

# ARIZONA'S BATS!

Arizona provides habitat for 28 species of bats, more than any other state. The various species of bats that call Arizona home are quite diverse themselves – some are rather small while others are relatively large, some feast on nectar while insects provide sustenance for others, some live in caves while trees are home to others – but they all share one important trait: we need them.



Mexican free-tailed bat. *By Ron Groves.*



Red bat. *By Dagmar Thurmond.*

## Benefits of Bats

Healthy ecosystems and human economies around the world depend on bats. Bats account for about one-fifth of the world's mammal species, and each has a different role to play. Biologists consider bats a “keystone” species in several environments, including our Arizona deserts.

Many of the over 1,100 bat species are insectivorous, consuming vast amounts of insects daily. A single Arizona myotis (*Myotis occultus*) can catch up to 1,200 insects in one hour. A colony of Mexican free-tailed bats (*Tadarida brasiliensis*) at Bracken Cave in Texas devours about 200 tons of insects each night. This incredible consumption reduces agricultural pests, saves farmers millions of dollars each year, and reduces the incidence of diseases such as West Nile Virus.

Nectar-feeding bats are critical pollinators for a number of important plant species. In Arizona, many of our cacti and agave depend on bats for pollination, including the iconic saguaro. Bats across the world are responsible for pollinating a variety of important food crops that are important not only to people but other animals in the environment.

## Myths vs. Facts

*Myth:* Bats are blind.

*Fact:* Most bats can see as well as the average person. Some bats, such as fruit bats, have very well-developed eyesight.

*Myth:* Bats suck blood.

*Fact:* Only 3 out of over 1,100 species of bats are vampire bats, which eat very small amounts of blood from some animals.

*Myth:* All bats carry rabies.

*Fact:* Less than 0.5% of bats in the world have rabies, which is a lower incidence than domestic dogs. However, you should avoid touching a bat as one that permits approach may be sick.

*Myth:* Bats are dirty.

*Fact:* Bats spend much of their time grooming, similar to a cat.

*Myth:* Bats get tangled in your hair.

*Fact:* Using echolocation, bats are able to detect something as small as a strand of hair. When they swoop near a person, it is likely due to a nearby insect feast or because the person is blocking their exit.



Pallid bat. *By Tiffany Sprague.*

## Threats to Arizona's Bats

Bat populations around the world are declining due to a wide variety of threats, the most prevalent of which is humans. Bats are among the most misunderstood and least respected creatures. Human ignorance and prejudice leads to roost destruction and closure, habitat loss, exploitation, and extermination.

Urban development and pesticide use are also significant threats to bat species. Some bats can survive in urban environments, but often development eliminates necessary roosting sites and food. Similarly, pesticide use in urban and agricultural areas reduces food for insectivorous species and can cause direct poisoning.



Townsend's big-eared bat. *Courtesy of the BLM.*

A newly-discovered disease is also wreaking havoc on bat populations. White-nose syndrome was discovered in February 2006, yet we know very little about it, including its cause. To date, more than a million hibernating bats have died, and the U.S. Fish and Wildlife Service calls it "the worst wildlife health crisis in memory." White-nose syndrome was first discovered in the northeast U.S., but it is rapidly spreading westward.



Western pipistrelle.  
*Wikimedia Commons.*

## Climate Change and Bats

Not much is known about the specific effects of climate change on bats. However, biologists have made some predictions based on what we know about the various species. Bats rely on a wide variety of resources for food and shelter. Climate disruptions that alter resources within a bat's roosting and foraging sites can have a huge impact. For example, a small increase in temperature (just 3°C) can alter the plant species found in a particular area, which would negatively affect the nectivorous bats that depend on those plant species, such as the endangered lesser long-nosed bat (*Leptonycteris curasoae*) in southern Arizona. Similarly, most insectivorous bats rely on selected kinds of insects, but changes in insect populations and distribution are expected as a result of climate change. Climate change may also affect the hibernating and migrating patterns of many bat species. In some areas, hibernation may no longer be an option.

## What Can I Do?

Education is one of the most important ways we can help bats. The more people know about the benefits of and threats to bats, the better chance the bats will have. We must work to protect their habitat, including roosting and foraging sites. Preserving natural areas is paramount, as well as working to close abandoned mines using bat-friendly gates where appropriate. Protecting habitat in urban areas is also important. You can provide important habitat in your own backyard by putting up a bat house, preserving trees around your home, installing an escape device in your swimming pool, and keeping your cat indoors! And, of course, one important thing we can all do for bats and other species is to work to limit global climate change.



Mexican long-tongued bat. *By Ken Bosma*

## Additional Information

Arizona Game and Fish Department – [http://www.azgfd.gov/w\\_c/bat\\_conserv\\_az\\_bats.shtml](http://www.azgfd.gov/w_c/bat_conserv_az_bats.shtml)

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

