

# Working the Night Shift

Why study bats and what methods can we use?



# Bats Are Important

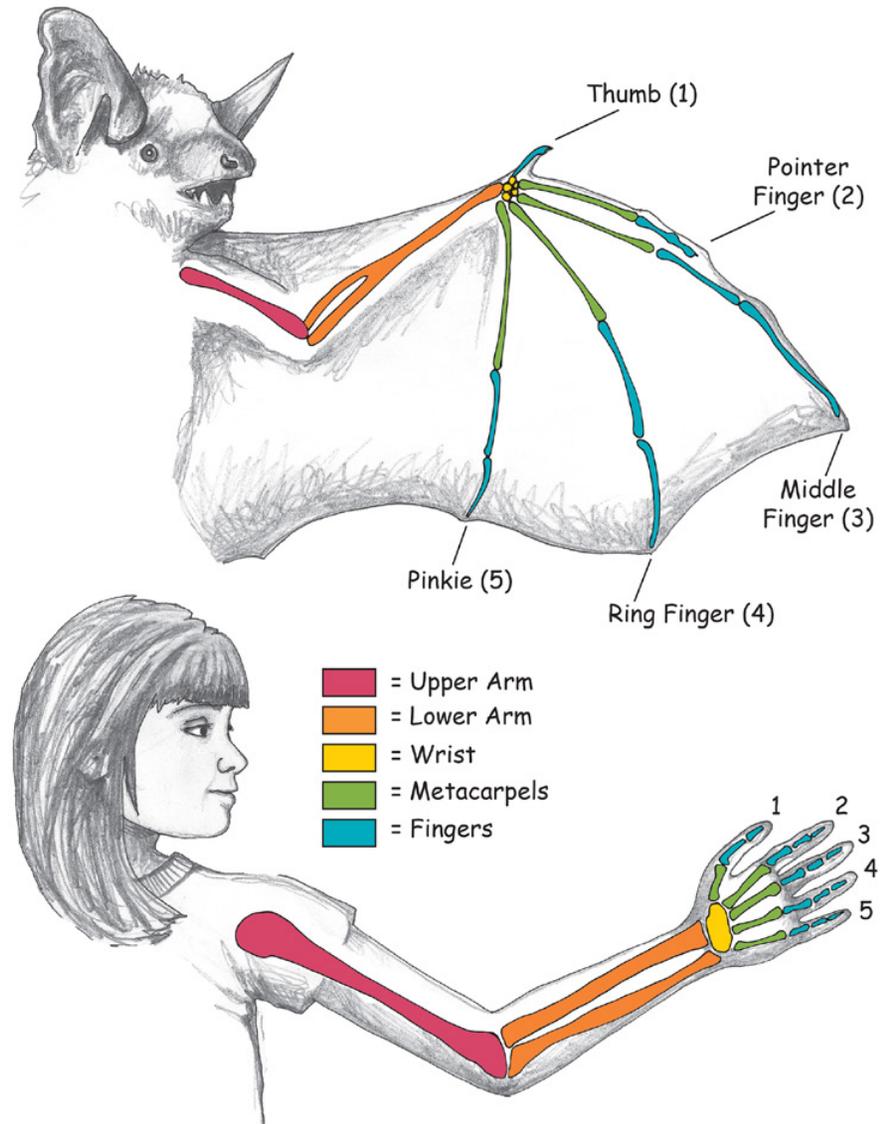
Bats occupy almost every habitat in the world eating tons of insects nightly, pollinating flowers, and spreading seeds that grow new plants and even trees. Bats are our most important natural predators of night-flying insects. Many of these insects are serious crop or forests pests, and others spread disease to humans or livestock. Every year bats save us billions of dollars in pest control simply by eating insects.



# Bat Wings – Bones of the Hand

Bat wings are one of the most remarkable features of a bat. A bat's wing is actually a modified hand and the wing bones are elongated fingers.

This elongation of the bones is required to support the wing membrane. The thumb has a small claw, which aids the bat in crawling around on rough surfaces.



# Observing the Bat Wing

To minimize damaging bat wings, biologists have special training and experience. Bat wings hold clues about a bat's health and can sometimes show if the bat has been infected with the fungus that causes White-Nose Syndrome. Bat wings are gently extended and held over a light for careful examination.



# Catching Bats for Study

Scientists study bats by catching them in mist nets, harp traps, or observing them while they hibernate in caves.



