
Best Management Practices for Bat Exclusions

Recommended Exclusion Methods for Bat Colonies

The only permanent and effective solution for getting bats out of homes is exclusion.

Materials – The preferred method for excluding bats involves one-way exclusion devices made of lightweight polypropylene netting (less than 1/6” mesh), plastic sheeting, or a tube-like excluder.

Methods – Exclusion devices should be used at all active exit points and remain in place for five to seven days. Not all bats leave the roost each night and the time helps to ensure that all bats are out before the permanent exclusion is done.

If bats are still present after five to seven days, the structure should be reevaluated for other exit points and the process repeated for the new exit points. After allowing all the bats to leave the building and waiting five to seven days, the exit points should be sealed permanently with the appropriate materials – keep in mind that bats only need 1/8” to get back in. It is recommended to bat-proof the entire structure during the exclusion job as opposed to spot treating only the obvious exit points.

Not recommended

Do not wait for bats to fly from their roost for the night and then permanently seal entrances without the use of exclusion devices. This method often traps some adult or young bats inside the structure.

Lethal control of bats is prohibited. If there is a chance that someone has been bitten the Department of Health should be notified. Only non-lethal methods may be used by nuisance wildlife control operators.

Trapping and relocating is not an approved exclusion technique. It may be impressive to customers, but it has no biological or historical basis for being an effective exclusion method. Bats have a strong homing instinct and thus return to their roost if captured and transported to another location. Furthermore, trapping can be fatal to bats if left unattended or overcrowding occurs.

Chemicals cannot be used directly on bats or where bats have not yet been excluded properly. With proper permits, they can be used to control invertebrate pests after exclusion is complete. Commercial applicants need a permit from the Delaware Department of Agriculture to apply chemicals or pesticides.

Aerosol dog and cat repellants may discourage use of a night-roosting spots (where bats rest at night, mid-hunt and to digest) for periods of time up to a few months. They are useful for temporarily discouraging roosting in specific locations, such as porches or at entries to living quarters. However, they are not long term solutions and should only be sprayed when bats are out of the roost.

Ultrasonic devices, chemical repellants, and smoke are not effective methods for evicting bats from buildings and do not provide a permanent solution.

Spray insulation or spray foam is not an approved sealant for cracks or holes in most situations. Bats that come in contact with it may become injured or die. This product should never be used when bats are still present.

Time of Year for Exclusion Work

Spring/Summer:

The maternity season for little brown and big brown bats (the species most likely to use human made structures for maternity colonies) in Delaware is generally between **May 15 and August 31** and **complete exclusions should not take place between these dates**. Between these times, if complete exclusions are performed flightless pups can become separated from their mothers and die inside the structure. Females have been known to reenter the building through any access to reunite with their pup(s) and thus increase the chances for bat-human interactions. Please avoid *completely* excluding bats from the structure during the maternity season; especially May and June when almost all maternity colonies still have flightless pups.

Limited bat proofing (mid-May through August) – Exclusions from the homeowner's living space can and should be performed at any time of the year. Complete exclusions should not be done until pups can fly. This approach allows you to protect both bats and people. You can also fill unused holes and cracks on the outside of the building. Once the primary entries are closed, bats may try to reenter using other holes. If there are extenuating circumstances, please contact our office for direction on how to proceed (302-735-8651).

Fall (September/October)

Complete bat exclusions – This is the best time of year to do a complete the bat exclusion. Bats have left or are leaving summer sites in search of winter locations. Big brown bats may stay in the same location year round but will typically move to a cooler location in the building. Little brown bats do not appear to stay in Delaware in the winter and, if this is the only species using the roost, the exclusion can take place any time during the winter.

Winter:

Some bats hibernate in buildings during the winter. On unseasonably warm days these bats may become active. Winter exclusions should only be performed if it can be confirmed that no bats are hibernating inside the structure. If bats are present during the winter months, exclusions should be planned for early spring when the temperatures have warmed and insects are available for bats to hunt but females are not likely to have given birth yet (prior to May 15).

