

**The Rufford Small Grants Foundation**

**Final Report**

Congratulations on the completion of your project that was supported by The Rufford Small Grants 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**

<b>Grant Recipient Details</b>	
<b>Your name</b>	Andimile Martin
<b>Project title</b>	The biodiversity and conservation of Lwafi Game Reserve in the South Western Tanzania.
<b>RSG reference</b>	11702-1
<b>Reporting period</b>	April ,2012 – October, 2013
<b>Amount of grant</b>	£5979
<b>Your email address</b>	<a href="mailto:andimile@gmail.com">andimile@gmail.com</a> / <a href="mailto:andmartin@ucdavis.edu">andmartin@ucdavis.edu</a>
<b>Date of this report</b>	30 <sup>th</sup> September, 2013

**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
To investigate the distribution and abundance of large mammals in Lwafi			✓	This was accomplished by walking 82 transects (each 8 to 12 km in length) in both dry and wet seasons recording animal tracks and signs and using GPS.
To carry out comprehensive vegetation monitoring using satellite imagery		✓		Satellite images have been obtained. Analysis is in progress.
To determine the extent of current illegal extraction of both mammals and timber			✓	Household interviews were carried out in 23 villages surrounding the reserve. Data collected and entry is on progress Timber, charcoal and hunting signs were recorded in the reserve.
To establish realistic and contemporary boundaries.			✓	Using GPS, I marked the on-the-ground boundaries of the reserve with the help of village officials and local people. Maps from the Wildlife Conservation Society, local district authority and the wildlife division of Tanzania are being digitized.
To build awareness and cultivating conservation attitudes to local stakeholders.			✓	Achieved through working with local field assistants on the project and carrying out a systematic series of meetings with officials in charge of the Game Reserve, adjacent protected areas, District and Regional officials.

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

a) Difficult terrain of the Lwafi game reserve. When I drafted a research design for this study I envisioned that the reserves could be accessible everywhere but it was different during the implementation. We had difficulties conducting transects where the reserve has steep slopes. I would say about 30% of the reserve is covered by steep slopes that are not friendly for foot transects. Instead vegetation was estimated from a distance.

b) Village/local area accessibility difficulties. The western side of the reserve borders Lake Tanganyika with a completely absence of roads connecting villages or local communities. Surveys in these villages were very tough and we could not manage to access three villages out of the 23 villages that exist on this side of the reserve. The rest of the villages were accessed by using a motor cycle.

c) Excessive rainfall: The wet season transects were carried out in a year of exceptionally heavy rainfall that led to river flooding (e.g. Tembwa and Lwafi Rivers). Crossing these rivers was difficult: sometimes we had to stop and resume the surveys after water had retreated.

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

- a. We now have a very good understanding of the wildlife species and their distributions in Lwafi game reserve (corridor). We also know the different vegetation types in the area. We can now begin to realistically assess its potential for conservation, write articles for publication along with extending the findings to the local authority, NGOs and reserve/park management authorities.
- b. The project has uncovered most illegal activities in the reserve such as charcoal burning, hunting, grazing and timber extraction in the reserve (see photos attached). The impact has been reported to the Wildlife Division (WD) anti-poaching team once they are found in the area. Arrests of Sukuma pastoralists found in Lwafi game reserve grazing their livestock have been made. The research team itself managed to arrest a truck carrying illegal timber from the reserve and brought it to the Wildlife Division anti-poaching team based at Lyazumbi for further action. Along the same idea we have held meetings with the Rukwa Regional and Nkansi District Natural Resources Officers (RNRO and DNRO), the Lwafi game Reserve manager, the adjacent Katavi National Park Chief Park Warden, the District Game Officer (DGO) and other officials in Rukwa region and Nkansi district to communicate the findings.
- c. The project has improved communication between the local communities and the WD anti-poaching team which is a key for long term conservation of the reserve. This has been achieved through the use of local expert opinion and citizen science (local people) in conducting ecological surveys. The field assistants Mr. Christopher Mpemba and Conrad Mizengo have continued to be key Wildlife Division informers of illegal activities that are happening in the Lwafi. I envisage that the two research assistants will be part of the project legacy as they will continue to sensitise others on how best to ensure the survival of mammals and their habitat in their areas for the benefit of the present and future generations.

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

The project used local experts as field guides. This approach has improved communication between communities and the Wildlife Division anti-poaching teams for a longer term commitments to the Lwafi corridor. Furthermore these local guides are able to record animal signs that could be used for future wildlife monitoring by local people.

Socio-ecological surveys were preceded with some environmental education to community leaders as point of reference. Focused group discussions with community leaders and local natural resource committees were held. The awareness raised their understanding of threats facing Lwafi Game reserve. In addition, most communities now know the borders of the reserve.

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

Yes, in September 2014, after completing my PhD, I will return to home Tanzania. I propose to revisit all the District and National figures whom I have interviewed and to run a workshop in Sumbawanga, the Rukwa Regional Capital, to reinvigorate discussion of Lwafi. My report will form the basis for this stakeholder discussion. In short, this project will be the start of a long term surveillance of wildlife in Lwafi corridor. I plan to return again to the area 5 years later to carry out a sister survey of large mammals to see if the situation has improved. Data on arrests and incidences of poaching will be monitored over time to see if changes are moving in a positive direction.

