

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	Tlaishego Tedson Nkoana
Project title	Temporal changes in food resource availability of two karst landscape bat assemblages
RSG reference	20992-1
Reporting period	2017-2018
Amount of grant	4922
Your email address	Tedson.nkoana@africanbats.org
Date of this report	June 2018

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
Compare food resource availability between Meletse and Cradle of Humankind World Heritage Site study areas				Only 3 months of data was compared for this. This meant that a smaller sample of data could be compared for analysis but it was still adequate enough to run analysis.
Comparison of insect and bat abundance between open, edge and closed vegetation structures.				Only data collected from Meletse was used in this analysis due to a smaller data sample (size) collected from CoHWHS

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

The initial submission of my project proposal to the university took longer than expected which caused the delay of my fieldwork commencement by 6 months. In response to this delay, I scaled down my fieldwork duration to 9 months rather than the initially planned 12 months. The full 9 months (June 2017 - February 2018) of fieldwork was undertaken at Meletse whilst only 3 months of work was done at Cradle of Humankind World Heritage Site (CoHWHS). The shorter duration of fieldwork at CoHWHS was due to limited access to the area as per agreement with the property manager. In addition, data collection at CoHWHS was only undertaken in September, November and January (wet season) due to access arrangements with the property manager. Overall, scaling down fieldwork had a bigger impact on the data collected from CoHWHS as I was only able to collect data encompassing the wet season only as opposed to Meletse where I collected dry to wet season data. My site comparison analysis (Meletse vs CoHWHS) was therefore limited to wet season only.

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

My study will contribute to better understanding of temporal predator/prey activity dynamics within habitats.

I plan to publish my work as a thesis to the public and as an article in a scientific journal.

I also plan to present my work at the annual South African Wildlife Management (SAWMA) conference later in September, 2018 where I will emphasise the

importance of long term monitoring of predators and prey species activity patterns to better understand how they relate together.

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

I gave a talk students from multiple high schools at Ditsong National Museum of Natural History as part of National Science week in September 2017. I volunteered to take part in this talk as it is an important aspect of my personal goals to increase awareness to the public about ecology.

5. Are there any plans to continue this work?

I plan to pursue a PhD where I will further analyse and compare the vegetation of the habitats, faecal pellets of occurring bat species, and insects using isotope analysis. The aim of this will be to trace food source origin within habitats to possibly answer questions of feeding ranges, patch preference, and other unanswered questions. Samples have already been collected and are awaiting analysis.

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

I plan to present my work at the South Africa Wildlife management Conference in September, 2018.

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

It was used over a period of 9 months rather than the initially proposed 12 months.

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. (1£=16ZAR) as used in the original budget

Item	Budgeted Amount	Actual Amount	Difference	Comments
(1)Vehicle rental and (2)Rental vehicle usage (1722+1574)	3296	1986	1310	The first budget was based on costs of using a University of Pretoria hired vehicle for these trips. Instead, a private vehicle was initially hired to carry equipment to Meletse for the first five months of fieldwork due cheaper costs. For the Meletse site, another field based vehicle was available for usage. After the

				Meletse field based vehicle broke down, a university vehicle was then used to carry out trips for the rest of fieldwork
Toll gate costs	185	185	0	
SWIFT fee	13	13	0	
Petrol cost for vehicle based at Meletse	49	406	357	On the original budget, fuel costs were only allocated for two months of fieldwork. As fieldwork took longer than that, it was decided to shift funds towards petrol costs for all trips to get the project running for the rest of the fieldwork. This did not affect other costs of the project
Digital Calliper	80	45	35	Clock dial callipers (cheaper) were instead purchased as they are more convenient for field use. They do not require battery to operate as opposed to digital callipers. Batteries for the digital calliper are also expensive making it dear to maintain.
Pesola scale	95	130		A more expensive digital scale was purchased. Although it uses a battery, it is more versatile as it can weigh up to 3kg as opposed to non-digital weights that can only measure up to 50g. Batteries for the scale are easily available and cheaper.
Land and Air intercept (LAI) insect traps	884	884	0	
Malaise trap bottom collectors	320	320	0	

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

I think the next step is to apply for another grant to fund lab analysis of all the isotope samples I collected during this project.

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?

Yes I presented part of my work at a presentation hosted by AfricanBats NPC in collaboration with University of Pretoria (Centre for Wildlife Management and Centre for Viral Zoonosis) last year (2017). As part of my acknowledgements, I used the Rufford logo and also vocally thanked Rufford for being a major funder and

supporter of my project. I will also acknowledge Rufford at the SAWMA conference that I plan to attend and present at in September, 2018.

11. Any other comments?

My project titles changed from 'Seasonal changes in two karst landscape bat communities in relation to food availability and abundance' to 'Temporal changes in food resource availability of two karst landscape bat assemblages' as this was more appropriate and specific to my project.



Left: One of the highlights every evening was seeing this beautiful sunset at Meletse. ©M. Shanahan. Right: Myself getting ready for a night of mist netting at the CradleFarm, situated within Cradle of Humankind World Heritage Site. ©M. Shanahan.



Left: A *Myotis tricolor* ready for release. ©T. Nkoana. Right: *Neoromicia capensis* caught using a mist net at Meletse (Limpopo Province, South Africa). This individual was measured and released back into the wild. ©M. Shanahan.