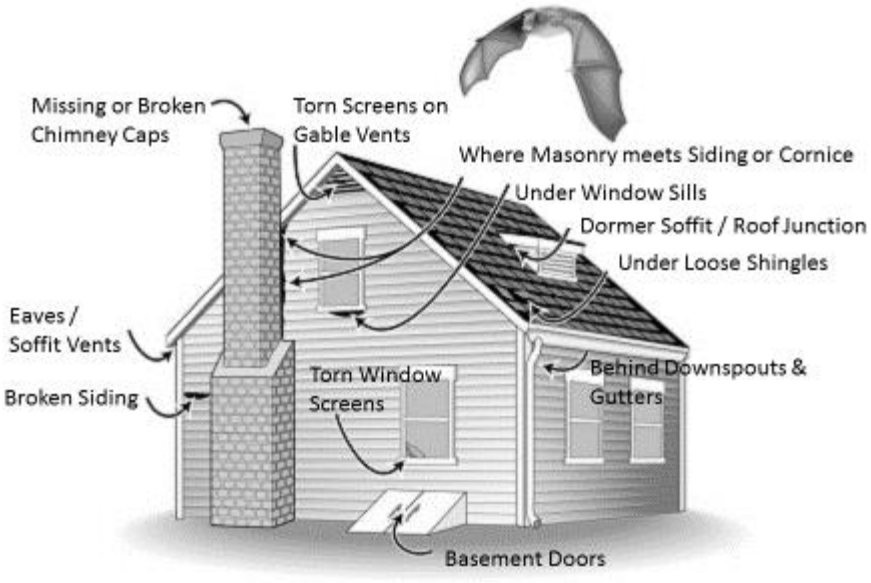
Bats

Fourteen species of bats occur in South Carolina but only half of those are colonial cavity roosting species (those which form large groups and sometimes use human dwellings). Of

those colonial species, most cases of nuisance or unwanted bats in buildings, stadiums, and other man-made structures are attributed to four common species: the free-tailed bat (*Tadarida brasiliensis*), big brown bat (*Eptesicus fuscus*), evening bat (*Nycticeius humeralis*) or the tri-colored bat (*Perimyotis subflavus*). [Note that the tri-colored bat and the big brown bat are declining due to white-nose syndrome (WNS), a fungal disease of hibernating bats; free-tailed bats and evening bats are not affected by WNS]. If you live in the mountains of South Carolina several other, more rare, bat species might use your home: the little brown (*Myotis lucifugus*), small-footed (*Myotis leibii*) or the federally listed Northern long-eared bat (*Myotis septentrionalis*). Free-tailed bats, by far, form the largest colonies in the state; their numbers in one site can range from a few individuals to thousands.

All of South Carolina's bats are nocturnal and feed only on insects. Because South Carolina bats navigate and locate prey using sound waves (sonar), they all have a large gap between their incisors (front teeth) which allows them to emit high-pitched sounds out their mouths. Those sounds bounce off of objects, allowing bats to detect things around them. That gap in their top front teeth makes it impossible for bats to create holes in structures to gain access. Bats can only use existing structural crevices, gaps or holes; they do not create them.



If a homeowner suspects that they have unwanted bats in a structure, it is important to 1) verify that they have bats, 2) determine if they have other unwanted wildlife as well (in particular if they have squirrels, black rats, raccoons or other wildlife capable of making holes and openings), and 3) determine where the bats are entering or exiting the structure. Sometimes persons report that they have bats in their chimney but are actually confusing chimney swifts (birds) for bats. Both can be quite noisy, but only chimney swifts are capable of long glides while in flight.

If bats are using a structure they leave plenty of evidence of their presence where they enter and exit. There will be brown markings rubbed onto the surface at holes or gaps in the structure (often at eaves, unscreened or poorly screened vents, soffits, under facia boards, or behind shutters or gaps between chimneys and buildings). Droppings, called guano, will accumulate under the major entry/exit points.

