



WISSENSCHAFTLICHE KURZMITTEILUNGEN

Free-ranging Vampire bats (*Desmodus rotundus*, Phyllostomidae) survive 15 years in the wild

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While there is considerable information on the life-span of bats of temperate zones, few data have been published about the life-span of tropical bats (see review by TUTTLE and STEVENSON 1982). The Phyllostomidae or American leaf nosed bats of the Neotropics are in general much less extensively studied, their habitats are less accessible and they do not have periodic seasonal inactivity, which facilitates collection of survival data for temperate zone bats (DAVIS and HITCHCOCK 1995). Reports exist only for some well-studied locations and a few abundant species. For example, *Artibeus jamaicensis* have been studied extensively on Barro Colorado Island in Panama. One animal was reported reaching 7 years (WILSON and TYSON 1970) while two others were at least nine years old (GARDNER et al. 1991).

Vampire bats (*Desmodus rotundus*: Phyllostomidae) have been studied longer than most the other neotropical bat species because of their potential economic impact. During his studies on social behavior in *Desmodus rotundus* one of the authors (GSW) banded over 600 vampire bats at various places in Costa Rica, primarily in Guanacaste province, but also in Atlantic rainforest at the La Selva Biological Station.

On November 21st, 1994 MT caught a female *Desmodus rotundus* carrying band no. 507 at the Sendero Cave at Santa Rosa National Park (Guanacaste Province). The animal was pregnant and appeared to be in good condition. This bat was initially banded May 16th, 1980 at precisely the same location by GSW. During a visit to this cave in July 1994, GSW failed to observe any of the more than 300 vampire bats banded there between 1980 and 1982. Subsequent frequent netting in the area between June of 1996 and June of 1997 revealed no more banded vampire bats (M. T. FERNANDEZ, Universidad Nacional de Costa Rica, pers. comm).

A second noteworthy record occurred at La Selva Biological Station (Heredia Province) on January 6th, 1996 when we recaptured another female vampire bat with an orange-green plastic band. This bat had been marked initially by GSW on September 2nd, 1981. Judging from the condition of the nipples this animal was lactating or postlactating. The distance between place of banding and recapture is approximately 2 km. While the animal was first caught at a roost in a big hollow *Dipteryx panamensis* located in primary forest near abandoned plantations, the recapture location is located at the edge of the La Selva property and serves probably as a flyway for animals roosting in old trees to the cattle pastures outside La Selva, as indicated by frequent captures of the species at that

spot. GSW banded 50 vampire bats in 1981 at La Selva, and the reported animal is the first recapture known to us at the rather well-netted field station.

It is noteworthy that both of our recaptures were females. WILKINSON (1985) reported that female vampire bats form roost associations which remain stable over long periods. At the time of first capture, neither female was pregnant or lactating but both had average adult forearm lengths and weights, indicating that they were probably near one year of age when captured. Our observations indicate, therefore, that *Desmodus rotundus* females can remain reproductively active until at least 15 years of age. While there is indirect dental evidence for 18 year old vampire bats (LORD et al. 1976), the animals reported here represent, together with similar aged animals (1♂/2♀) reported by DELPIETRO et al. (1992), at an age of 15 years, the oldest recaptured vampire bats from the wild. Female vampire bats appear, therefore, to be able to live longer than the fruit bat *Artibeus jamaicensis*, which is about the same body size and occurs in similar locations in the New World tropics. While we cannot determine if this difference in life history is due to a difference in diet or behavior, we suspect that the tendency of female vampire bats to share food under duress (WILKINSON 1984) represents an important behavioral adaptation that can increase longevity. In general terms our observations emphasize the remarkable status of bats as small mammals with small offspring-numbers per birth and a comparably long life-span.

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