

Attachment A

Introduction

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Welcome to BCI's Bats in Buildings web page. We have put together an exciting program that lists companies who provide proper bat exclusion services. In order to be listed on our web site, companies must be insured and licensed in the states they serve, and use approved bat exclusion methods. This site also includes detailed information on bats in buildings, such as:



- What kind of bats use buildings and why
- How to live safely with bats
- What exclusion methods are approved and what methods are not approved, and why
- Simple do-it-yourself exclusion methods
- Using bat houses as management tools
- What to do if you find a bat

If you want to be listed as a Bat Exclusion Professional, please go to the 'Professional Excluders' link above.

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Which bats are likely to use buildings?

Antrozous pallidus - pallid bat

The pallid bat is a medium-sized bat with light brown or grey-yellow fur with a white underside and large ears measuring about 25 mm (1 inch) in length. It is found in the western and southwestern U.S., mostly in arid areas. These bats roosts in caves, rock crevices, mines, hollow trees, buildings, and under bridges.



Corynorhinus townsendii - Townsend's big-eared bat

Townsend's big-eared bat is a medium-sized bat with pale brown to black fur and large ears measuring up to 40 mm (1.6 inches) in length. It ranges from southwestern Canada to the U.S. and Mexico. Big-eared bats roost in caves, cliffs, abandoned mines, and rock ledges. These bats generally do not use crevices in buildings, but prefer large spaces that trap hot air.

Corynorhinus rafinesquii - Rafinesque's big-eared bat

Rafinesque's big-eared bat is a medium-sized gray bat with a white underside. It has large ears measuring more than 1 inch in length, and two large lumps on the snout. It occurs in the Ohio River Valley, and east and south of the Appalachians, westward along the Gulf Coast. Females form maternity colonies of up to several dozen individuals in building and sometimes in caves. Males roost singly during this time in buildings, behind loose tree bark, and in hollow trees. They generally hibernate in caves or abandoned mines.



Eptesicus fuscus - big brown bat

The big brown bat is a relatively large, robust bat with a broad nose and fur that ranges in color from

light rusty to dark chocolate brown. It ranges throughout most of the U.S. and Canada, with the exception of central Texas and extreme southern Florida.



In summer, females typically form nursery colonies of 25 to 75 bats, while males live alone or in smaller bachelor colonies. They commonly roost in buildings, although nursery colonies are also found in hollow trees. In winter, big brown bats hibernate singly or in groups of up to 100 in caves, abandoned mines, and buildings.

Myotis californicus - California myotis

The California myotis is a small bat that ranges in color from light tan to nearly black. It ranges from southern Alaska to western Canada southward through the western U.S. These bats roost under loose bark, in hollow trees, rock crevices, and buildings. They also use bat houses. The sexes separate in the summer when females form small maternity colonies. California myotis hibernate in caves and mines.



Myotis evotis - western long-eared myotis

The western long-eared myotis is a medium-sized bat with long black ears and dark wing membranes. The fur is long and glossy and generally brown in color. It ranges from southwestern Canada into the western U.S. and Baja California.

These bats often live alone or in small groups, although females form small maternity colonies of 12 to 30 individuals in the summer. Western long-eared myotis roost in hollow trees, under loose slabs of bark, in fissures of cliffs, sink holes, caves, mines, and abandoned buildings. They are also known to use bat houses. Measurements: forearm length 36-41 mm (1.4-1.6 inches), weight 5-8 grams (0.2-0.3 ounces).

Myotis lucifugus - little brown myotis

The little brown myotis is a small bat with long, glossy fur that ranges in color from pale tan to dark chocolate brown. It is found in wooded areas throughout most of Canada and the northern half of the U.S., with the exception of desert or arid areas.

There are also a few isolated populations farther south. In summer, females often form nursery colonies in buildings. Nursery colonies have also been found in tree hollows, rock crevices, and bridges. These bats are also common residents of bat houses. In winter, little brown bats hibernate in caves and mines.



Myotis yumanensis - Yuma myotis

The Yuma myotis is a small bat that ranges in color from light tan to dark brown with white underparts. It ranges from southwestern British Columbia through the western U.S. In summer, females form maternity colonies that may include thousands of individuals. Maternity colonies are found in buildings, under bridges, and in mines and caves. Males live relatively solitary lives, roosting in buildings or other suitable roosts. Yuma myotis also use bat houses. Bats leave the nursery roosts in the fall, although their winter habitat is unknown.

[Continued...](#)

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More Bats that are likely to use Buildings...

Nycticeius humeralis - evening bat

The evening bat is a small brown bat that ranges east of the Appalachians, from southern Pennsylvania to Florida. West of the mountains, it occurs from extreme southern Michigan and Wisconsin, west to southeastern Nebraska and south through eastern and southern Texas. It is abundant in southern coastal states. Nursery colonies in buildings can contain hundreds of individuals. Smaller colonies are found beneath loose tree bark and in tree cavities. These bats are also known to use bat houses. Although winter habitat is unknown in most of their range, they have been found overwintering in bat houses in Florida and in buildings in northern Texas.



Pipistrellus hesperus - western pipistrelle

The western pipistrelle is a small small light gray or yellowish tan bat with a distinctive black mask that includes its face and ears. It lives primarily in arid and semiarid lowland areas from Washington and Oregon, south through southwestern Idaho and western Nevada to Michoacan and Hidalgo Mexico. It also ranges east through much of Utah, extreme southwestern Colorado, most of New Mexico to southwestern Oklahoma, and southward across West Texas. They generally roost in cliff face crevices, but have also been found roosting beneath rocks, in dead leaves of palms, and behind window shutters.