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

Results will be made available to a wider conservation community and scientists through a well-illustrated report written under the auspices of the Tanzania Wildlife Research Institute (TAWIRI). The report will be submitted to the Director of Wildlife, Director of Tanzania National Parks, and the local administrative offices. The information on the current status of illegal extraction of wildlife and trees will help to formulate nuanced messages that will be used to raise awareness in local communities about the importance of wildlife conservation. In addition I will write up the results of the mammal survey in a peer reviewed journal about the abundance and distribution of mammals throughout this large wildlife corridor. There will be a second publication on the extent and nature of illegal extraction of mammals and timber in Lwafi Game Reserve. Finally, I will do a number of presentations at local and international science and policy meetings.

## 7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

Project implementation started in September, 2012 instead of the originally planned June, 2012. The delay was caused by the absence of the project leader (Andimile Martin) due to change of his PhD schedule in the United States of America. However, the project was implemented within the allowable time frame.

## 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
Diesel fuel for Land rover (available at site) for transects in Lwafi.	£253	£253	£0	Went as planned
Diesel fuel to get from base in Sumbawanga Regional capital to Lwafi	£127	£200	-£73	The car needed more maintenance therefore more trips to Sumbawanga than originally anticipated.

Vehicle diesel to and from the site for WCS advisors	£253	£0	£253	This was not used because the WCS team covered their own diesel
Diesel for interviews in villages	£127	£150	-£23	The distances were longer than planned so used more diesel
Vehicle oils and oil filters etc	£95	£95	£0	Went as planned
Vehicle repair and maintenance	£317	£317	£0	Went as planned
Bus travel from Dar es Salaam City to Sumbawanga	£114	£114	£0	Went as planned
Per diem (2 assistants) for meals	£2533	£2533	£0	Went as planned
Per diem for Principal researcher	£1273	£1247	£26	Squeezed on the per diems as the cost increased for some of the items.
Awareness meetings	£317	£317	£0	Went as planned
Camping tents	£317	£500	-£183	Two tents were bought instead of one that was budgeted. One was used by the two assistants and another one by the principal investigator
Note books, printing and other stationeries	£253	£253	£0	Went as planned
<b>Total</b>	<b>5979</b>	<b>5979</b>	<b>£0</b>	<b>Went as planned</b>

Exchange rate, used was 1 British pound = 2503.26 TZS

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

1. Analyse the data, finish plotting vegetation of the area and put together a final report for submission to the Director of Wildlife, Director of Tanzania National Parks, and the local administrative offices.
2. Finish the dissertation and publish my findings.
3. Write manuscripts and submit to peer-reviewed conservation journals.
4. Put together a proposal for the second RSG that will help to follow-up with workshops and monitoring activities of the Lwafi game reserve.
5. Present findings of this project at the 10th Tanzania Wildlife Research Institute (TAWIRI) Conference in Arusha in 2015.
6. Run a wide awareness campaign to local communities, conservation stakeholders and local authorities.
7. Establish a database on the diversity and relative abundance of large mammal species of Lwafi corridor and add to a nationwide mammal database housed at the Tanzania Wildlife Research Institute (TAWIRI).

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

Yes.

- a. The RSGF logo was used on letters of introduction for the project and requests for meetings and appointments with government officials.
- b. It was also used to presentations that were given to the village leaders and officials in the region about the project and its outcomes.
- c. I plan to acknowledge the RSG on my dissertation, publications and future presentations.

**11. Any other comments?**

I have discovered that Lwafi Game Reserve has great potential for protecting wildlife species. I hope that RSGF will continue to support efforts there to achieve medium and long-term conservation of the area.

Appendix: The first species list of larger mammals in Lwafi Game Reserve

Species	Dry season (September – December, 2012)	Wet season (March – May, 2013)
Aardvark	X	X
African civet	X	
Baboon	X	X
Buffalo	X	X
Blue duiker	X	X
Bushbuck	X	X
Bush pig	X	X
Bush Rat	X	X
Cane Rat	X	X
Cheetah	X	
Dik dik	X	X
Common duiker	X	
Eland	X	X
Elephant	X	X
Giraffe	X	X
Hartebeest	X	X
Honey badger	X	
Hyrax		X
Impala	X	X
Side-striped jackal		X
Klipspringer	X	X
Kudu	X	X
Leopard	X	X
Lion	X	

Dwarf <i>mongoose</i>	X	X
Monitor	X	
Porcupine	X	X
Rabbit	X	X
Roan Antelope	X	X
Sable Antelope	X	X
Sitatunga	X	
Spotted hyena	X	X
Topi	X	
Warthog	X	X
Wild cat		X
Wild dog	X	X
Vervet	X	X
Zebra	X	
<b>Total</b>	<b>42</b>	<b>32</b>