

Bat Management in Alabama

Bats, the only mammals that truly fly, are misunderstood by many people. Since bats can be both a benefit and a nuisance, this publication addresses them as both in regards to bat management. Before discussing bat management, though, it may be useful to give some explanation of their biology.

Sixteen species of bats are found in Alabama. Some of these are year-round residents, while others simply migrate through the state. Two of these species, the gray myotis and the Indiana myotis, are listed as endangered species by the U.S. Department of the Interior. Four more species—the northern yellow bat, the southeastern myotis, the Rafinesque's big-eared bat, and the Brazilian free-tailed bat—are listed as species of special concern by the Alabama Department of Conservation.

The natural habitats for bats in Alabama are trees or caves. However, attics, eaves, and chimneys sometimes make ideal roosting areas for bats. Bats roost during the day and feed at night. Natural feeding

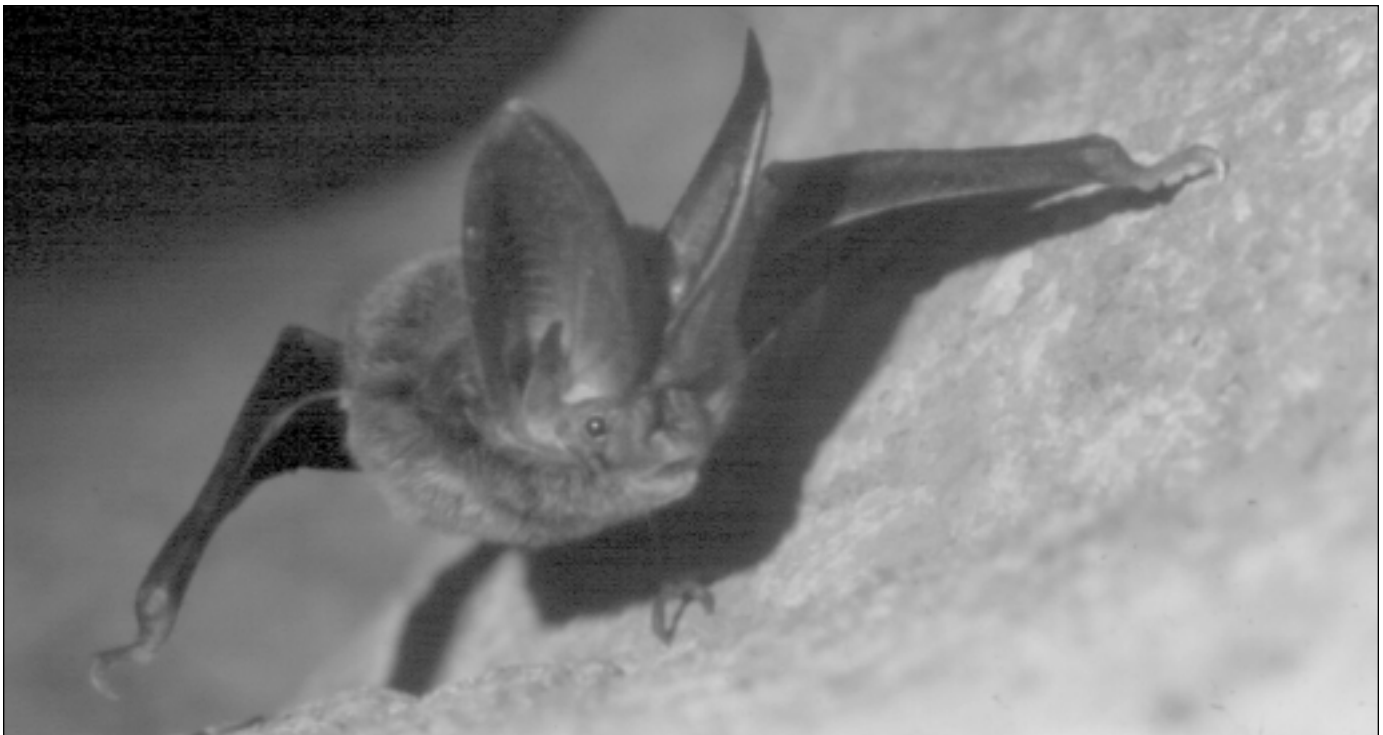
areas include forests, wetlands, and other habitats. However, in urban areas, bats may be seen feeding near streetlights.

