

Guidelines for the Exclusion of Bats from Structures in West Virginia

This document provides guidance to homeowners and Wildlife Damage Control Agents regarding the exclusion of bats from homes and other structures. Bats are important nocturnal predators of insects and are beneficial. However, they can become a nuisance when they take up residence in structures. These guidelines were developed to set standards which will insure impacts to bats are minimized during the exclusion process.

Bat Species Potentially Present in Structures

Most bats in buildings in West Virginia are either big brown bats (*Eptesicus fuscus*) or little brown bats (*Myotis lucifugus*). Although less common, northern long-eared bats (*M. septentrionalis*) and Indiana bats (*M. sodalis*) have also been documented using buildings. In addition, there are a few instances of big-eared bats such as Virginia big-eared bat (*Corynorhinus townsendii virginianus*) and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) roosting in buildings. Both big-eared bat species are rare, and the Virginia big-eared bat is federally endangered.

White Nose Syndrome

White Nose Syndrome (WNS), a disease caused by a fungus, has impacted bat populations in much of the eastern half of the U.S. and Canada and was first detected in West Virginia in 2009. The impact on bats varies by species with big brown bats being less affected than little brown bats, northern long-eared bats, and Indiana bats. Virginia big-eared bats do not appear to be affected by WNS.

The Indiana bat and Virginia big-eared bat were listed as federally endangered prior to the appearance of WNS. However, due to concerns about declines due to WNS, the US Fish and Wildlife Service (USFWS) is proposing to list the northern long-eared bat as endangered and is reviewing the status of the little brown bat for potential listing as well. Because populations of these species are declining, it is becoming increasingly important that exclusions do not impact remaining populations of these bats. In addition, measures need to be taken to minimize the potential of Wildlife Damage Control Agents spreading the disease-causing fungus.

Life History of Bats

The bat species commonly found in buildings are species which hibernate during the winter when insects are scarce (other species of bats migrate south during the winter). Bats put on fat reserves in late summer and fall and these reserves sustain the bats during the hibernation period. Most bats hibernate in caves or mines, but big brown bats may also hibernate in buildings.

In spring, bats emerge from hibernation. Bats breed in late summer and fall, so females coming out of hibernation do not need to look for a mate. In late spring and early summer, female bats gather in maternity colonies where they rear their young. There may be some male bats in the maternity colonies, but the location of most males during the summer is not well known. Virginia big-eared bat maternity colonies in West Virginia are always in caves. Natural roosts for the other species are usually in trees, either under loose, exfoliating bark or in cavities or hollows. When available, these bats will also use buildings and other structures as roosts which provide the

dark, warm, and stable environments the bats are seeking. The females in the colony give birth to their young over about a two week period with most bats giving birth to a single “pup.” The females nurse their pup for several weeks as the young bats learn to fly and catch food on the wing. Maternity colonies are usually located in warm sites, such as an attic, where the young stay warm at night when the adults exit the roost to forage.

Around mid-August, the bats in the colony start to disperse and head to the areas where they will hibernate. Late summer and fall is a time to accumulate fat to carry them through the winter. This is also mating season for the bats. During this period bats often swarm around the entrances of caves and mines checking out potential hibernation sites and look for mates. Some bats may go into hibernation as early as September, but many bats will continue to forage into the fall, at least on the warmer nights.

Exclusion Concerns

When excluding bats from a building, there are several things to consider:

1. Do the bats need to be excluded? If the bats are in an out-building or barn, it may be possible to allow them to stay in the roost.
2. When can exclusions be done with the least disruption to the colony and without harming individuals?
3. If the bats are in a house, can they find their way into the living quarters?
4. Do the bats hibernate in the structure or will they depart in late summer?
5. How can one be sure no bats are trapped in the structure when openings are sealed off?
6. Where will the bats go once they are excluded? Ideally, a bat house can be placed nearby well before the bats are excluded so they have an alternate roost.

What Not to Do

No lethal means can be used for bat control.

If big-eared bats are encountered (genus *Corynorhinus*), do not proceed with any exclusion until you have consulted with the WVDNR, Wildlife Diversity Unit. Big-eared bats are easily identified by the large ears (greater than one inch) and lumps on their noses.

No glue boards or fly paper may be used in areas where bats are likely to encounter these items.

Do not exclude bats when flightless young are present even if it is within the official safe dates.