Pipistrellus subflavus - eastern pipistrelle

The eastern pipistrelle is a small bat with tricolored fur that is dark at the base and tips and lighter in the center. The bat can easily be identified when roosting by the juxtaposition of reddish-orange forearms and black wing membranes. It ranges from eastern Canada throughout most of the eastern U.S. They are generally solitary bats although females form small maternity colonies of 35 individuals or less in tree cavities, rock crevices, and sometimes



buildings.



Eumops perotis - western mastiff bat

The western mastiff bat is a large brownish grey to dark gray bat with a paler underside, long, narrow wings and a tail that protrudes beyond the tail membrane. The rounded ears are joined at the midline and extend beyond the nose. It ranges from California to Texas. Western mastiff bats roost in cliff faces and buildings. They form colonies of less than 100 individuals. They are probably non-migratory, but may move among several roosts in an area.

Eumops glaucinus - Wagner's mastiff bat

Wagner's mastiff bat is a large dark grey or brown bat with a paler underside. It has long narrow wings, smooth lips, and a tail that protrudes beyond the tail membrane. The round ears are joined above the forehead. In the U.S., it is found only in southern Florida. Western mastiff bats roost in tree hollows, palm fronds, and buildings, particularly under Spanish tile roofs. This species is uncommon although they a nursery colony of 32 individuals has been reported. They are permanent residents throughout their range where conditions are warm enough that they do not require hibernation.



Molossus molossus - Pallas' mastiff bat

Pallas' mastiff is a medium sized bat with reddish-brown to black fur and a tail that protrudes free from the tail membrane. Although similar in appearance to the Mexican free-tailed bat, Pallas' mastiff bat has ears that lay forward and are joined at the base. Three colonies of *M. molossus* have been documented in the U.S. The colonies were found roosting in buildings in the Florida Keys. In other parts of their range, Pallas' mastiff bats are known to roost in hollow trees, palm fronds, rock crevices, caves, bridges, buildings and bat houses. Young are reared in buildings, hollow trees, or caves.

Nyctinomops macrotis - big free-tailed bat

The big free-tailed bat is light reddish-brown to chocolate brown or

black, with narrow wings and verticle wrinkles on the upper lip. It ranges from southern California, Nevada, Utah, and Colorado to southwestern Kansas and northwestern Oklahoma, and the Big Bend area of Texas. Big free-tailed bats roost mainly in crevices and fissures of rocky cliffs, but have also been found in large cave entrances, hollow trees, and buildings. Nursery colonies range from 20 to 150 individuals. There are winter records only from southern Arizona, California, and Texas.



Tadarida brasiliensis - Mexican free-tailed bat

The Mexican free-tailed bat is a medium-sized bat with brown or gray fur, long, narrow wings and a tail that protrudes free from the tail membrane. The ears are large and rounded, and the upper lips have numerous vertical wrinkles. It is common in southern and southwestern U.S. and north to Nebraska, Colorado, Utah, Nevada, and Oregon. Mexican free-tailed bats may form nursery colonies that include anywhere from a few hundred to several million bats. Nursery colonies are found in caves, under bridges, and in buildings. Males form smaller bachelor colonies. These

bats also use bat houses. They are not capable of true hibernation and most western populations migrate to caves in Mexico and Central America during the winter, although some colonies overwinter in buildings or bat houses in warmer sections of their range.

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Living in Harmony

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Living Safely With Bats

The tragic death of a 13-year-old Connecticut girl from rabies last October has once again triggered an avalanche of dire warnings about the supposed dangers of sharing our neighborhoods with bats. Some communities have recommended eviction of any bats living near humans, and others have even mandated removal of backyard bat houses. Are such actions justified? Let's examine the facts.

Only two diseases have been transmitted from bats to humans in North America: histoplasmosis and rabies. Histoplasmosis is a respiratory disease caused by a fungus that grows in soil enriched by animal droppings, most frequently birds. Ninety percent of all reported cases in humans come from the Ohio and Mississippi River valleys and adjacent areas where warm, humid conditions favor fungal growth. The disease is rare or nonexistent in most of Canada and in the far northern and western U.S. The vast majority of cases are asymptomatic or involve no more than flu-like symptoms, though a few individuals become seriously ill, especially if exposed to large quantities of spore-laden dust. To be safe, simply avoid breathing dust in areas where there are animal droppings.

Rabies is a viral infection of the central nervous system and is easily prevented by vaccination. The modern rabies vaccine ranks among the safest and least painful of all vaccines and provides excellent protection. Anyone who handles wild animals should obtain pre-exposure immunization, and anyone bitten or exposed to the saliva or nerve tissue of a rabies-suspect animal should immediately obtain post-exposure treatment. This treatment has been simplified and no longer requires a lengthy series of shots in the stomach as it did in the past.

Worldwide, more than 30,000 humans die from rabies each year, and 99 percent of these deaths are due to contact with rabid dogs. In modern countries, where most dogs and cats are now vaccinated against rabies, the disease is rare in humans. For example, only about one person per year contracts rabies in the U.S. Dog bites remain the most frequent cause for vaccination in North America, but fatalities more often result from contact with wildlife, which is less likely to be reported and treated.

Inexplicably, a strain believed to be associated with the silver-haired bat (*Lasiurus noctivagus*), based on monoclonal antibody tests, now accounts for the majority of all North American human rabies cases. How this rare transmission occurs remains a mystery, since silver-haired bats seldom contact people and do not form colonies in buildings or bat houses. Such cases typically cannot be traced to any known exposure.

