

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	Legrand Nono Gonwouo
Project title	Human influence on the diversity and distribution of endemic amphibians, on Mount Manengouba, Cameroon
RSG reference	40.05.07
Reporting period	August 2008 to January 2009
Amount of grant	£4295
Your email address	jgonwouo@yahoo.com
Date of this report	February 13 th 2009

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
Investigates how human activities influence the distribution of the endangered endemic amphibians using GIS tool to document where they occur for site conservation measures.			Yes	Various human activities greatly influence endemic species distribution around Mount Manengouba. Endangered amphibian species such as <i>Cardioglossa trifasciata</i> , <i>C. Manengouba</i> (Blackburn 2008). The later species has a restricted range of less than 10 square kilometres above 2000m while the former was recorded to extend its known range above 2000m (formally below 1800m). This species as well extends to the eastern flank of mount Manengouba in gallery forest along fast moving stream. <i>Leptodatyledon erythrogaster</i> range from the summit to all the flanks with a high population concentration around 2100m. These montane specialist frogs recorded in the cloud forests were not found in lowland forests. Species like these ones are extremely vulnerable to climate change or habitat modification and any disturbance to the environment and the forests may have negative impact on them.
Enhance the checklist of amphibians known from the study site			Yes	We recorded about 84 species of amphibians in the study area with one species from the Genus <i>Wolterstorffina</i> new to science. Frogs are found all over Mount Manengouba in the various habitats; forest, savannah, farm bush/plantations and grassland. Some endemic amphibians are restricted to particular forest types, some to specific grassland types, while others are more tolerant in their habitat requirements.
Based on the data collected; provide specific recommendation for forest conservation and built the bases for long-term monitoring and conservation			Yes	Our present observation in the field reveals that all forest and savannah habitats have been reduced in size or altered through various forms of human activity. Some natural forest patches are being eliminated or negatively impacted and such practises are particularly detrimental to generally reduce the range of the endemic amphibian species. Sound conservation planning can maintain the forest cover with

<p>strategy for amphibians in the region.</p>				<p>the biological and cultural richness of Mount Manengouba at its present level while also supporting the livelihoods of people who currently depend on the forest. Our recommendations include:</p> <ul style="list-style-type: none"> - The primary forest extending from the southern slope should receive some form of protection while integrating the needs of local people in the region as it is particularly rich in amphibian diversity and endemism. -Reduced impact to the gallery forests along the many streams of Mt Manengouba will favour amphibian diversity and conservation as this is critical to the health of the amphibian community. -Maintenance of forested habitats adjacent to ponds and streams and between neighbouring ponds will contribute to the persistence of endemic amphibian and dispersion among populations. -The environment around the crater lakes is of outstanding beauty for tourists who visit the area mostly in the dry seasons. Thus, a formal protection of the site will very much benefit ecotourism and the biological entities of the region.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

N/A

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

- The study permitted the discovery of a new species of toad from the genus *Wolterstorffina* presently being described. This new species has presently been recorded only between 1900m and 2000m above sea level on Mount Manengouba and seems to be restricted to this mountain.

- The number of strictly endemic amphibians appears very high in the Manengouba area than any other site along the Cameroon highlands with 5 species only known from this mountain and include: *Cardioglossa trifasciata*, *Cardioglossa manengouba*, *Leptodactyledon erythrogaster*, *Wolterstorffina* sp. Nov. and *Hyperolius* sp. Nov. The latter species also recorded at the site has long been recorded by the French herpetologist Jean-L. Amiet who is presently describing the species.

-The rediscovery during this study of the critically endangered *Cardioglossa trifasciata* since its description updates information on the species. Formally known from the eastern flank between 1750-1800m.a.s.l., the species was recorded at points N05°01.061', E009°52.206', 2077m a.s.l. and

N05°01.866', E009°52.452', 1816m a.s.l.). These records extend the known range of the species to the summit and eastern flank of the mountain. Also, *Leptodactyledon erythrogaster* known only from this site and the recently described *Cradioglossa menegouba* (Blackburn, 2008) from above 2000m are all strict endemics of the study site. The calls of the later frog not known during its description were also recorded during this study

