

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	María Grande Vega
Project title	A Study of the Basic Reproductive Biology of Tropical Forest Mammals to Aid Sustainable Hunting
RSG reference	12349-2
Reporting period	Feb 13- Feb 14 (extended till May14)
Amount of grant	£6000
Your email address	mgrandevega@yahoo.es / maria.grande.vega@upm.es
Date of this report	17 Jul 2014

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
Provide information on the reproductive biology of four taxa: blue duiker, red duiker, brush-tailed porcupine and giant pouched rat, in Bioko Island, Equatorial Guinea.		X		The number of red duikers in our sample will not be sufficient to do strong statistics with it. This is because we have collect the data on the animals hunted in the villages studied and red duiker has been scarcely hunted. However, though scarce, all the information we have will be relevant as there is no published information on <i>Cephalopus ogilby's</i> reproduction (Kingdon 2013).
Collect data on extraction rates of the study species and on hunting effort.			X	
Train students at the National University on animal necropsy techniques and mammalian reproductive biology			X	

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

A part from the ones commented in each of the updates, no other important difficulties arose.

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

In my opinion, the two outcomes mentioned in the submitted proposal have been successfully achieved.

All data gathered (currently being analysed) on offtake and the reproductive biology of hunted mammals will generate invaluable scientific information as well as provide Equatorial Guinean conservation institutions with a better understanding of the productivity and potential for sustainable offtake of these species on Bioko Island.

Similarly, this project has served to train nationals, indeed more than expected. One teacher and three UNGE students participated in the field data collection. One of the students is also analysing part of the data for his Final Degree Report. We have also organised the III Biodiversity Week, where

we have not only presented our work (methodology and preliminary results) but we have also emphasised the characteristics and value of protecting Biodiversity in Equatorial Guinea. Additionally, we were able to assemble other NGOs (BBPP, TOMAGE, PACEBCO, ASOMETRAGE), Scientific Institutions (UNGE, RJB, MNCN) and government institutions (Ministry of Fisheries and Environment and Ministry of Forestry and Agriculture) in the country to talk about EG Biodiversity. The meeting was held at National University of Equatorial Guinea (UNGE) and at the Spanish Cultural Center during 7 days in daily 3-hour sessions. A total of 178 people assisted: 120 UNGE students and the rest from different public and private institutions. On the last day, we invited oil companies and embassies to attend.

With this event our work and our preliminary results were presented to national and international institutions including those in charge of the management of environment and protected areas. But not only through this event but throughout the year we have had a continued communication with them, especially with INDEFOR-AP (National Institution for Forest Development and Protected Areas Management System, Ministry of Forestry and Agriculture) with whom we have started a new project as explained in point 5.

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

Overall, this project has directly benefited to national students by being able to train a large number and a lesser extent villagers that collaborated in it (apart from the two village-assistants hired). However, information generated by the project will be used to encourage sustainable hunting in the area whilst also taking into account villagers' necessities. Our data will thus benefit the villagers in the future. We have transmitted this to the villagers and we believe most of them have understood our intentions and have agreed to collaborate further with us (probably the fact that each year they have to hunt further). For the women, mostly involved in the sale of the hunted game, our gifts in gratitude for their collaboration have assisted their families. Also, the younger of our two village-assistants (Ambrosio, 24 years old), who has been collaborating with us since 2010, has been awarded official accreditation as scientific assistant by the UNGE.

5. Are there any plans to continue this work?

Yes. During the execution of this project (and as a result of the links expanded during the 5 years of our work in Equatorial Guinea, alongside NGOs and governmental and financial institutions) we have developed a new project (to continue with our work on the long-term sustainable management of the Pico Basilé), which has been presented to the Government and has been funded by it. This project, MANAGEMENT AND CONSERVATION OF BIOLOGICAL RESOURCES IN THE NATIONAL PARK PICO BASILE, has been designed in conjunction with the UNGE, INDEFOR-AP and independent professionals working in EG. Its four aims are:

- Research: To understand the impact of hunting on all sides of the Pico Basile mountain. Data gathering will mostly involve interviews of hunters living in all villages surrounding the Pico Basilé. Given our experience working with hunters in Basile Fang, we will apply tested methodologies throughout the study área. These data will help us estimate hunting impacts and sustainability potential of hunting in Pico Basilé.
- Training nationals: To develop and teach seminars and courses for UNGE students, INDEFOR-AP technicians, press and secondary teachers.

