2019

Ohio Bat Roost Monitoring Project

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Thank you!!

Your time and effort volunteering to conduct surveys is a crucial part of the ODNR Division of Wildlife conservation program for bats. We appreciate your assistance recording bat sightings this summer.

INTRODUCTION

Four little brown bats in a house (Photo by Don Althoff)

Bats are an important part of the ecosystem and greatly assist the agricultural economy. As the main predator of night-flying insects in Ohio, bats keep insect populations in check. Unfortunately, some bat species have drastically declined over the last few years due to the cumulative effects of habitat loss, wind energy development, and white-nose syndrome. In order to protect bats, it's important to know where they are roosting and understand how their population sizes are changing.

During the summer, bats can potentially be found roosting in trees, barns, attics, caves, or bat houses, but many of these locations are unknown. Bats that roost in structures in Ohio tend to be either little brown bats (like the above photo) or big brown bats. Little brown bats were once thought to be the most common species in Ohio, but their numbers have recently declined by as much as 99% according to winter hibernacula counts.

The purpose of this project is to identify locations of bat maternity colonies (groups of female bats and their young) and determine the approximate size of these roosting populations. By tracking the difference in colony size across the season and across several years, we can start to understand where bats are living and how their populations are changing in our state.

LOCATING A ROOST

The first step is finding a place where bats are roosting. Most people have bats in their area and may be unaware of it. Here are some tips to help find a roost near you:

1. Look up! Bats fly around sunset, and it is easy to spot them. If you see an animal flying near sunset that has a rapid wing beat, it is likely a bat. Bats tend to have very acrobatic movements while they fly, dodging back and forth in complex patterns, which distinguishes them from a bird.
2. Look for old structures like barns. These can provide great opportunities for bats to roost because they often have openings that have formed over time. You can look for evidence of bats to see if they are in the building. They may have left behind piles of guano (*right*). There also might be dark stains on the side of the building

Presence of bat guano can be used to help locate a roost (Photo by Allyson Arulananthum)

that have formed from bats rubbing against the surface and depositing skin oils as they enter.

3. Look for a bat box or bat condo (*below*). Many parks place bat boxes on their property to encourage bats to roost in the area.
4. Find a bat roost tree. Many colonies can be found in forests. The largest colonies are usually located along major rivers or other significant bodies of water. In these areas, bats use live or dead trees with sloughing bark or cavities to roost. These types of roosts can be hard to find, so they should probably be your last option.
5. Ask neighbors and friends. They may know of roosts in the area that you can survey.
6. Contact DOW staff. They may know of roosts in your area. See contact information at the end of this document.

Once you have located a roost, it is important to determine where the bats emerge. There is normally one spot that most of the bats will exit. You can use guano deposits on the ground to help you locate this. You should do this prior to your first survey. Be sure to gain permission to access the property from the landowner. If you are monitoring a roost on park property, you may need to fill out a special access permit to stay at the site after dark; contact DOW staff if you need assistance with a permit.

Two bat houses on the side of a barn as indicated by the arrows (Photo by Allyson Arulananthum)

MONITORING A ROOST

Now that you have found a bat roost, all you have to do is watch and count bats that exit it! Surveys should begin 30 minutes before sunset. Bats typically emerge shortly after this point, and you want to be sure to account for as many of the bats as possible in the roost. The survey then only needs to continue until it is too dark to see the roost and bats exiting. Typically, surveys last about an hour.

We ask that you watch the roost **two times** during the summer.

1. To estimate the number of mature female bats, the first survey should be conducted before the pups can fly, between **last week in May and the third week in June.**

2. To estimate the number of offspring that year, the second survey should be conducted after the pups can fly, which is from **the fourth week of June to the end of July**. The latest date to survey the roost is July 31. Bats may move after this date to fall swarming locations or migrate to warmer areas, so surveys after this date should not be included in the results.

When you are picking nights to do the survey, it is a good idea to consider the weather. Complete the surveys on nights where the **wind is less than 10 mph, temperatures are at least 60°F, and there is no rain**. Arrive at the roost at least 10 minutes before the start of the survey so you have time to fill out the data sheets before beginning the count.

Once you arrive at the roost, fill out the information on the **Site and Landowner Information Form.** The location information is crucial for the project. Please record the county and nearest address. If you have a GPS unit, please record the latitude and longitude. If you do not have access to a GPS, please include a map with the site circled and return with the form so a general location can be recorded or provide general directions from a town, major road intersection, or other recognizable feature on a map. If possible, please **include a photo** of the roost with your form.