Mist nets are usually made of fine, nylon mesh suspended between two poles. When properly set up, the nets are virtually invisible. You can't see the net and neither can the bats! Nets are often set up near rivers, lakes, and ponds where bats are hunting for insects.

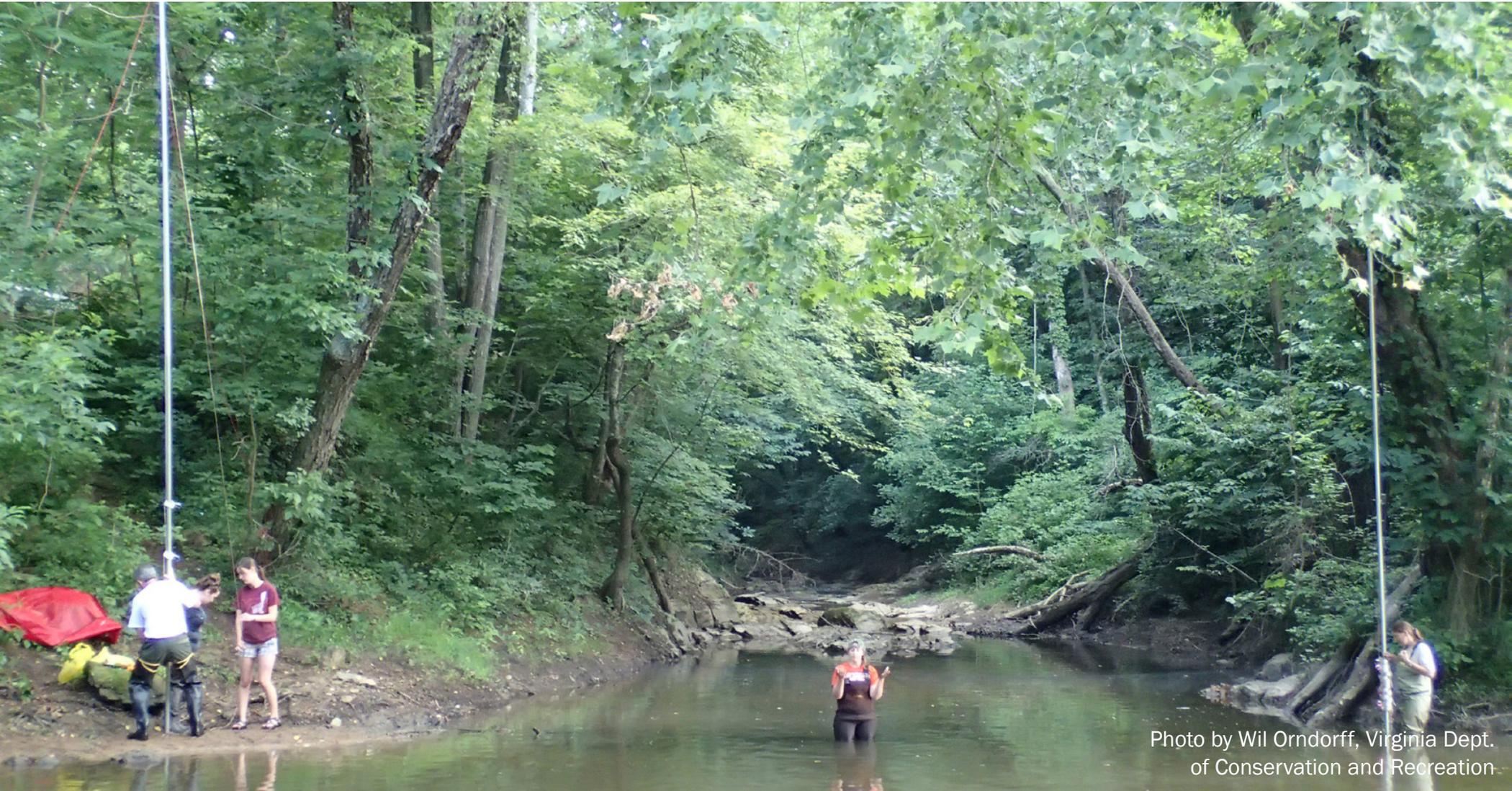
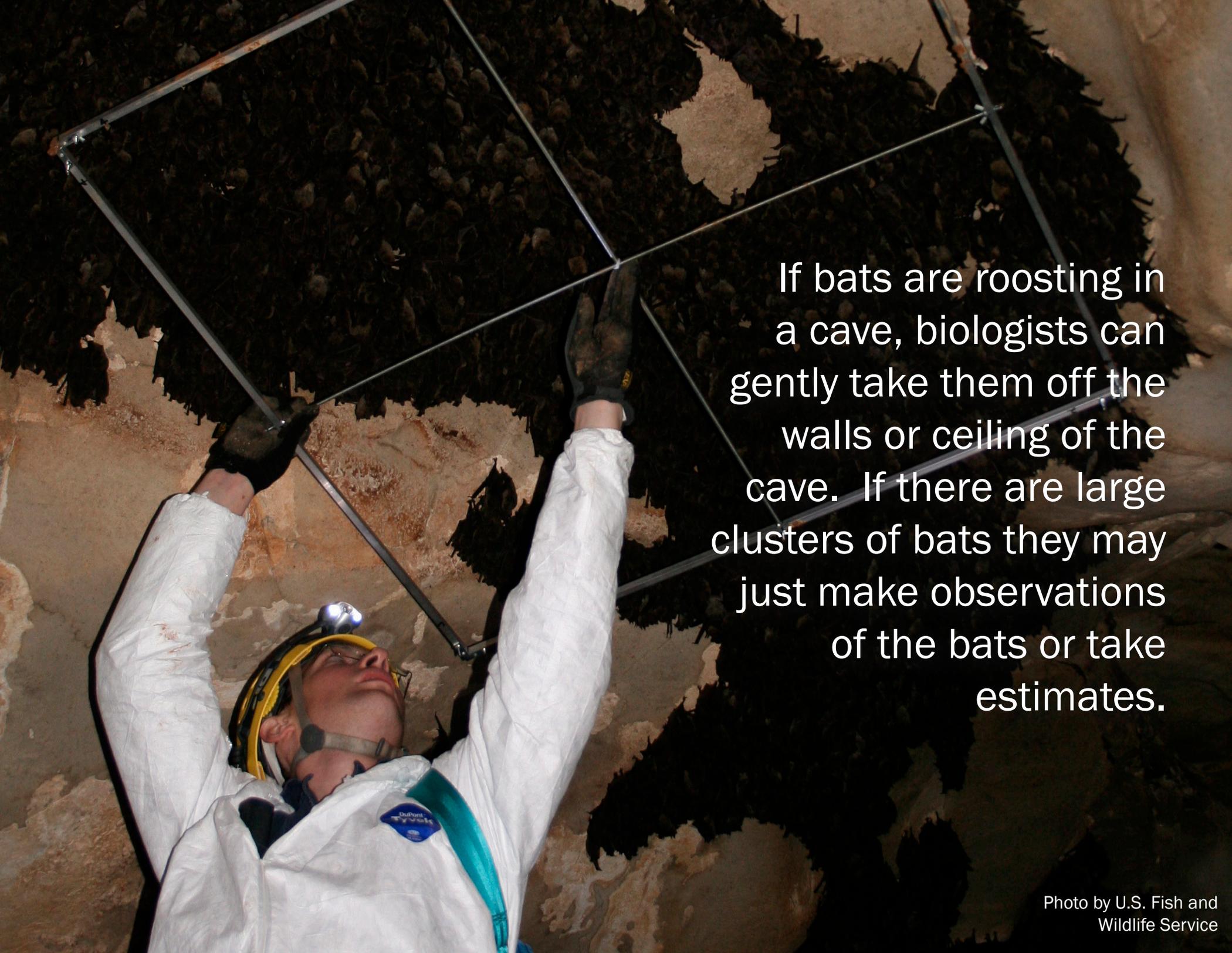


