

## 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

---

Grant Recipient Details	
<b>Your name</b>	Helen Taylor-Boyd
<b>Project title</b>	Bat Biodiversity, Ecology and Conservation in Zambia
<b>RSG reference</b>	21021-2
<b>Reporting period</b>	February 2017 to January 2018
<b>Amount of grant</b>	£5000
<b>Your email address</b>	batsinzambia@gmail.com
<b>Date of this report</b>	31/01/18

**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
Identify potential feeding, commuting and roosting areas to aid collection of data and to inform future conservation and management strategies				<p>The transect methodology is being used to identify feeding and commuting areas, so going forward this will be included in the aim below as an outcome of the recording methods.</p> <p>Identifying roost sites has been highlighted as a priority going forward to allow collection of larger numbers of droppings (dietary analysis) as well as for future population monitoring. The roost database is continuously being added to and so this aim is ongoing.</p>
To record bat species via acoustic and trapping methods implementing structured survey techniques to allow comparisons between sites				<p>For the 17 farm study sites covered over the duration of the grant, structured bat surveys were carried out using acoustic and trapping methods. This is being used to highlight habitats and landscape features associated with higher bat activity and diversity and to identify feeding and commuting areas. The survey protocol developed will be continued for study sites as the project continues long term.</p>
Undertake insect trapping to compare insect specimens with dropping analysis				<p>For the 17 farm study sites covered over the duration of the grant, structured insect trapping surveys were carried out to identify potential prey insects. The survey protocol developed will be continued for study sites as the project continues long term.</p>
Work with local organisations to initiate awareness campaigns within local communities				<p>Educational establishments and conservation organisations have been targeted to initiate awareness in local communities through delivering presentations</p>

				and 'bat walks'. Developing campaigns already initiated through repeated visits and training of staff will be important next steps.
Build on current and new relationships with local wildlife management, conservation and agricultural organisations, as well as landowners to aid future conservation and awareness activities				Current relationships with organisations and landowners are well established to ensure that the project remains sustainable. Maintaining relationships with collaborators remains an important aspect of the project and building new relationships will continue as our network grows.

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

- a. Weather – The 2016/2017 rainy season was very good, which meant that the torrential rainfall and thunderstorms we experienced did make fieldwork more difficult than expected. Surveys were often postponed due to the weather, reducing the number of sites we could cover. At one point because it was raining heavily every night, we moved on to an area further south with less rainfall. The deep mud also made it difficult to manoeuvre around farms and some survey transects were restricted to more established road networks after several attempts to get to less frequented areas ended in vehicles getting stuck.

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

- a. Training – Several volunteers who received training in bat research and conservation have become very competent and confident and have increased the capacity of the project
- b. Data collection – The structured survey approach combining acoustic and trapping surveys allowed a lot of comparative data to be collected in a relatively short space of time.
- c. Awareness – The project is generating interest from farmers, the general public and schools and awareness of bats is being initiated both actively through talks but also passively within communities where we work. This is essential for conservation action to be successful and collaborations have aided dissemination of information.

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

- a. Local volunteer field assistants – Field assistants have not only received valuable training and experience relating to bats, but they have also developed transferrable skills and received networking opportunities.

- b. Public awareness – Through public and school talks we generate awareness of basic bat biology and ecology, bat species diversity and importance, bat related issues and conservation. They also learn how they are locally useful to human's e.g. insect control, seed dispersal and guano for gardens and how to encourage them e.g. habitat management and roost protection.
- c. Roost visits – Human-bat conflict often occurs when bats roost in human dwellings or outbuildings. Roosts are often destroyed and bats killed, which exposes humans to the possibility of being bitten and transfer of zoonotic disease. Our visits reassure roost owners and encourage people to protect their bats and roosts whilst reducing direct human interaction with bats.
- d. Landowners – The landowners receive reports about the bat surveys we do and receive tailored advice on how to encourage bats so as to take advantage of their benefits e.g. insect pest control for farmers.

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

Yes – this is a long term project which relies on collaborations and volunteers to maintain sustainability. Training of local volunteers has increased the capacity and long term sustainability of the project already, especially in terms of outreach and data collection. The University of Stirling has also transferred me from the MPhil to PhD programme, which will increase academic recognition of the project. Peer reviewed articles using some of the data collected are expected to be written by 2019.

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

- a. Open access records and call database being developed in collaboration with Bats without Borders.
- b. Reports to landowners.
- c. Presentations to the general public, educational establishments, collaborators and at conferences/symposiums.
- d. Articles to the general public and in peer reviewed publications.

#### **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 received in February 2017 when the 2016/2017 field season was well underway. The 2<sup>nd</sup> RSG provided essential funding for 12 months to allow us to finish the 2016/2017 field season, continue outreach activities between field seasons and also to make a good start on the next field season starting in October 2017 as expected. The overall 'Bats in Zambia' project will continue for the foreseeable future.

#### **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.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Equipment	£275	£574	-£299	Some equipment was purchased to replace previously loaned equipment so that it can remain with the project in the long term (e.g. moth trap bulbs) resulting in a higher equipment expenditure
Travel	£2,700	£2,645	£55	The Rufford grant covered the travel budget (although some costs for maintenance and fuel on particular excursions were covered by private donations and are not included here)
Volunteers	£1,600	£1,441	£159	Volunteer costs were kept down by buying local produce where possible e.g. seasonal vegetables sold along the roadside and this came under budget
Licences and Courier Fees	£425	£409	£16	Permit costs were higher than expected but as samples will be exported for analysis in a batch this year there was enough budget to cover this shortfall
<b>TOTAL</b>	£5,000	<b>£5,069</b>	<b>-£69</b>	Exchange rate K11 = £1 was used

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

- a. Roosts – finding more roosts to obtain larger sample sizes of droppings for genetic analysis.
- b. Genetic analysis – genetic confirmation of species and dietary analysis.
- c. Publication in peer reviewed journal to increase academic recognition.

**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 logo and mention of Rufford Foundation support has been publicised in the following ways:

- a. Articles - I have been writing articles for local publications aimed at the general public where the Rufford Foundation has been publicised.
- b. Presentations – Locally we have delivered educational talks at schools, a public talk at Livingstone Museum and a presentation to the Zambian National

Parks and Wildlife Department. I have presented at Bat Conservation Trust regional conferences in the UK, at a symposium on PhD Impact at the University of Stirling, Scotland and in Edinburgh at an IALE (International Association of Landscape Ecology) Workshop. I also attended the first Southern African Bat Conference in Cape Town to present our work and to network with others working in the same field.

- c. Social Media - The Facebook group 'Bats in Zambia', set up to share information and bat records, has been well used and we have 341 members currently. We share links to the Rufford website and our project page. I attended the Rufford Conference in Tanzania to present our work which raised awareness of the Rufford Foundation to social media group followers.

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

Project Co-ordinator - **Helen Taylor-Boyd**

Local volunteer assistants (completed training and gained experience to carry out education and some research activities independently) - **Lameck Nyirenda & Shadreck Phiri**

Local volunteer trainees – **Ackim Nyatula, Sarah Mwanza, Rosalia Mtongo, Maxwell Mvula, Bernard Kangwa, Stephen Banda, Kecious Mwape**

Logistics and vehicle maintenance support – **Daniel Boyd**

PhD project supervisors - **Prof. Kirsty Park and Dr Elisa Fuentes-Montemayor**, University of Stirling

**12. Any other comments?**

Our sincere thanks for the financial support that the 2<sup>nd</sup> RSG has give us, but also for the efficient communication and constructive feedback I always receive from the Rufford Foundation Team.