Since Alabama bats are insectivorous, the flying insects that congregate around lights provide a ready source of food. Bats locate these flying insects by using a built-in sonar system that detects objects through echolocation. Bats are quite adept at catching insects, possibly as many as 3,000 each night.

Despite these beneficial qualities, bats may become a nuisance if they take up residence in a man-made structure.

Bat Control

People tend to immediately blame any rustling sounds in their chimney or attic on bats. In actuality, the culprits may be squirrels, rats, or chimney swifts, so before implementing any control measures, first determine whether bats are the problem.



Southeastern big-eared bat (*Plecotus rafinesquii*)

One thing to look for is bat droppings. Bat droppings are easily distinguished from rodent droppings when they are crushed. Bat droppings contain shiny bits of undigested insects and never contain a white, chalky substance.

Another sign of the presence of bats is a brown stain around entrance holes on the exterior of a building. This stain is left by oils from the bat's body.

Outside buildings, bats may roost behind shutters, under shingles or roofing, or in any other place that provides protection. Therefore, it may be difficult and impractical to bat-proof the exterior of a building.

The presence of a bat colony is fairly uncommon—more common is the occurrence of one or two wayward bats in a house. The simplest solution



Hibernating Indiana myotis bats (*Myotis sodalis*)

for this type of bat problem is to open all the doors and windows. Bats usually detect the fresh air and leave. If the bat is still there at night, turn off the lights to help it find the doors and windows.

Bats normally will not attack people and can be caught in a net, box, can, or a gloved hand. The captive bat can then be released outside. However, bats will bite when handled, so exercise caution.

The health hazard posed by bats has been greatly exaggerated. From 1953 to 1998, 35 human rabies fatalities have been attributed to bats. Data on the frequency of rabies in bats is misleading because it reflects only sick animals in laboratories and not random population samples. Far more people die annually from dog attacks, bee stings, lightning, and household accidents than from bat-transmitted rabies. However, any bat bite should be treated as a potential rabies infection, and medical attention should be sought.

People often think that bats are swooping at or attacking them; however, most bats are merely searching for insects. Bats may fly around swimming pools to drink and to catch insects. Any outside lights that attract flying insects may also attract bats. Both of these situations may bring bats into closer proximity with people.

