

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details

Your name	Paul Webala
Project title	The population ecology, diet and movement of Straw-coloured fruit bats, <i>Eidolon helvum</i> (Megachiroptera: Pteropodidae) in Western Kenya
RSG reference	10078-1
Reporting period	July 2011 – July 2012
Amount of grant	£5591
Your email address	Paul.webala@gmail.com
Date of this report	5 th July 2012

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
Generate critical data on population status, trends and migration patterns of the bats for monitoring		Yes		Although three active roosting camps have been identified and mapped, it's possible that other unidentified camps do exist in western Kenya given that the bat population size fluctuated on a regular during the 7-month monitoring period. In addition, seasonal (intra-annual) as well as long-term (inter-annual) patterns of these fluctuations in relation to climate and their annual migrations can only be unravelled through long-term monitoring.
Identify, map and protect roosts of <i>Eidolon helvum</i> in Kenya		Yes		Three roost camps have been identified and mapped. However, we believe additional surveys and interview with local people will reveal more camps. Even those that have been identified, a lot more needs to be done to ensure their protection against challenges posed by poverty and high human population growth rates in western Kenya where these bats occur
Identify plant species that provide the diet of <i>E. helvum</i> and to verify which species could be dispersed by these animals			Yes	About 32 plants were identified as providing the diet for straw-coloured fruit bats during the 7-month sampling period but given seasonal changes in food availability, more sampling is likely to add the plant list that the bats are aiding in dispersing their seeds
Document threats that the bats and their habitats face			Yes	Many threats to the bats and their habitats were identified. The main ones included deforestation and roost tree clearance and negative perceptions about the bats fuelled by ignorance, myth and superstitions
Create local awareness of the value of fruit bats as pollinators and seed dispersers		Yes		Workshops were held for teachers and representatives from the local community on the importance of bats to the local economy and the need for their conservation. We also gave seminars in a few local schools. However, given the vastness of the western region and the persistence of negative attitudes and

				associated threats facing straw-coloured fruit bats and other bat species in the region, more workshops and training need to be done to change the negative attitudes and also inculcate conservation values among local communities in the region
Build the capacity of local communities to protect fruit bat colonies		Yes		30 volunteers from the local community have been trained on aspects of bat ecology, bat counts, environmental monitoring, and how <i>Eidolon</i> colonies could potentially be used to generate revenue for the local community through ecotourism. Further training is needed as a follow up on this initial training

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

At the commencement of the project, local people and even teachers expected inducements in order to participate in our workshops. It was apparently so because the locals have been socialised largely by politicians from within and without the area into a culture of cash handouts whenever meetings held in the area. The situation is exacerbated by extreme poverty in the region. We were able to overcome this problem by firmly explaining that we can only facilitate the meetings and that a handout is inferior to an opportunity to work and provide for one's own long-term needs. So what was initially a trickle to our meetings, slowly but eventually turned into crowds!

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

- i Three roosting camps were identified and mapped. The bats in the camps have been counted on a monthly basis and this will be continued with the help of locally trained volunteers. We are also working with local leaders to seek ways of protecting the roosting camps and the bat colony.
- ii From seed germination experiments, the project unequivocally demonstrated the critical role that straw-coloured fruit bats play in dispersing seeds of over 32 plants including economically important and locally available fruit trees such as the common guava, pawpaw, figs, among others! The study's results illustrate that the disappearance, or local extinction, of the bats from the area can have serious deleterious effects in the area because of their role in facilitating seed interchange between different forest patches and the re-vegetation of large open areas.
- iii A group of trained 30 volunteers from the local community is trained and is available for monitoring the bats and their roosting camps and other environmental issues in Vihiga District. Additionally, there was increased awareness of the ecological services provided by *E. helvum* as leverage for protecting its roosts

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

Other than the workshops with teachers from local schools and representatives of local communities and the seminars held in a few local schools, and as aforementioned, we identified and trained 30 volunteers on aspects of the bats' roles in seed dispersal, plant pollination and insectivory, basic monitoring techniques and environmental monitoring and conservation. The volunteers are the focal group for monitoring population trajectories of straw-coloured fruit bats through monthly counts and reporting of any observable changes such as deforestation in the local environment, with supervision of the PI.

5. Are there any plans to continue this work?

Yes! We are planning on scaling up some of the initial activities and initiate some more so as to enhance the long-term conservation of straw-coloured fruit bats in Kenya.