For single bat in living space – The removal and live release of a single bat inside a living area or for the purpose of species identification is acceptable any time of year. Most isolated incidents of a single bat in a house; especially July and August, are the result of young bats just learning to fly and losing their way. The bat should be set free in the vicinity where it was captured so it can find its way back to its roost. If anyone may have been bitten or is suspected to have been bitten by the bat, the Department of Public Health must be notified prior to releasing the bat.

Rabies – All Nuisance Wildlife Control Operators or employee(s) of a Nuisance Wildlife Control Company are highly recommended to have completed the entire rabies pre-exposure vaccination series prior to working at any site where bats are present, in the event it is necessary to handle a bat.

White-Nose Syndrome (WNS) Prevention

White Nose Syndrome is causing widespread bat mortality in the Northeast. WNS has been verified in all the states surrounding Delaware. The fungus associated with the disease was verified on bats in Delaware in April 2010. The symptoms of WNS are generally only visible on hibernating bats and Delaware doesn't have any major hibernation sites (caves or mines). This means that the bat-specific fungus can be on Delaware bats without any outward signs of its presence. Most of Delaware's cave-hibernating bat species come from sites in affected states. Therefore, Delaware's bat populations are at risk from this disease. Please see attached WNS Fact Sheet for information.

Nuisance Wildlife Control Operators are expected to follow the procedures outlined below to prevent the spread of WNS in Delaware bats.

- All equipment (*including tools, clothing, nets, non-disposable gloves, animal carriers, and anything you might use at multiple sites*) needs to be washed, cleaned or soaked for at least 10 minutes with a 10% bleach solution (1 part bleach, 9 parts water), rinsed and air dried after working with any bat species. This is the solution known to kill the fungus and prevent contamination of other bats and roosting sites.
 - Formula 409 Antibacterial All-Purpose Cleaner (with a minimum of 0.3% quaternary ammonium compound) is approved to be substituted for the 10% bleach solution.
- Submersible equipment may be boiled in water for 15 minutes as an alternative to bleaching, if it does not compromise the integrity of the materials.
- When it is necessary to directly handle bats (not needed for most exclusion projects), handler should wear gloves, preferably with disposable gloves **over** leather gloves.
- Dead bats should be double bagged and transported to the Delaware Division of Fish and Wildlife, Natural Heritage and Endangered Species Program (DNHESP) for wing scoring and possible testing for WNS.

It is our sincere hope that your company will join us in our efforts to protect bats and limit the spread of WNS. We are interested in hearing of **unusual bat activity** involving: 1) multiple bats flying during the day; 2) bats found on or outside of buildings prior to April; or 3) live or dead bats found on the winter landscape. As part of our volunteer bat count effort, **we are also interested in knowing where bat colonies are located in Delaware**, even if the colony will be excluded from the location.

Other Expectations

Knowledge – Nuisance Wildlife Control Operators should be knowledgeable about the natural history of the bat species found in Delaware. Anyone working with bats should be able to identify bats species, especially the little brown, big brown, tri-colored and Indiana bat. The Indiana bat is a federally listed species that has not yet been documented as occurring in Delaware but could be present.

Presenting Information to Customers – Nuisance Wildlife Control Operators should present factual, accurate information to the customer concerning the biology, natural history and habits of bats – including the topics of rabies, histoplasmosis and bat bugs. The Bats and Health concern fact sheet is listed on this website. It was developed with information or input from the Center for Disease Control, the Delaware Department of Public Health and wildlife veterinarians. Citations are provided for further reference.

Bat Boxes- Please relay to the homeowner that bat boxes may aid in the exclusion process by providing an alternative roost outside of the structure. Bat boxes are a really good idea for both the bats and the homeowners. Bats can move in as their previous roost is excluded – often expediting the exclusion process. Colonies in bat boxes can be monitored in the future for population health and White Nose Syndrome.