

The Rufford Foundation Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Fezile Mtsetfwa
Project title	Assessing the impacts of commercial agriculture on insectivorous bats in Swaziland
RSG reference	15483-1
Reporting period	1 year
Amount of grant	£ 5,657
Your email address	mtsetfwafezile@gmail.com
Date of this report	May 2015

1. Please 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
Record echolocation calls across various points in a savanna habitat and adjacent sugarcane plantations			×	Echolocation calls were successfully recorded on 12 grids (each grid with nine points). Six grids in each habitat.
Identify calls to species level using an automated call library developed in-situ.			×	The majority of species could be identified by the automated call library. However, a few species could not be completely separated using their frequency/time parameters on AnaLook and were therefore presented as species pairs.
Assign calls to foraging groups; open-air foragers, edge foragers, and clutter foragers.			×	All clear call sequences were successfully identified to a foraging group. Over 60% of the total calls recorded were open-air foragers.
Determine how habitat change influences bat activity, species composition and foraging groups			×	The research gathered that sugarcane plantations promoted high bat activity dominated by open-air foragers (Molossidae), whereas savannas had much lower activity with much more variation in species composition in summer and winter.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

There was nothing that majorly affected the project but I sometimes got delays due to equipment malfunction. I was however able to get replacements with the help of Dr McCleery. I also hadn't anticipated that I would actually need an assistant the whole time I did the surveys, but thanks to All Out Africa organisation, their camp almost always had volunteers that helped or at least staff to help student researchers meet their deadlines.

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

The three most important outcomes of this project were:

- I have successfully completed my MSc thesis, thanks to the Rufford grant.
- I have shown that a certain group of bats heavily utilize agricultural landscapes in Swaziland, but that the diversity of species is greatly in natural savanna habitats.
- I have visited several schools (see below for further details) where I gave talks on the ecological roles of bats and bat conservation. Furthermore, a bat house was installed at Shewula High School with the help of the students. Through this project I have been able to educate school-going children of various age groups (4-18 yrs) on bat conservation and hopefully got some of them interested in bats and bat conservation or just wildlife conservation in general.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

I visited three schools around my study area where I educated students within the age ranges 4-18 yrs on the ecological importance of bats. The bat house built at one of the schools, I believe will serve as a monumental reminder of the visit there. I will be going back to the school in at least 6 months to see if the bat house has been occupied and hopefully have something new I can share with the students.

5. Are there any plans to continue this work?

Yes, I plan to continue this work at a PhD level building from the work already achieved. I think that research on the importance of bats in agriculture will help promote awareness and bat conservation. I have received preliminary funding to start a PhD programme (Interdisciplinary Ecology), University of Florida, in August 2015. The subject of my thesis will almost certainly involve bat ecology across an agricultural landscape.

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

During the course of my fieldwork, I visited three schools: Thembelisha Pre-preparatory school, Lusoti and Shewula High Schools, which are close to my study area, where I gave talks on the ecological functions of bats and bat conservation. I sent a copy of my research report to RSSC which is the main sugarcane growing company in Swaziland and where I carried out part of my work. I am also looking to send a copy to Better Sugar Initiative (Bonsucro).

A scientific paper will be written on the findings of this research. My collaborators and I have just submitted a paper 'Bush encroachment influences savanna bat activity' to Acta Chiropterologica which will help introduce the work done in this particular research. I am also in the process of preparing my thesis for submission to a high impact journal.

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

The grant was used over the period of a year. Although there were occasional time delays for various reasons (weather, equipment malfunction), the project was still finished within the anticipated time.

8. Budget: Please 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.

Exchange rate used £1: R17.81

Item	Budgeted Amount	Actual Amount	Difference	Comments
Research camp charges	£ 915	£ 1,020	-£105	I stayed more days than anticipated at camp due to equipment malfunction.
Batteries for 9 Anabats	£1,290	£ 1,100	+£190	The new Anabat detectors require less batteries than the old Anabats that I was familiar with
Anabats	£2,680	£6,400	-£3,720	Upon receiving the grant, I bought 4 Anabat Express detectors which are superior to the old Anabat II detectors and half the price. My collaborators (Prof A. Monadjem-UNISWA, Dr A. R. McCleery-University of Florida) supplied a further six Anabat Express detectors for me to use on this project.
CF card and card	£47	£47	0	
Anabat stands	£51	£51	0	
Transport	£675.00	£800.00	+£125.00	I had to travel back from the field to the University of Swaziland more times than anticipated
Total	£5657	£9,419	-£3,510	This difference has been brought about by the extra Anabats which were donated Dr McCleery, University of Florida (see above). Excluding this, the total amount spent is £ 5,699, which reflects an overspending of £42. This was covered by my supervisor Prof Ara Monadjem.

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

For this project, I think it is crucial to try and distribute the information to all affected parties, especially the sugarcane growing companies. I think any research that could express the ecological role of bats in monetary terms could be important in such cases. I also feel that the development of bat conservation strategies that will conserve bat diversity in such a savanna/agriculture matrix is long overdue and needs to be prepared.

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

The Rufford logo was displayed in all my presentations linked to this particular study and the Rufford foundation was always acknowledged.

11. Any other comments?

I would like to express my gratitude to the Rufford foundation for helping me complete this project and thereby complete my MSc degree. I would also like to acknowledge the support of the following people, institutions and organisations. I am very grateful to my supervisor Prof Ara Monadjem who worked hard to find funding to enroll me for this programme in the first place, for his advice throughout the entire project and exposing me to the many opportunities that help advance me as a person and my career. I greatly appreciate Dr McCleery for providing working equipment and subsidizing my fieldwork expenses, Bat Conservation International (BCI) for further financial support, All Out Africa Foundation and Savanna Research Camp for making fieldwork possible, especially the following people; Phumlile Simelane, Mduduzi Ngwenya and Muzi Sbiya for helping with fieldwork and finally the Biology department of UNISWA.