Next, fill out of the top portion of the **Bat Tally Sheet,** including the weather information for the start of the survey.

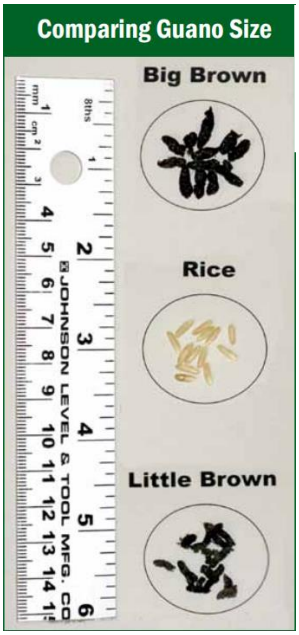
Begin monitoring the roost exit 30 minutes before sunset. Try to position yourself so that the roost is silhouetted against the lit sky. This will make it easier to view the bats exiting the roost. You will want to tally the bats as they exit; you can use the "out of roost" section on the Bat Tally Sheet to create hash marks or make other notes to help you keep track of the number of bats exiting. **Please do not shine a light on the bats because this can cause them to not exit or disorient them in flight**. Some bats may re-enter the roost, especially when there are pups inside. You can use the "into roost" section on the Bat Tally Sheet to keep track of this.

An hour after sunset, or when the sky is too dark to see bats, you can conclude the survey. Be sure to **record the final number of bats** that exited and entered the roost on the bottom of the Bat Tally Sheet and fill out the weather information for the end of the survey.

When you have completed your two surveys for the season, please scan/email or mail data sheets to the address below. **Please submit all observations by August 31.**

If you are determining the species by the size of guano, please take a picture of the guano next to a quarter or ruler. Pieces the size of uncooked rice will likely belong to little brown bats, and larger pieces will likely belong to big brown bats (*reference photo on next page*).

You can also include a picture of the bats themselves if you are able to get one. However, please do not shine a spotlight on the bats or the roost. This may prevent them from exiting the roost. Bats are easily stressed by light.



Guano comparison between the little brown and big brown bat (Photo from Vermont Fish and Wildlife)

Please send all forms and photos to the following address. You should have 1 landowner form and 2 bat tally forms per roost:

Sarah Stankavich, Wildlife Technician
2045 Morse Road, Building G
Columbus, OH 43229
614-265-6764

sarah.stankavich@dnr.state.oh.us

Please call if you have any questions!

DOW BAT ROOST MONITORING

Site and landowner information

Please fill out this sheet **once** for each location and return with bat tally sheets

Site Name/Address: _____ **County:** _____

Coordinates: _____ _____

Type of roost:

Bat box	Bridge	Tree
Bat condo	House (occupied)	Cave
Barn	House (unoccupied)	Other: _____

Placement (bat house/condo only): Pole Tree Building (Brick) Building (Not brick)

Other: _____

Color (bat house/condo only): Black Dark brown Light brown Natural wood White
Other: _____

Surrounding habitat: Urban Forest Agricultural Grassland Suburban
Other _____

Height to bottom of roost (approximation is ok). Please include units (feet or meters) _____

Direction facing: N NE E SE SW W NW Does not apply

Distance to water: Less than .25 miles Between 0.25 and 0.5 miles Between 0.5 and 1 miles
Over 1 mile Unknown

Primary species in roost: Big brown bats Little brown bats Unknown
Other_____

Comments (directions to site, where bats are exiting, site history, etc). Use back of sheet if needed:

_____
_____
_____
_____
_____

Landowner information (will remain confidential)

Name _____
Address _____
City _____ **State** _____ **Zip** _____
Phone _____ **Email** _____

DOW BAT ROOST MONITORING

Bat Tally Sheet

Please fill out one tally sheet for **each** monitoring event and return with site information sheet. Instructions are online at WildOhio.gov/GoBatty

Date: _____ **Site:** _____

Surveyors:_____

	Start of Survey	End of Survey
Time		
Temperature (Fahrenheit)		
Cloud Cover (0%, 25%, 50%, 75%, 100%)		
Moon Visible? (Y/N)		

Bat Tally

OUT OF ROOST	INTO ROOST

Final # out _____ **Final # in** _____

Comments:

_____

_____

_____

_____