

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	Alfred Chitiki
Project title	Habitat Suitability Modelling and Conservation Implications for Threatened Tanzania's puku antelope, <i>Kobus vardonii</i> in Kilombero Valley, Tanzania
RSG reference	15500-1
Reporting period	1 year
Amount of grant	£5981
Your email address	alchitiki@gmail.com or chitiki@suanet.ac.tz
Date of this report	15 th September, 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
(i) To conduct an ecological survey so as to update the population status and distribution of <i>K. vardonii</i> in Kilombero Valley		√		The survey did not cover an entire Kilombero Valley; rather it concentrated in Kilombero Game Controlled Area (KGCA). This is because during reconnaissance survey, it was observed that most of the puku are currently found in KGCA and not in other parts of the valley. It was also noted during reconnaissance survey that the budget could not suffice a survey for an entire valley.
(ii) To predict suitable habitat distribution for threatened <i>K. vardonii</i> using occurrence records to inform conservation planning and guide conservation actions for this species in Kilombero Valley			√	Prediction of suitable habitats has been done. However it has done based on occurrence records in KGCA only. This was achieved by combining own field data and previous data from Frontier Tanzania.
(iii) To identify the environmental factors associated with <i>K. vardonii</i> habitat distribution			√	From Maxent results, the environmental factors associated with puku habitat distribution in KGCA were successfully identified.
(iv) To identify critical areas of immediate conservation actions and suggest specific conservation priorities that will help to ensure the continued survival of this threatened species and				Areas of conservation priority were also indentified for the KGCA from predictive maps on Maxent outputs.
(v) To promote tree planting practices in local communities around Kilombero Valley		√		Capacity building and awareness raising was conducted. Villagers from communities surrounding KGCA were trained on forests and woodlots establishment techniques

			<p>including nursery techniques, demonstrations on tree planting, woodlot management and agroforestry practices. Awareness campaigning on wildlife conservation was also done during the training. However, as stated in the proposal the meaningful change in attitudes or behaviour can hardly be achieved within a short timeframe such as one year. Therefore such training and campaigns should be continually conducted to cultivate an attitude of environmental conservation to local communities. Future projects should also support the villagers in terms of resources such as tree seedlings as most of them are willing to plant the trees but cannot afford buying the seedlings from private nurseries. These projects should also focus on other parts of the Kilombero Valley apart from KGCA.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

(i) Timeframe: The timeframe of one year was shorter than expected. It was found that some of the planned time for fieldwork was not appropriate for fieldwork and to some of staff members.

(ii) Financial constraint: It was planned during proposal writing that the survey will be conducted in entire Kilombero Valley. However this could not be achieved due to limited financial resources. It was also observed that current puku populations are concentrated in KGCA apparently because of higher protection measures than the surrounding parts of the valley. It was also noted that the transport costs for an entire valley could not be afforded by the current budget. Therefore we adjusted ourselves by limiting our survey in KGCA. However it is worthy to survey the remaining parts to explore the current status of puku in the remaining parts because the level of protection and attitude of people are changing with time. Several conservation initiatives have been carried out in areas outside the KGCA. These initiatives may also encourage renewed puku populations.

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

The project has successfully:

- (i) Predicted the suitable habitats for *K. vardonii* under changing environmental conditions in KGCA. These predictions can be incorporated in future conservation plans in the area and guide conservation actions for this species in Kilombero Valley.
- (ii) Identified the environmental factors associated with *K. vardonii* habitat distribution in KGCA. These factors may assist land managers (wildlife officers) in understanding the potential threats that may occur in the future so that they can develop possible adaptation/mitigation plans.
- (iii) Raised awareness on environmental conservation to villagers from communities surrounding KGCA. The villagers are now aware on the techniques and methods of establishing forests and woodlots including nursery techniques, tree planting, agroforestry practices. However, most of the villagers cannot afford buying the seedlings from private individuals. Therefore they need material support such as free seedlings to enable them plant trees in their farms. This eventually will reduce pressure on miombo woodlands surrounding the KGCA and thus enhance puku conservation.

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

Villagers from communities surrounding the KGCA were involved in the project. They were trained on issues about environmental conservation such as tree planting, and agroforestry practices. The villagers are now aware on environmental conservation issues. They have established village environmental committees and can practice agroforestry in their farms.

5. Are there any plans to continue this work?

Yes there are plans to conduct an ecological assessment of puku in the remaining part of Kilombero valley. Apart from covering entire area in surveying puku population, it is anticipated in the next phase to introduce trainings on alternative livelihood activities that will enhance biodiversity conservation in the area. These include training on beekeeping and fish farming as alternative livelihood sources to communities surrounding the valley. These projects will be appropriate in the area because it has abundant woodlands, forests and water sources. Such knowledge is crucial for livelihood improvement because over-dependence on forest resources will be reduced, thus biodiversity conservation will be enhanced.

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

The results will be shared through scientific publications and in addition to that I am planning to submit predictive maps on suitable habitats of puku to Ulanga and Kilombero District Wildlife Conservation Officers. Two manuscripts are in final stages to be submitted to peer reviewed journals for publication. The first one is entitled "The effects of habitat degradation on abundance and distribution of puku, Kobus

vardoni in Kilombero Game Controlled Area, Tanzania" and the second is "The influence of socio-economic factors on population trend and distribution of puku (*Kobus vardoni*) in Kilombero Game Controlled Area, Tanzania" The third on "Modelling impacts of climate change on potential habitat distribution of puku (*Kobus vardoni*) in Kilombero Game Controlled Area, Tanzania" is under preparation.

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 for a period of one year (i.e. from June 2014 – May 2015). Some of the works were however extended for the reasons already stated in the previous sections.

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
(i) Transportation costs				
• Fuel	£ 731	£ 731		
• Car hire	£ 692	£ 692		
(ii) Stationery	£ 288	£ 288		
(iii) Field subsistence allowances				
• Project leader	£808	£808		
• Research Assistant 1	£692	£692		
• Research Assistant 2	£692	£692		
• Research Assistant 3	£692	£692		
• Driver	£692	£692		
• Ulanga District Game Guard	£346	£346		
• Kilombero District Game Guard	£346	£346		
Total	£5981	£5981		

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

The next steps include development of grant proposals that will enable:

- (i) Surveying puku population distribution in the remaining area of entire Kilombero valley.
- (ii) Conducting trainings on alternative livelihood activities to reduce over-dependence in forest resources and enhance biodiversity conservation in the area.
- (iii) Establishing research networks and partnerships with other researchers worldwide.

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. The RSGF was used in all documents related to the projects such as introduction letters, etc. The logo will also be put on the poster presentations.

11. Any other comments?

We are grateful to the RSGF for providing funds to conduct puku survey, awareness raising and campaigning on wildlife conservation in Kilombero valley. Our sincere gratitude is extended to our employers for granting permission to execute the project and our referees.