Project Update: April 2019

Bat sampling occurred in 10 forest fragments (Figure 1) instead of 12 fragments as initially proposed. This occurred because some areas were located within farms and we were not able to get permission to work in two farms and to access the forest fragments. Thus, the project occurred in 10 forest fragments and, despite several difficulties, such as bad roads and heavy rains during the fieldwork, we were able to perform the fieldwork as planned. Thus, four fieldwork in each of the 10 areas (two in the dry season and two in rainy season). We highlighted that this reduction in two sampling sites did not affected the landscape analysis and statistical tests. The methodology was as planned and the for bat sampling 10 mist nets per night (12 x 2.5 m) were arranged with lowest stem about 20-30 cm from the ground (Figure 2).

All 10 landscapes have been mapped and the landscape metrics have already been calculated. In order to choose the landscape metrics, we considered the biological characteristics of the bats and decided to use the edge perimeter, the shape of the fragment, percentage of the forest, and diversity of classes in the landscape. 793 bat individuals were netted and they belong to 22 species and three families. As expected, the most abundant family was Phyllostomidae (N = 780) (Figure 3), followed by Vespertillionidae (N = 12), and Molossidae (N = 1). Regards the diet, 11 bat species presented a consumption of 32 species or morphospecies of fruits distributed in eight genera and eight families. However, the last fieldwork will be performed in order to collect fruits for comparison with fecal samples in order to improve the plant identification until the lowest taxonomic level as possible. A total of 1319 individuals of ectoparasites were collected and they are distributed in the families of bat-fly Streblidae (N = 790) and Nycteribiidae (N = 5), as well as Polyctenidae (N = 1), and mites (N = 523).

The next steps of work will be to make the final field work to collect plants with the objective of assembling a collection of seeds to facilitate the identification of the seeds obtained from the feces of the bats. We are also initiating statistical analyses to assess whether patterns of interactions are influenced by the landscape. Our objective is to publish two scientific articles (with high impact) related to this project until early 2020, in addition to scientific abstracts published in congresses. The data will partially reported in X Brazilian Mammal Meeting in September 2019.



Figure 1: Location map of the area where the fieldwork occurred and the red dots are the sites where the mist nets were arranged.



Figure 2: The photo on the right shows the mist net arranged on the edge of a forest fragment with sugarcane plantation composing the matrix. The photo on left shows the mist nets arranged inside the fragment.



Figure 3: The photo on right showing a *Sturnira lilium* netted. The photo on left shows an *Artibeus lituratus* consuming a fruit of the genus *Ficus* sp. Note the marking ring in the forearm of A. *lituratus*. Both bats belong to the Phyllostomidae family.