

BATS

NECTAR-FEEDING BATS: HABITAT AND
RESOURCE LIMITATIONS IN A SEASONAL
TROPICAL DRY FOREST OF BRAZIL AND
INPUTS FOR THEIR CONSERVATION

ID:24057-1

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PLANTS

FIELD WORK

BAT SAMPLING



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BAT SAMPLING IS COMING TO AN END

I have sampled a total of 43 nights from March to December 2018. According to my project, the sampling sites included the municipalities of Lajes, Cerro Corá, Felipe Guerra, Martins, Caiçara do Norte and Serra do Mel. However, for logistic reasons, it was not possible to collect data in Cerro Corá, Caiçara and Serra do Mel. Nonetheless, other municipalities were included, Mossoró and Caraubas. In addition, captures were made in the three conservation units that were previously stipulated.

*The four habitat types (arboreal Caatinga, shrubby Caatinga, riparian Caatinga and outcrops) were sampled. Further, I added three extra types of habitats to my sampling. "Brejo": areas above 500 meters of altitude. Due to the altitude they create all the necessary conditions for the development of a flora that brings together both characteristics of the Atlantic forest and the Caatinga. "Carnaubal": areas dominated by the species of palm tree *Copernicia prunifera*. These areas are abundant in some regions of the Caatinga. Bats have been found roosting in their leaves and feeding from their fruits. "Anthropized": areas with different crops (papaya, banana, corn, etc) located in rural regions immersed in the Caatinga. Finally, I included the exploration of nine caves in search of colonies of nectarivorous bats. I will capture bats one more time at some of these sites in February when the rainy season starts again.*

Glossophaga soricina



Lonchophylla inexpectata



Lonchophylla mordax



Xeronycteris vieirai



Anoura geoffroyi



NECTAR- FEEDING BATS OF CAATINGA

JUST STARTING

So far I have conducted two education workshops mainly with adults. I made a presentation about generalities of bats (anatomy, diet, roosts, diversity, threats, etc) and presented the results of my research. On both occasions, there was also considerable amount of time for dialogue and clarification of doubts and myths. I only applied the Pre-workshop knowledge questionnaire.

The workshops with children will be held during the first semester of next year.

EDUCATION



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CONSERVATION



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IMPORTANT AREA FOR THE CONSERVATION OF ENDEMIC NECTARIVORES IN CAATINGA WAS DETECTED

Lajes, specifically near the Sierra do Feiticeiro, is where we have found the greatest diversity of nectarivorous bats. It is the only place where we have captured the five species of nectarivorous bats coexisting, and the only place where we captured individuals of the two endemic species. Additionally, the only documented roosts of *Xeronycteris vieirai* is located in Lajes on a private ranch called Fazenda Santo Antonio. Lajes will be suggested as AICOM and the Fazenda Santo Antonio as a SICOM.

ACCORDING TO EACH OBJECTIVE

MONITORING SUMMARY

(1) DETERMINE WHICH MECHANISMS RELATED TO FOOD RESOURCES ALLOW THE COEXISTENCE OF NECTAR-FEEDING BATS TAKING INTO ACCOUNT MORPHOLOGICAL DIFFERENCES.

-Number of captured bats with wing and snout measurements: 147 adult individuals of 5 nectar-feeding bat species.

-Data on activity patterns for each species: 157 individuals of 5 nectar-feeding bat species.

(2) IDENTIFY THE KEY FOOD ITEMS FOR THE MAINTENANCE OF NECTAR-FEEDING BAT COMMUNITY CONSIDERING SPATIAL AND TEMPORAL VARIATIONS SUCH AS PRECIPITATION AND VEGETATION COMPOSITION

-Number of pollen and feces samples: 148 pollen samples none have been analyzed yet. 111 feces samples, of which I have already analyzed 99 samples.

-List of diet items for each species of bat: In the fecal samples I have identified at least 13 species of plants, in addition, 88% of the samples have insect remains.

-List of key species of plants in the diet of nectar-feeding bats: Not yet.

-Characterization of the habitats preferred by species of bats, list of plants present in the different habitats: Not yet.

