

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. 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. 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	Vincent Shacks
Project title	Baseline assessment of Persistent Organic Pollutants (POPs) in Nile crocodiles of the Okavango Delta, Botswana
RSG reference	7914-2
Reporting period	Final report
Amount of grant	£6000
Your email address	vshacks@gmail.com
Date of this report	19/12/11

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
Collect tissue samples from crocodiles throughout the Okavango Delta system			x	Samples from 20 crocodiles were collected from locations throughout the Delta each representing the different types of wetland habitats available.
Collect Corio-alantoic membrane (CAM) samples from wild crocodile eggs	x			Unknowingly to our programme, the Department of Wildlife and National Parks of Botswana issued permission for another researcher to collect 1500 eggs from the wild along the Okavango river. Based on the findings of our work over the past 8 years, this scale of collection is unnecessary and ill-advised. We therefore decided to delay our egg collection and analyses until the next nesting season in order to keep our impact on this critical breeding period as low as possible. Nesting effort by Okavango crocodile females is as low as 22%, so based on this – our CAM analysis work will be delayed for one full season.
Laboratory assessment		x		A loss of critical funding for the laboratory analysis was experienced by the programme, causing us to delay analysis of the samples until 2012. Our priority is to firstly have the tissue samples assessed for baseline contamination. We have subsequently secured interest from two international laboratories to cover this analysis.

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

The unexpected egg quota issued to another researcher in the region was done without consultation to our programme or review of the current management plan governing the management of this species. The collection of these eggs from the wild meant our egg collection objectives would not be feasible for this particular season. There is currently massive pressure on crocodile nesting activities in the Delta due to human disturbances. 95% of all crocodile nesting currently takes place along an unprotected portion of the Okavango system and this has led to a very low (22%) nesting effort by the existing females. The number of females in the system is also very low due to previous years of hunting which lead to a 5-fold decrease in the breeding pool of adults in the last 80 years. Our

programme does not wish to place any unnecessary pressure on the nesting process of this crocodile population and hence have delayed the egg collection and analysis until next season. The programme has issued its complaint with the department and will work alongside this department to ensure that reporting and consultation is improved to ensure that a situation like this is avoided in the future.

The analysis of all tissue samples was to be funded by a local GEF (Global Environmental Fund) grant. This grant, however, was only to cover the work of Botswana citizens rather than a Botswana resident. Vince Shacks, although a long-time resident of Botswana, is not a citizen and this particular funding was then not available due to this fact. The programme has however, attracted the interest of two international institutions who are willing to process the samples as part of a new collaboration (University College of London and University of Pretoria). These results will still provide the relevant stakeholders with accurate results of baseline contamination of crocodiles in the Okavango system.

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

The most important outcome of the project was firstly the collection of samples from 20 crocodiles throughout the Okavango Delta system. Capture of crocodiles by night is extremely difficult and completely reliant on the correct conditions and experience of the staff. The team carried out approximately 15 night time surveys along different sections of river to capture the correct size class of animal for the sample that was required. These samples will go a long way in accurately describing the baseline POP contamination of crocodiles in the system.

The programme has successfully pioneered a new technique for identifying adult crocodiles without having to capture them. Our technique involves SCUBA diving with Nile crocodiles and getting high resolution digital photographs of the base of the tail. This portion of the tail shows distinct skin patterns which are unique to every crocodile, very much like a human fingerprint. We have successfully devised a code to translate the visual pattern to a numerical identification number which can be used to identify individuals at specific locations over a number of seasons. We hope to use this system to identify females on nesting sites (with remotely triggered infra red camera traps) in order to later successfully capture the same laying female for samples. This technique will allow us to compare contamination of the young in the eggs with the laying female to assess mother to young contamination levels. This will take place in the 2012/2013 nesting season.

Lastly, the programme has collected detailed land use information for the Okavango portion of the larger Kavango basin, which includes Namibia and Angola. This spatial data has allowed us to create detailed GIS maps of all land use activities taking place along the river, which may have the potential to be the source of various pollutants in the system. This data will be used and shared with inter-basin initiatives like Okacom, who are responsible for overseeing the management of inter basin land use activities. Our programme has also arranged to be part of a regional crocodile conference with other national crocodile projects to cover various inter basin issues related to the impact of humans on crocodiles. This meeting will take place in June 2012 in Namibia and will form part of a consultancy which is developing a management plan for crocodiles in Namibia.

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

Although no direct benefits to the community took place as a result of the pollutant study, our programme assisted the department of wildlife and the surrounding Maun community with the capture and relocation of 18 problem crocodiles throughout this reporting period. The presence of our programme in the region allowed these animals to be caught and relocated to a crocodile farm rather than be terminated. These particular animals had moved into areas of high human populations and had become a threat to the people as well as the domestic animals which also make use of the river. Our programme also continues to provide research and monitoring assistance to the local Krokovango crocodile farm in Samochima village. This monitoring work allows the farm to stay accredited by CITES and to legally export farmed skins from the country. The farm currently employs 46 people from the local village permanently.

5. Are there any plans to continue this work?

Yes, this project forms part of a long-term monitoring programme which works in collaboration with the national wildlife department. The programme raises its own funding independently and provides a conservation service for crocodiles which would otherwise not be possible for the government due to lack of funding and expertise in the field. Our programme has been operational since 2002 and hopes to continue this monitoring work for the foreseeable future. It is our intention to provide as much data and evidence as will be required to promote the establishment of a nesting sanctuary for crocodiles in the Panhandle of the Okavango.

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

The programme has made use of an aggressive media campaign to raise the awareness of the impacts on the Okavango crocodile population. Our work has been featured in three international documentary films over the reporting period ("Diving with Crocodiles" Earth Touch Productions for EDEN HD, Smithsonian Networks, ARTE; "River of the World – Okavango" for Travel Channel and ARTE and "Crocodile Labyrinth" Earth Touch Productions for National Geographic Television).

Our popular website (www.okavango-croc.com) provides permanent online presence for our programme as well as providing members of the public with information on the work we are carrying out. Vince Shacks has also attended numerous local consultancy meetings in order to provide government departments and stakeholders with information on the programme which may assist with future land use management of the Okavango.

Vince Shacks is also a member of the IUCN Crocodile Specialist Group and reports on the programmes findings every year.

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

The RSG provided the funds for the purchase of a 4x4 vehicle which was used for the duration of the sample collection period in 2011. This vehicle continues to provide much needed transport for the team and the gear required to carry out the work in the Okavango. The vehicle is subject to regular maintenance and will continue to be used for the programme in the coming years.

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
Toyota Hilux 4x4, 2,4l SRX Double Cab.	5641	6000	359	The cost of purchasing the vehicle was 5641 and the actual grant amount was 6000. The difference of 359 was used for an initial service which was required for the vehicle, which included the installation of a new carburettor.
TOTAL		6000		

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

The most important step for this project is to carry out the laboratory analysis of the collected samples. This will require the official set up of a collaboration between the program and the interested laboratories. Once the initial samples have been processed, the female to young contamination study needs to be carried out in the 2012/2013 nesting season.

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?

All of the reporting documents to government and private donors carried an acknowledgement to RSG. The website (www.okavango-croc.com) lists RSG as a partner in the project. The vehicle and boat (1st Grant) continue to be used for the programme and have been filmed on numerous occasions by participating film crews.

11. Any other comments?

The RSGF has provided an extremely important source of funding for this programme over the last 4 years and we greatly appreciate the help that Rufford has provided with the conservation of the Okavango crocodiles.