Removing Bats from a Structure - Exclusion

The only way to effectively remove bats from a structure is a process called **exclusion**. Exclusion is simply placing one-way exits on all of the major entry/exit points for the bats and

also sealing (with caulk or any durable material) all other potential entry points not in use (any gap or crevice of 3/8" or more). This work is done in the day time. This technique requires NO trapping and NO handling of bats; the bats let themselves out to feed at night and cannot regain entry. The one-way exits can be made from flexible tubing, tight mesh screen or plastic. Be certain to periodically monitor the building at dark to be certain no entry or exit points were missed. After a week or two in place, with no more bat entries taking place, the exclusion devices can be removed and the holes or gaps can be closed or sealed with any number of products (screen, caulk, copper mesh, etc). Remember bats cannot chew through and make holes.

An excellent bat exclusion guide is available from Bat Conservation International. That site has excellent illustrations to make the exclusion process simple to understand. Note that there are no effective repellants and no chemicals/pesticides for use on bats. Products sold to remove or repel bats are only useful at relieving homeowners of their money.

The best time of year to exclude bats is in the early spring (March-April) or in the fall (August-October). We recommend you do not attempt to exclude bats in May through mid July, because exclusion then will result in flightless young (called pups) trapped within the structure. That can increase the likelihood of bats gaining entry to living quarters (as the pups are desperately trying to find their mothers) and also results in odor problems as the trapped young die in often inaccessible crevices.

If other wildlife is gaining access to the structure, often that wildlife must be removed or controlled because animals such as squirrels, rats, and raccoons can promptly undo any exclusion work and allow bats entry. Also, it is often desirable to remove the guano or droppings left behind by a large bat colony; there are some companies which provide this type of service. If you plan to remove the guano yourself, please reference the following guide to reduce your risk of exposure to a fungus that typically grows on animal droppings: http://www.cdc.gov/niosh/docs/2005-109/pdfs/2005-109.pdf

Sometimes it is necessary to have a licensed pest control operator treat the area where the bats resided after the exclusion is done to kill any bedbugs or other ectoparasites left behind.

Often homeowners appreciate the useful role bats play in controlling insects and wish to retain bats in their neighborhood, but don't want them in their homes. In those cases it is desirable to put up bat boxes in their yard or near the edge of a wood line, away from frequently used sites. Bat boxes are available for purchase but the quality and design can widely vary - look for large bat boxes with well-sealed joints and a weather-proof roof. Bat box plans are available at http://www.batcon.org/pdfs/BHBuildersHdbk13_Online.pdf . It is best to put up the bat boxes prior to excluding the bats and proper placement is important.

In South Carolina, no permit is required to remove bats (neighboring North Carolina and Georgia do require permits prior to removing bats). Because of the conservation value of these animals and the rare or endangered status of some bat species, the South Carolina DNR does not recommend lethal removal.

Bat or Bats in Living Quarters

If a bat is loose in a building where people are living it is important to follow a protocol developed by the Center for Disease Control to determine whether the bat(s) should be collected for rabies testing. If a bat is in your living space and you are *uncertain* if any bat-human contact or bat-pet contact has taken place, please err on the side of caution, and assume you have had an exposure (keep the bat for testing) and please reference these important links:

http://www.cdc.gov/rabies/bats/contact/home.html

http://www.scdhec.gov/rabies/PreventingRabies/Bats/

The South Carolina Department of Health and Environmental Control (SCDHEC) is responsible for all rabies testing in South Carolina. If anyone is bitten by a bat in any circumstance, they should contact SCDHEC immediately and wash the affected area thoroughly with soap and water. Do not release a bat that has bitten a person or pet.

If a bat is found in a room where all persons *are certain* they have had no contact with the animal then it can be captured and released or allowed to release itself. If the animal is actively flying, open all windows (remove any screens), close all doors to the room and turn out the lights; the bat will release itself. If a bat is hanging quietly somewhere, simply place an open can or jar over it and slide cardboard underneath to trap it and carry it outside and release. Never handle any wild animal (including bats) without gloves.

Reporting Bat Colonies

If you have bats occupying a structure or bat box that you are not planning to remove, then please use the DNR webpages to report bat sightings.