Gray bat
Myotis grisescens

Gray bat, USFWS

Status: Endangered

Description: The gray bat is the largest member of its genus in the eastern United States. Its forearm measures 40-46 mm, and it weighs from 7-16 grams. It is easily distinguished from all other bats within its range by its mono-colored fur. All other eastern bats have distinctly bi-or tri-colored fur on their backs. Following molt in July or August, gray bats are dark gray, but they often bleach to chestnut brown or russet between molts (especially apparent in reproductive females during May and June). The wing membrane connects to the foot at the ankle rather than at the base of the first toe, as in other species of *Myotis*.

Habitat: With rare exception, gray bats roost in caves year-round. Most winter caves are deep and vertical; all provide large volume below the lowest entrance and act as cold air traps. A much wider variety of cave types are used during spring and fall transient periods. In summer, maternity colonies prefer caves that act as warm air traps or that provide restricted rooms or domed ceilings that are capable of trapping the combined body heat from thousands of clustered individuals.

Range: The gray bat is found mainly in Alabama, northern Arkansas, Kentucky, Missouri, and Tennessee, with a few occurring in Florida, Georgia, Kansas, Indiana, Illinois, Oklahoma, Mississippi, Virginia, and North Carolina. Distribution within the range is patchy.

Listing: Endangered, April 28, 1976. 41 FR 17736 17740

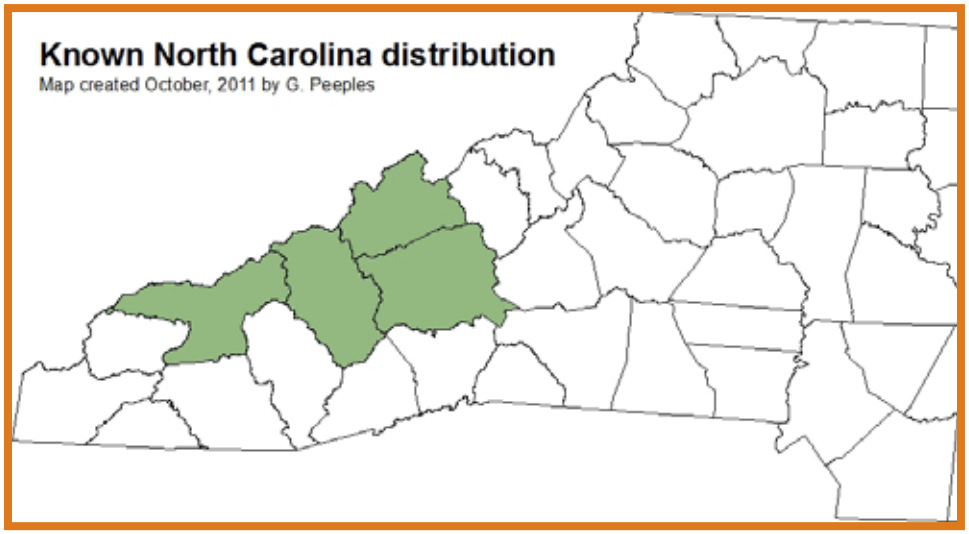
Critical habitat: None designated

Threats: A significant reason for the species' decline is human visitation to maternity roosts and hibernation caves, which disturbs bat populations at sensitive and important times. Other threats stem from waterway impoundments, which can flood caves near impounded rivers; and environmental contamination, which can affect the bats directly, or the insects on which they feed, including insects with aquatic life stages which suffer from water pollution.

White-nose syndrome poses a growing threat to the gray bat. The disease, caused by the fungus *Geomyces destructans*, typically develops in hibernating bats and in some species is nearly always fatal. The disease was first identified in New York in 2006 and has since spread in all directions, though most notably south and west. The fungus has been found on gray bats, but thus far no gray bats have been discovered with full-blown white-nose syndrome.

Why should we be concerned about the loss of species? Extinction is a natural process that has been occurring since long before the appearance of humans. Normally, new species develop through a process known as speciation, at about the same rate other species become extinct. However, because of air and water pollution, forest clearing, loss of wetlands, and other man-induced environmental changes, extinctions are now occurring at a rate that far exceeds the speciation rate.

All living things are part of a complex and interconnected network. We depend on the diversity of plant and animal life for our recreation, nourishment, many of our lifesaving medicines, and the ecological functions



they provide. One-quarter of all the prescriptions written in the United States today contain chemicals that were originally discovered in plants and animals. Industry and agriculture are increasingly making use of wild plants, seeking out the remaining wild strain of many common crops, such as wheat and corn, to produce new hybrids that are more resistant to disease, pests, and marginal climatic conditions. Our food crops depend on insects and other animals for pollination. Healthy forests clean the air and provide oxygen for us to breathe. Wetlands clean water and help minimize the impacts of floods. These services are the foundation of life and depend on a diversity of plants and animals working in concert. Each time a species disappears, we lose not only those benefits we know it provided but other benefits that we have yet to realize.

What you can do to help

Cave ecosystems evolved in relative isolation. They are a simple yet intricate system that involves relatively few organisms. Food is scarce in caves and is generally limited to animals that either die in or are preyed upon in the cave, and organic nutrients that wash or filter in through cracks and crevices. The loss or decline of one organism can disrupt the interdependent relationship between species, causing other species to disappear or decline.

When entering caves, be careful not to disturb bats, other cave creatures, or their habitat. Avoid entering significant bat caves, especially during the hibernation and maternity seasons.

Build a bat house and join a bat conservation group. Educate others to the value and uniqueness of our American bat species.

Many caves have streams and pools that are inhabited by unique species. Be concerned with the quality of these and all waters. Watch for fish kills, illegal dumping of waste, unusual water color or smell, and other changes in the water's condition. Report such events to your state conservation agency.

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