- i Continue population monitoring and searches for additional *E. helvum* roosting camps. Data on population estimates were collected for seven months and hence a need to collect a full complement of annual and inter-annual data. In light of our findings of monthly fluctuations in population size of straw-coloured fruit bats and shifts in the use of current roosting camps, it is possible that other roosting camps exist in western Kenya. Therefore it would be essential to search for additional roosting camps, map them, and seek ways of protecting them. Annual data on population trends of bats at all possible roosting camps would be useful for preparing an annual roosting calendar for potential marketing as ecotourism sites as part of the western region tourism circuit.
- ii Continue with ecological research, especially seed dispersal experiments to take into account seasonal variations in food items consumed by the bats. Roost-site selection investigations shall also be continued especially in light of the expected discovery of other roosting camps in western Kenya.
- iii Bat education awareness and establishment of wildlife clubs in local schools. Even among youths, traditional beliefs and misconceptions were identified in relation to environmental conservation and bat conservation in particular. To counter this, more environmental talks need to be intensified in as many primary and secondary schools as possible in the region to improve understanding about bats and dispel myths and traditional beliefs harboured by local people. In the next phase of the project we propose to target more than 50 schools, which is a tiny fraction of schools in the region given the high population density. Aside PowerPoint presentations, posters and the use of questionnaires, we shall engage school administrations to establish wildlife clubs in schools in order to continue inculcating into youths values and benefits of conserving the environment.
- iv Initiate tree planting and income-generating activities: - Many trees used as roost sites by straw-coloured fruit bats are likely to be felled as source of timber for domestic or commercial uses. There is a need to engage households in activities that can sustain roost tree survival but also allow local people meet their livelihood needs. Therefore, more detailed discussions with households near bat roosting camps to understand what economic activities can prevent them cutting trees which are also used by bats, and whether they would be willing to plant additional trees for bat roosting. We plan to work with local people to initiate environmentally friendly income-generating activities that are labour-intensive

but have higher profit margins and do not require a lot of space. These include beekeeping; horticulture farming (onions and tomatoes s); rabbit-keeping; and poultry-keeping

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

We plan to hold more seminars with local stakeholders, including amongst the local communities, to specifically demonstrate the link between the straw-coloured fruit bats and forest regeneration in the region. Alongside seminars, colourful brochures will be produced, and we will contribute to local newsletters where general project outputs and outcomes will be highlighted. Presentations will also be made in invited seminars across Kenya. We also hope to publish the results on roost-site selection and seed dispersal by straw-coloured fruit bats after augmenting our preliminary findings with further assessments in western Kenya in a popular peer-reviewed scientific journal.

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

As anticipated, the RSG grant was spent over the entire year (from July 2011 to July 2012). However, towards the end of the project, we ran out of money for the monthly counts because most of the money had earlier spent on other activities and equipment. However, the trained volunteers came in handy to undertake the monthly counts with minimal facilitation.

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. . (NB:

Although the exchange rate at the market was KSh 132 to UK£1, the bank exchange rate was a dismal KSh 118 to UK£1, which was the approximate rate a year ago before the Kenya Shilling depreciated dramatically against major currencies).

Item	Budgeted Amount	Actual Amount	Difference	Comments
40 Petri dishes	80	100	-20	
2 Petzl Duo LED 5 Head Torch	163	0	163	We did not buy headlamps as we borrowed them from other projects
Stationery	50	0	50	Stationery were obtained from Karatina University as in-kind support
Dry cells (batteries) and calico bags + filter paper	130	130	0	
Field travel – Car mileage	2250	2400	-150	We spent slightly more on car hire than anticipated
Field travel Fuel	1350	1500	-150	We spent slightly more on fuel due increased fuel during the project cycle
STAFF COSTS 1 Research Scientist	1296	1000	+296	We sometimes camped at Ilwanda roosting camp during fieldwork instead of using spending in hotels
Workshops and training	272	600	-328	The number of participants in the workshops exceeded the invitees. And training took more days than

				planned
Total	5591	5730	-139	Spend own resources especially for continued bat counts and facilitating volunteers to do the same

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

Please see section 6 above! We will be applying for a booster grant from the Rufford Foundation and matching funds from the Bat Conservation Grassroots Program to carry out activities indicated in section 6.

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?

RSGF logo was used on the posters and when training project volunteers drawn from the local communities. We will also include RSG as the major donor of our activities when we prepare articles for newsletters in the near future.

11. Any other comments?

We are very grateful to RSGF's support for this nascent project, the first of its kind on the ecological roles of straw-coloured fruit bats in Kenya