

Backyard Bats

by Tom Barnes

Bats often get a bad rap. They have been considered the bad boys of the natural world for centuries because of myths, misinformation, and misconceptions. In reality, bats are essential animals that provide important functions in the environment such as eating agricultural and home insect pests, pollinating important crops, and dispersing seeds that help regenerate forests.

For example, the red bat roosts in the foliage of deciduous trees and eat moths, beetles, plant hoppers, spittlebugs, and leaf hoppers that can damage agricultural crops and home gardens. This species can hibernate in the leaf litter and grass clumps on the forest floor. Another common species, the little brown bat, can eat about 1,000 mosquito-sized insects in a single hour. Of course bats can carry rabies, but the chances of contracting the disease from a bat are rare—over 99% of all rabies cases involving humans are related to contact with infected dogs. In Kentucky, rabies is more common in skunks than any other species. Common sense should tell you to avoid contact with an infected animal. While 90 to 95% of sick bats do not carry rabies, you should still never pick up a bat.

Bats are called a keystone species because they are important to proper functioning of the ecosystem and bat populations are declining. Most recently, an outbreak of the disease white-nose syndrome has decimated populations of cave-dwelling bats in the northeastern United States. This disease has been found as close to Kentucky as West Virginia, Virginia, and Tennessee. It has been a mere four years since the discovery of this disease, and more than a million bats of six different species have died. The death toll in caves where the disease hits is almost 100%.

What can you as a private landowner do to help ensure the survival of these important animals? The first thing is to take an inventory of potential bat habitat on your property. In this inventory, focus on roosting, foraging (feeding), and drinking habitat.

One of the first things to look for on your property would be a cave (or even a hole in the rock that might be a cave entrance), a cliffline, or a rock shelter (house). If you discover any of these features, you should have a biologist with the Kentucky Department of Fish and Wildlife Resources visit the property to make a proper assessment of these habitats for bat use. If any of these areas on your property are found to harbor bats, the biologist can advise you if visitation could be allowed or if the area should be gated, fenced, or protected.

Next, look at your forest stands, including the types of stands and their condition. Bats need roosting sites—typically dead or dying trees. Roosting sites are perhaps the most important aspect of providing habitat for bats when managing a forest. Bats use multiple roosts over time. From a habitat perspective, it's most important to provide as many natural snags, wolf trees, or den trees in various states of decay, as possible, because bats use multiple roosts over time. It doesn't appear that tree species is important, rather size. In particular, large-diameter snags that still have bark on the tree are the most important ones to salvage.

All photos courtesy, expect white-nose bat: Tom Barnes

Bats, like the red bat on the left, have a bad reputation but they play important ecological roles such as eating nuisance insects, pollinating plants, and dispersing seeds.

This little brown bat may look “scary” but in reality is an important part of our ecosystem.

All things being equal, you should provide snags in an earlier stage of decay, larger and taller trees, and trees that retain bark longer.

The final component of bat habitat is forest age. Older forests provide more habitat than younger forests because very old trees that occur on ridgetops, such as chestnut oak, have been found to be good roosting sites. Furthermore, older age forests typically provide more of the snags and cull trees that are useful roosting sites.

The next important feature to look for is water, because water is critical to most species of bats. For example, gray, little brown, and eastern pipistrelle bats prefer to feed over lakes, ponds, and rivers. Eastern red, big brown, hoary, and Indiana bats use waterways for both travel and feeding. Beaver ponds are among one of the best habitats for bats, as they provide water and potential roosting areas with numerous dead or dying trees in or around the pond. If you are planning a timber harvest, it is critical that you follow best management practices to allow for a continuous tree cover over the stream channel, because these waterways are essential as travel corridors. Remember that forest best management practices are designed to protect water quality. If wildlife is your prime concern, you might want to consider widening your buffer to provide more habitat for bats.

Research in Kentucky has shown that small woodland ponds provide excellent feeding habitat for bats. Think about creating a small pond in an opening (it doesn't have to be large—even 10 feet by 10 feet will do), or place an earthen dam to catch runoff from a spring. You also could simply deepen a woodland road rut pond to retain water all year long. There are numerous methods of creating water in openings for bats.

One other management activity you might consider is an artificial roost. In some cases where natural roosts have been eliminated, bats will use human-made structures like abandoned buildings, cisterns, road bridges, and culverts as roosting sites—especially old buildings: more than 20 different species have been documented as using them. Such structures should be protected if they do not pose a safety hazard. You can also make an artificial roost, or bat house. As more research goes into developing artificial roosts,



their occupancy rates are starting to rise. If you are considering putting up a bat house, Bat Conservation International has excellent information on its Web site (www.batcon.org) on how to build and place bat houses to maximize the chance that the bats will use them.

Bats are often unseen and forgotten wildlife resources when it comes to forest management.

However, we should consider their needs because they are so important in maintaining ecosystem functions. While Kentucky has 14 species of bats, about half of them are now rare and in desperate need of help. If white-nose syndrome makes it to Kentucky, our cave bats would surely be threatened. Perhaps you can do your part and help manage your forest for this forgotten resource.



White-nose syndrome has killed more than a million cave-dwelling bats in the northeastern United States since it was discovered four years ago. People should avoid caves because movement of people and other animals between caves could inadvertently spread white nose syndrome.

Photo courtesy: Marvin Moriarty, USFWS

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Bat houses can be constructed relatively easily and can help provide additional habitat.