

# Summer Maternity Roost Monitoring-Emergence Counts

## U-2 White Nose Syndrome (WNS):

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

#### INTRODUCTION

The methods used in this survey will be used to: Identify and evaluate the approximate size of bat maternity roosts by conducting general emergence counts; evaluate emergence variances between bat pup pre-volant and post-volant counts using more extensive count surveys at some locations; compare the number of reproductive versus non-reproductive females and evaluate their general health by capturing animals; and provide opportunities for collecting biological samples at maternity roosts as needed by WNS researchers.

The Goals of the survey are to: Gather base line information on summer colonies; evaluate the impact of WNS on summer colonies; assist in the identification of the primary WNS contagion; determine if WNS contagions persist and can be transmitted in summer roosts; and correlate long term trends with the spread of WNS.

This survey is primarily geared toward little brown bats (*Myotis lucifugus*) which appear to be heavily impacted by WNS in the northeast US (VA and north). Adjustments may be necessary for other species and other parts of the country. Consult with experts and the literature for your area.

#### COMMITMENT

Protocols will vary depending on the surveyor's commitment and expertise. It is hoped that surveyors will commit to conducting surveys over the next several years or longer once you find out how enjoyable bat counting is. The initial commitment is a volunteer or researcher who locates at least one roost and conducts a minimum of one emergence count of that site a year. Locating and conducting a base line emergence count is one of the most important aspects of this study. You may be contacted by researchers to use your site in a more extensive study. Once you have participated with an initial commitment and learn how much fun counting bats is, you may want to increase your effort. Listed below are different levels that can be used in this study.

LEVEL 1- Find and conduct at least one emergence count of a roost between 15 May and 1 August. Additional roosts can also be located and additional counts conducted. Base line information on many roosts is extremely valuable. If conducting one count try to conduct in mid-July (late lactation for females) when the colony should be most stable.

LEVEL 2-Find and conduct at least one (pref. 2) or more emergence counts of a roost before most pups begin flying (pre-volant).

**Pre-Volant: Conduct between Last Week in MAY and 3<sup>rd</sup> Week in JUNE (VA and North).**

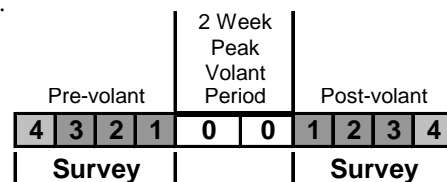
And at least one (pref. 2) or more emergence counts after most pups begin flying (post-volant). Again, target mid-July.

**Post-Volant: Conduct after July 4<sup>th</sup> through July 31 (VA and North).**

LEVEL 3- conduct at least one emergence count of a roost at least every 2 weeks (preferably every week) starting the:

**Last Week of May through July 31**

*Researchers use Level 3's high commitment because some roosts begin to disperse soon after pups begin flying. Maternity roosts can be very dynamic and it is often difficult to pick out the best dates for sampling the pre-volant and post-volant periods. For intensive research purposes, it is also recommended that you conduct at least 2 or more counts on consecutive evenings to obtain error parameters.*



*General guidance for conducting emergence surveys for states planning to initiate emergence surveys.*

*From VA north the 2-week peak Volant period is the ~ last week of June and 1<sup>st</sup> week of July.*

*Weeks 1, 2, and 3 are preferred weeks for emergence counts.*

Another aspect of this study involves researchers with the appropriate state and federal permits. You may be contacted for permission to use your site in these studies. Proposed work includes netting during the pre-volant period to capture females and evaluate reproductive condition, gathering weight data, banding, and collecting samples for lab studies such as skin and blood samples.

### PROTOCOL

Finding colonies of bats: Country churches and other old structures provide the best opportunities for finding bat roosts. 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. Buildings such as old houses, country churches, and barns are likely candidates. Usually you can just ask some local people about buildings with bats. Generally bat roosts are locally known. If you're lucky, someone will know of artificial roosts created just for bats. The bat species will usually be little brown (*Myotis lucifugus*) and big brown (*Eptesicus fuscus*) bats where females congregate in spring through summer to give birth and rear their young.

Data Forms- The information you collect will be maintained in a database used to research WNS. A database provides uniform formatting and storage of your data so it can be compared with other surveys. This requires the use of standardized reporting forms. Please use them.

1. Surveyor Information Data Form: This is used to register you within the program. Please print legibly so that your contact information is entered correctly. You only need to complete this form once, unless changes are needed.
2. Site and Landowner Data Form: It's important to make contact with the landowners and get their approval. Location information is important. Please record the state and county. If you have a GPS unit, please record the latitude, longitude and datum the unit is set on. If you do not know the datum, write unknown. If you have no access to a GPS, please copy a map with the site circled and return with the form so a general location can be recorded. Otherwise, provide general directions from a town, major road intersection, or other recognizable feature on a map. Record the species using the roost if known, otherwise circle unknown. The last portion of the form collects the landowner's contact information. You only need to complete this form once unless addresses, or other information changes.
3. Emergence Count Data Form: Use this form for recording the actual bat count. Be sure to indicate the site name and you as the surveyor. Record the date, sky and wind codes (codes are on bottom of form), start temperature, start & end time, total bats counted and technique used, which will usually be visual. Please make a note of other surveyors in comments. Also note any unusual observations. The form page has space for 2 counts. If you conduct more than 2, please copy more forms.
4. Volunteer Survey Data Form: Researching a wildlife disease is an expensive adventure. Funding the work requires grant funds and most grants including the one funding the regional initiative on WNS require grant funds be matched with a percentage of the grant. In other words, nothing is free. By completing the volunteer survey form your time and vehicle mileage used in this survey can be applied to the required match. PLEASE complete and return the volunteer form so that you can help us retain and use this grant money to solve this wildlife disease.

The Survey- It's best to do some scouting before hand 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 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 ½ hour 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. 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.

Roosting Estimate- If time does not permit an emergence count and the roosting bats can be counted, a roost estimate may be recorded in comments. This is most useful for surveying multiple bat boxes (artificial roosts) where a light can be shined up into the bat box and roosting bats counted. This can also be used if you have access to an attic with roosting bats. **Record the total bats for the count , record "other" in technique and note roost estimate and counting method in comments.** This type of count is generally a minimal estimate since many bats may not be seen but it does record a roost.

Upon the completion of any re-survey, landowner and surveyor information should be checked and updated if necessary. Thank you again for participating in this important survey of your wildlife resource.

**Return Survey Data to Colony Bat Count – WNS Investigation, Nongame and Endangered Wildlife Program, NH Fish and Game Dept., 11 Hazen Dr., Concord, NH 03301.**