

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	Gilbert Baase Adum
Project title	Conservation of the Ghanaian Endemic Frog Species, <i>Arthroleptis krokosud</i> Ghana
RSG reference	09.03.10
Reporting period	
Amount of grant	£5,945
Your email address	adum2010@yahoo.com or adumgilbert@gmail.com
Date of this report	31/05/2012

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
Conduct surveys for <i>Arthroleptis krokosua</i>			√	We conducted large-scale surveys at all the known ranges of the species and six other suitable forest reserves in Western Ghana. Unfortunately we failed to locate the species despite prolonged survey period and intensive searches for it. However, we did record other endemic and threatened amphibian species including <i>Phrynobatrachus villiersi</i> (Vulnerable), <i>P. annulatus</i> (Endangered), <i>Phrynobatrachus liberiensis</i> (Near Threatened), <i>Hylarana occidentalis</i> (Endangered) and <i>Amietophrynus togoensis</i> (Near Threatened), and two endangered chelonians, <i>Kinixys homeana</i> (Vulnerable) and <i>Kinixys erosa</i> (Data Deficient).
Investigate the presence/absence of the deadly <i>Batrachochytrium dendrobatidis</i>			√	We designed a parallel study that sampled frogs for the deadly amphibian fungus, <i>Batrachochytrium dendrobatidis</i> . In all we swabbed 99 frogs. The results of this study have been prepared and a manuscript submitted for publication in an international peer-reviewed journal.
Improve capacity and skills of local stakeholders in amphibian research and basic ecology			√	Six local stakeholders (including wildlife staff, local people and staff of affected logging companies) have been trained in amphibian survey and conservation strategies. One undergraduate student Philip Amankwa, was specially trained and he collected data for his BSc. Degree project at the Kwame Nkrumah University of Science and Technology (Dept of Wildlife and Range Management). In addition, 10 ecologists from different organisations and institutions across Ghana received training from Professor Andrew Cunningham of the Zoological Society of London and Dr Richard Suu-Ire of the Accra Zoo on the chytrid fungus and other amphibian diseases.

Create awareness and empower local people in the conservation of the species		√	We conducted workshops, community radio programmes and school outreach before and during the project to create awareness among local on the need to protect the species and its habitats. A post-project workshop was also conducted to assess the success of our conservation activities. We developed and distributed brochures and info cards. The project succeeded in persuading some people farming within the habitats of the species to relocate their farms. Sometimes however, we had to report stubborn farmers and chainsaw operators to the Wildlife Division to intervene in halting their illegal habitat destruction activities.
Provide local people alternative livelihood options in beekeeping		√	Our failure to find the species within the original time frame made us to increase our survey period and area and also to allow us to successfully sample a reasonable number of other rare frogs for the Chytrid fungus. We diverted allocated funds for this purpose and also to do more conservation education and capacity building. Besides, contrary to our original budget we realised it could cost almost twice as much to establish and sustain such a beekeeping project. However, we managed to educate and encourage local communities to embrace beekeeping as best alternative to the activities destroying the species habitats.

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

The project team on some occasions encountered local people who would not be persuaded by our conservation education to stop illegal farming and logging within the species habitats. In dealing with the situation we made reports to the affected Chiefs and offices of the Wildlife Division. By the time we could also do the beekeeping component of our project, starting-up such a project could cost about twice we had originally budgeted for. However, we committed these allocated funds in maximising our efforts in other aspects of the project such as field/chytrid surveys, conservation education and capacity building. Thankfully, through the conservation education interactions we succeeded in prevailing on local people to consider alternative livelihood options such as beekeeping instead of relying heavily on the species habitats.

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

A. Chytrid Fungus (*Batrachochytrium dendrobatidis*) and Capacity Building

This project established that the deadly amphibian disease chytridiomycosis is absent from Ghana. The work further contributed to a large pool of similar, c. 800 samples, showing that the disease is absent from the whole of West Africa (western Nigeria to Senegal). I and co-authors have prepared and submitted a related paper for publication in a reputable peer-reviewed journal, *PLoS ONE*. In addition, the project also led to the first-ever workshop in Ghana on amphibian diseases, held in the capital, Accra. Workshop participants received relevant training on amphibian diseases surveillance, monitoring and prevention strategies.

B. Halting of Illegal Habitat Destruction Activities: We succeeded in persuading many local people, including farmers and chainsaw operators whose illegal activities were destroying the species habitats, to abandon such activities. Many of such farmers relocated their farms and the chainsaw operators agreed to subsist on alternative means of livelihoods such as beekeeping. As alternative to using juvenile frogs as bait for fishing children were also taught and agreed to using earthworms.

