Anoura geoffroyi (Geoffroy's Tailless Bat)

Family: Phyllostomidae (Leaf-nosed Bats)
Order: Chiroptera (Bats)
Class: Mammalia (Mammals)

Fig. 1. Geoffroy's tailless bat, *Anoura geoffroyi.*

[http://www.redorbit.com/media/uploads/2012/07/Geoffroys-Tailless-Bat-Anoura-geoffroyi.jpg, downloaded 3 April 2015]

TRAITS. This species of bat has no tail. When observed from a top view, it has dullish brown appearance, and when observed from a bottom view, it has greyish brownish colour. It has short ears, and its face consists of an elongated muzzle (Fig. 1), with a lower jaw that extends beyond the top jaw, and a long tongue with papillae (fleshy projections) on it. The toes, legs and forearms and feet of the bat are all covered with hair (Ortega and Alarcón, 2008). The body length of the

bat is usually about 61-71mm. The length of its skull is 24.3-26.6mm, while its forearm is about 41-45mm long. The weight of *Anoura geoffroyi* is about 15.2g (Fackler, 2005). The size of the males and females are usually the same, however when observed in Trinidad, the males had slightly shorter forearms than the females. The length of forearms of the males was about 39mm compared to that of the females which was about 42mm (Heideman et al., 1992).

DISTRIBUTION. *A. geoffroyi* is mostly distributed in regions which are about 400-2500m in height. This species of bat is found in central, northern and southern Mexico. It is also found many countries of Central and South America (Fig. 2), some of which are Costa Rica, Panama, Guyana, Suriname, Columbia, Venezuela and Brazil (Ortega and Alarcón, 2008). *A.*geoffroyi is also native to Trinidad and Tobago (Mantilla et al., 2008).

HABITAT AND ACTIVITY. *A. geoffroyi* roosts in tunnels and small caves (Fig. 3) usually located close to streams, in evergreen forests, croplands and cloud forests (Mantilla et al., 2008). This species of bat has a preference for caves which receive daylight. A study conducted on the populations of *A. geoffroyi* in the Aripo Cave, Trinidad, indicated that during the night they usually left their roost an hour after dark, in groups of about 5-10 (Ortega and Alarcón, 2008).

FOOD AND FEEDING. The diet of *A. geoffroyi* consists mostly of differing amounts of pollen and fruit (Ortega and Alarcón, 2008). It is also regarded to be a nectarivorous species in Mexico, and its eating preference show that it acts a pollinator (Fig. 4) in most of the ecosystems which it is found (Caballero-Martinez et al., 2009). However, during the rainy season, *A. geoffroyi* seems to consume large amounts of insects and arthropods. A Brazilian study revealed that *A. geoffroyi* is a very diverse insect-eater, with 7 families of arthropods belonging to more than 3 orders were found in samples of its diet (Willig et al., 1993). This change in its eating habits may be a strategy used to decrease competition between ecologically related species within the region in which samples were collected. This change to a different type of food also gives an indication of the species responding to variation in resources available during the different seasons (Zortéa, 2003). *A. geoffroyi* have lengthy, thin wings which is one of the main reasons that allow this species to adapt quickly to the resource variability in the different seasons within a large area (Sperr et al., 2011).

POPULATION ECOLOGY. Members of *A. geoffroyi* usually roost either by themselves or within colonies of about 20-75 individuals. The largest reported roosting colony was comprised of 300 individuals which were found in a Mexican cave (Ortega and Alarcón, 2008). The roosting group of *A. geoffroyi* may be made of both sexes or can include only one sex, depending on the season (Heideman et al., 1992). Some *A. geoffroyi* may also roost with other species of bat such as *A. caudifer* or *A. cultrata.* Studies in Brazil have indicated that each individual bat roosts in one cave for about one year. In terms of longevity, there are no substantial data on the estimated lifespan of this species, but one captive individual lived for approximately 10 years (Fackler, 2005).

REPRODUCTION. The breeding pattern of *A. geoffroyi* is seasonal and depends on the location of the population (Heideman et al., 1992). Studies have shown that embryos one and a half weeks old are about 24mm long and weigh approximately 1g (Ortega and Alarcón, 2008). Breeding in Trinidad usually takes place during the months of July-August and female bats usually deliver

only one offspring, in December. Studies conducted in Trinidad indicated that male testis in the bats collected from the months of September to April had a relatively low weight, which then increased to a maximum size and weight in July, corresponding to the time for impregnation of the females (Heideman et al., 1992). After birth, *A. geoffroyi* exhibit different parental behaviour compared to other species of bats. At night, mothers usually do not return to nurse their pup. Even though the mothers are absent from the nesting area during the night, the pups are usually not alone, since there are other females present which perform the role of "baby-sitting" (Galindo-Galindo et al., 2000). Fathers do not usually play a major part in the growth of offspring. A study of the *A. geoffroyi* in Brazil indicated that mature male bats decrease in number, in caves where there were either young pups or pregnant females (Baumgarten and Vieira, 1994).