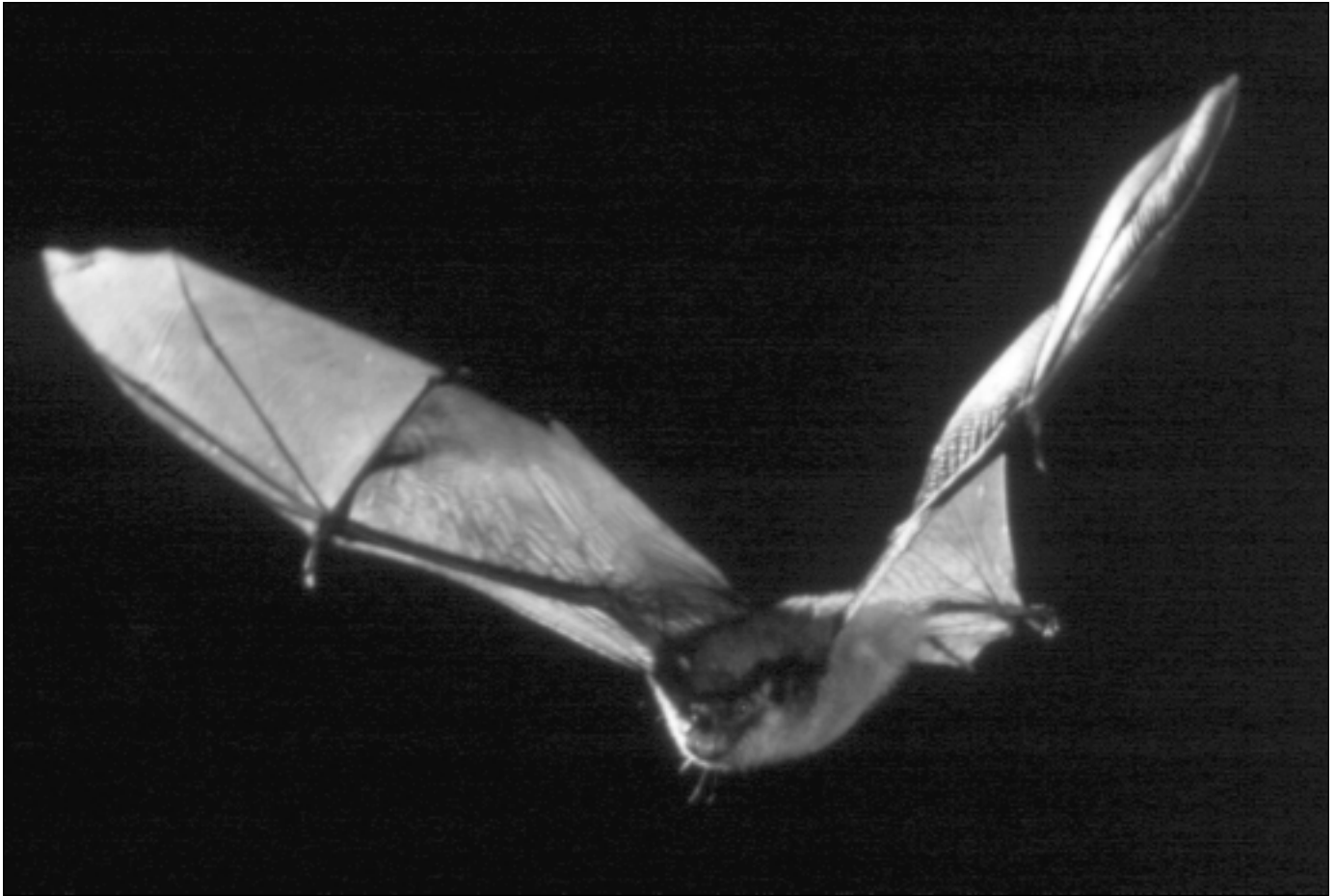
Another concern related to bats is histoplasmosis, which is an airborne disease from a fungus that grows in soils enriched with bird and bat droppings. While the potential dangers of contracting histoplasmosis are slim, guano should be moistened with water before it is removed. This reduces the amount of dust that may become airborne.

Bat guano (feces) and urine accumulating in attics may attract insects, and while the odor may not be pleasing, it is not dangerous.

The long-term solution to any bat problem is to exclude the bats from the area. Bats can enter a building through tiny holes, so a careful inspection must be made to block all entrances.

When trying to bat-proof the interior of a house, check for air leaks that may reveal possible points of entry. One simple way to find air leaks is to hang a thin plastic bag or tissue paper from a coat hanger and place it near a windowsill. The plastic or tissue will move or wave if air is leaking through. A lighted candle can be used in a similar way—the flame will flicker and move if air currents are present.

Make sure the bats are out of the building before bat-proofing it. This means doing the work at night or installing a one-way valve. One-way valves should be installed over all major entry points, with at least one valve on each side of the building the bats are using. One-way valves can be constructed from a 6- to 8-inch length of 2-inch-diameter pipe and a 6-inch



Gray bat (*Myotis grisecens*)

piece of plastic drop cloth rolled into a tube and taped to one end of the pipe (Figure 1). The bats will exit the building but will be unable to return via the one-way valve. One-way valves should not be used from May through August when flightless young are present.

