Trachops cirrhosus (Fringe-lipped Bat)

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

Fig. 1. Fringe-lipped bat, *Trachops cirrhosis*.

[http://fineartamerica.com/featured/fringe-lipped-bat-trachops-cirrhosus-christian-ziegler.html, downloaded 25 February 2015]

TRAITS. *Trachops Cirrhosus* is medium sized; it attains a maximum length of 10cm and weighs around 32-45g (Anon., 2002). It has long, woolly, wavy, shiny fur that extends along the forearm for half the length of the body. Forearm length is around 5.7- 6.4cm. The dorsal region (upper parts) of the organism body is reddish brown in colour while the ventral region (under parts) is dull brown with a tinge of grey (Cramer et al., 2001). Ears are large, rounded and erect (Fig. 1)

(Reid, 2009); and the tragus (fleshy projection that covers the entrance of the ear) is pointed (Cramer et al., 2001). Cylindrical or conical wart-like bumps studs the lips and chin, while the nose leaf (leaf shaped nose) has a serrated edge (Eisenberg and Redford, 2009). The tail is short, length 1.2-2.1cm, feet are large and claws are short and robust. Broad wings and high wing loading (body mass is high compared to total wing area) (Cramer et al., 2001). The mouth has two pairs of lower incisors and three pairs of lower premolars, which have tubercular depressions, and w-shaped cusps (Rocha et al., 2012). No true sexual dimorphism seen.

DISTRIBUTION. The bat is distributed (Fig. 2) from southern Mexico (Oaxaca), to the Guianas, southeastern Brazil, Bolivia, Ecuador, Belize, Costa Rica, Venezuela and Trinidad. It is native to all the countries listed above (Wilson and Reeder, 2005).

HABITAT AND ACTIVITY. Found in habitats such as tropical forests, tropical evergreen and dry deciduous forest near moist habitats. *T. cirrhosus* roost in caves, hollow trees (Fig. 3) road culverts and buildings. The bat flies low through the forest understory at night and forages over streams and wet areas (Kalko et al., 1999). The bats are active predators of small animals such as lizards, mammals (including some bats), birds and frogs; additionally they feed on fruits and insects. Individuals of this species specialize on frogs specifically the tungara frog, in which they use echolocation strategies and rely on sounds produced by prey when hunting (Barclay et al., 1980). These bats are highly selective with respect to the type of frogs they consume; research conducted by (Kalko et al., 1999) suggests the fringe-lipped bat can discriminate between poisonous and palatable species not only by mating calls but also on a basis of touch and taste.

FOOD AND FEEDING. The fringe-lipped bat emerges from their roost approximately 30mins after sunset and forages for more than 1.5km away from their roost (Kalko et al., 1999). This bat has a diverse diet, it is an omnivore thus it is termed an opportunistic feeder that will consume anything it can capture and over power (Page and Ryan, 2005). This bat has high wing loading, which allows it to have enhanced speed and high maneuverability when flying in cluttered environments. It listens for cues (low frequency sounds) given off by prey, specifically tungara frogs. It flies down and grasps its prey off the ground (Fig. 4) or off the surface of water, and the prey is usually taken to a nearby perch and eaten (Fig. 5) (Page, 2008). Individual *T. cirrhosus* have unique associations with one another and this permits social learning. Inexperienced bats learn socially by observing an experienced bat distinguish the calls of a poisonous toad to that of a palatable one. This strategy has expanded the foraging repertoire of the species and contributed to its hunting success (Page and Ryan, 2005).

POPULATION ECOLOGY. The colonies of *T. cirrhosus* are small (less than six individuals of both sexes) however, there is evidence that suggests that this bat roosts in groups of up to 50 individuals and sometimes shares its roost with other bat species such as *Desmodus rotundus*, *Diphylla ecaudata* and *Tonatia brasiliense* (Cramer et al., 2001).

