



Seasonal foraging activity of *Carollia perspicillata* related to distance from the roost

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The behavior of bats is an important topic due to their role in ecosystem stability and seed dispersal. There is a strong relationship between bat movement and environmental resources, namely their roosts. Male bats typically hold a higher degree of fidelity to their roost and try to gain and defend the best position to attract females, who utilize female choice in their mating decisions. Optimal placement indicates fitness and is more appealing to females. *Carollia perspicillata*, a frugivorous species, holds a strong preference for *Piper* (Piperaceae). The objective of this work is to determine the activity pattern of *C. perspicillata*, measured by the likelihood of capture of marked animals during different seasons at set distances from the roost in the Reserva Biológica União (RJ). In União, a roost houses colonies of *C. perspicillata*, which have previously been marked and recorded. The foraging movements were tracked by sampling at set distances from the roost crossing two trails, Trilha Interpretativa and Estrada do Lava Pés. Three nets were set up on each trail at distances 100m, 200m, and 300m from the roost before sundown and remained for approximately four hours. The nets were checked every 20 minutes, captured bats were placed in individual bags, measured, and then released. Data was analyzed using generalized linear models and the R-software. A total of 308 individuals were captured between April 2016 and April 2018: 151 males and 157 females. Out of the total captured, 119 individuals were captured during the rainy season and 189 during the dry season. During the dry season, there is a smaller probability of capturing marked individuals due to a decrease in food availability, causing the bats to travel longer distances, not returning to the roost for several months. The selected model for analysis included distance, sex and season. Data indicated that males had the higher probability of being captured at all distances and in all seasons, even though the ratio of males in the colony was smaller. The data suggests an overall preference for foraging in areas closer to the roost. More sampling has to be completed to support these findings to understand the importance of other factors, such as age, reproduction, and body condition, on roost fidelity.

Key Words: Foraging, Bat, Fidelity.

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