The good news is that the North American bat species most frequently found in our homes or bat houses, big and little brown bats (*Eptesicus fuscus* and *Myotis lucifugus*), are not known to have caused a single case of human rabies in the past 15 years. In fact, only four cases are believed to have come from common house-dwelling species in American history. Furthermore, contrary to occasional speculation, there is no evidence that bats living in buildings ever transmit rabies through parasites, the air, or fecal material. Since 1980, 14 Americans have died of rabies contracted from bats, and eight of those were ascribed to silver-haired bats. Some cases could have been prevented—for example, the one involving a man who failed to report being bitten by a sick bat that he dunked in his beer during a barroom prank. Placed in perspective, we are hundreds of times more likely to die from riding a bicycle, falling down stairs, or hitting a deer while driving. In fact, dog attacks kill as many Americans annually as have died in the past 15 years from contact with bats. Death from bat rabies grabs headlines only because it is so rare.

Children should be taught to appreciate but never handle bats or any other wild animals. Only experienced animal rehabilitators, researchers, or educators should attempt to keep bats in captivity. Such people must be protected by pre-exposure immunization. Even newborn animals can be infected with rabies, and the virus can lie dormant in any mammal for many months before making it visibly sick or contagious. Rabies outbreaks in animals such as raccoons, skunks, and foxes are unaffected by, and independent of, the disease in bats. There is no evidence that outbreaks of rabies occur in bats, nor that the current incidence is any higher than in decades past. In bats, only occasional individuals succumb to the illness, and these typically remain nonaggressive, biting only in self-defense, if handled.

The odds of contracting rabies are virtually nonexistent for anyone who: 1) vaccinates family dogs and cats; 2) avoids handling wildlife; and 3) obtains prompt vaccination following any suspected exposure. It also makes sense to exclude bats from human living quarters, rarely a difficult task, even if bats live in the attic. There is no evidence to suggest that elimination of bats from buildings or bat houses would make any neighborhood measurably safer. In fact, loss of bats increases demand for pesticides that already threaten both human and environmental health. You can help by countering with facts when local media run needlessly scary stories.

Merlin D. Tuttle Founder and President

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Exclusion Guidelines

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Guidelines for Excluding Bats

- Our goal is to promote exclusion methods that ensure the safety of both bats and people. We understand that differing architectural structures and/or climatic conditions may require modification of the guidelines given below. Please feel free to share your ideas about these issues with us when submitting your letter of commitment. We want to encourage you to participate in the "Bats In Buildings" program and look forward to receiving your input.
- All BCI recommended exclusion professionals should be licensed by the states in which they work, be insured, and use only approved exclusion methods. They should also provide the property owner with a guarantee and list of references. All written materials should be accurate and scare tactics should be avoided.
- One-way devices constructed from light weight polypropylene netting (<1/6" mesh), plastic sheeting, or tube-type excluders are the preferred methods for evicting bats from buildings. Excluders should be placed at all active entry points and should remain in place for at least 5 to 7 days. These devices should be removed after the bats have been excluded, and then exclusion points should be sealed with silicone caulking, caulk backing rod, hardware cloth, or heavy duty polypropylene mesh. In some cases, sealing may require repair or replacement of old, deteriorated wood. BCI strongly recommends that exclusion professionals bat-proof the entire building and avoid spot treatments. Moving bats from one corner of a building to another does not solve the problem and may require that further exclusion work is carried out at some time in the future, further disturbing the bats and the property owner.
- Please note that simply waiting until the bats have flown out at night and then permanently sealing entrances shut without the use of exclusion devices, is not approved by BCI. This method often traps some bats inside the building. BCI also discourages the use of 'permanent netting' in most situations. Aerosol dog and cat repellents may discourage bat use of a particular roosting spot for periods of up to several months. They have been used effectively to prevent bats from night-roosting above porches. The spray should be applied by day when bats are not present. Aerosol repellents are not an adequate substitute for exclusion in the case of day roosts and should never be applied when bats are in a roost. For night roosts, we also recommend the use of Mylar balloons or strips of tin foil hung from roosting areas and allowed to move in the breeze.
- Maternity season for bats in the US and Canada can range from 1 May through 31 August, although pups have been seen as early as late April in some instances. Eviction

of bats, or any activity that directly affects their roosting area, should occur only prior to or after the maternity season, when young will not be trapped inside, creating additional problems.

- Some bats hibernate in buildings during the winter months. Winter exclusions should be performed only if it can be determined that no bats are hibernating in the building. If bats are present during the winter months, exclusions should be postponed until spring temperatures are warm enough for deciduous plants to leaf out and insects to again be abundant.
- Ultrasonic devices, chemical repellents, and smoke are not approved by BCI as effective methods to evict bats from buildings. In addition, canned spray foam is not an approved sealant for cracks and holes in most situations. It is not only unattractive, but can result in the death of bats that come into contact with it. This product should never be used when bats are still present.
- Traps and relocation are not BCI approved exclusion techniques. Removing large numbers of bats from a building may seem impressive to a customer, but is unlikely to be effective. Traps can be fatal to bats if left unattended or if overcrowding occurs. Bats have excellent homing instincts making relocation attempts unlikely to succeed. They will simply attempt to return to the original capture area upon release. Capturing bats at an exclusion site is not encouraged, although capturing a single bat for species ID or removal of an individual bat from a living space are exceptions to this rule.

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New! Bat Exclusion Tube. Learn more [here](#)

NOTE: For those residing in the United Kingdom, please note that bat exclusion without prior notification to the proper authorities is a punishable offense. The proper authorities to seek guidance from include: English Nature, Scottish Natural Heritage, The Countryside Council for Wales, or the Countryside and Wildlife Branch of the Department of the Environment in Northern Ireland.