Photo by Wil Orndorff, Virginia Dept. of Conservation and Recreation



If bats are roosting in a cave, biologists can gently take them off the walls or ceiling of the cave. If there are large clusters of bats they may just make observations of the bats or take estimates.

Harp traps are a metal frame strung with vertical monofilament line (like fishing line) with a bag at the bottom. Bats drop down to the bottom of the trap and are easily removed by biologists.



Photo by U.S. Fish and  
Wildlife Service

# Collecting Data

Biologists collect biometric data such as the length of the forearm and weight to identify bat species. Using a caliper or ruler, a biologist measures the length of the bat's right forearm. It also important to weigh the bat using scale.



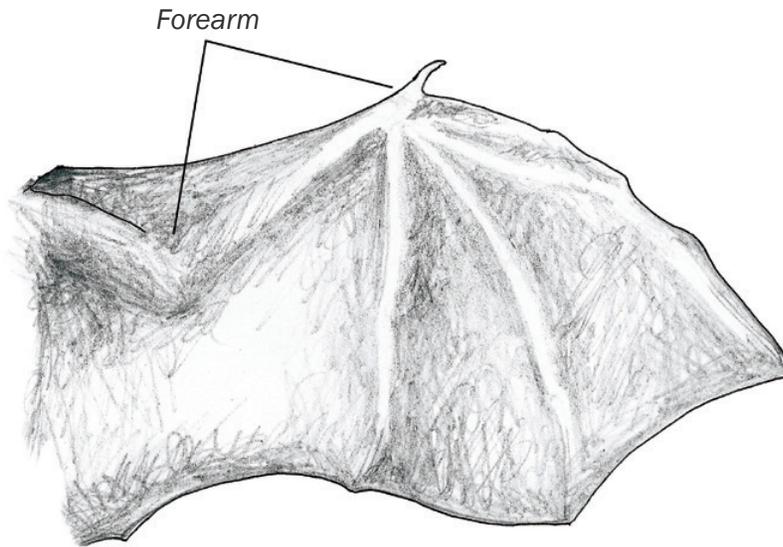
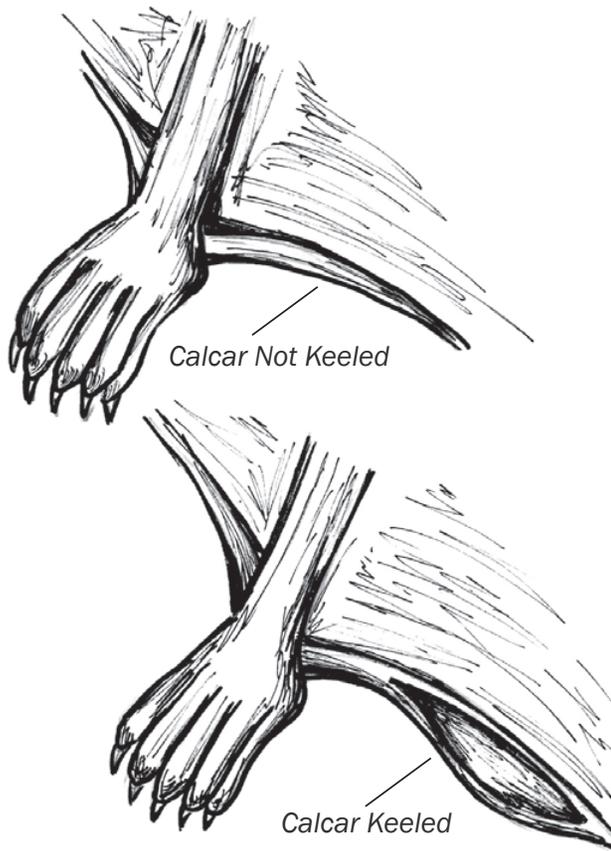
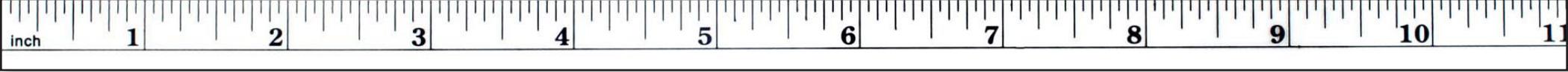
Photo by Wil Orndorff, Virginia Dept. of Conservation and Recreation



# Recording Data

Scientists look at other physical characteristics to help identify bats. These include: age (juvenile or adult), sex, overall size, fur color, fur length, ear size, tragus size, tail membrane, calcar, and toe hair length. They record their observations on data sheets. Accurate records are important for bat surveys.

# Bat Measurements





# Bats Are In Trouble

Bats are declining nearly everywhere they are found. Numbers in the U.S. and Canada have declined dramatically as a new disease, White-Nose Syndrome, has killed over 6 million bats in just 6 years. Other threats to bats include habitat loss, pesticide use, wind energy development, oil and gas exploration, residential and industrial development, disturbance of hibernating bats, and improper eviction of bats from buildings. In the United States, nearly 40 percent of our bats are endangered or are considered at risk. There is an urgent need to protect our bats!

**Visit [whitenosesyndrome.org](http://whitenosesyndrome.org) for more information!**