

Wisconsin Summer Bat Colony Monitoring

WISCONSIN BAT PROGRAM



<http://wiatri.net/inventory/bats>

Wisconsin Bat-Roost Monitoring Project

Bureau of Natural Heritage Conservation
Species Management

Wisconsin Department of Natural Resources
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What is summer bat colony monitoring and why is it important?

Bats are some of the most ecologically diverse animals on the planet. Over 1,300 species of bat exist worldwide and they are found on every continent except Antarctica. 45 species of bat call North America home, and eat a wide variety of foods including insects, pollen, and fruit. Because of their feeding habits, bats are an important form of pest control and also pollinate and spread many important foods we eat everyday.

In 2006, a fungus was discovered growing on the noses and wings of bats as they hibernate. The disease, later named [white-nose syndrome](#) (WNS) because of the white, powdery fungus on the muzzle of infected bats, causes die offs of multiple species of bats in infected hibernation sites, and mortality rates of 90-100% are not uncommon. In reaction to the occurrence and spread of WNS, a continent-wide response was launched in 2009 which included learning more about



A little brown bat infected with WNS.

the disease and how to stop it, as well as what to expect should populations recover post-infection.

Summer roosts are critical to the survival of bats because they offer safe places to raise young and rest during the day. Bats in Wisconsin generally give birth to one baby, called a pup, in early June, making these havens important habitat for the survival and propagation of bats.

Documentation and monitoring of summer roosts is a critical part of the National Response to WNS. The true impacts of the disease cannot be determined using estimates from hibernacula alone; therefore, we are soliciting help from within and beyond the WNS affected areas to assist in a nation-wide effort to collect data during summer months through maternity colony monitoring and acoustic sampling. The rapid advance of WNS has eliminated the opportunity to collect baseline data in the affected northeastern states, but we still have time to establish some pre-WNS information in Midwestern states. Summer bat monitoring through the surveys described in this package will provide three levels of information; 1) impact of WNS on affected bat populations; 2) baseline data on populations in advance of WNS, and; 3) insight into summer symptoms and possible transmission of WNS in summer roosts. Your participation in any or all of these efforts is encouraged and will support the regional and national WNS Investigation and Response effort.

*The WNS Summer Colony Packet was designed by the PA Game Commission and has been adapted to fit the needs of the Wisconsin DNR/Natural Heritage Conservation/Species Management section.

What's in this packet?

The information and datasheets in this packet are resources for you to use to get started with summer bat colony monitoring.

1. Summer Maternity Monitoring Q&As
2. Emergence Count Monitoring Introduction and Protocol
3. Site Surveyor Data Form
4. Site and Landowner Data Form
5. Emergence Count Data Form

Who can participate?

- Anyone interested in bat monitoring in the state can participate in summer colony monitoring. Emergence counts (colony monitoring) may be conducted by landowners, volunteers, students, researchers or staff. As most bat colonies in the summer on private lands, we are relying almost exclusively on landowners and volunteers to report colonies and conduct emergence surveys.

What does monitoring entail?

- Emergence counts: Ideally site visits are conducted at least twice a season during both the pre-volant (before flight of pups) and post-volant (after flight) time periods. Female bats give birth to pups from June 1 –July 1 which is known as the pre-volant period. As the pups mature, they are ready to forage and fly at 3-4 weeks after birth. This stage when the young begin to fly is known as the post-volant period. Emergence counts are simple and include **sitting outside the roost in the evening and counting the bats as they emerge**.

How do I get started?

- If you know of a summer bat roost, you can report the colony to the Wisconsin Bat Program by filling out the attached **surveyor** and **site datasheets** and sending them to heather.kaarakka@wisconsin.gov or mailing to:

Wisconsin Department of Natural Resources

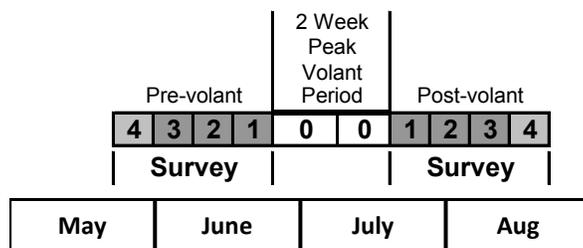
Heather Kaarakka

Bureau of Natural Heritage Conservation

101 South Webster Street

Madison, WI 53707-7921

- After your site and contact information is submitted you are free to begin emergence surveys! Use the **emergence count datasheet** to fill out survey information and [email](#) or [submit your counts online](#) on the roost project webpage.
- Commitment: There are three levels of commitment for the project.
 1. Conduct one emergence count from May through August.
 2. Conduct two emergence surveys—1 during pre-volancy and 1 during post-volancy.
 3. Conduct at least one emergence count every two weeks starting in late May through late August. Or conduct consecutive counts for at least three days during late May and early June.



