



Cave Owner's Newsletter

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Wu-Fu, What Good Are Bats?

Rick Reynolds, Wildlife Biologist

As a cave owner, you possess a unique habitat that is shared by an unusual and often misunderstood group of animal, bats. Most people are not fond of bats and would just as soon live without them. Through "old wives' tales," superstitions, and movies, many have learned to despise and even persecute bats. They think of bats as blind, dirty, dangerous, and, at best, equivalent to a flying mouse.



Not all societies have held the bat in such low esteem. In China the bat is regarded as a symbol of happiness or good luck. The *wu-fu* is a Chinese design that consists of the symbol of life (a tree with roots and branches) encircled by

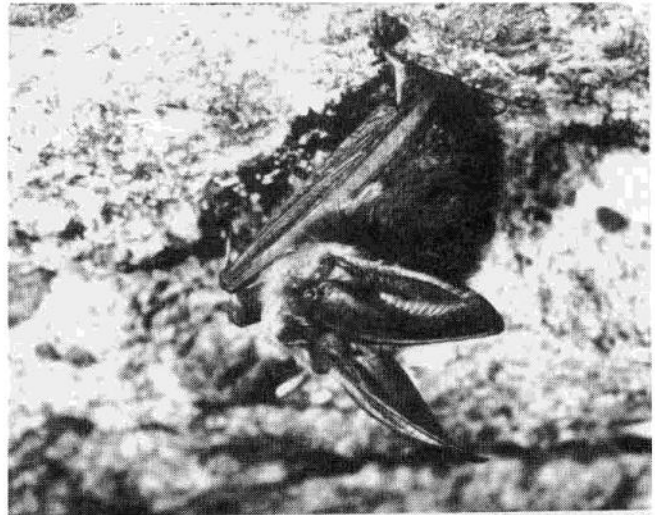
five bats with wings spread facing inward. Each bat symbolizes one of the five great virtues sought by all men (health, wealth, long life, good luck, and tranquility).

Less well known is that bats are clean, intelligent, beneficial animals that possess the ability to navigate by echolocation. They are mammals that range worldwide and vary in size from slightly over 2 grams to more than one kilogram (2.2 pounds). The largest bats are the "flying foxes" with a wingspan up to 6 feet. In Virginia our largest bat is the hoary bat, weighing about 40 grams.

Despite our lack of love for bats, they are extremely beneficial to us. All species of bats in Virginia are insect feeders. In fact, they are the

only major predator of night-flying insects. An individual bat can consume up to one half its weight in insects each night. When you think of thousands of bats feeding each night, you can picture a rather effective natural insecticide at work.

Bats have a unique way of capturing insects. Unlike birds that capture insects directly into their mouth, bats can use different parts of their body to catch a meal. In addition to using their mouths, bats will scoop up insects with their tail or wings and reach down and eat them. This is why bats appear to fly so erratically.



Photograph of a Townsend's big-eared bat (*Plecotus townsendi*) by Dr. Merlin D. Tuttle. Virginia Cave Board thanks **Bat Conservation International (BCI)** for permission to use this photograph. For more information about bats or membership in BCI, please write or call Bat Conservation International, P.O. Box 162603, Austin, Texas 78716, 512-327-9791, or visit the BCI website: <http://www.batcon.org>

In addition to their insect-eating ability, bats have benefitted man in many other ways. Because they are long-lived, disease resistant, and have a sophisticated sonar, bats are increasingly important for research. They have contributed to the development of vaccines and navigational aids for the blind, drug testing, and studies on aging, artificial insemination, and speech pathology.

In Virginia, some bats use caves all year round and some use caves only in winter. Whatever time of year, bats can be very sensitive to disturbances inside the cave.

Bats carry only enough fat reserves in the winter to get them through the cold months. Each time they are disturbed, they must raise their body temperature to flee the intrusion. This takes away from the fat reserves needed to carry them through to spring. Loss of body fat can make these individuals more prone to disease and predation. In addition, females that have been stressed during the winter may not bear young the following

summer. If greatly disturbed, even females that are trying to raise young in the summer may abandon the site.

To be the owner of a cave presents a unique opportunity and a special challenge. Not only do caves contain unique physical features, but they also house many unique animals. Both the physical and biological features of caves need to be respected, because both are highly sensitive to disturbance and can take generations to repair or replace. And after all, we are only borrowing the present from our children's future.

This article only discusses bats, but many other animals also reside in caves. And each animal, if we look close enough, has a purpose and place in the cave and the world around it. So the next time you see bats hanging on the ceiling of the cave or streaming from the cave's entrance, remember they are *wu-fu*, the symbol of happiness and good luck.

Members of the Virginia Cave Board

For additional information, please contact the **Department of Conservation and Recreation, Division of Natural Heritage**, 217 Governor Street, 3rd Floor, Richmond, VA 23219. (<http://www.state.va.us/~dcr/vaher.html>). Members of the Virginia Cave Board (listed below) may also be contacted.

Mr. Craig M. Ashbrook
523 Ridge Road
P.O. Box 1116
Lebanon, VA 24266

Mr. Mike Barber
821 Florida Street
Salem, VA 24153

Mr. Robert T. Barns
8616 Dwayne Lane
Richmond, VA 23235

Dr. David C. Culver
427 Foxridge Drive
Leesburg, VA 20175

Ms. Karen M. Kastning
P.O. Box 1048
Radford, VA 24141

Mr. William Keith
Rt. 1, Box 17
Cleveland, VA 24225

Ms. Marie "Blue Sky" Keshick
Mattaponi Indian Reservation
Route 2, Box 240
West Point, VA 23181

Mr. Timothy J. Kilby
10607 Howerton Avenue
Fairfax, VA 22030-2914

Mr. James A. Paul, III
5308 New Kent Road
Richmond, VA 24225

Dr. Rhoda E. Perozzi
Virginia Commonwealth Univ.
Department of Biology
Box 842012
Richmond, VA 23284-2012

Ms. Lynn K. Richardson
P.O. Box 425
Flint Hill, VA 22627

Newsletter Editors: Karen and Ernst Kastning, Radford University, Radford, VA
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