

Wild Mammals of Grayson County—Order Chiroptera (Bats)

The Order Chiroptera (Bats) is the second most speciose mammalian order in the world with about 1,400 species, of which 33 species in four families occur in Texas. A characteristic shared by all bats is true flight; no other mammal has this trait although several species (e.g., Southern Flying Squirrel, Flying Lemur, Sugar Glider) have the ability to glide. About 75% of all bats species in the United States can be found in Texas; however, only nine species in two different families occur in Grayson County. Bats are nocturnal but may be active during the crepuscular hours of dawn and dusk. To find prey items and avoid obstacles at night, bats echolocate by emitting high frequency (usually greater than 20 kilohertz) sounds. All the bats in Grayson County are aerial insectivores and feed on a variety of flying invertebrates (e.g., moths, beetles, flies, dragonflies, caddisflies, mayflies). From late fall to early spring, insect prey may be limited and some bats will hibernate while others migrate south. Some bats may be active year round in the mild climatic zones of Texas.



One member of the Family Molossidae (Free-tailed Bats) has been documented for Grayson County, the Brazilian Free-tailed Bat (*Tadarida brasiliensis*); it is also called the Mexican Free-tailed bat. This bat weighs less than 0.5 ounce and has a wingspan of about 12 inches. Free-tailed bats are characterized by a tail that extends well beyond the trailing edge of the tail membrane that stretches between the two hind limbs. Brazilian Free-tailed Bats in Texas are migratory and usually overwinter in Mexico. Females usually arrive in Texas in mid to late spring when they give birth to a single pup. In about 4-6 weeks, the pups are able to fly but still rely on nourishment from the mother's milk. By mid to late fall, most have migrated south for the winter. No large maternity colonies occur in Grayson County but two notable ones in Texas are Bracken Cave northeast of San Antonio and the Congress Avenue Bridge in Austin.

Of the 25 members of the Family Vespertilionidae (Vesper Bats) in Texas, eight probably occur in Grayson County. Bats in this family are characterized by the lack of complex facial structures, small eyes, and a tail completely enclosed by the tail membrane. Most of these bats weigh less than one third of an ounce; however, the Big Brown Bat (*Eptesicus fuscus*) and Hoary Bat (*Aeorestes cinereus*) may weigh more than an ounce. Over the past 40 years, numerous people have asked me to remove bats from their property. Most of the time when the removal was from a house/shed, I encountered a Big Brown Bat. This species has readily adapted to using buildings as roost sites. In contrast, I have picked up numerous Eastern Red Bats (*Lasiurus borealis*) from people's yards after heavy rains and/or high winds. The Red Bat is a tree-dwelling species which is often knocked to the ground in severe weather.



Bat populations have decreased in many regions of the country in recent years. One factor contributing these declines is white-nosed syndrome (WNS). This disease is caused by a fungal infection found most often on the muzzle, ears, and wings of cave-dwelling bats. Infected bats often exhibit atypical daytime activity during winter and exit hibernacula too early in the spring, have extensive wing damage, and are often dehydrated and malnourished; mortality rate of infected bats ranges from 75-98% in several cave-dwelling species. In contrast, tree-dwelling species of bats are more impacted by the increasing number of wind turbines. Bats may be killed directly after being struck by a turbine blade or from barotrauma when their lungs are damaged due changing air pressure caused by the rotating blades. More research is needed to find solutions to these devastating impacts on bat populations.

Although rabies has been transmitted to humans by bats, its prevalence in most bat populations is much lower than commonly believed. It is important to remember that if you see a bat on the ground, or acting abnormally, you should take precautions not to be bitten because such behaviors are indicators that it may be sick. The bat should be captured and removed from the area. Take safeguards if you opt to remove the bat yourself or call the local animal control

agency for assistance. This will help prevent more naïve individuals, or other animals, from contacting a potentially sick bat.

The next article will discuss an order of mammal that contains the most widespread of any naturally occurring terrestrial large mammal in the Western Hemisphere. Any guesses?

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