Guidelines excerpted from:

Bats in Buildings: An Information and Exclusion Guide

by Barbara French, Laura Finn and Mark Kiser

Introduction

As primary predators of night-flying insects, bats play a vital role in maintaining the balance of nature. A single little brown bat can catch 1,200 mosquito-sized insects in an hour, and big brown bats are important predators of some of America's most costly crop pests. Cucumber beetles, June beetles, bark beetles, stink bugs, leafhoppers, cutworm moths, corn earworm moths, armyworm moths, termites, assassin bugs, ants, roaches, crickets, and grasshoppers are just some of the many pests known to be consumed by America's bats. Yet, bat populations are in alarming decline due to decades of unwarranted human fear and persecution.

As traditional roosts in trees and caves have been destroyed, many of North America's bats have been forced to seek shelter in man-made structures. An understanding of the habits of these beneficial animals can help solve problems that sometimes develop when bats roost in buildings. The following pages provide details about safe, effective methods for permanently evicting bats from buildings when necessary. These methods help ensure the safety of both humans and bats.

Accidental Intruders

What if you find a bat in your home?

On occasion, a solitary bat may accidentally fly into a home, garage or other building through an open door or window. Such incidents often involve lost youngsters whose primary goal is a safe escape. As long as no direct contact with the bat has occurred, it can be released outside. These bats will usually leave on their own if a window or door to the outside is opened while others leading to the rest of the building are closed. Bats are rarely aggressive, even if chased, but may bite if



handled. As with any wild animal, bats should not be touched with bare hands, and anyone bitten should immediately seek medical consultation.

If a bat does not leave your home on its own, its exit can be hastened by waiting until it lands, and then covering it with a small box or other container. Slip a piece of cardboard between the wall and box, slide the bat into the box, then release the bat outside. You may also catch it by hand, using leather work gloves to avoid being bitten. Keep doors and windows to buildings closed, and window screens in good repair, to prevent bats from reentering.

Where do bats roost? Bats may roost in attics, soffits, louvers, chimneys, under siding, eaves, roof tiles or shingles and behind shutters (see diagram). In sports stadiums and parking garages, bats sometimes roost in expansion joints between concrete beams. They can enter through openings as small as one-half inch in diameter (1.3 cm). Common points of entry include open windows or doors, broken or poorly-fitted screens, loose or missing shingles or tiles, places where flashing or boards have come loose and locations where pipes or wiring enter buildings. Openings often occur where walls meet the eaves at the gable ends of an attic, where porches attach to the main part of a house, or where dormers meet the roof. Other points of entry are associated with siding. For example, cracks and crevices are often created where siding forms corners, or at places where it meets windows, doors or chimneys (see diagram). Bats can sometimes be detected by the presence of black or brown stains from body oils or droppings around cracks or crevices formed by ill-fitting building materials. Bat droppings may also appear on walls, under porches or decks, or on floors beneath dilapidated ceilings. Bat droppings are dark and do not contain any white material. Although they may resemble small hard rodent pellets, bat droppings are soft and easily crushed, revealing shiny insect parts.



Common entry points on homes and buildings include corners, eaves and louvers.

Providing a safe exit for bats

There is little reason to evict bats from buildings where they are not causing a nuisance.

However, bats should be prevented from entering human living quarters. This can be accomplished by inspecting the inside of a building for small openings through which bats could enter. All openings connecting the attic or other roosting areas to inside living quarters should be sealed, although entry points on the outside of the building should be left open, allowing bats to exit. Draft-guards should be placed beneath doors to attics; electrical and plumbing holes should be filled with steel wool, caulking or weatherstripping. Bats have small teeth for eating insects; they do not gnaw through wood or other building materials like rodents. Caulking, flashing, screening or insulation can be used to seal most openings on the inside. Expanding urethane foam products should not be used to seal cracks where bats are active, because they can become caught in it. Caulk should also be applied early in the day so that it has time to dry before bats emerge in the evening.

In some instances, noise or odors from large colonies of bats can become a nuisance. When bats must be evicted from a building, netting or tubes that function as one-way valves must be placed over the openings bats use to enter and exit. These one-way valves allow bats to leave, but not reenter the building. Valves may be constructed from lightweight plastic netting (1/6 inch-0.4 cm-or smaller mesh), or plastic pipes or tubes. These exclusion devices should be left in place for five to seven days to ensure all bats have exited. It is not appropriate simply to wait for bats to fly out at night and then seal openings. Not all of the bats leave at the same time, and some bats may remain inside all night. Take weather conditions into consideration when deciding how long to leave the netting or tubes in place; there may be evenings (such as during storms), when no bats exit.

Bats often roost in buildings seasonally, including during maternity periods, and exclusions should not take place until young bats are able to fly. After the young are old enough to fly, all bats can be excluded. The maternity season begins as early as mid-April in the southernmost U. S., mid-June in the northern U.S. and Canada. Young bats are flying and exclusions can resume by late August. In late fall most house-dwellings bats either migrate to warmer climates or enter caves or abandoned mines to hibernate. However, a few species can hibernate in buildings, and in the mildest climates, they may even remain active year-round. If bats are present in cold regions during the winter, exclusions should be postponed until spring when they emerge to feed.

Exclusion is the **ONLY** effective solution for permanently removing bats from buildings. Trapping and relocating is ineffective since bats have excellent homing instincts and simply return, even when released at great distances. The use of pesticides against bats is illegal and counterproductive. Poisoning greatly increases the likelihood of bats coming into contact with people and pets.

Naphthalene, the active ingredient in moth balls, and ultrasonic devices are often promoted as bat repellents. However, ultrasonic devices are ineffective against bats, and to be effective, naphthalene must be used in such large quantities that it poses a significant health hazard to humans.