- Awareness campaign: To inform young persons and children (in collaboration with schools, cultural centers and neighborhoods or villages), as well as through a radio and TV campaign.
- Management: In conjunction with INDEFOR-AP, to design a Management Centre within the Pico Basilé National Park.

This project will be a crucial development in our work since it will be able to put all our research at the service of a real management in Pico Basilé together with a strong awareness campaign.

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

- Through scientific papers: one paper (based on the extraction data collected) is about to be sent to the journal *Biotropica*. The aim of this paper is to present evidence of local declines of the blue duiker (*Philantomba monticola*, Bovidae) in Bioko Island, Equatorial Guinea. Another two articles will be written and submitted for publication by the end of this year.
- Through a workshop planned in the new project mentioned above, we will present the final results to government and NGOs to discuss all gathered information for use in the design of the Pico Basilé Management Centre activities.
- Through our awareness activities to EG population planned in the new project.
- Through our websites: Ecotono and UPM web.

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 project was aimed for 1 year. After some initial delays, we started the project in February 2013, ending in February 2014. However, thanks to extra funding received on September 2013, from INDEFOR-AP, we were able to extend this work until May 2014 (which allowed us to collect more data to include the months of February and May, which in 2013 had fewer data as explained in our second update). With this supplementary funding we were also able to strengthen some other activities, as explained in the table of point 8.

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
Inventory - (plastic containers, formol, dissection material, weighing and measurement apparatus)	RSGF: 467 Other: 3114 TOTAL: 3581	RSGF: 467 Other: 4048 TOTAL: 4515	RSGF: 0 Other: + 934 TOTAL: + 934	Thanks to the new funding (see update Nov 2013) we could buy a microscope (instead of borrowing one from a surgery), which gave us more freedom and time to practice with students. We could also buy more field material to extend the work till May and to collect samples of head bones and tissue of rats and blue duiker for the parallel study

				mentioned in Nov 2013 update. The microscope has been donated to the National University.
Stationary - (paper and other stationary, and gifts for villagers collaborating in the project)	RSGF: 618 Other: 14 TOTAL: 632	RSGF: 618 Other: 390 TOTAL: 1008	RSGF: 0 Other: + 376 TOTAL: + 376	To thank the women that let us measure and take samples of their bushmeat carcasses, we gave them gifts according to the number of individuals they let us study. Though in the meeting of November we could agree not to give them more gifts than initially agreed, the total number of animals studied has been higher than expected. Thank to the new funding we have been able to afford this difference.
Airfares	RSGF: 1630 Other: 3831 TOTAL: 5462	RSGF: 1630 Other: 4925 TOTAL: 6555	RSGF: 0 Other: + 1094 TOTAL: + 1094	Thanks to the new funding I could afford one more travel from Spain, one travel to the mainland (to meet INDEFOR-AP), and pay air fares for people living in Bata (mainland) and attending the III Biodiversity week (in Bioko Island) from different institutions (TOMAGE, ASOMETRAGE and INDEFOR-AP), four persons in total.
Allowance	RSGF: 1427 Other: 1427 TOTAL: 2853	RSGF: 1427 Other: 4487 TOTAL: 5914	RSGF: 0 Other: + 3061 TOTAL: + 3061	Thanks to the new funding I could afford 5 more months of stay in EG (10 in total) out of the 5 initially planned, and we could afford the allowance in Bioko for the four persons attending the III Biodiversity Week.
Salaries	RSGF: 1084 Other: 0 TOTAL: 1084	RSGF: 1084 Other: 4300 TOTAL: 5384	RSGF: 0 Other: + 4300 TOTAL: + 4300	Thanks to the new funding we could formally hire Paloma Ferrer (see update Nov 2013) extend the salaries' assistants till may 2014, and help UNGE students participating in the

				field work with some aid for transport and food.
Others (transport, credit phone, internet, first aid kit, emergencies)	RSGF: 774 Other: 0 TOTAL: 774	RSGF: 774 Other: 795 TOTAL: 1569	RSGF: 0 Other: + 795 TOTAL: + 795	The new funding help us afford some contingencies as: - Robbery of the car battery -Clutch and exhaust pipe car repair - Medical analysis of our field assistant in B. Fang - More phone and internet expenses
TOTAL	RSGF: 6000 Other: 8386 TOTAL: 14386	RSGF: 6000 Other: 18946 TOTAL: 24946	RSGF: 0 Other: + 10560 TOTAL: + 10560	We obtained 9000 € from Barcelona Zoo and 14.242 € from INDEFOR-AP (a total of 18.946 €)