C. Key Collaborations: Through this project we established long-lasting collaboration with two world renowned wildlife diseases experts, Professor Andrew Cunningham of the Zoological Society of London and Dr Richard Suu-Ire of the Accra Zoo. This collaboration is important to sustain efforts of preventing in particular transmission of the deadly amphibian chytrid Fungus in Ghana. In addition, through this project we also fostered partnership with a USA-based nonprofit SAVE THE FROGS! the world's only charity dedicated exclusively to amphibian conservation. Although we sought from SAVE THE FROGS! Mostly in-kind support to ensure that the plight of the species receive wide publicity, thankfully we got more than we bargained. SAVE THE FROGS! Ghana was launched (<http://www.savethefrogs.com/in-the-news/press-releases/2011-09-23-Ghana-Formation.html>), becoming the first international branch of SAVE THE FROGS! And West Africa's first non-profit organisation dedicated exclusively to amphibian conservation (www.savethefrogs.com/ghana). The organisation has increasingly become a major force to reckon with in Ghana and our focal species (*Arthroleptis krokosua*) remains a "flagship species" for protecting other amphibian populations and promoting a society that respects and appreciates nature and wildlife. We reported about the species in my interview with Mongabay (<http://news.mongabay.com/2011/1102-hance-interview-adum.html>).

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

We involved local people in all aspects of the project, from the start to finish. Two local community members, Kwame Yaw and Atiza Mensah received training in identifying the species (and other amphibians) and its habitats. These new local experts are now being used by us and other ecologists at a fee on other projects. We had some local people who voluntarily served as our informants, reporting to us any ongoing illegal farming or chainsaw operations. Two logging companies operating within the project area (John Bitar and Co. Ltd., and Logs and Lumber Ltd) were also actively involved in the project planning and all workshops. Now the management of these two companies are able to locate the habitats of the species and other endangered amphibians. At a workshop in Kumasi that comprised logging companies and the Forestry Commission, recommendations were made to incorporate this endangered frog and other endangered

amphibians in the country's National Forest Certification Standards. We also worked with local school teachers to involve school children in practising and acting drama, showing the importance of this frog and other amphibians. In addition, we contracted local artists to make art of this frog and other amphibians. We presented these beautiful frog art works to various people to show our appreciation and also as an effective tool to ensure that our conservation initiatives persist far beyond the life of this project.

5. Are there any plans to continue this work?

Yes.

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

Our new NGO, SAVE THE FROGS! Ghana (www.savethefrogs.com/ghana) is creating a whole webpage for the species wherein we will have the significant findings of this project. We will continue to update this page whenever necessary especially when we have follow-up projects. In addition, once we get our paper about the absence of chytrid fungus published we will make it downloadable (free) at this site. We will also circulate the paper among all stakeholders. Meanwhile, in the recent past, we shared some of our results locally and internationally at conferences and workshops.

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

We spent about 20 months on the project instead of the anticipated 12 months. Our failure to detect the species within the anticipated time made us to prolong our survey period. (The species is a rare species and many other amphibian assessments that occurred in our project area and other similar forests also failed to detect it (Hillers *et al.* 2009 and literature cited therein), with the exception of Adum *et al.* (2011) and Ernst *et al.* (2008). In addition, the results of the diseases component of the project were novel and we needed more time to prepare a manuscript for immediate publication to contribute to ongoing global efforts in curbing the spread of the disease.

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
Reconnaissance Surveys and Training	-	300	-	It was necessary to have recce trips to train and also get team members familiarise themselves with local communities, other team members and forest sites.
Field/Chytrid Surveys	1246.464	2203.00	956.594	We increased our survey period almost double, as we could not detect the species within our original given time. The extended time was also to allow us to be able to sample many other rare

				frogs for the chytrid fungus.
Livelihood Activities	2110.012	-	-	In our failure to find the species, these funds were diverted into other project areas as appropriate. Besides, it would cost us twice more than we originally planned to establish and sustain a beekeeping project.
Awareness Creation and Improvement of Stakeholders' Involvement	2248.203	2948.00	699.797	We needed more days to be able to persuade farmers to give up their farms and illegal chain-saw operations. Contrary to original plans we also organised a national chytrid fungus workshop in the country's capital, Accra.
Equipment/Supplies/Mailing	80.774	494.00	413.226	It became necessary to buy a video camera and GPS device.
Contingency	259.547	-	-	Formed part of other project expenses as appropriate.
TOTAL	5945.00	5945.00		

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

Following our conservation education, farmers who had farms located within the species habitats abandoned their farms and all chainsaw operations also ceased. But these past activities have degraded and fragmented the species habitats and facilitated the invasion of *Chromolaena odorata*, a non-native plant species that is a major threat to biodiversity throughout the tropics (Holm et al. 1977; GISP 2007). We have plans to remove the invasive plant and replant such areas and other fragmented sites with native trees. We also have plans to provide beekeeping to the local communities. As we failed to detect the species we would also like to intensify our search for it in the near future.

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. In all related presentations during workshops and at conferences.

11. Any other comments?

We wish to acknowledge the in-kind support of the Forestry Commission, Kwame Nkrumah University of Science and Technology, University of Ghana (especially L. Holbech and N. Annorbah) and our two collaborating logging companies: John Bitar & Co. Ltd., and Logs and Lumber Ltd. We would also like to thank our two able local field assistants, Kwame Yaw and Atiiza Mensah and the Chief and Pentecost Church elders and members of Agyemadiem.