Timing of Exclusions

April 1 – April 30

At this time the colonies are starting to form, but young are not yet born. Bats can be excluded at this time using one-way doors to insure no bats remain in the structure when it is sealed. If there are multiple exits the bats can use, seal all openings other than the primary entrance/exit used by the bats. Then install a one-way door at the one remaining exit/entrance. The one-way door should be in place for a 7-day period with at least three consecutive nights when conditions are suitable for the bats to emerge (above 50 degrees F, winds below 10 mph, no sustained rain). Once the bats are gone, the primary entrance can be sealed. If bats roost in more than one portion of the building, multiple one-way doors may have to be used.

May 1 - August 15

Maternity colonies are active and pups may be present. Only limited bat-proofing is allowed during this period. **If there are any openings that allow the bats to enter the living quarters they may be sealed to avoid human contact with bats.** Identify the primary opening(s) used by the bats; other openings can be sealed if bats are still able to freely enter/exit the building. Female bats must not be separated from their young during this period.

August 16 – October 31

Maternity colonies are dispersing and bats begin to move to hibernation sites. Bats may be excluded using one-way doors as allowed during the April 1 – April 30 period.

November 1 – March 30

This is the hibernation period although some bats may not enter hibernation until later in November. If the summer colony was confirmed as a *Myotis* species (i.e., not big brown bats) it should be safe to seal openings that could be used as an entrance/exit. Ideally, before openings are sealed, the potential roost areas can be inspected to verify no bats are present. If the space housed a big brown bat colony during the summer, some of these bats may hibernate in the structure. The structure should be thoroughly inspected before openings are sealed. If this is not possible, bat exclusion should not proceed until April.

Exemptions to these dates may be granted by the WVDNR if there are public health concerns that cannot be alleviated by other means.

Bat Houses

It is likely that bats excluded from a house they have been using will stay in the area and look for another roost. If bats are excluded late in the year, they will probably return to the area the following spring looking for a home. This could be another part of the same building or in another building nearby. Erecting a bat house (bat box) near where the bats will be excluded will provide the bats with an alternate roost, and encourage them to move into a structure not used by people. Ideally, the bat house will be put up in advance of the exclusion taking place. There are several good bat boxes available, or you can build your own. To insure the bat box design is suitable for

bats (some bat boxes offered for sale are poorly designed), select a design certified by Bat Conservation International or other trusted bat organizations:

(see <http://www.batmanagement.com/Batcentral/batboxes/BCIApproved.html>).

Boxes are most likely to be used if placed on a pole or on the side of a building rather than on a tree. Remember, maternity colonies seek warm conditions. The bat house should get at least seven hours of sun each day. Painting the bat house a dark color will also help.

Additional Guidance

The National Wildlife Control Operators Association (NWCOA) has prepared a document called “Professional Standards of Practice for Structure Bat Management for Wildlife Control Operators.” The document provides specifics on bat exclusion operations including materials which should be used and links to related websites. NWCOA is currently updating their website (<http://www.nwcoa.com>) with pages related to the bat standards. Please check the website for information on the latest version of the standards (NWCOA hopes to have the materials available by 1 June 2014). NWCOA also offers a “bat standards compliance” course that teaches the standards. They plan to offer this course on-line in the future.

White Nose Syndrome

To minimize the spread of the fungus causing White Nose Syndrome, anything that comes into contact with bats should be disposed of or decontaminated following the most recent decontamination protocol found on the White Nose Syndrome website (www.whitenosesyndrome.org).

Threatened and Endangered Species

At this time, it is extremely rare to encounter endangered bats using buildings in West Virginia. Individual Indiana bats and Virginia big-eared bats have been observed using structures, but no colonies of these species have been located in buildings. The northern long-eared bat was listed as federally threatened by the US Fish and Wildlife Service on 2 Apr 2015. It is not uncommon to find northern long-eared bats in buildings and colonies have been documented occupying buildings. However, at this time, if these guidelines are followed, exclusion of bats from buildings is considered an exempt activity under the USFWS’ interim 4d rule and may proceed.

Additional Information

Bat Conservation International (www.batcon.org)

Bat houses, bat exclusion guidelines

Bat Conservation and Management (www.batmanagement.org)

Bat houses, bat exclusion guidelines

White Nose Syndrome website (www.whitenosesyndrome.org)

White Nose Syndrome, decontamination protocols

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