

## The Rufford Foundation Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Lina Mushabati
<b>Project title</b>	Assessment of water pollution levels and its effect on bat species richness in the Kunene region, Namibia
<b>RSG reference</b>	21393-1
<b>Reporting period</b>	January 2017-January 2018
<b>Amount of grant</b>	£4995
<b>Your email address</b>	mushabatilina@gmail.com
<b>Date of this report</b>	30th January 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
Assess the quality of water at 12 springs and boreholes in the Kunene region.				Water quality was analysed for contaminants as polluted water is being recognized as one of the greatest wildlife concerns.
Identify bat species and seasonal variation of bat activity in the Kunene region				Bat species were identified and seasonal variation of bat activity recorded.
Develop a call library of bat echolocation calls to facilitate future acoustic studies and monitoring.				Call library is still being developed
To raise awareness for bats and to educate on their ecological importance , biodiversity and conservation				Questionnaires showed positive responses and interest from land owners and the general public on the importance of bats and the need to conserve them

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

Bat detectors were damaged by baboons and lions which caused a loss in data. An extra field trip was added to get enough data for the project. Detectors were also better placed to prevent further damage from animals.

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

- Assessed the quality of water at 12 springs and boreholes used by bats in the Kunene region, as poor water quality can affect the health of bats.
- Assessed seasonal variation in bat activity and distribution in the Kunene region. This baseline information will help in monitoring bats in the region and other future studies.
- The locals are more aware of bats and their importance in the ecosystem which will help conservation, as they are willing to take part in conservation activities.

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

Through education sessions and consultations, the landowners and general public have become more aware of the importance of bats and the water sites bats use.

I gave talks about the project to tourists and guides at the Hoanib Skeleton coast camp, which was one of the study sites.

A conservation seminar will be held in March 2018 aimed at educating and empowering learners and students to get involved in protecting threatened species. There will be presentations from conservationists and scientists involved in the conservation efforts of Namibia's endangered animals.

Through the activities of this project, bats species found in the Kunene region and their monthly activities were identified, which will provide basic information to future research activities.

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

I am intending to do my PhD and do more research for my thesis on Namibian bats, expanding the research to other parts of Namibia where bats are unstudied.

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

I have presented the work at two conferences, The Entomological and Zoological Societies of Southern Africa Conference, South Africa and Rufford Foundation Conference, Windhoek, Namibia. I will present the final results at the University of Namibia, Windhoek in April 2018.

The final results will be made available to the land owners, where research was carried out and the local representatives of the Ministry of Environment and Tourism based in the Kunene Region. Finally the results will be published in a scientific 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 funds were used between February 2017 and September 2017, which was a total period of 8 months.

- A bit longer than the expected period of 7 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.**

**Notes to Budget 1 UK Pound Sterling = 17.7746 (N\$)**

Item	Budgeted Amount	Actual Amount	Difference	Comments
1X GPS	150	150	0	
1X Camera	500	500	0	
Fuel for transport	705	805	-100	Fuel expenses were higher than expected as an additional trip was added to have 7 months' worth of data
Food for 3 people for 7 trips	700	800	-100	Food expenses were higher than expected as an additional trip was added to have 7 months' worth of data
3X Headlamps with red light and rechargeable batteries for each headlamp.	100	100	0	
Water analysis for 12 sites, two times	800	800	0	
Portable hard-drive 2TB (2 items)	150	150	0	
3X Energizer Universal Battery Charger	100	100	0	
10X SDHC/SDXC flash card slots (Class 4 or greater) (10 items)	150	150	0	
Hiring venue for two education sessions	150	150	0	
Printing and stationery	100	100	0	
Refreshments for participants	100	140	-40	Refreshments costed more as more participants attended educational sessions
D-size alkaline rechargeable batteries	190	350	-160	Rechargeable batteries used in the bat detectors weren't lasting for a week as expected, so unreachabe batteries had to be used as it was only possible to change batteries once a week
Camping fees (for 3 persons for 12 days/ 7 trips	600	300	-300	Accommodation expenses were less than expected, as at most camps I did not pay accommodation. Difference was used to pay for fuel and food
2X Canvas tents	500	400	100	Managed to get tents at a cheaper price
<b>Total</b>	<b>4995</b>	<b>4995</b>	<b>0</b>	

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

- i) Pursue a PhD programme, working on small mammals in Namibia.

- ii) Continue to raise awareness for bats in Namibia and collect distribution records.
- iii) Continue to study possible conservation threats to bats in Namibia.

**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 used the RF logo on a poster presentation at the Entomological and Zoological Societies of Southern Africa Conference, South Africa.

The RF logo was also used in oral presentations at Hoanib Skeleton coast Camp, Namibia and Rufford Foundation Conference held in Windhoek, Namibia. It was used as well on questionnaires.

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

No	Name	Role
1	Lina Mushabati	Logistics, data collection (water sampling, mist netting and setting up bat detectors), presentations, report writing.
2	Theresa Laverty	Assisted with data collection (Mist netting and setting up bat detectors)
3	Archie Gawuseb	Assisted with guiding to the sampling sites and helped monitor for wild animals such as elephants, rhinos and lions while netting

**12. Any other comments?**

I would like to take this opportunity to thank the Rufford Foundation for the financial support provided to the project. Without this support my field work would have not been possible.

More research still needs to be done in other parts of Namibia where bats are unstudied.