Bats can be repelled from an area for short periods of time. Naphthalene applied at a rate of 5 pounds per 2,000 cubic feet has been somewhat successful in repelling bats. However, bats will return after the odor dissipates.

Floodlights or some other method of illumination in the attic may repel bats. This technique can also be useful in locating entrance/exit holes from the outside. Simply turn on the light in the attic, go outside at night, and look for the rays of light coming out of the attic. Mark the spots, and then patch them.

Bats do not like to colonize areas with a lot of air movement. Drafts created by fans or open windows may be effective in repelling bats.

Toxicants and fumigants are not recommended in Alabama because of the protected status of bats. In addition, the dead bodies of poisoned bats and other organisms may attract even more serious pests.

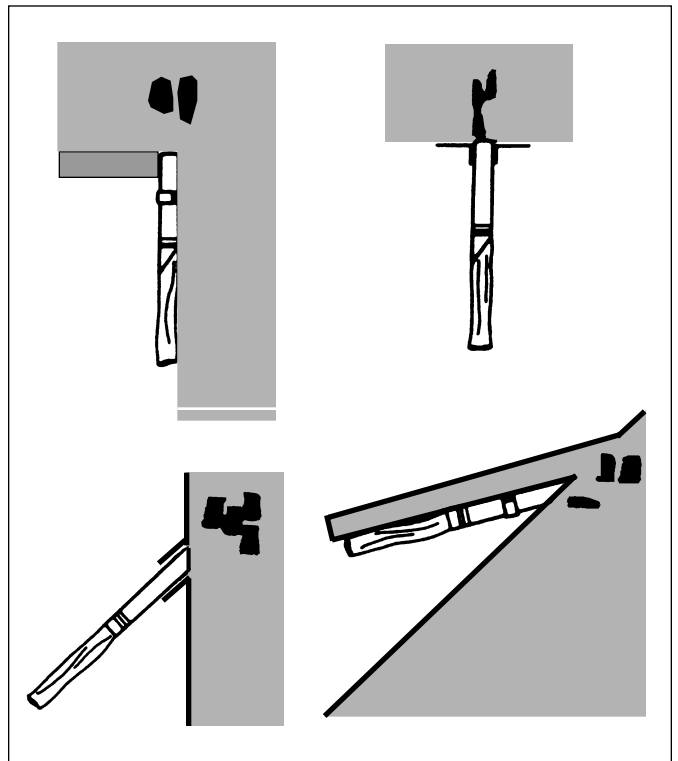


Figure 1. One-way valve mounted in various locations

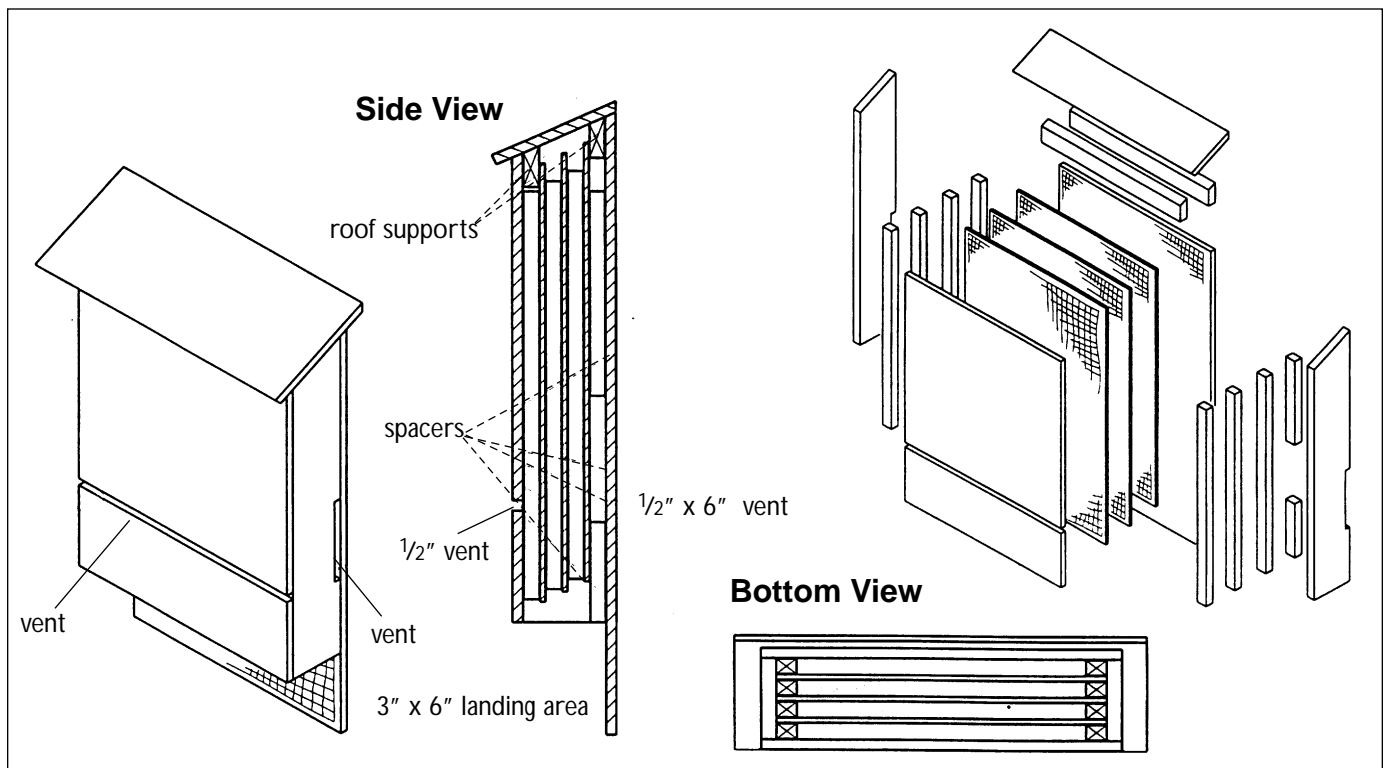


Figure 2. Plan for bat house. Drawing courtesy of Bat Conservation International. For more information, visit BCI's Web site at www.batcom.org.

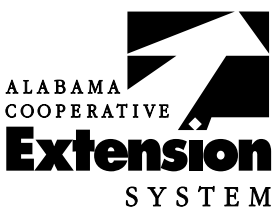
Buildings must be bat-proofed after the bats are trapped or repelled; otherwise, bats will be a persistent problem.

Bat Houses

The beneficial aspects of bats make them enjoyable to have around. Bats may be encouraged to take up residence in an area if bat houses are provided. This practice, similar to that of putting up bluebird boxes, provides roosting sites for bats.

Figure 2 shows a plan for a bat house that is easy to construct. Be sure that the crevice widths for the bats are $\frac{3}{4}$ inch wide. Use rough lumber so the bats can climb out easily. Use rough lumber or staple plastic mesh to interior surfaces to provide secure footing for the bats. Exterior-grade plywood is best for the front, back, and partitions, and solid wood is best for the sides and roof. Bat houses should be at least 16 inches wide and 30 inches tall.

The finished box should be placed in a sunny area about 12 to 15 feet off the ground. The side of a building or a pole makes a good site. Placing the bat box within $\frac{1}{4}$ mile of an open, permanent water source such as a pond or river increases the chance of occupation. Areas with high insect populations, a mixture of natural vegetation and agriculture, and areas where bats are already attempting to live in buildings are also good bat house locations.



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James B. Armstrong, *Extension Wildlife Scientist*, Associate Professor, Zoology and Wildlife Sciences, Auburn University, and **Mark Kiser**, Coordinator, North American Bat House Research Project, BCI, Austin, Texas

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