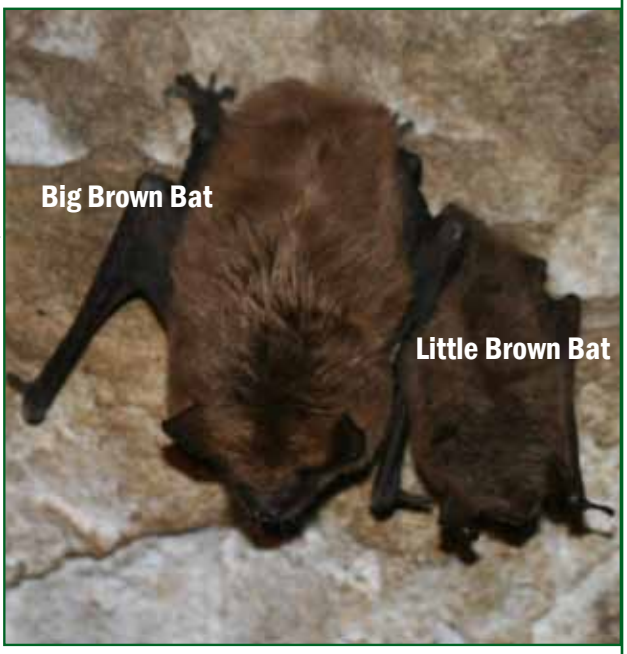
Excluding Bats from Vermont Residences - A Guide to Best Management Practices

Background

The once common little brown bat (*Myotis lucifugus*) that numbered in the hundreds of thousands in Vermont has been inflicted by White Nose Syndrome (**WNS**), which has devastated several of Vermont's bat species. Vermont's population of little brown bats has experienced over a 90% decline in the past 3 years and now faces possible extinction. As a result of this emergency, the little brown bat has been listed as endangered in Vermont to protect the species from unnecessary harm. To prevent and minimize the conflict between the now endangered little brown bat and people, the Vermont Fish & Wildlife Department (VFWD) provides the following guidance for addressing human-bat encounters. To accurately identify **little brown bats** please visit the following web page at: www.vtfishandwildlife.com/sites/fishandwildlife/files/documents/Learn%20More/Living%20with%20Wildlife/Bats/bigBrown_and_littleBrown.pdf



Of Vermont's nine species of bats, two - the little brown bat and the big brown bat (*Eptesicus fuscus*) - commonly live in buildings and are often referred to as "house bats." The little brown bat hibernates in caves and mines from early fall to spring, typically emerging from hibernation in mid-April. As little brown bats emerge from hibernation, they return to their summer roosts commonly located in attics, under shutters and shingles, and in sheds, barns, and garages.

Prior to WNS, maternity colonies of female little brown bats varied in size from a few to hundreds of females, with each female giving birth to a single pup between the end of May and mid-July.

The big brown bat hibernates in mines and caves as well but is the only species that will also hibernate in buildings during the winter. While the vast majority of conflicts between humans and bats occur during July and August, occasionally, during the winter, bat and human conflicts arise when hibernating big browns are disturbed or when they arouse during a warm period and enter living spaces.

Best Management Practices for Excluding Bats

Step 1-Determine if bats are present and where they are entering the building

1. Take note of places where bats are likely to enter your home. Bats can enter through holes smaller than the size of a quarter. Places like fascia boards, where two buildings meet, between the building and a chimney, loose shingles, ridge caps, windows, attic vents, flashing, eaves and loose siding are all common places for bats to enter and exit.
2. Look for evidence on the ground. Bats will defecate while they roost, and piles of guano usually indicate where bats are roosting.
3. Look for evidence on the building itself. Places where bats enter and exit often have stains from urine and skin oils on the siding and holes. These can be good indications of where bats are entering.
4. Monitor at dusk or dawn. Even if no visible signs occur, bats may still be roosting in a building. Observe the building at dusk or dawn to see if any bats fly out of openings in the evening or into opening in morning. Listening at this time can also alert the observer to the presence of bats. Bats will often become very vocal 5-10 minutes before they take flight to forage. If you determine the presence of bats, follow the guidelines for bat exclusion described below.

Step 2-Excluding Bats from Building

Because of the dramatic declines in Vermont's little brown bat populations as a result of WNS, large maternity colonies that might have been a concern may now number just a few bats. The VFWD recommends if a small number of bats are not bothering the homeowner it best to leave the bats alone.

Exemption to Take Little Brown Bats to Protect Public Health

Because little brown bats may carry rabies (less than 1% of all bats have rabies) and are often encountered in Vermont residences, it is important for Vermonters to be able to act quickly on any reasonable threat to their health. The Center for Disease Control (CDC) recommends that in all "instances of potential human exposure involving bats, the bat in question should be safely collected, if possible, and submitted for rabies diagnosis."

If the homeowner prefers to exclude bats from the building, the following steps should be practiced by the homeowner or their pest control agent. Measures conducted not conforming to the steps below may require a State of Vermont Threatened and Endangered Species Permit prior to implementation.

