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	Lorraine Boast
Project title	Exploring the causes of and mitigation options for human-predator conflict on game farms in Botswana: How is coexistence possible?
RSG reference	12046-1
Reporting period	July 2012 – July 2013
Amount of grant	£5765
Your email address	lboast@yahoo.co.uk
Date of this report	24/06/2013

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
Determine accurate estimates of large predator density on farmland			Yes	The density of cheetah, leopard and brown hyena was estimated using spoor and camera trap surveys. Spoor survey data was published in 2012 in the South African Journal of Wildlife Research. Motion camera data has been submitted to the African journal of ecology and is under review.
Determine the drivers of human predator conflict on farmland			Yes	Interviews were conducted with 122 farmers across Botswana in Oct 2012 – March 2013. The data have been partially analysed and will be completed for submission in a PhD thesis in Feb 2014 and for peer reviewed publication.
Determine the relative importance of stock losses as a driver of human predator conflict			Yes	
Determine farmers attitudes towards conflict mitigation methods			Yes	
Determine if ecotourism, predator translocation and predator trophy hunting can increase farmer tolerance to predators		Yes		In addition to the interviews described above an additional 25 phone interviews were conducted with farmers who had translocated a problem predator. Additionally predator death, trophy hunting, problem animal control and predator translocation data was collected nationwide from government offices. This data is currently under analysis.
To calculate estimates of stock losses on farmland over a year period		Yes		A project to calculate stock losses every month for a year has been initiated with 60 farmers across Botswana and is due for completion in Dec 2013.
Determine cheetah prey preference			Yes	327 cheetah scat samples were analysed for prey contents, revealing kudu to be the most common prey item. The data will be submitted for peer reviewed publication.
Determine survival rates of translocated cheetahs			Yes	Data from 12 GPS collared cheetahs translocated as problem animals was analysed. Data will be submitted as a

				peer reviewed publication.

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

Obtaining contact details for farmers who had translocated a predator was more difficult than expected as there has not been a formal system for keeping records of translocated animals. All 25 Department of Wildlife offices in Botswana, were visited or telephoned individually and helpfully provided translocation data, often based on officers' memories of past events.

Maintaining regular contact with the farming community to obtain monthly data on stock losses over the year has proven difficult and a combination of email, text messaging and phone calls has been employed in order to collect regular information.

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

The three most important outcomes of the project so far have been:

- First interview-based examination of drivers and intensity of human-predator conflict on game ranches in Botswana - Interviews about human-predator conflict and the available methods to mitigate conflict were conducted with 122 farmers from across Botswana. Representatives from 85% of the registered game ranches were interviewed and the data is currently under analysis.
- First data-based estimate of cheetah, leopard and brown hyena densities on farmland in Botswana - Until recently predator management policies were reliant on assumptions to estimate predator densities outside of protected areas. This research published spoor tracking data on predator densities on commercial farmland in Botswana.
- Experience-based evidence of the survival of translocated cheetah - Data analysis on the survival of translocated 'problem' cheetahs was completed and interviews with farmers regarding their satisfaction with the translocation process were conducted. Data showed that the survival rate of translocated cheetah was poor and that the translocation of problem predators was not successful in reducing stock losses to predators on farmland. This data will be presented to the Botswana Department of Wildlife to encourage national predator management strategies to focus on the co-existence of predators and humans on farmland and to avoid the translocation of problem predators.

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

The study was largely based on interviews with commercial farmers and therefore the involvement of the local community was essential to its success. The findings from the study will contribute towards human-predator conflict management strategies with the aim of reducing the costs and increasing the benefits associated with living with predators.

The project would not have been possible without the assistance of local research assistants, Uyapo Molefe and Phale Phale. Uyapo assisted with contacting Department of Wildlife offices and farmers regarding predator translocation and with organising and conducting the one-year study of stock losses with farmers and Phale assisted with scat analysis.

5. Are there any plans to continue this work?

The findings from this research will contribute to the development of future education and community outreach campaigns by Cheetah Conservation Botswana (CCB), with whom this research is associated. Methodologies to reduce the obstacles preventing farmers from implementing mitigation methods will be developed in association with the Department of Wildlife and CCB.

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

The results of the work will be shared with:

The farming community: Through a report submitted to the farmers who took part in the surveys and to the national and regional game ranching and livestock farming organisations. An article will also be submitted to Botswana farming magazine and I hope to present results at farmers meetings next year.

Botswana Government: A report will be submitted to the Department of Wildlife and National Parks and to the Ministry of Environment, Wildlife and Tourism.

Scientific community: The data is being analysed and presented as a thesis for a PhD with the University of Cape Town. In addition the data will be submitted for peer reviewed publication in scientific journals. A manuscript on the use of spoor surveys to estimate predator density has already been published in the South African Journal of Wildlife Research. Data will also be submitted to the IUCN reintroduction specialist group and the Southern Africa regional cheetah conservation plan.

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

The bulk of the RSG was used between October and December 2012 as anticipated, for the collection of interview data with farmers. However, interviews with farmers who had translocated predators continued until April 2013 and a second round of interviews and a visit to Cape Town University was conducted in February 2013. The data collection on annual stock losses started three months later than anticipated due to the need to establish contact with farmers through interviews before the commencement of the stock loss data collection and will not be completed until January 2014.

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.

Local exchange rate (taken from date grant was received)

1 GBP = 10.99 BWP 1GBP = 12.99 ZAR

Item	Budgeted Amount	Actual Amount	Difference	Comments
Vehicle hire/purchase	£2140	£2255.81	-£115.81	
Accommodation	£1529	£1229.11	£299.89	Food costs being higher than expected were proportional to accommodation costs
Food	£984	£1121.31	-£137.31	

				being lower, as I often contributed to grocery shopping when camping free of charge on farmland
Volunteer subsistence	£492	£527.80	-£35.80	
Field Laptop	£620	£630.97	-£10.96	
Total	£5765	**£5765**	£0.00	

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

The next steps are to complete the analysis and publication of the findings. I plan to complete the PhD thesis and reports to farmers and farming organisations by March 2014. Manuscripts will be submitted for peer reviewed publication in journals either during or shortly after the thesis writing period.

Production of an information leaflet regarding human-predator conflict and the possible mitigation methods available to reduce conflict, specifically for game farms, would be a useful step to promote co-existence.

During 2012, Botswana banned hunting on all state land and stopped leopard trophy hunting until further information on leopard populations was available. Research to determine the impact this hunting ban has upon communities, the game ranching industry, poaching, game species and predators will be essential in the future.

Conflict between wild dog and farmers was highlighted as of being of particular concern and research to study wild dog populations in Botswana outside of protected areas would be useful for the conservation of this highly endangered species.

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?

The RSGF was acknowledged in the publication of a peer reviewed article on the density of predators on farmland published in the South African Journal of Wildlife Research. RSGF will also be acknowledged on the researchers' webpage of the Okavango Guiding School website. RSGF will be acknowledged on future publications and at presentations of the results later in the year.

The RSGF logo was not used to date.