

Acton WildAware

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Paula Goodwin

Little Brown Bats

In Massachusetts, Little Brown Bats roost during the summer in natural habitats such as hollow trees and under tree bark, as well as built structures such as homes, bridges and office buildings. They are insectivores. Acton's forests, meadows, agricultural areas, wetlands and neighborhoods, anywhere insects can be found in large numbers, are optimal places for supporting bats. Of great benefit is that on a summer evening a Little Brown Bat can eat about 1,000 mosquitoes, moths and other night flying insects.

Bats have good eyesight but it is "echolocation" that makes it possible for bats to fly in the dark and still maneuver safely while pursuing prey. Extended arm and finger bones connected by a double layer of skin form the bats' wings. Between the skin layers run networks of nerves and blood vessels. Having an aerodynamic shape, strong back and arm muscles and the ability to quickly adjust the angle and shape of their wings with their fingers, bats are able to twist and turn in flight. Bats can fly as fast as 21 mph while hunting, grabbing insects with their mouths and also using their tail or wing membranes to scoop and flick insects into their mouths.

Little Brown Bats mate in the fall, although females delay ovulation, not becoming pregnant until the spring, giving birth to one pup each year in June or July. When females give birth they reverse their usual head down position to upright, catching the newborn pup in a special membrane between their legs. Baby bats cling to their mother's fur for a few days including during her hunting trips. Young bats grow very fast, able to fly at 3 weeks of age. They are as big as adults by 4 weeks at which time they are independent and self-supporting. Little Brown Bats' natural life span is long, sometimes more than 30 years.

Since 2008 the Little Brown Bat population has been declining due to a fungus commonly known as White Nose Syndrome due the "powdered sugar-like" appearance of the fungus on bats' noses. The fungus, which seems to thrive in cool moist caves where Little Brown Bats hibernate, was once known as *Gymnoascus destructans* because it was thought to be a fungus that only attacked outer skin cells which are already dead. After DNA testing disproved that idea, the fungus was given the Latin name *Pseudogymnoascus destructans*, also known as Pd.

Researchers are using the chemical Terbinafine, the active ingredient for treating athlete's foot, in hoping to treat zoo populations of bats to keep them alive until they can be safely returned to the wild, and to avoid extinction. Other work is being done to find bacteria or fungi that naturally stops the growth of Pd and helps bats resist infection. It may take a long time to find the right microbes, but when found, researchers have come up with a creative possible solution to treat the bats. Sprayers could be set up at cave entrances during the summer months so that as they come and go the bats would fly through a mist of microbes. If it is successful the method could be used anywhere to protect the bats from Pd as they begin hibernation for the winter.

To protect our local bats, the most important thing residents can do is leave them alone. If bats move into your attic or garage and you need help, call someone you can count on to handle them gently and set them free.

Citizen Scientist opportunity! To help the Massachusetts Division of Fisheries and Wildlife better understand White Nose Syndrome/Pd, please report observations of bats flying in the winter, (January-March) and let them know if you have a summer colony of bats. If you have a summer colony, please report where it is, what kind of place it is in, and about how many bats are in the colony. Your help is greatly appreciated. Contact info: natural.heritage@state.ma.us Phone: (508) 389-6360

Resources:

The Case of the Vanishing Little Brown Bats; A Scientific Mystery by Sandra Markle
Massachusetts Natural Heritage Endangered Species Program:

<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/>

Bat Conservation International: <http://www.batcon.org/>

Bat Houses resource: <http://www.batbungalows.com/>

Mass Audubon: <http://www.massaudubon.org/learn/nature-wildlife/mammals/bats>

University of Michigan (Fenton and Barclay, 1980; Wai-Ping and Fenton, 1988): BioKids, Kids' Inquiry of Diverse Species: http://www.biokids.umich.edu/critters/Myotis_lucifugus

Paula Goodwin is a member of the Acton Conservation Commission who introduced WildAware with Acton Natural Resource Assistant Bettina Abe. WildAware is a program sponsored by the Town of Acton Natural Resources Department that began in September and will continue through the summer of 2016. The purpose of WildAware is to educate the community about the existence and habits of wild creatures, and the goal is increased community awareness of shared habitats. For information, call 978-929-6634 or send email to nr@acton-ma.gov.