REPRODUCTION. The breeding season of this bat is directly related to the seasonality of fruit production. The fringe-lipped bat mates during the dry season period in the tropics (January-June) (Cramer et al., 2001). This bat shows bimodal polyoestry, which involves a restricted breeding season, where a female can have two pregnancies within a breeding season and give birth to a single offspring per litter. Females and their young form maternity colonies, which is a sub area

of the larger colony. The pup remains with its mother for a long period of time (Cramer et al., 2001).

BEHAVIOUR. The young bat (pup) will drink milk from its mother's body because their wings are not fully developed when they are born therefore they are unable to forage for food on their own. While being cared for, the young bats will cling to a nipple of their mother to feed and receive warmth. When the mother forages for food on late evenings, the young pups will hang from the nursery. This bat is sometimes preyed upon by the grey opossum (*Metachirops opossum*) (Cramer et al., 2001).

APPLIED ECOLOGY. *T. cirrhosus* occurs in a number of protected areas throughout its range. With its current high population and lack of threats, the fringe-lipped bat is listed as stable and appears on IUCN Red List with a conservation status of "Least Concern" (IUCN, 2014).

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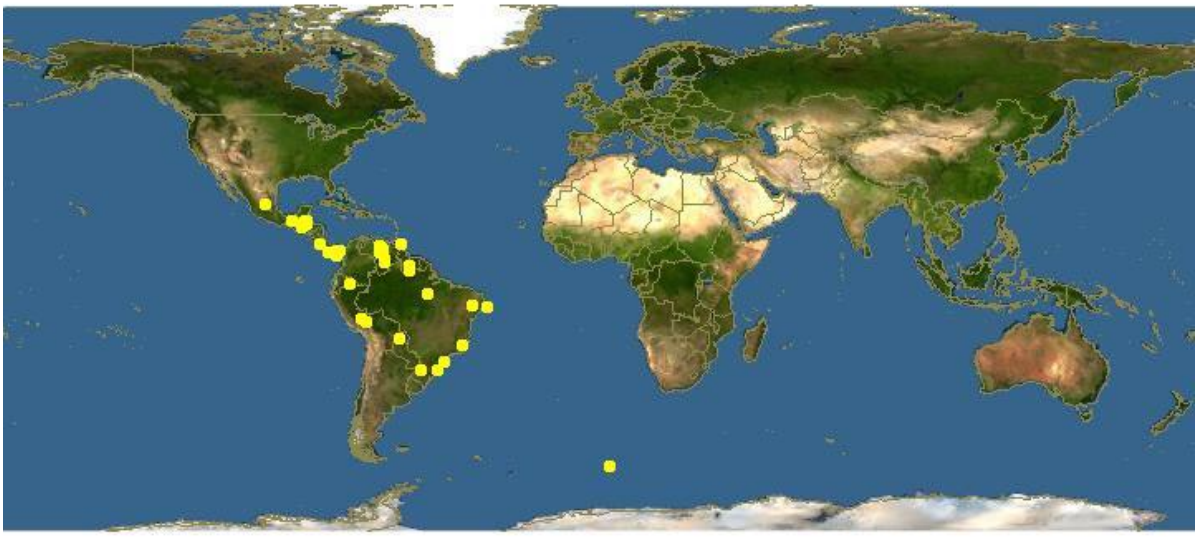

Fig. 2. Geographic distribution of fringe-lipped bat.

[http://eol.org/pages/327406/overview, downloaded 22 March 2015]

Fig. 3. Fringe-lipped bats roosting in hollow tree trunk.

[https://www.superstock.com/search/Fringe-lipped%20bat%20%28Trachops%20cirrhosus%29#id=13250729, downloaded 22 March 2015]

Fig. 4. Fringe-lipped bat attacking a frog.

[https://www.superstock.com/search/Fringe-lipped%20bat%20%28Trachops%20cirrhosus%29#id=13249001, downloaded 24 March 2015]

Fig. 5. *Trachops cirrhosus* feeding on a frog.

[https://www.superstock.com/search/Fringe-lipped%20bat%20%28Trachops%20cirrhosus%29#id=13249001 downloaded 23 March 2015]

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