

Scott Craven
and Frank Iwen

Bats: Information for Wisconsin Homeowners

Few animals are as misunderstood as the bat. Much of the fear they elicit is unwarranted and based on misconceptions. For example, most bats are not rabid. Wisconsin bats do not suck blood; the vampire bat, which does, is not found within 1,500 miles of Wisconsin.

Bats are interesting animals. They are also highly beneficial because they eat tremendous numbers of insects, including mosquitoes. Still, there are valid reasons for not wanting a colony of bats in an attic or outbuilding. Accumulated droppings and urine can cause odor, stain walls and attract insects. Bats' high-pitched, "metallic" squeaking and their scrambling in and out of roosting places can be disturbing. In addition, there is a slight risk of contact with a rabid bat.

About bats

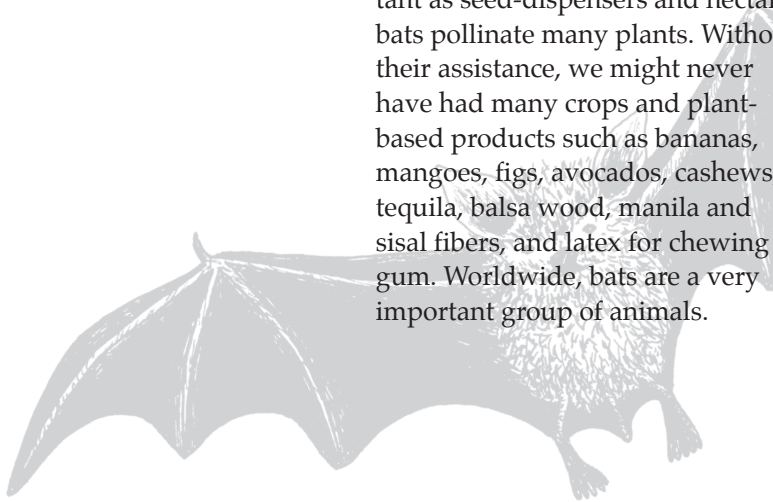
Bats belong to a large and diverse order of mammals called the Chiroptera, which means "hand wing," referring to the wing's membrane-covered digits. Some mammals can glide, but only bats exhibit true flight. Another feature unique to bats is their sophisticated echo location system which they use for navigating, avoiding obstacles and detecting food. Wisconsin bats eat only insects. While in flight, bats capture flying insects with their tails and wing membranes. Like other mammals, bats are warm-blooded and furry. They nurse their young.

Bats are most abundant and diverse in warm climates. In the tropics, different species are adapted to feed on fruit, nectar, blood, insects—even frogs and fish. Fruit bats are important as seed-dispensers and nectar bats pollinate many plants. Without their assistance, we might never have had many crops and plant-based products such as bananas, mangoes, figs, avocados, cashews, tequila, balsa wood, manila and sisal fibers, and latex for chewing gum. Worldwide, bats are a very important group of animals.

Wisconsin has eight species of bats. Some are common, while others are rarely seen. Three of the species are solitary—individuals live apart from each other during at least part of the year—and migrate south for the winter. The other five form colonies and spend the winter in Wisconsin. They hibernate in caves, mine shafts, crevices in rock outcrops and some buildings. Several species prefer houses and old buildings for summer dwellings because caves are too cool to rear young. Bats have impressive homing abilities and return to the same summer or winter quarters year after year, much like some birds. Bats live for a long time—some up to 30 years—so a favorite attic is likely to be used by many generations of bats.

Increasing numbers of people are interested in attracting bats. By providing a roost constructed much like a birdhouse, you can enjoy the advantages of having bats around without having them in your attic. You can send for roost plans from the Extension wildlife specialist, Department of Wildlife Ecology, University of Wisconsin–Madison 53706.

Bats are often associated with rabies and they do get the disease. Rabid bats are identified periodically in Wisconsin. Surveys indicate, however, that only one in 200 or more apparently normal bats is likely to be rabid. Sick bats are turned in more frequently for



testing, perhaps giving a slightly distorted impression of rabies incidence in bats. Infected bats either survive or die—they do not become carriers of the disease.

Rabid bats seems to be less aggressive than other rabid animals and rarely attack people. However, rabid bats often become partially paralyzed and may fall from a roost to within reach of pets and children. These bats will attempt to bite; never handle them without protection. Use extreme care—and a pair of tongs or heavy gloves—to collect a sick bat.

If a bat bites a person or behaves suspiciously, submit it to the Wisconsin State Laboratory of Hygiene for rabies tests. Refrigerate it and don't damage its head; the brain is necessary for the testing. Consult your local physician or veterinarian for further information.

Controlling problem bats

In light of bats' beneficial feeding habits, you should decide whether control is really necessary. Pesticides, pollution, people and habitat loss have already reduced Wisconsin's bat populations. We recommend non-lethal control measures.

If a single bat gets into your house, simply open a door or window and allow it to escape. If it does not find its way out, you can catch it and release it outside. Wear leather gloves or use tongs (or fishnet) because bats will try to bite like any other frightened wild animal. Keep calm. Panic will only make catching the bat more difficult and you may damage home furnishings.

Wisconsin bats

Little brown bat (*Myotis licifugus*)

A brown, mouse-sized bat. Very common throughout Wisconsin and the most frequent resident of attics and buildings. Forms colonies; hibernates.

Keen's bat (*Myotis keenii*)

Similar in size and appearance to the little brown bat, except that its ears extend beyond its nose when its ears are flattened forward against the head. Found throughout Wisconsin, but more common in northern counties. Forms colonies; hibernates.

Indiana bat (*Myotis sodalis*)

An endangered species protected by federal legislation. Very difficult to distinguish from other *Myotis* species. Forms colonies; hibernates.

