

The Use of Bat Houses as Management for Excluded Colonies of Bats

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Introduction

Little is known about the cryptic roosting behavior of bats, and even less is known about what happens to a colony after the bats are excluded and forced from a roosting site. Little brown bats and big brown bats commonly use buildings as roosting sites in North America, but most landowners do not wish to share their living space with bats. As a result, many colonies of bats are excluded and offered no alternate roosting habitat. **This project was designed to investigate whether or not bat houses are used as alternate roosting habitat after bats are excluded.** The Wisconsin Bat Program and the CBM roost monitoring project built bat houses to donate to landowners excluding bats if the landowners agreed to monitor the new bat house. Bat houses were put up both before and after exclusion to investigate whether bat houses put up before exclusion were more successful (used more quickly and by more bats) than those bat houses put up after exclusion.



Bats using an outbuilding

Methods

- The CBM roost monitoring coordinator worked with various excluders over the spring, summer and fall of 2012.
- The exclusion companies alerted the roost monitoring coordinator to sites wishing to exclude.
 - If the landowner agreed to participate in the project, the roost monitoring coordinator worked with the landowner and the excluder to **determine species, estimate number of bats and locate the best placement for the new bat house.**
 - A project description letter was created for the excluders to give to landowners during initial contact.
 - **Bat houses were placed either a day or two before exclusion or approximately a week after exclusion took place.** The post-exclusion treatment was designed to investigate whether bats will abandon an area completely if they have no alternate roosting habitat, or return once bat houses are installed.
 - **30 bat houses were designated the pre-exclusion treatment and 30 bat houses were designated the post-exclusion treatment.**
 - After installation, the landowners were asked to monitor exact date of usage of the bat house by looking for guano beneath the bat house.
 - After bats began using the bat house, participants were then asked to conduct emergence counts to determine number of bats using the bat house.

This study is still ongoing, but when a sufficient amount of data is gathered, a statistical analysis will be completed to investigate if a difference exists in usage between the two treatment groups.



Left: digging a hole to install a bat house on a pole.

Right: study data sheet given to landowners to complete.

2012 CBM Bat House Project

Landowner:
 Landowner contact:
 Site address:
 Species roosting:
 Treatment group:
 Date bat house installed:
 Date first guano noticed under bat house:

Weekly monitoring:

Date														

Number of Bats

Notes:

Return Survey data to:
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Results

Because of the non-exclusion period from June 1 through August 15 put in place to protect baby bats and their mothers, very few bat houses were installed in spring and fall of 2012. Only four bat houses were installed during the spring and two were installed during the fall. Three sites were assigned the post-exclusion treatment and three sites were designated pre-exclusion.

Spring:
Trempealeau barn- **Post-exclusion.** Excluder estimated 200 bats using the building. Exclusion was completed before bats returned in the spring, so no one-way doors were installed. Bat houses were installed on April 13 after all holes were sealed on April 12. Bats began using both bat houses on April 23. The landowner conducted emergence counts of both bat houses. The brown box housed roughly 150 bats, and the black maternity box housed about 100 bats. Little browns were using both bat houses. **Days after exclusion bats began using bat house: 11; Days after bat house installed: 10**

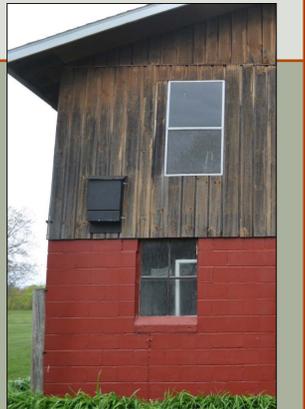
Barneveld log cabin- **Pre-exclusion.** The excluder alerted the roost monitoring coordinator prior to exclusion, and bat houses were installed on May 7, exclusion completed May 15.. Follow up with this landowner is still needed to see if bats are using the bat house.

Stone Lake cabin- **Post-exclusion.** Because of the distance, the bat house was sent to the landowner to install himself rather than the project coordinator installing the bat house. The landowner excluded before the bat house was installed on May 30. More information about usage date and numbers is still needed from this site.

Winter cabin- **Pre-exclusion.** This site did not work with an excluder, but conducted the exclusion themselves while working with the roost monitoring coordinator. Bats had been roosting and hibernating in the attic of their cabin for several years. After talking with the roost monitoring coordinator, the landowner excluded in late spring, May 15, after they had installed the bat house on April 15. Six bats began using the bat house on September 1. **Days after exclusion bats began using bat house: 106; Days after bat house installed: 136**

Fall:
Columbus chimney- **Pre-exclusion.** This landowner contacted the roost monitoring coordinator in late August and worked through exclusion with the coordinator and agreed to participate in this project. The bats had been roosting in a crack between the chimney and the side of the house. Bat houses were installed directly to the chimney. Information is still needed from this site as to when the bats began using the bat house and exact date of exclusion, but bat houses were installed prior to exclusion.

Middleton house- **Post-exclusion.** The excluder began working with this landowner in late September and by September 19 the excluder began sealing holes and installing one-way doors. The bat house was installed for the little browns of this colony on September 20. The landowner will monitor for guano beneath the bat house and note the date of usage.



Trempealeau barn bat house. Bats began using this bat house 11 days after they were excluded.

Discussion and Future Steps

- Because a limited amount of data from only 10% of the required number of sites has been gathered, the project will continue in the spring of 2013. The project coordinator will also work with those landowners who contact the Bat Program directly looking for information about exclusion.
- The scope of this investigation may be beyond the amount of time and financial support of both the CBM Program and the Bat Program can invest in it. The use of citizen monitors was intended to reduce the amount of data-gathering the bat program would have to complete in order to investigate this issue, however, the type of citizen interested in monitoring and helping bats may not necessarily overlap with the type of person wishing to evict bats from their roost. The largest hurdle, other than obtaining suitable sites, appears to be getting landowners invested in gathering data about their colony.
- By fall of 2012, much of the project was distilled down to simply recording date of first usage, because as the project progressed, it became evident that too much of a commitment may have been asked of landowners by requiring emergence counts.
- There are also many factors that are hard to control which may affect usage of the bat houses such as time of year and placement of the bat house. The project attempted to install the bat houses as close to the original entrance as possible, ideally directly on the side of the building. Many landowners do not wish to mount bat houses on their homes, so the boxes were installed away from the original roost which many causing a delay in the time it takes the bats to begin using the bat house. Limited knowledge of roosting behavior leads one to believe that bats excluded in the fall will simply leave the area to begin migration to winter hibernacula, and results from fall installs may skew data if the bats do not begin using the houses until the following spring. Bats excluded during spring will likely stay in the area and offer a more accurate depiction of bat house usage after exclusion. As a result, the project will continue to target spring exclusions rather than fall.
- The non-exclusion period from June 1 through August 15 also limits the amount of time available during the year for this project to continue. Bats return to summer roosts in April which gives excluders and this project less than 2 months to conduct exclusions and install bat houses.
- Regardless of the short time period allotted for this project during the year, the information that could be gathered from this project could offer valuable insights as to how best to manage excluded colonies using bat houses.
- Because of the nature of bat behavior, this project will require more than one year to gather data.

Acknowledgements

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