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

- Finish analyzing all data collected and publish results.
- Use our results for the design of the Management Centre for the Pico Basilé, planned in the new project.
- Work in the new project and continue involving as many NGOs and government institutions in the discussion and development of further activities.
- Maintain and strengthen our links with government and NGOs involved in biodiversity conservation in Equatorial Guinea, not only for the development of our new project but to continue afterwards working together in research, conservation and awareness.
- Consolidate our work group in Equatorial Guinea and serve also of support to new groups or researchers willing to work for Biodiversity Conservation in Equatorial Guinea.

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?

We used the Rufford logo in all our PowerPoint presentations related to the project (this one and the first one also funded by Rufford) and/or our preliminary results, in the following meetings:

- INDEFOR-AP internal annual meeting, celebrated in Bata the 18th-19th February 2013, to discuss common activities undertaken throughout the year as well as those activities planned for following year one.
- The biannual celebration of the JAP (Journées des Aires Protégées) of RAPAC (Réseau des aires protégées d'Afrique Centrale), celebrated in Bata during 29th-30th May 2013, where INDEFOR-AP invited me to present our research in Pico Basilé since 2009.
- Meeting with the Marathon Oil Company, US Embassy representatives and Congo Basin Forest Partnership (CBFP) representatives. This meeting took place on the 5th of May 2014 at Marathon Oil

Headquarters in Malabo, to celebrate the visit of two environmental policy experts representing the CBFP. This visit was coordinated by the U.S. Embassy.

- Meeting of the III Biodiversity Week celebrated in Malabo during 19th - 24th May (explained in point 3). This presentation was recorded in CDs (with the rest of presentations of the week) and distributed to all participants that included 120 UNGE students and people from the different institutions. We also deposited CDs of the meeting in each of the four public libraries on Bioko Island: Spanish Cultural Center library, Institute d'Expresion Culturel Français library, Equatorial Guinean Cultural Center library and National Library.

We use it also in the web of our association www.asociacionecotono.org

11. Any other comments?

I want to thank once again RSGF to have given me support to do this research. RSGF has been the first one to support it and which I have no doubt has awoken the interest of the other two institutions which have provided funding afterwards (Barcelona Zoo and INDEFOR-AP).

With this research I have been able to collect more scientific information necessary to make a feasible estimate of sustainability of the actual hunting in the area, but I have also been able to create a strong and multidisciplinary team in Equatorial Guinea with strong links with UNGE and INDEFOR-AP (as well as with NGOs and cultural institutions) that has permitted us to develop a new more extensive project that includes research, training, awareness and applied management and continue working in Equatorial Guinea for biodiversity conservation.

Collecting reproductive cycles data



Ambrosio Ondo (Field Assistant) and Josefa Mikue (UNGE Student)



Pascual Obiang

(Hunter)

Ambrosio

Ondo

María

Grande



FILE/0073



Blue Duiker's foetus



Weighing a Blue Duiker



Pastor Cham
(UNGE Student)

