

HOW TO CONDUCT SUMMER BAT COLONY COUNTS

New Hampshire Summer Bat Colony Monitoring Project

Why is this important?

We need your help finding and counting colonies of bats that live in buildings.

All 5 of New Hampshire's hibernating bat species have suffered drastic losses from White-Nose-Syndrome (WNS) in the Northeast. Bats living in buildings are usually either little brown (*Myotis lucifugus*) or big brown (*Eptesicus fuscus*) bats. Females of these species congregate in groups in spring through summer to give birth and rear their young. These are called maternity roosts. Males gather in smaller groups. Little brown bats have lost up to 95% of their population in just a few years and are now listed as **endangered** in the State of New Hampshire. These insect-eating bat species are a vital part of our state's ecosystem yet we still know so little about them. Your efforts to help monitor summer bat activity around the state will allow us to make informed decisions regarding the welfare and long-term conservation of these important mammals.

The Goals of the survey are to:

- Gather baseline information on summer bat colonies
- Evaluate the impact of White-Nose Syndrome (WNS) on summer bat colonies

The survey methods described below will be used to:

- Identify the location and evaluate the approximate size of bat maternity roosts by conducting general emergence counts (number of bats exiting the roost at night)
- Compare pre-volant (before pups can fly) and post-volant (after pups start flying) counts using more extensive surveys at some locations

Conducting bat colony counts is easy and fun as well as very helpful to scientists. You'll need a few friends to help so you can even turn the count into an evening social event!

For more detailed information about White Nose Syndrome and NH Bats:

<https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/white-nose-syndrome>

How to participate

1. Decide how much you are able to do.

Bat counts take about an hour and a half in an evening, starting a half hour before dusk. The initial commitment is to conduct one baseline emergence count of a maternity roost site per year. It is hoped that volunteers will commit to conducting multiple surveys over the next several years once you find out how enjoyable bat counting is, but any of the following commitment levels will contribute to our survey goals.

Bat Reporter- Conduct one (or more) emergence counts of a roost **between May 15th and July 31st**. Base line information on many roosts is extremely valuable. If conducting only one count, try to conduct in **mid-July** when the colony should be most stable.

Bat Tracker-Conduct at least one (preferably 2) emergence counts of a roost **between June 3rd and June 23rd** before most pups begin flying (pre-volant) **and** at least one (preferably 2) emergence counts **between July 8th and July 28th** after most pups begin flying (post-volant).

Bat Enthusiast- Conduct at least one emergence count of a roost every 2 weeks (preferably every week) from **May 15th through July 31st**.

Some maternity colonies begin to disperse (break apart and spread out to other locations) soon after pups begin flying (post-volant). For intensive research purposes, it is also recommended that you conduct 2 or more counts on consecutive evenings.

Additional Research: You may be contacted for permission to survey your site. Proposed work may include netting to capture females to determine health, reproductive condition, and banding.

2. Download and print the following forms at

<https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/bats-new-hampshire/nh-bat-survey>

- a. Bat Colony Count Site Form
- b. Bat Colony Count Data Form

3. Conduct a Summer Bat Colony Count

Preparation:

How to find a bat colony: Barns, attics and other old structures provide the best opportunities for finding bat roost sites. The largest colonies are usually located along major rivers or other large bodies of water and other colonies can be found most everywhere near forests and water. Often local colonies are known and you can ask your neighbors if they know of any locations. Perhaps you can interest them in conducting a count too!

It's best to do some scouting beforehand to determine where bats are exiting. You may find that you need help in covering all the exits (front and back of a structure).

Please remember to ask permission of the landowner and enjoy the experience.

Conducting the Count:

Choose an evening when the temperature is 50°F with light wind and no rain (see data sheet referring to wind and sky codes of 3 or less).

Bring a thermometer, paper and pencil and the Bat Colony Count Data Form.

Arrive ½ hour before sunset and continue the survey until 1 hour after sunset or until it is otherwise too dark to see emerging bats.

Fill in the Emergence Count Data Form noting the observers and weather conditions and start time.

Give a pencil and blank paper to each surveyor. On the blank paper make two columns. In one column you will make a tick mark for each bat as they exit. In the other column you'll make a tick mark for bats that re-enter the building.

Position both yourself and helpers so that someone has a view of each side of the building and so that you can communicate easily. It is best to be in position to have the bats silhouetted against the sky for easiest viewing. (Wearing a hat helps to reduce glare from the sky.)

It is important to keep noise and light to a minimum while bats are emerging.

As the sun goes down, it will take a while for the bats to start emerging, and then they tend to come out over about an hour. If you find that you have a mega-colony that numbers in the thousands, you may need to tally the bats by the 10's as they exit.

Count only the bats entering or exiting the building - as opposed to bats flying by you. As the bats exit, if you see one going toward another observer let them know.

You can end counting when either 15 minutes has passed since the last bat emerged or when visibility is gone.

After the Count:

Tally all the bats exiting and re-entering the roost and enter it on the Emergence Count Data Form. Remember to note the start time and the end time. Note any observations (e.g bat behavior, newly discovered exits, etc.) from the surveyors.

What Species?

If you want to figure out which bat species are using the building, wear gloves and collect some droppings (fresh are best) into a small container such as a pill bottle, and send that in with your results. The bottle should then be put in a ziplock baggie with a label that indicated where and when the sample was taken. Please make sure you are using the same location information as you put on the landowner form. In general, big brown bats have droppings larger than a grain of rice, while little brown bats droppings are a bit smaller than a grain of rice, but individual droppings can be variable, so collect a few.

4. Submit the Data!

Report your count online: <https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/bats-new-hampshire/nh-bat-survey> OR Return Survey Data to

Sandra Houghton | Summer Bat Colony Count
NH Fish and Game Dept.
11 Hazen Dr.
Concord, NH 03301

If you need more information please contact: Sandra Houghton at sandra.houghton@wildlife.nh.gov