A short video explaining the roost monitoring process is also available on the [roost project webpage](http://wiatri.net/inventory/bats/volunteer/roost):
<http://wiatri.net/inventory/bats/volunteer/roost>

How can I identify the species using my roost?

- In Wisconsin, the two species most likely to use bat houses, buildings and bridges are little brown bats and big brown bats. Big brown bats are about twice the size of little brown bats and the muzzle is much blacker and wider on the big brown bat. A photo of the bats in the roost submitted to the Bat Program is an easy way to definitively identify the species. Another way is to look at the guano below the roost. A submitted photo of the guano compared to a coin is helpful in determining species.



Left- big brown bat guano compared to a quarter. Right- little brown bat guano compared to a nickel.

*** Please limit disturbance of the bats while trying to identify the species. Too much disturbance can cause the bats to abandon the roost.**

Conducting emergence surveys

The Survey- It is best to do some scouting before hand to determine where bats are exiting.

- To determine the primary exit, look for discolored areas in and around chimneys, eaves, and soffits along with concentrations of guano beneath the exit. You may find that you need help in covering all the exits (front and back of a structure).
- Please try to survey when starting temperatures are above 60°F and wind and sky codes are 3 or less. Bring a thermometer, paper and pencil, and the emergence form.
- Arrive about 15 minutes before sunset.
- Locate where the bats are exiting the structure and count them as they exit. Some may re-enter, especially when there are pups inside. Try to keep track of this. If you find that you have a mega-colony that numbers in the thousands, you may need to tally them by the 10's as they exit. ***Do not shine lights into the roost to count the bats.** Too much disturbance from lights and activity can cause the bats to abandon the roost. You will also not be able to see all the bats inside the bat house making for an incomplete count.
- There are free hand- tally apps available for smartphones that will make counting much easier.
- Position both yourself and helpers for easy viewing of bats exiting. It is best to be in position to have the bats silhouetted against the sky for easier viewing. When more than one surveyor is needed, it's a good idea to turn the count into an evening social, with dinner or an ice cream parlor visit afterwards.
- Please remember to ask permission of the landowner and enjoy the experience.

Return Survey Data to: Heather Kaarakka (Wisconsin DNR) heather.kaarakka@Wisconsin.gov or 608-266-2576 or John Paul White (WDNR) john.white@wisconsin.gov 608-267-0813.

Summer Maternity Roost Monitoring-SURVEYOR INFORMATION Data Form

White Nose Syndrome (WNS):

Multi-state Coordination, Investigation and Response to an Emerging Wildlife Health Threat

SURVEYOR INFORMATION (CONFIDENTIAL):

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: _____

EMAIL: _____

SURVEYOR TYPE (circle what best describes you):

Landowner -You are surveying a roost on your own property (use this even if also surveying other sites you do not own).

Volunteer -You are surveying as a volunteer and have limited expertise in both bat identification and ecology.

Student -You are a student studying bats with a basic expertise in both bat identification and ecology.

Researcher -You are actively involved in bat research on an academic and/or professional level.

COMMENTS: (Bat experience etc.)

Summer Maternity Roost Monitoring-SITE and LANDOWNER Data Form

White Nose Syndrome (WNS):

Multi-state Coordination, Investigation and Response to an Emerging Wildlife Health Threat

Site name or Number: _____ 2 Digit State abbrev.: _____ County: _____

LAT (Decimal degrees; ex: 43.5738): _____ (N) LON (Decimal degrees; ex: 89.60225): _____ (W)

Lat/Lon Precision (circle): GPS – From Map – County Resolution – Google Maps- Not Mapped – Other (specify)

(Circle- "GPS" if GPS unit used; "From Map" if plotted from map; "County Resolution" if coordinates are only County specific)