Ambrosio

Ondo

María

Grande



Paloma Ferrer, excising
Blue Duiker's testicle



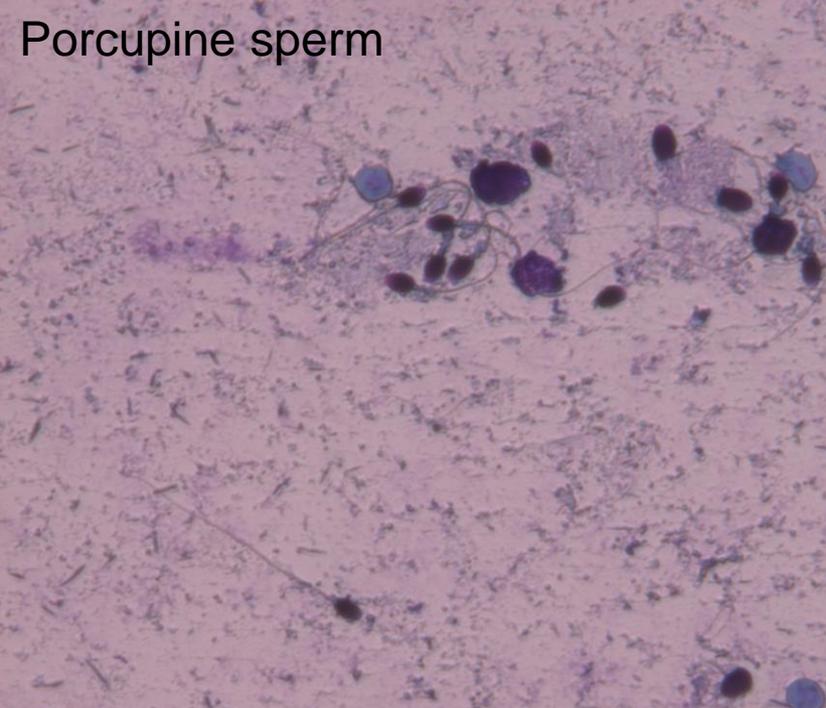
Measuring a porcupine



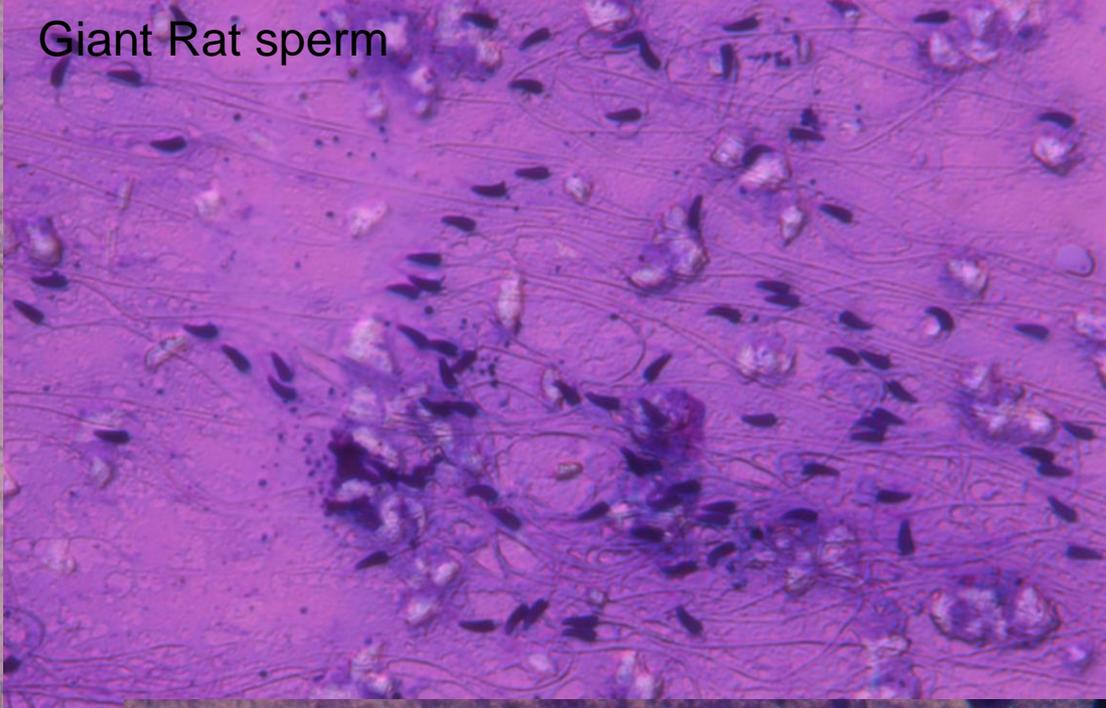
María Grande drying
Blue Duiker's sperm

Hunter burning
Blue Duiker's hair

Porcupine sperm



Giant Rat sperm



Blue Duiker sperm



Red Duiker sperm



III Biodiversity week: conferences and expositions

Paloma and I introducing the third conference's day



One of the fore panels exposed in the Spanish Cultural Center



UNGE Student



Flora of Equatorial Guinea Project Director



Alberto Rosell (Marine Areas Project), David Fernandez (BBPP), Me and Paloma, answering questions about our projects



Traditional Plants use Stand



Alberto Rosell's video of the bottom sea of Equatorial Guinea



INDEFOR-AP Director



PACEBCO representant



CSIC researcher



María Grande's presentation of the project



UNGE Students asking questions



National Strategy for Biodiversity Conservation Conference



III Biodiversity Week: Games for conservation awareness and diplomas' delivery to the most participative UNGE Students