Big brown bat (*Eptesicus fuscus*)

A large bat, perhaps twice the size of the little brown bat, but still weighing only ½ oz. Found throughout the state, but seems to be more common in the southern part. May roost in buildings and frequently hibernates there. Forms colonies; hibernates.

Silver-haired bat (*Lasiurus noctivagus*)

Slightly larger than the little brown bat, but noticeably smaller than the big brown bat. Fur is dark, nearly black, with white-tipped hairs. Seasonally solitary; migrates.

Eastern Pipistrelle bat (*Pipistrellus subflavus*)

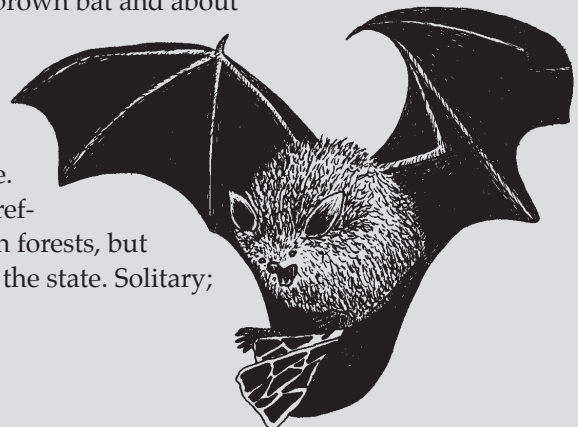
Our smallest bat, yellowish brown in color; only three inches long. Not commonly found in buildings; prefers caves, abandoned mines and rock crevices. Forms colonies; hibernates.

Red bat (*Lasiurus borealis*)

About the same size as the big brown bat, but fur is rusty red, washed with white. Seeks daytime refuge in trees. Solitary; migrates.

Hoary bat (*Lasiurus cinereus*)

Larger than a big brown bat and about twice the weight (1 oz). Color is grayish yellow-brown, overcast with grayish white. Seems to have a preference for northern forests, but found throughout the state. Solitary; migrates.



One or two bats in the house may mean only that they came in through an open window or chimney. But their presence also could signify a colony of bats in the attic or walls. Most household bat colonies in Wisconsin contain no more than a dozen individuals, but there are instances of attics inhabited by several hundred or more.

If you find a colony of bats in your house, the only long-term solution is to “bat-proof” the building. All bat entrances must be sealed. Use screening, hardware cloth, steel wool, lumber, cement, caulking compound or some other material that is appropriate for the size of the hole. Remember that a crack only $\frac{3}{8}$ -inch wide will admit bats. They do not need an opening they can fly through. Bats cannot gnaw new holes or reopen old ones, unlike rats or squirrels, so once openings are closed they should stay that way.

There are several ways to locate attic openings if they are not obvious. Perhaps the best is to position several observers around the building and watch for bats emerging in the evening. Another method is to put a bright light in the attic on a dark night and look for light from the outside. Or, you can determine where light enters a dark attic on a bright, sunny day.

Do not seal bat openings until the bats are out of the attic. This means waiting until an hour or so after

sundown—when the bats will be out feeding—or until November—by which time most Wisconsin bats will have abandoned attics for their winter quarters. Also try to avoid sealing openings in June and July, when flightless young bats are likely to be present. If you find many bat openings, you may wish to seal all but one or major ones at your convenience. Then, when all of the bats have adjusted to the restricted access (two or three days later) seal these openings after dark. Capture and release bats that are trapped inside or they will quickly

that you have all or most of the bats out of a building before you complete the structural repairs necessary for bat-proofing. Commercial models are available in Wisconsin or you can make excluders from plastic bird netting. Hang the netting over the access point so that it is at least a few inches from the hole and extends several feet below it. This lets bats drop down and fly under the material to leave. However, when they return it blocks direct access to the hole. For more detailed advice contact an Extension wildlife specialist.



After bat-proofing, clean up all the feces, urine and dead bats as thoroughly as possible. If you don't, the odor will continue to attract other bats. If there are a lot of droppings, wear a mask to avoid breathing dust as you clean up. A surgical mask is adequate. Dropping piles may harbor a fungus that causes a respiratory disease called histoplasmosis.

People sometimes use naphthalene and

starve. If you do trap a large number of bats inside, you will have a serious odor problem.

One-way excluders or “bat valves” are helpful in bat-proofing. These devices come in different forms but their purpose is the same. When properly mounted over an access hole bats use, the device allows the bats to leave the building but prevents them from getting back in. Use of these devices for several days when bats are active ensures

ammonia to repel bats from an attic to allow bat-proofing. About five pounds of naphthalene flakes (mothball flakes) are typically spread around an average-sized attic. You can use a household cleaning solution to clean an infested attic; pans of the solution may serve as a continuing repellent. To repel bats, some people spray commercial dog and cat repellent liberally on beams or in crevices where bats roost.

Unfortunately, reports from users indicate that none of these repellents is completely successful.

At one time, commercial fumigation with the chemical methylbromide was a standard approach to bat control. Other chemicals were dusted or placed where bats would come in contact with them and subsequently die. None of these lethal approaches permanently controlled bat problems. Reinfestation was possible, if not likely. Further, the chemicals were dangerous, often

expensive and destroyed an ecologically valuable group of wild animals. For these reasons and others, the Wisconsin Legislature passed a bill in 1984 that prohibited the use of pesticides for bat control. Thus, not only is bat-proofing the best and only long-term solution to a bat problem; it is the only legal solution.

Temporary approaches such as repellents or physically removing bats are possible but do not prevent reinfestation. Electronic devices

which allegedly interfere with bats' "sonar" or otherwise cause them distress have not been shown to be effective despite testimonials to the contrary. However, new devices constantly appear on the market. Consider your alternatives carefully before you choose a course of action.



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