Roost Structure is: barn – church – occupied house – unoccupied house – utility building – bat box – bat condo – bridge – tree –
cave – mine – unknown – other structure (describe): _____ - _

Primary Species within Roost: _____ or Unknown (circle if unknown)

(list only 1 if known., and make comments on others)

COMMENTS (include directions to site, where bats are exiting, how many surveyors needed at site, other species roosting, landowner's plans for the bat colony, history of site regarding bats, etc... attach more sheets if needed):

LANDOWNER INFORMATION (CONFIDENTIAL):

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: _____

EMAIL: _____

RESPONSIBLE SURVEYOR NAME: _____

Summer Maternity Roost Monitoring-EMERGENCE COUNT Data Form

White Nose Syndrome (WNS)

Counts can also be submitted online! <http://wiatri.net/inventory/bats/volunteer/roosts>

SITE NAME or No.:--- _____ SURVEYOR: _____

(a site/landowner data form needs completed)

(Lead Surveyor who is responsible for reporting and has completed a SURVEYOR Info data form)

Date	Sky Code	Wind Code	Start Temp	Start Time	End Time	Total Bats Counted	Technique Used (Visual or Video)

Other Surveyors _____

Comments:

SITE NAME or No.:--- _____ SURVEYOR: _____

(a site/landowner data form needs completed at least once)

(Lead Surveyor who is responsible for reporting and has completed a SURVEYOR Info data form)

Date	Sky Code	Wind Code	Start Temp	Start Time	End Time	Total Bats Counted	Technique Used (Visual or Video)

Other Surveyors _____

Comments:

		WIND	
1	Clear-Clear to a few clouds	1	Calm-Leaves Still 0 MPH
2	Partly Cloudy-Clouds but variable sky conditions	2	Slight Breeze-Leaves slightly Rustling 1-7 MPH FASD 1-7 MPH
3	Cloudy-Mostly cloudy or overcast	3	Gentle Breeze-Leaves and twigs in motion 8-12 MPH
4	Drizzle-Light intermittent rain	4	Mod. Breeze-Small branches begin to move 13-18 MPH
5	Showers-Steady soaking rain	5	Windy-Small Trees or more in canopy sway 19-24+ MPH
6	Thunderstorms-Rain with thunderstorms	6	Not Recorded- Not Recorded
7	Not Recorded-Not Recorded		

Sky and wind codes of 1 – 3 are best. Code of 4 is marginal. Avoid surveying if code is higher than 4.

Summer Maternity Roost Monitoring-Reporting Sick/Dead Bats Data Form

White Nose Syndrome (WNS):

Multi-state Coordination, Investigation and Response to an Emerging Wildlife Health Threat

Please fill out an on-line Sick/Dead bats form here: <http://wiatri.net/inventory/bats/Reporting/>

or you can complete the form below and send it to: Wisconsin DNR
Natural Heritage Conservation
Paul White
101 S. Webster St.
Madison, WI 53707-7921

* Indicates Required Fields

* Name: _____

Address1: _____

Address2: _____

* City: _____

*State: _____ Zip Code: _____

* Phone #: _____

* E-mail: _____

* Number of Bats Found: _____

* Date of Observation: (mm/dd/yyyy) _____

* County of Observation _____

* Description of Location:

Additional Comments:

A few bat counting tips

- Sit or stand so that you can see the bats fly out of the roost against the night sky. It is much easier to see them with a light backdrop. If at a building, sit so that you are looking along the side of the wall, not straight on.
- Bats will begin exiting 15-20 minutes after sunset and will continue to exit for about 30-40 minutes. In all, the count should not take more than an hour to complete.
- Not all bats will exit during the survey. A few will remain in the roost. To tell when you can stop counting, wait for a five minute period, and if no bats have exited, or if it is too dark to see, you have completed your survey. Remaining bats will sometimes make noise indicating that some still remain in the roost.



Researcher looking along the wall for bats emerging against the night sky.

Citizen-scientists and volunteers are critical to monitoring Wisconsin's bats. The roost monitoring project cannot continue without your support.

Please always feel free to contact Heather with questions or concerns about bats and bat roost monitoring. Heather.kaarakka@wisconsin.gov or 608.266.2576

Thank you for helping the Wisconsin Bat Program gather important data about bat populations in Wisconsin.