

# Mexican Free-tailed Bat

By Debra C. Noel  
Nongame Biologist

**SCIENTIFIC NAME:** *Tadarida brasiliensis*. Derivation of genus unclear. The specific epithet refers to Brazil, where scientists first collected this species.

**DESCRIPTION:** Smallest free-tailed bat; forearm 1.5 inches long. Wings consist of elongated finger bones covered with two layers of skin. Tail extends well beyond edge of tail membrane. Short chocolate-brown velvety fur. A lobe (tragus) in front of the ear aids in hearing.

**HABITAT:** Roosts in caves or abandoned mines, sometimes old buildings or bridges in desert scrub and foothills. Primarily Lower Sonoran (desert scrub) and Upper Sonoran (desert grassland) life zones, but may range to elevations of 9,000 feet or more.

**DISTRIBUTION:** North, Central, and South America. Occurs statewide in spring through fall; occurs only in southern and western Arizona in winter (in smaller numbers).

**BIOLOGY:** Myths about bats have been passed down for generations, but acceptance in folklore does not make them true. For instance, bats will not intentionally fly into your hair (and certainly not to "nest"), drink your blood, or attack you. They are no more likely to carry rabies than any other mammal. The only "fact" most people know about bats is, they are the only mammals that truly fly. Several other mammals with fur-covered membranes stretched between their limbs glide, but they do not fly.

Like most bats, free-tails are active at night and navigate by echolocation. In flight they emit sounds through their mouth or nose that are reflected back, revealing locations of obstacles or prey. As for most bats, these sounds are normally higher infrequency than can be heard by humans. Occasionally,

though, free-tails emit clicks that humans can hear.

Mexican free-tails roost in large colonies that number into the millions. They hang upside down from rough-surfaced walls or ceilings. At dusk, the colony flies high and fast (up to 65 miles per hour) to feeding areas as much as 50 miles away. Free-tails feed on the wing, mostly on moths, but also take other insects. One colony can eat tons of insects per night!

Adults migrate to the southwestern United States in April, having already mated. Gestation takes 11 to 12 weeks. Females bear one young in June-July, while roosting in relatively warm maternity colonies away from males. All young in a colony are born within a two week period. They remain in the roost while the females forage; females nurse only their own young when they return. When the young are a month or so old, they can forage for themselves.

Free-tails do not hibernate. In October, the colony migrates south to winter in warmer climates. This species is known to have traveled as much as 800 miles each way during its biannual migration. Adult Mexican free-tails are long lived, having survived in captivity for more than eight years.

**STATUS:** This species is not on the Department's 1988 list of Threatened Native Wildlife in Arizona, nor is it listed by U.S. Fish and Wildlife Service. However, all bats are protected from take through the Department's hunting regulations and are "restricted live wildlife" in Arizona. They cannot be taken live or dead under auspices of a hunting license, and may not be imported, exported, or otherwise possessed.

Common threats to bats are vandalism and destruction of their roosts, recreation activities near and in caves and mines, and direct harm from humans (as in shooting at roosts). Another threat



GEORGE ANDREJKO

to insectivorous bats is pesticide poisoning. Although DDT has been banned in the United States for more than 20 years, it is still used in Mexico. Because most free-tails winter there and do not hibernate, they are exposed to DDT and other potentially harmful chemicals while foraging. The chemicals concentrate in the female's milk, and poison her baby. Pesticides may have caused monumental population declines in free-tails, such as at Carlsbad Caverns National Park (from 8.7 million bats in 1936 to 200,000 in 1973) and at Eagle Creek Cave, in east-central Arizona (the loss of some 25.4 million free-tails between the 1960s and 1970).

**MANAGEMENT NEEDS:** Detailed information is severely lacking for free-tails and most Arizona bats. Studies are needed to determine basic life history information, population status and trends, specific micro habitat requirements, and the extent of pesticide contamination. Specific caves and abandoned mines should be protected from human impacts by gating the entrance, fencing the property, or regulating human use. 🦇