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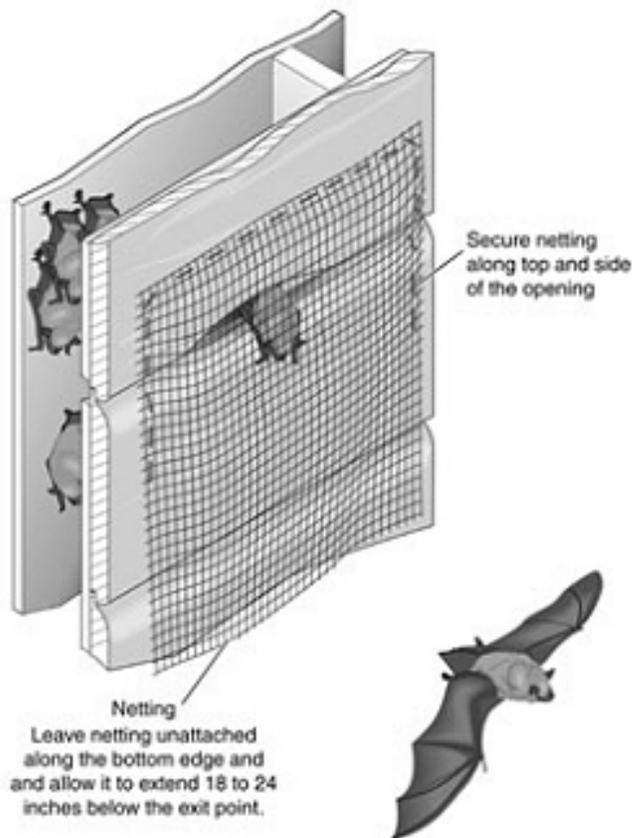
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Using Netting to Exclude Bats



Bats sometimes enter buildings through openings on smooth surfaces of exterior walls or through louvers. In such cases, plastic or lightweight, flexible netting with 1/6 inch (0.4 cm) mesh or smaller, should be secured to the building along the top and sides of the opening as shown in the diagram. It should extend 18 to 24 inches (46 to 61 cm) below the bottom edge of the opening and should remain in place for a minimum of five to seven days to ensure all bats have exited. Then, openings should be permanently sealed with silicone caulking, caulk backing rod, hardware cloth, or heavy-duty netting. In some cases, sealing may require repair or replacement of old, deteriorated wood. When bats are using multiple openings to exit and enter, exclusion material should be placed on each opening unless it can be determined with certainty that all areas used by the bats are connected. If so, some openings can be sealed as described above, and netting can be placed over the openings used by the most bats. Even when all roosting areas are connected, bats will sometimes

refuse to use alternative exits. In this case, exclusion material must be installed over all exits. After this has been done, watch to make sure the bats are able to exit safely. If they do not appear to be exiting, or appear to be having trouble doing so, make adjustments or add new valves as needed.

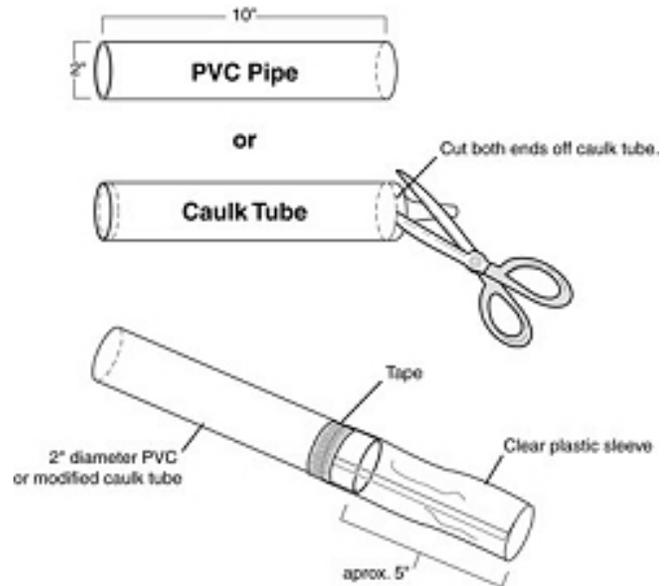
Using PVC pipe or Empty Caulking Tubes to Exclude Bats