BEHAVIOUR. Bats utilize calls in their communication and echolocation, and *A.geoffroyi* has large eyes (Heideman et al., 1992). The bat moves very quickly during flight and is adept at hovering. Studies of the bat's behaviour conducted under laboratory conditions reveal that *A. geoffroyi* uses a series of visual cues in escaping when threatened, or utilizes echolocation whenever these cues are absent (Ortega and Alarcón, 2008). The juveniles often remain attached to their mothers initially and then slowly begin to wander off. A study done in Mexico showed that juveniles suckled on their mother's nipples for about 3 months until they were successful in finding their own food (Galindo-Galindo et al., 2000).

APPLIED ECOLOGY. It is found widely within countries like Mexico and is not considered to be under threat. The International Union for Conservation of Nature and Natural Resources (IUCN) state that *Anoura geoffroyi* is a species of least concern. It can be considered, however, as a source for parasites which can lead to human disease. There have been reports of batflies, mesostigmatid mites, and nematodes residing in or on *A. geoffroyi*, all of which can cause human diseases (Ortega and Alarcón, 2008).

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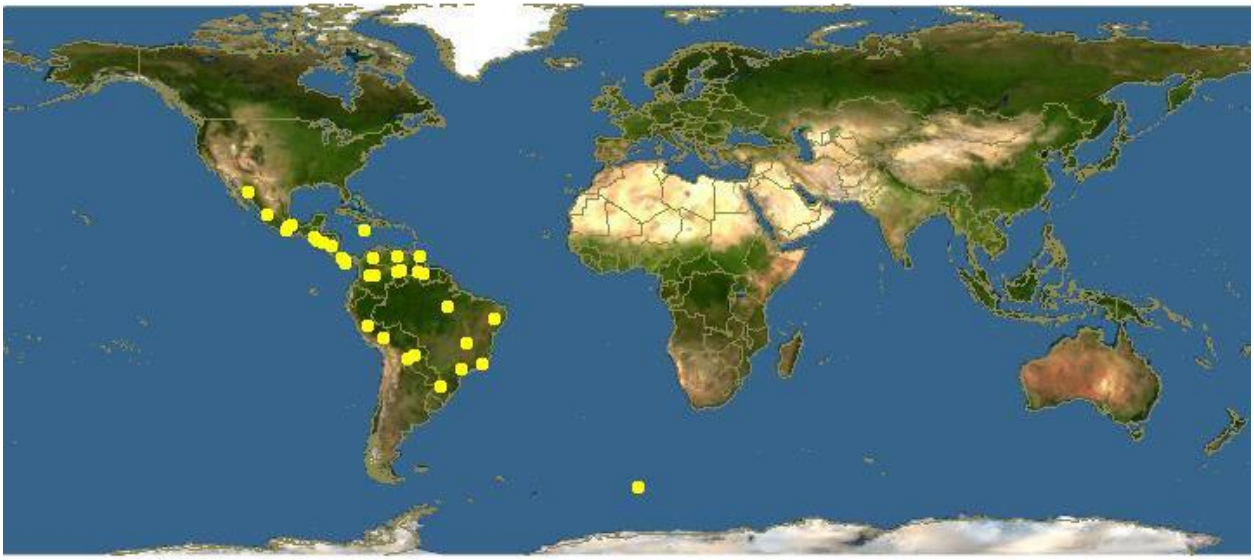

Fig. 2. Map of the geographic distribution of Geoffroy's tailless bat.
[http://www.discoverlife.org/mp/20m?map=Anoura+geoffroyi, downloaded 3 April 2015]

Fig. 3. A small colony of Geoffroy's tailless bat, *Anoura geoffroyi*.
[http://www.mammalwatching.com/Neotropical/Images/Colombia/Hairy%20Legged%20Bats.jpg, downloaded 2 April 2015]

Fig. 4. Geoffroy's tailless bat feeding on a flower.

[http://www.umsl.edu/~muchhalan/Bat-Flower%20Photos/A_geo_B_cyli.JPG, downloaded 3 April 2015]