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

This study was carried out with the help of the local communities who assisted in all stages of the survey. Locals from all villages around the study site were temporally used as field guide when conducting survey around villages. Regular inventory work (Setting of transect plots, and monitoring them for specimen recording) was carried on with the help of locals. During this cooperation, education on sustainable exploitation of natural resources was passed on to them as they are known to exploit natural resources (Frogs, Chameleons, arthropods) for the pet trade as an income generating activities. Also, collaboration with the local community eased access to various forest patches found around the study site. Individuals involved in the survey progressively understood the importance of the study while generating little income from the daily salaries pay for guides and porters. They understood through this cooperation that as long as the resources are available, they can periodically end some money when research work is conducted at the site.

5. Are there any plans to continue this work?

It is necessary to continue further research in the Manengouba area particularly in difficult to access hilly slopes of the mountain forest. The fact that four species (*Cradioglossa oreas*, *Astylosternus laurenti*, *Amietophrynus (Bufo) tuberosus*, *Amietophrynus (Bufo) superciliaris*), known from the site were not documented justifies chances of species new to science still found at the site. Particularly, we recommend continuing ecology and natural history studies on endemic species. While carrying on the life history studies, the checklist for the site could be updated if species not recorded to date happen to be found. This could be achieved by assigning life history studies of various species to graduate students as their end of year thesis work to enhance National capacities in amphibian research.

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

This survey formed part of my PhD studies presently at its writing phase and a final version will be deposited in libraries for public use. I am presently writing a paper describing the new species found during the study and the paper will be made available to the donor (RSG) and scientists through libraries of NGOs in Cameroon and Museums in Europe where I have contacts (e.g. London UK, Berlin Germany and USA). Analysis of data collected in the various transects at the site is presently being analysed and I plan to submit my findings to a top conservation journal when completed. Also the results will be disseminated to all interested parties (NGO's), working around the site including the Ministry of Forestry and Wildlife (MINFOP). A summary reports (Brochure) from my findings will be distributed to all village chiefs of the study area who work closely with the local community and will be able to relay my findings to the community and hopefully create awareness of the importance of amphibians conservation.

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

The grant provided for the study was used for a period of one year although the project extended for three months after the grant completion period. This is one of the reasons why the final report has been compiled with some delay.

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
Salaries/field staff & assistants	£2160	£2160	0	
Supplies & materials	£240	£275	- £35	
Food/per diems	£720	£864	- £144	Due to the fall in £ (1£ = 900 frs CFA) and rise in food commodities in Cameroon, we spent 1.2£/day per person instead of 1£ as budgeted.
Communications	£250	£220	+£30	Communication was limited to Emails with less telephone calls and this saved some few pounds
Travel-local (day)	£480	£480	0	
Overnights	£240	£240	0	
Miscellaneous	£204.50	£204.50	0	Helped to cover the cost of fall in currency exchange: prize increases for: Supplies & materials; Food/perdiems
TOTAL	£4294.50	£4423.50	- £109	

The exchange rate was £1 equalling to ~900frs CFA at the date of transaction instead of 950frs CFA as budgeted.

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

Continue survey at the site while involving graduate students from Cameroon and the Manengouba locality in amphibian surveys is very important. Amphibians around Mount Manengouba are collected for food and the international pet trade. These practises coupled with the fast habitat degradation from the increasing human population may have a negative impact on the amphibian population in the long run. It is important to note here that very few nationals have to date carried on amphibian research and their involvement in such studies will enhance national capacity and help in developing sound conservation measures.

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?

Yes the Logo was use during a workshop presentation in Cameroon. I am also on the process to give a talk on the prioritisation workshop of Cameroon amphibians coming up next week (April 24th 2009 in Yaoundé) and the Logo of the RSG will future in my presentation. The final outcome of the study will be three scientific publications and the RSG will be well acknowledged in all the papers. Copies will be made available to the RSG when published.

11. Any other comments?

I sincerely thank RSG for supporting this study around mount Manengouba. Funds from the project have helped to update information of some critically endangered species at the site and have as well permitted the discovery of a species new to science. Since I was still finalizing data collection at the site in last months, the distribution map has not been produced yet but will future in the paper I am on the process to prepare for the site.