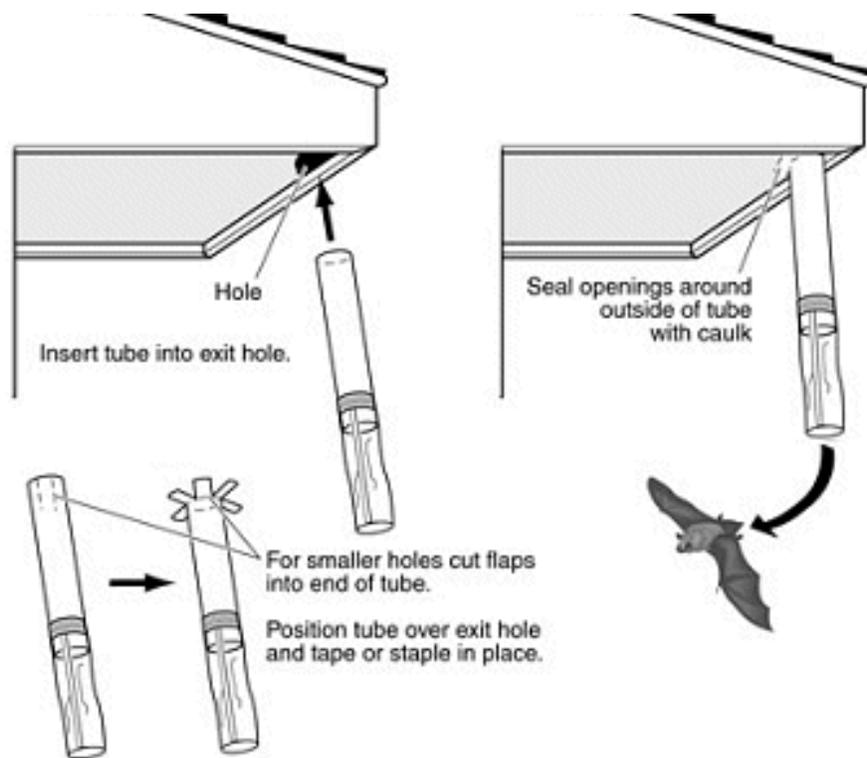
There are a number of situations in which tubes work best as bat exclusion devices. Examples include openings used by bats on buildings constructed from materials that do not create smooth exterior walls, such as those found on brick or stone houses, and log cabins. Tubes also work best for holes located at corners where walls meet and on horizontal surfaces such as soffits. Exclusion tubes should have a 2-inch (5 cm) diameter and be approximately 10 inches (25.4 cm) in length. Exclusion devices can be made from PVC pipe or flexible plastic tubing. According to Laura Finn of Fly by Night, Inc., empty caulking tubes work well for this purpose. When using caulking tubes, both ends must be cut out. Use of a flexible plastic tube makes it easy to either squeeze one end of the tube so that it fits into a crevice, or cut one end of the tube into flaps that can be fit over an opening and stapled, nailed, or taped to the building (see

diagram). Bats are unable to cling to the smooth surface of these tubes. Do not let the tube project more than 1/4-inch (6 mm) into the opening, ensuring that bats can easily enter the tube to exit. Caulking tubes must be thoroughly cleaned before use to prevent bats from sticking to wet caulk and because dried caulk creates a roughened surface, making it possible for bats to re-enter. Once the tube has been inserted over the hole, a piece of light weight, clear plastic can be taped around the end of the tube that projects to the outside (see diagram) to further reduce the likelihood of bats reentering, though this is typically not necessary.

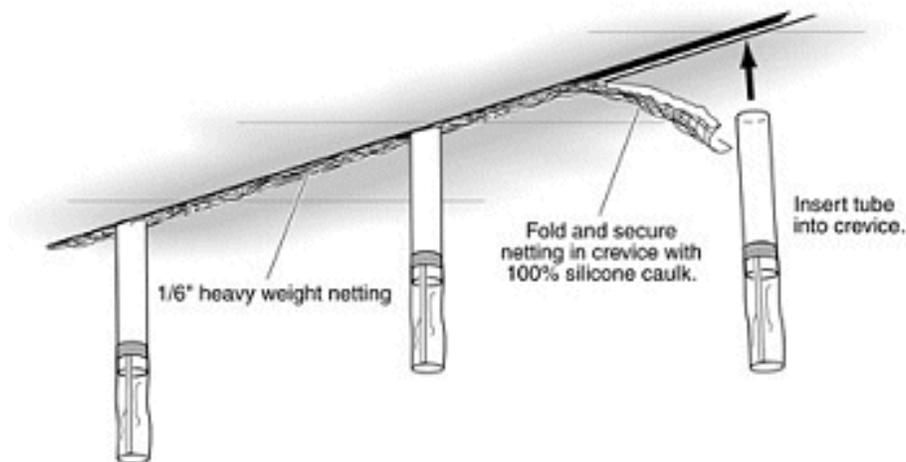
Plastic sleeves collapse on themselves, preventing bats from reentering once they have crawled out through the tube. After the tube has been inserted into or over the opening used by bats, any spaces between the outer rim of the tube and the building must be sealed shut. Be sure also to seal shut any other openings in the building that bats could use to reenter. Leave the tube in place for a minimum of five to seven days to ensure all bats have exited. After the bats have been excluded, the tube should be removed and the opening permanently sealed.

Some concrete parking garages have lengthy crevices used by bats. Multiple exclusion tubes will need to be placed every few feet along the length of each crevice; spaces between the tubes should be closed with heavy-weight (1/6 inch mesh) netting (see diagram). Fold the netting so that it fits into the crevice, and caulk it in place as shown in the diagram. The same procedure can be used in lengthy crevices created where flashing has pulled away from a wall.