-Construction of models based on landscape variables in each sampling site that will help to explain the presence/absence of the species: Not yet.

(3) GENERATE INPUTS THAT CAN FACILITATE THE CATEGORIZATION OF THE THREAT LEVEL OF THE TWO ENDEMIC SPECIES

*-Number of individuals of each species captured with data on the time they were captured (activity pattern) and reproductive status: we have captured 23 individuals of *Lonchophylla inexpectata* and 29 individuals of *Xeronycteris vieirai*.*

-Increase in the number of records for both species: Both species were captured only in shrubby and riparian Caatinga in the municipality of Lajes.

(4) DEFINE IMPORTANT AREAS OR SITES FOR THE CONSERVATION OF BATS

- Location of areas containing species of national or regional conservation concern (Criterion 1, RELCOM): So far none was defined.
- Location of roosts with colonies of different species (Criterion 2, RELCOM): One small cave with a colony of at least 25 individuals of *Xeronycteris vieirai* has been found. No roost of *L. inexpectata* has been found.
- Location of areas containing high species richness regardless of their threat level (Criterion 3, RELCOM): The municipality of Lajes is the only region where we have found the 5 nectar-feeding bat species coexisting.

(5) PROMOTE THE CONSERVATION OF BATS THROUGH EDUCATIONAL WORKSHOPS IN THE COMMUNITIES WHERE THE FIELD COLLECTIONS WILL BE CARRIED OUT

- Number of workshops and number of people participating in workshops: 2 workshops, with a total of 85 participants.
- Measure effectiveness (qualitatively and quantitatively) of the workshops through the results of pre and post workshop evaluations: 69 questionnaires answered
- Number of distributed bat posters: Not yet.

DIFFICULTIES

There have been some problems with conducting the evaluations during the workshops due to a recent change in the research policies of the ethics committee. I am analyzing two options for the development of the workshops. One option is to insert my workshops within the environmental education program of the IDEMA (State Institute of the Defense of the Environment). I already talked with one of IDEMA's officials and she was very interested in my education project and agreed that my project meet with the institution interests. They are working in many of the locations I intended to develop the workshops. In January I will have a meeting with the director to present my workshop ideas. This is the ideal option since I could take advantage of IDEMA's logistics, contacts with schools and their research license with humans. My second option is to carry out the workshops in the defined communities but unfortunately I would not be able to apply the evaluation questionnaires.

BUDGET

DESCRIPTION	ITEM COST £	EXTERNAL AMOUNT £	RUFFORD AMOUNT £	RUFFORD SPENDED AMOUNT £
PhD scholarship CAPES	6,500	6,500	0	0
Natal-Bahia round-trip ticket for pollen identification	120	0	120	0
Materials for Education Workshops	310	0	310	10
Batteries AA and AAA	380	330	50	40
Microscope blade and coverslips	15	15	0	0
Microtubes	62	62	0	0
Calipers	17	17	0	0
Pesola scales	573	573	0	0
Ropes	100	100	0	0
Cloth bags	490	490	0	0
Mist nets poles	1,270	1,270	0	0
Mist nets	1,350	1,350	0	0
Local guide and field assistant	5,518	4,104	1,414	844.09
Transport (Car rental, fuel, bus)	5,058	3,762	1,296	682
Meals	2,810	2,090	720	496
Lodging	3,091	2,001	1,090	641
TOTAL	27,664	22,664	5,000	2,649

There has been no problem with the use of resources, they have been used as agreed. I plan to finish my field collections in mid-March. The purchase of the airplane ticket to Bahia for the identification of the pollen will be made when the field work is finished and all the samples are ready to be analyzed, probably in April. My plan is to start with the environmental education workshops in March.



CARNAUBAL, NEW TYPE OF HABITAT INCLUDED

EDUCATION WORKSHOP AT THE COMMUNITY OF V. NOVA I, IN BARAÚNA



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CAPTURE NIGHT WITH THE ZOOSES CONTROL CENTER COURSE



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COURSE AT THE ZOOSES CONTROL CENTER



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PLANT PHENOLOGY

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BAT MEASUREMENTS

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BAT SAMPLES

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BAT RELEASE

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