

Tadarida brasiliensis (Mexican Free-tailed Bat)

Family: Molossidae (Free-tailed Bats)

Order: Chiroptera (Bats)

Class: Mammalia (Mammals)



Fig. 1. Mexican free-tailed bat, *Tadarida brasiliensis*.

[<http://carnivoraforum.com/topic/9328503/1/>, downloaded 15 March 2016]

TRAITS. It is referred to as free-tailed since the end of its tail is free as it extends beyond the interfemoral membrane, this is located between the legs of these bats. The tail is approximately half the bat's total body length. These bats are considered to be relatively small in size since most adults average 9cm (Wilkins, 1989). The females are noticeably larger than the males in both length and weight. They range in colour from dark brown to grey (Tuttle, 1994). They have broad wings with pointed tips (Wikipedia, 2016). Their ears are positioned far apart and are very wide and set behind the muzzle and eyes (Fig. 1). Their upper lips are very wrinkled and their muzzles are short. The sexes are alike (Gannon et al., 2005).

DISTRIBUTION. These bats are widespread in the southern parts of North America, it also ranges through most of Central America and Mexico into certain parts of South America including Chile, Brazil and Argentina, including Trinidad and Tobago (Fig. 2) (Gannon et al., 2005).

HABITAT AND ACTIVITY. They are mostly found roosting in caves (Fig.3) with high ceilings, and are rarely seen in hollow trees, attics, abandoned buildings and under bridges. They choose their roosting areas based on nearby presence of water, as the insects they feed on have affinity to the water. These bats are nocturnal and most of their activity occurs in the night as they are usually asleep during the day or resting in their cave habitat. Therefore, their foraging occurs mainly in

the night and thus feeding begins after dusk and just before dawn (Wikipedia, 2016). They use their characteristic echolocation for navigation to detect objects in the environment especially during high speed flight. These bats have a relatively good sense of sight but they use echolocation to assist them in their objectives of flight and feeding especially.

FOOD AND FEEDING. They are primarily insectivores. Their ears are particularly wide and are efficiently utilized for echolocation to hunt their prey. They consume significantly large amounts of insects such as beetles and moths, usually caught during flight. They are the only species of bats that are known to fly several kilometers above the ground and this is useful as they feed on insects that are migrating. They can consume almost 50% of their actual body weight.

POPULATION ECOLOGY. The largest known colony is found in Texas which comprises nearly 20 million bats (Wikipedia, 2016). Their average life span is 8 years according to dental studies (de Magalhaes and Costa, 2009). This life span was recorded during life in the wild. Both the males and females were found to have equal mortality rates and lifespan. Most adults have a survival rate of 70-80% each year and this rate decreases with the increase in age. They are extremely abundant in their range.

REPRODUCTION. Their mating system is one that is polygandrous, that is, they are promiscuous in terms of the process of mating (Gannon et al., 2005). The males use scent marking in the breeding season. Females congregate in large numbers at what is considered to be the maternity roosts. Males use vocal signals to claim territory in order to attract mates. Both males and females make calls to each other thus allowing the selection of a mate. Once mates are united, they distance themselves from the larger groups. Males are observed to be very rough with their female mates as he pulls her neck, jaw and ear with his wings and his mouth, he then uses his mouth to bite her neck and then her back to keep her in position. Breeding occurs once yearly (Wilkins, 1989), with one offspring, and the parental care is solely by the female.

BEHAVIOUR. They are one of the most sociable of their kind. They are able to endure long flights 5 km above the ground. Most of their activity occurs just as it begins to get dark and just before the sun comes up. Weather conditions have a critical impact on their behaviour as warmer conditions yield greater activity, while in colder conditions there is less activity observed.

APPLIED ECOLOGY. They are listed by the IUCN; they are labelled as near threatened. An action plan has been created for this species. Over the last century the populations of this species has noticeably declined (Arita, 1993). They pose an increasing health concern as they produce abundant amounts of guano that facilitates the transmission of human diseases, and they may carry rabies.

REFERENCES

- Arita, H. 1993. Conservation Biology of the Cave Bats of Mexico. *Journal of Mammalogy*, 74/3: 693-702.
- Gannon, M., Kurta, A., Rodriguez-Duran, A. and Willig, M. 2005. Bats of Puerto Rico. Jamaica: The University of the West Indies Press.
- Wilkins, K. 1989. Mammalian Species: *Tadarida brasiliensis*. *Mammalian Species*, 331: 1-10.
- De Magalhaes, J., and Costa, J. 2009. AnAge entry for *Tadarida brasiliensis* (On-line). AnAge: The Animal Ageing and Longevity Database. http://genomics.senescence.info/species/entry.php?species=Tadarida_brasiliensis.
- Tuttle, M.D. 1994. The lives of Mexican Free Tailed Bats Vol 12:33. Accessed March 15, 2016 at http://www.batcon.org/resources/media-education/bats-magazine/bat_article/656.

Wikipedia. 2016. Mexican free- tailed bat. Accessed March 15, 2016 at https://en.wikipedia.org/wiki/Mexican_free-tailed_bat.

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Fig. 2. Mexican free-tailed bat geographic distribution.

[https://en.wikipedia.org/wiki/Mexican_free-tailed_bat, downloaded 15 March 2016]



Fig. 3. A colony of Mexican free-tailed bats resting inside a cave.

[http://www.nytimes.com/2015/01/13/science/no-time-for-bats-to-rest-easy.html?_r=0, downloaded 15 March 2016]

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