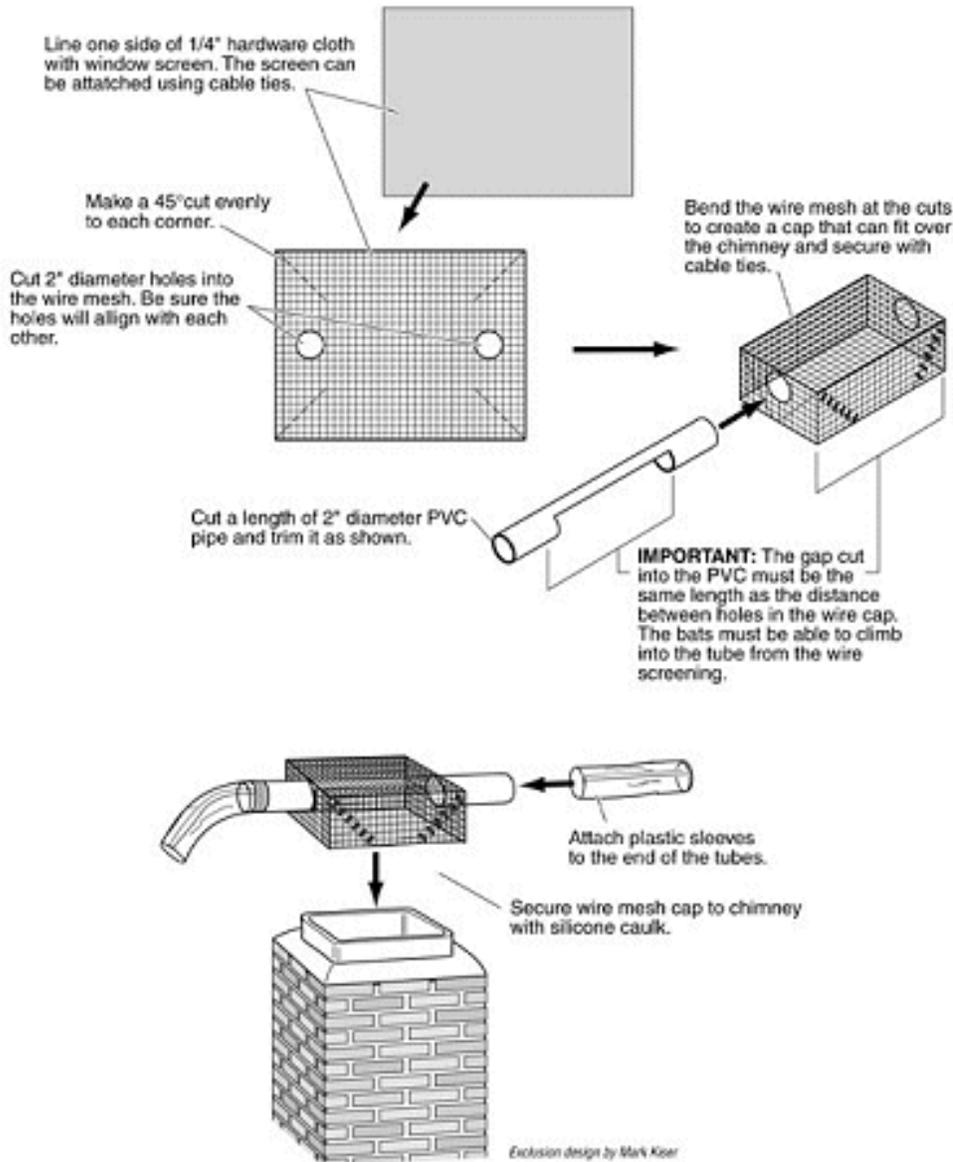
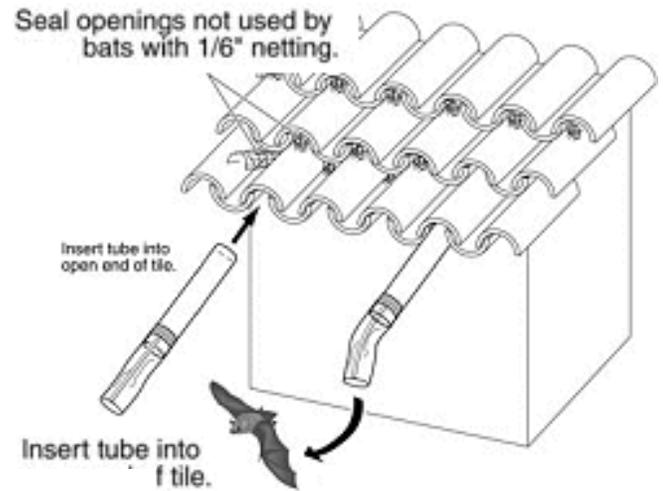
Plastic tubes also work best for excluding bats from under Spanish (clay) or concrete roofing tile. Bats typically enter through open ends of the tiles on the lowest row, or through openings created where tiles overlap one another. Observe the building when bats fly out in the evening to determine which openings they use. Exclusion tubes should be placed in these openings (see diagram). Multiple exclusion tubes are often needed to exclude bats from problem roofs. Collapsible plastic sleeves should also be attached to the ends of the tubes. Heavy weight netting can be folded and inserted into openings where tiles overlap (see diagram).



Tiles are sometimes temporarily removed to replace a layer of tar paper. When this is done, a layer of coarse fiberglass batting can be put over the tar paper and under the tiles. Constantine (1979) found that the fiberglass layer repelled bats, although he

recommended against use of batting within 6 inches (15 cm) of open tile ends to prevent birds from pulling it out for nesting material.

Bats may also enter a building through spaces beneath corrugated or galvanized roofing sheets. These roofs can be sealed with a variety of materials such as caulk backing rod during months when bats are not present, or after they have been excluded from a building by use of exclusion tubes.



Special modifications may be needed when bats roost in chimneys or in separations between chimneys and roofs. If bats are roosting inside the chimney, construct a wire cage from 1/4-inch hardware cloth lined with window screen. A section of PVC pipe can be cut and then inserted through holes cut into the sides of the wire cage (see diagram). Although bats are able to simply drop down and out of a vertically placed tube that extends below the roost, they are not able to

grip the slick surface to crawl out if the tube extends upward above the roost. Therefore, the tubes should project horizontally or down. A collapsible plastic sleeve should be placed over the ends of all exclusion tubes used on chimneys. Once the bats have been excluded, a chimney cap should be installed.

Bats Roosting on Porches at Night

Bats sometimes roost on porches or under overhangs briefly during the night while they digest the insects they have eaten. Non-toxic aerosol dog or cat repellents may be used to discourage bats from roosting in these areas. The spray should be applied by day when bats are not present (Aerosol repellents are not an adequate substitute for exclusion in the case of day roosts and should never be applied when bats are in a roost.) Mylar balloons or strips of aluminum foil hung from the porch ceiling and allowed to move in the breeze may also discourage bats from roosting in that area.

