

## Final Evaluation Report

---

Your Details	
<b>Full Name</b>	Atagana Patrick Jules
<b>Project Title</b>	Bat community response to forest loss and habitat conversion in southern Cameroon
<b>Application ID</b>	29213-2
<b>Grant Amount</b>	5999
<b>Email Address</b>	apatrickjules@yahoo.fr
<b>Date of this Report</b>	March 2021

**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Provide a species summary of the bat fauna found using different habitats in Southern Cameroon which can be compared to the distribution patterns of bats found in the north of the country				In spite the fact that the sampling effort was not 100% in different habitats, we have collected more data for 2 years.
Determine bats roosting and foraging habitats in Cameroon				During those 2 years, we found several bats roosting in the Dja Biosphere Reserve as well as in trees, caves and houses.
Analyse changes in species abundance and distribution across a land-use gradient in southern Cameroon				We observed that species abundance differs following a negative degradation gradient with a higher number of individuals in human habitation following by agricultural clearing, primary forest and secondary forest.
Predict potential range shifts for the bat species found in southern Cameroon (including past, present and future models)				It appears that the survival of the bat species for the future in the Dja Biosphere Reserve is threatened and conservation measures need to be taken to prevent this from happening.
Produced a series of recommendations' will be handed to the authorities in charge of wildlife protection and will serve as a base for the elaboration of conservation strategies for these species.				To provide a good recommendation, we have to do an ethno-zoological study in order to integrate all the components such as the belief of populations that bats are responsible for Covid-19. Given the large number of villages around the reserve and different ethnicities, 2 years is not enough.

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.**

During the project, the major difficulty was the Covid-19 pandemic which led to a sanitary confinement in the country during March and April 2020. To resolve the difficulty, we spent all the two confinement months in the field. During the end of this project, it was difficult with the local population thinking that bats are responsible for Covid-19.

**3. Briefly describe the three most important outcomes of your project.**

- This study provided an inventory of bats found in the Dja Reserve in Cameroon and identified the effect of anthropogenic change on species distributions.
- The results of this work will be used to establish a long-term monitoring system in order to control and reduce the pressure of local population activities such as deforestation, hunting, forest fragmentation and intensive agriculture that highly contribute to destroying forest landscapes.
- This study also provided baseline data on other research on environmental conservation in Cameroon rainforests and protected areas. The results can be used by local authorities in charge of the protection of forest resources in Cameroon to initiate and sensitise local populations about the beneficial effect of conservation of natural ecosystems and to promote the regeneration of destroyed forests.
- Roost sites such as caves and trees were mapped out using a GPS. Knowledge of these sites can enable authorities to better protect them against human activities.

**4. What do you consider to be the most significant achievement of this work?**

Awareness campaigns were carried at 20 villages near capture sites. Campaigns consisted of explaining to local populations the morphology, physiology and ecological importance of bats using a living specimen. At the end of the explanation, populations were allowed to ask questions in order to be clarified on any doubts. We also take time to explain them that bats are not responsible for Covid-19.

**5. Briefly describe the involvement of local communities and how they have benefited from the project.**

**6. Are there any plans to continue this work?**

Yes, there are plans to continue this work; the past 2 years were for the first part of my PhD project. The second part of this PhD project is an ethno-zoological study around the Dja Biosphere Reserve. This is necessary to understand the perception of local populations about bats before providing recommendations for a good conservation of bats and their interaction with human.

**7. How do you plan to share the results of your work with others?**

Concerning this project, I am in collaboration with the Ministry of Forestry and Wildlife as well the Ministry of Scientific Research and innovation who both provided me research authorisations. These collaborations imply that I have to make reports which will be submitted to these ministries. Oral presentations are also to be made to the authorities of these ministries. The aim of these presentations is the implementation of measures for the conservation of these animals. The results of this project will also be orally presented to scientific committees from different institutions of the country as well as at the international level when possible. Until now I have submitted a paper to a peer review journal "Tropical Conservation Science" entitled "Responses of bat communities (Mammalia: Chiroptera) to forest loss and habitat conversion in southern Cameroon" which has been accepted.

**8. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?**

This grant was used over a period of 12 months as initially proposed.

**9. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
maps, repairs & first aid kit	268	268		
01-Camera + batteries+ accessories (Pentax 70)	540	540		
Mist-nets 12m with 5 Shelves	865	865		
Transportation of four persons at the cost of £4 per person for 84 days.	1344	1344		
Per diems for three guides at the cost of £6.5 per guide for 84 days	1638	1638		
Accommodation and feeding for four persons at cost of £4 per person for 84 days.	1344	1344		
<b>TOTAL</b>	<b>5999</b>	<b>5999</b>		

**10. Looking ahead, what do you feel are the important next steps?**

I think the next step is to apply for another grant to do ethno-zoological study and large awareness raising campaigns on bats conservation at all villages around the Dja Biosphere Reserve. Accent must be put on awareness about bats and Covid-19 and bat habitat destruction. During this project we found some bats habitats

previously identified destroyed by fire by Baka ethnic group (because they eat bats).

**11. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

Yes, I presented part of my work at the scientific days and doctoral seminars of the faculty of sciences of the University of Maroua. I have also acknowledged Rufford during my presentation at 13th African Small Mammals Symposium in Ethiopia (oral presentation title: Diversity pattern of bats in four habitat types in the Dja Biosphere Reserve, south Cameroon). As part of acknowledgements, I used the Rufford logo and vocally thanked Rufford for being a major funder of my project. I will also acknowledge Rufford at futures conferences that I plan to attend.

**12. Please provide a full list of all the members of your team and briefly what was their role in the project.**

**Dr. Bakwo fils E., M:** Supervision of the project

**Dr. Aaron Manga:** Identification of bat species

**Meyo Okono Franck:** Master Student, field assistance

**Ava'a Yves:** Ecoguard, transportation of field equipment and security

**Anyouzoua Luc:** Ecoguard, transportation of field equipment and security

**Dibrilla:** Ecoguard: transportation of field equipment and security

**Eyebe Jonathan:** Ecoguard, transportation of field equipment and security

**Engo:** Guide, transportation of field equipment

**Mantan Emmanuelle:** Guide, transportation of field equipment

**Mekebe:** Guide, transportation of field equipment

**Lonkeng Tido Christian:** Ecoguard, transportation of field equipment

**Abosso Christian:** guide, and transportation of others logistics.

**13. Any other comments?**

It is important to conserve bats and to let the local population know about their ecological and economic importance. This is a crucial step in the process of cohabitation between humans and bats.