

## Little Brown Bat

(*Myotis lucifugus*)

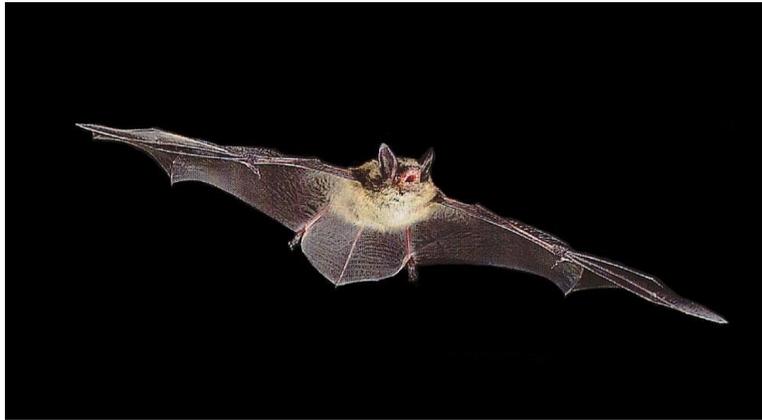


Photo credit: NW State University

Little brown bats, also known as little brown myotis, are among the most common bats in North America. It is a small brown bat that is difficult to distinguish from other myotis species. They are nocturnal insectivores and are commonly seen hunting insects just after dusk, especially near water bodies.

Little brown bats live in many locations. In the summer they roost in attics, under bridges, in hollow trees, under loose bark or shingles, or in rock crevices. During the winter these bats hibernate in caves or old mines. Populations are generally healthy, and these bats adapt well to living near humans as long as hibernation sites are not disturbed.

Order: Chiroptera (greek for 'handwing')  
Family: Vespertilionidae (referring to microbats)  
Genus: *Myotis*  
Species: *lucifugus*

### Characteristics

Little brown bats are rather small creatures. They are 7-10 cm (2.8-3.9 inches) long and have a wingspan of 22-27 cm (8.7-10.6 inches). They typically weigh around 10 grams (0.35 ounces). Their fur is dark brown on the upper parts and slightly paler on the belly. The wings and tail lack fur and are also dark brown.

To make their bodies lighter the lower part of a bat skeleton is reduced in size. As a result bats cannot stand upright. This is partly why they hang upside down.

Similar bat species are long eared, Keens, northern, Californian, Yuma and long legged. These are all members of the *Myotis* or mouse eared bat genus and are very difficult to distinguish in the field. All are small brown bats, with the main distinguishing feature being the tragus or small flap on their ears.

### Lifecycle

Little brown myotis are polygamous. Mating occurs in the fall, when large numbers of bats congregate in caves prior to hibernation. The age at mating is not certain but females are likely mature after their first year. Fertilization is delayed until after hibernation in the spring. Young are born in late June or early July after a gestation period of 50-60 days, usually in a protected nursery colony. One offspring is born to a female. During the birth, females hang upright by their thumbs. The baby is caught by the interfemoral membrane between the mother's back legs and soon climbs up her fur to find a teat. The mother usually carries the baby with her for the first couple of days, but after that it is left in the nursery colony while she hunts. Babies are blind and hairless at birth, but develop quickly. They can fly within 3 weeks and are independent after a month. Little brown myotis can live for up to 30 years, astonishing for such a small species.

### **Habitat**

Little brown myotis can live almost anywhere, and readily adapt to living near humans. They need a place to roost and a nearby water body for drinking and for a ready supply of insects. These bats will roost in attics, under bridges, in hollow trees, under loose bark or shingles and in rock crevices. They have two main types of habitats; a hibernation site and summer roosting sites. During the summer males are largely solitary, while females form colonies of a few to over 1000 individuals in which they give birth and raise their young. Summer colonies are typically in hot environments such as attics. Hibernation sites are typically caves or old mines. These sites must be cool, humid, above freezing and relatively free of disturbance. Little is known about where little brown myotis hibernates as only a few hibernating individuals have ever been found.

The range of little brown myotis covers much of North America. It lives from the east to the west coast and from the Northwest Territories south in the mountains to Georgia and southern California. Most of Canada's little brown myotis are thought to migrate south for the winter. More southern populations may not travel far to find suitable hibernation sites.

### **Behaviour**

Little brown bats are insectivores, meaning they feed on insects. A single bat can eat up to 600 insects an hour, making this species very important in helping to control insect populations. The interfemoral membrane is used as a net to catch insects. Little brown myotis are nocturnal and their peak feeding periods are one to two hours after sunset and before sunrise. Feeding typically occurs over water, where insects are abundant. Bats use echolocation to locate their prey and avoid obstacles. They emit high pitched ultrasonic pulses (70-90 kHz), that are above human's range of hearing. The strength of the reflected vibrations give the bats information on the distance and direction of objects and potential prey.

Like other species of bats, the little brown myotis is a true hibernator. This means that they experience significant metabolic and physiological shutdown. Their breathing slows and body temperature drops, heart rate drops from 400 beats per minute to 25 during

hibernation. Even with this slowdown of body functions little brown bats still need to drink, urinate and occasionally move to a warmer or cooler location. Depending on conditions they may arouse at intervals of 12 to 83 days. They usually emerge from hibernation in late April or early May.

### **Threats**

Little brown myotis have few natural predators. Owls, martens, raccoons and snakes catch some bats, though they do not directly affect population levels, which remain generally healthy. These bats are well adapted to living in human structures such as attics, so summer colonies are not greatly affected by human habitations.

It is extremely important that hibernating bats are not disturbed. Bats store enough fat to last for 5-6 months, but recent research shows that every time a little brown bat is aroused it expends precious amounts of its reserves. Thus it does not take many arousals by humans for a bat to run out of fat reserves before spring. Disturbance of hibernation colonies or loss of suitable sites is one of the biggest threats to little brown myotis and other bats.

Bats in general are poorly understood and as a result are often feared. Like many other wild mammals bats can carry rabies, but they avoid people and it is extremely unlikely to be bitten by a bat, unless one picks up a sick bat.

### **What We Can Do To Help**

Bats are among the most maligned and misunderstood of all animals. Therefore, public education of bats is a positive step toward respecting and appreciating these unique mammals.

Sustainable conservation practices such as reducing the degradation of the environment and preserving habitat can go a long way toward protecting and creating healthy ecosystems for bats and other animals to live in. In addition, one could build 'bat boxes', a simple project to help give bats additional roosting sites.

Finally, volunteering and providing support to help conservation organizations like the Northwest Wildlife Preservation Society, are important steps toward preserving wildlife and wild habitats for future generations.

### **Other Interesting Facts**

- Bats are the only mammals capable of flight.
- Bats have evolved over 60 million years.
- There are a thousand bat species worldwide, living on every continent except Antarctica.

### **References**

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