Bat Houses

It's always a good idea to provide bats with a new place to roost. For information on building or purchasing bat houses visit our Bat House Program [here](#). You can also purchase The Bat House Builder's Handbook or the Building Homes for Bats video through our shopping cart at Batcatalog.com

If you are interested in supporting BCI and our programs, please contact the Director of Development, at 512-327-9721 or development@batcon.org.

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Professional Excluders

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Bat Exclusion Professionals

 [Go to the Professional Excluders Database Listing](#)

New! Bat Exclusion Tube. Learn more [here](#) (external link)

Due to loss of natural habitat, some bat species now roost mostly in buildings; and because bat populations are declining worldwide, BCI wants to protect both bats and people by referring people who call BCI for help to companies that use safe and effective bat exclusion methods. BCI handles thousands of "nuisance" bat inquiries each year, and our "Bats in Buildings" project benefits exclusion companies by publishing listings on the Web site.

If you would like to be listed on our Web site as a Bat Exclusion Professional, please download, read and sign the letter of commitment found below, to BCI's exclusion guidelines and send it, along a copy of your insurance coverage, to:

 [Letter of Commitment](#) (pdf)

Barbara French
Bat Conservation International
PO Box 162603
Austin, TX 78744

If you are interested in supporting BCI and our programs, please contact the Director of Development, at 512-327-9721 or development@batcon.org.

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Excluders Listings

Paramount Pest Control, Inc.

131 Snake River Ave.

Lewiston, Idaho 83501

(208) 746-5130

(208) 743-2152

Contact: Duane Saxton, Denise Spikler

ilovebugs@lewiston.com

Critter Control of Spokane

Po Box 30566

Spokane, Washington 99223

(509) 443-6757

cbuyser@yahoo.com

<http://www.crittercontrol.com>

Date: _____

Dear Bat Conservation International,

_____, located at:

Company Name

Address Line 1

Address Line 2

City

State

Zip

Business Phone

Fax

Email

Website URL

is committed to humane exclusion methods that protect both bats and people. We hereby agree to abide by Bat Conservation International's (BCI) Exclusion Guidelines.

We will:

1. We will be licensed, as required, by our state.
2. We will provide property owners with a guarantee and list of references. All written materials will be accurate and scare tactics will be avoided.
3. We will use the preferred, one-way devices constructed from light weight polypropylene netting (<1/6" mesh), plastic sheeting, or tube-type excluders for evicting bats from buildings. Excluders will be placed at all active entry points and remain in place for at least 5 to 7 days. These devices will be removed after the bats have been excluded, and then exclusion points will be sealed with silicone caulking, caulk backing rod, hardware cloth, or heavy duty polypropylene mesh. We understand that in some cases, sealing may require repair or replacement of old, deteriorated wood. (Note that BCI strongly recommends that exclusion professionals bat-proof the entire building and avoid spot treatments. Moving bats from one corner of a building to another does not solve the problem and may require that further exclusion work is carried out at some time in the future, further disturbing the bats and the property owner).
4. We know simply waiting until the bats have flown out at night and then permanently sealing entrances shut without the use of exclusion devices is not approved by BCI. This method often traps some bats inside the building.
5. We understand that BCI also discourages the use of 'permanent netting' in most situations.
6. We know that aerosol dog and cat repellents may discourage bat use of a particular roosting spot for periods of up to several months and have been used effectively to prevent bats from night-roosting above porches. If used, the spray will be applied by day when bats are not present. Aerosol repellents are not an adequate substitute for exclusion in the case of day roosts and will never be applied when bats are in a roost. To discourage bats at night roosts, we also may use Mylar balloons or strips of tin foil that are hung from roosting areas and allowed to move in the breeze.
7. We acknowledge that maternity season for bats in the US and Canada can range from 1 May through 31 August, although pups have been seen as early as late April in some instances. We

agree that eviction of bats, or any activity that directly affects their roosting area, will occur only prior to or after the maternity season, when young will not be trapped inside, creating additional problems.

8. We understand that some bats hibernate in buildings during the winter months and that winter exclusions should be performed only if it can be determined that no bats are hibernating in the building. If bats are present during the winter months, exclusions should be postponed until spring temperatures are warm enough for deciduous plants to leaf out and insects to again be abundant.
9. We acknowledge that ultrasonic devices, chemical repellents, and smoke are not approved by BCI as effective methods to evict bats from buildings. In addition, canned spray foam is not an approved sealant for cracks and holes in most situations. It is not only unattractive, but can result in the death of bats that come into contact with it. This product should never be used when bats are still present.
10. We understand that traps and relocation are not BCI approved exclusion techniques. While removing large numbers of bats from a building may seem impressive to a customer, it is unlikely to be effective. Traps can be fatal to bats if left unattended or if overcrowding occurs. Bats have excellent homing instincts making relocation attempts unlikely to succeed. They will simply attempt to return to the original capture area upon release. Capturing bats at an exclusion site is not encouraged, although capturing a single bat to remove it from a living space is an exception to this rule.
11. We understand that installation of bat houses can offer a vital alternative roost for excluded bats, and that it is best if bat houses are installed in advance of exclusions.
12. We will provide BCI membership and bat house information to our customers to further encourage conservation of bats and their habitats.
13. We will maintain adequate insurance, and provide proof of insurance to BCI.
14. We understand that customers may post reviews about our company on the BCI Web site.

Sincerely,

Signature

Date

(PRINTED NAME AND TITLE HERE)

PHONE: _____

INSTRUCTIONS:

Please *print this letter on your letterhead* and submit it to Bat Conservation International, Attn: Bats in Buildings, PO Box 162603, Austin, TX 78716.