

Project Update: January 2019

Activities

From January to December 2018, the Cueva San Francisco (CSF) was visited monthly. Mist nets (12 x 2.6 m) have been placed outside the cave for capture of bats. The identification of the bats is done based on the key of identification Medellín et al. (2008) and in the experience of the collector.

Each Mexican free tailed bat (*Tadarida brasiliensis mexicana*) is weighed and measured morphological variables (length of the forearm, length of the third and fifth fingers, of both wings). Later the bats are released near the entrance of the cave. The capture and procedures are carried out in accordance with the guidelines approved by the American Society of Mammalogists (Sikes et al. 2016). At the entrance to the cave, an infrared night vision camera is placed, for each sampling event, to record the emergence of *T. b. mexicana* of the CSF, with which the population size of the bats will be estimated.

From January to December 2018 five species of bats have been reported in the CSF: *Artibeus jamaicensis*, *Eptesicus fuscus*, *Pteronotus parnellii*, *Uroderma bilobatum* and *T. b. mexicana*. The Mexican free-tailed bat has been present during all the sampling months and 946 individuals have been captured. During these months of sampling it has been observed that the size of the population of *T. b. mexicana* has fluctuated (from thousands of individuals to a few individuals), detecting two migratory periods (in which the guano bat almost leaves the CSF).

In the same way, the proportion of sex varies monthly, which suggests that both females and males migrate (Figure 1). We have found significant differences in body mass and in some measurement indices of wing morphology, suggesting that migration modifies some traits of bats.

In December 2018, the first technical report was delivered to the Ejidal commissioner of Ejido Pamalar, where the cave is located, with the objective that the Ejido has information on what is being done and observed in the CSF.



Figure 1. Sex ratio of *Tadarida brasiliensis mexicana* in the Cueva San Francisco, Chiapas.

Difficulties

It has been difficult for us to find the financing to start with the genetic analyzes, however we continue in the search.



Mexican free-tailed bats (*Tadarida brasiliensis mexicana*)
Photo: Viridiana Llaven-Macias