Exclusion practices are time dependent:		
December to March	Little brown bats have migrated to caves and mines for the winter. Big brown bats may remain.	**Complete bat-proofing** Little brown bats are hibernating in caves and mines. Caution should be made to make sure that big brown bats are not hibernating in the residence (usually in the attic or basement) before completely bat-proofing the building. During this time, all potential openings can be sealed using caulking, foam insulation, wood, or other materials that will close any opening greater than ½ inch in size.
April to early-May late-August to November	Bats may be present, but pups are not yet born. Bat-proofing with use of one way doors Some bats may remain in the roost.	**Bat-proofing with use of one-way doors** One-way doors enable the bats to leave on their own, but they won't be able to get back inside. One can use a commercial one way door or make your own. You have two options, you can create a one-way door using ¼ or ½-inch polypropylene mesh or screening or a 2-inch diameter tube (see page 3).
mid-May to mid-August	Bats and their flightless pups may be present.	**ONLY limited bat-proofing** This procedure is to be used when pups may be present and cannot yet fly or survive on their own. It simply allows for unused cracks and openings in the house to be sealed while still allowing for bats to enter the building. Seal potential points of entry into the **living quarters** (most important step); then work on **unused cracks and holes** on the outside of the building. There are probably many of them, because bats can enter a building through a tiny crack or hole smaller than a quarter. **Do NOT seal the primary hole**, and don't separate the mothers from their pups. You must let the females enter and exit the building freely. If females are sealed out from their pups they will actively search for a new entrance and may likely end up in the living quarters.

Step 3 – Consider Erecting a Bat House

The process of excluding bats forces the colony to relocate to another roosting site such as a nearby home or structure. To lessen the likelihood that home exclusions do not simply pass the "problem" onto another homeowner, a responsible measure may be to put up a bat house that will serve as an alternate roosting location for the colony. To maximize their effectiveness, bat houses should be put up before the exclusion is completed, painted black, and placed at a location no less than 10 feet off the ground and where the bat house will receive a minimum of 8 hours of direct sunlight.

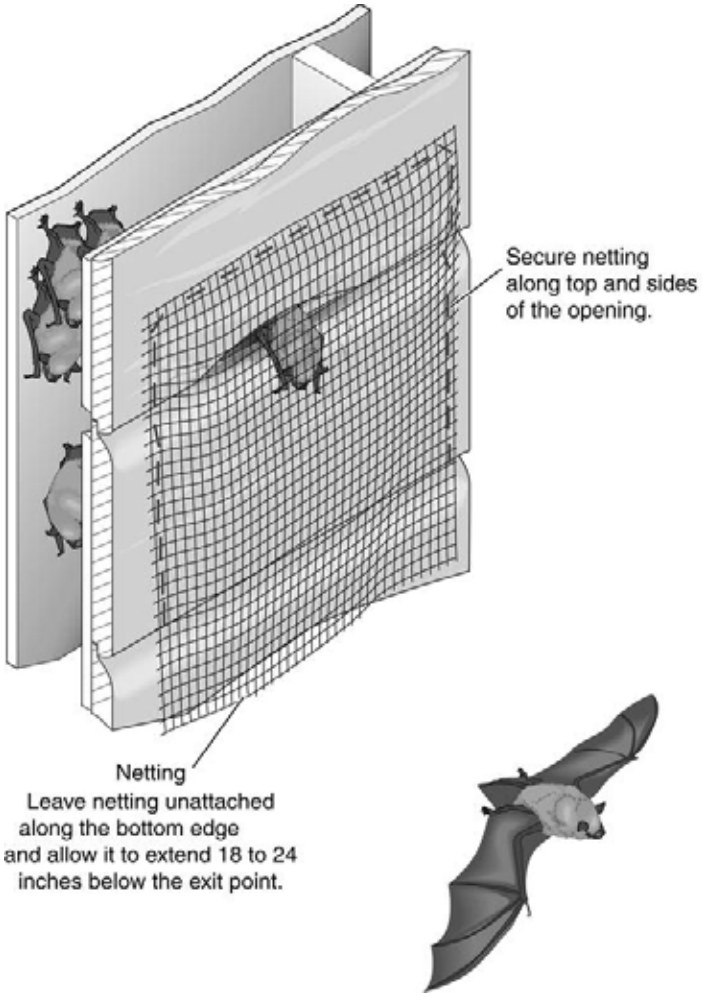
Download the brochure **Attracting Vermont's Bats** for more information on bat houses(www.vtfishandwildlife.com/sites/fishandwildlife/files/documents/Learn%20More/Living%20with%20Wildlife/Bats/Attracting_Vermont%27s_Bats.pdf).

For Additional Assistance

Bat Conservation International, **www.batcon.org**
Contact Wildlife Services at 1-800-4RABIES
Go to Vermont Fish & Wildlife Department, **www.vtfishandwildlife.com** for information on bats

One-way door construction using mesh or screening:

Place ¼ or ½-inch polypropylene mesh or screening over the entrance holes, forming a long sleeve or tent. The screening should cover the hole and extend about 18-24 inches below the hole (see diagram). It also should stick out about 3–5 inches from the wall, so the bats can crawl beneath the screen to leave. Secure the screening at the top and sides with duct tape or staples; leaving the bottom open. Bats will exit by crawling to the bottom of the screen. When the bats return, their sense of smell guides them back to the hole, now covered by screening. Leave the screening in place for 5-7 days and check that all the bats have left. Then one can remove the one-way door and immediately permanently seal the hole.



One-way door construction using pipe:

Exclusion tubes should have a diameter of 2 inches and be about 10 inches in length. Exclusion devices can be purchased commercially or made from PVC pipe or flexible plastic tubing. Bats are unable to cling to the smooth surface of these tubes, so the tube should project no more than ¼ inch into the opening. This will ensure exiting bats can easily enter the tube. Once the tube has been secured over the hole, a piece of lightweight, clear plastic can be taped around the tube's outside end (see diagram) to further reduce the likelihood of bats reentering.