

Final Evaluation Report

Your Details	
Full Name	Hamdia Mahama Wumbeidow
Project Title	Abundance, distribution and habitat Preferences of Small Mammals in Moist Tropical Forest of Ghana
Application ID	39139-1
Date of this Report	February 2024

1. 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
Status, distribution and habitat preferences				<p>Despite exceeding nine trap-nights per habitat (standard trap nights is three) which was aimed at increasing the sampling effort, most habitats recorded low captures. 200 individuals belonging to six species were captured during the period. High species and individuals were captured in a silviculturally treated site compared to undisturbed site / nature reserve.</p> <p>We observed that differences in species presence and abundance could be influenced by environmental and climatic factors such as temperature, humidity and seasonal changes. These factors are monitored and expected to be more appreciated with 2 years of sampling.</p>
Describe the threats of small mammals				<p>The study area is a part of the research area of the forest reserve that has remained intact after intensive silvicultural treatments in the 1940s (one logging cycle). However, we observed that though the forest has recovered to some level, the silvicultural treatments that were imposed seem to have caused reduction of forest specialist and increased generalist/disturbance tolerant species as the preliminary results show.</p>
Awareness and education on the conservation of small mammals				<p>A total of 100 pupils from both public and private schools from three communities surrounding the forest reserve have been sensitised on the importance of small mammals and wildlife conservation in general. These pupils were sensitised during our school visits and Powerpoint presentations. Most of the children showed interest in the awareness programmes and small mammal clubs have been proposed to empower these community schools in the area. more</p>

				wildlife clubs and materials to kick start the clubs and ensure the needed educated and awareness are created. Field stuff at the forest serve and a group of 30 farmers was sensitised on small mammal conservation and threats. One presentation at the Department of Wildlife and Range Management as progress report for my PhD research. One colloquium presentation to scientists at FORIG on small mammal project.
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2. Describe the three most important outcomes of your project.

- a). Estimate the occurrence, distribution and abundance of small mammals in a moist tropical forest, Ghana determined.
- b). Understanding factors / threats and habitat preferences of small mammal declines
- c). Arouse the interest of small mammals and least known species: over 100 individuals including school kids (upper primary) from primary schools and community members have been sensitised and encouraged to engage in sound environmental and wildlife conservation practices. Following our community education and sensitisation programmes, there has been changes in behaviour of the communities and schools in terms of their relationship with small mammals. Especially the pupils have understood that the role small mammals play are equally important to society and the ecosystem just as the charismatic animals. Wildlife clubs have been initiated in the three community schools due to the enthusiasm of learning more about conserving the small mammals leaving near them.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

Initially we planned on conducting our field surveys for 20 days (10 days dry season and 10 days rainy season) at the Bobiri Forest Reserve (16 plots of 1 ha each). However, it was impossible to cover all the 16 plots within the 10 days. As each plot required three trap nights. Also, trials sampling within the first three trap nights of the field inventory activities yielded no captures especially in the dry season. To deal with this challenge, discussions were held with my supervisor who suggested we increase the number of trap nights to 10 days. In the end we sampled all 16 plots for 9 days. This approach was more effective because it yielded more results. However, the initial budget and plan posed a great challenge for the team. We had to cut back on equipment and DSA for the team in order to cater for the extended days. Data loggers, densimeters and others initially planned to be bought and used in the field were not purchased. A handheld manual temp/humidity device was purchased in place of the data loggers to cut down cost.

Due to the limited time available for the project to be completed, we were not able to cover much of the smaller surrounding communities and schools in the area as planned. However, we were able to cover the three larger communities near the project sites and will require more funding support to cover the other communities around the r reserve in our future projects.

We anticipated using 16 camera traps to augment live trapping surveys, but we could only have access to four camera traps to be used over a limited time period as the owner also need to use them for his data collection. Due to limited number of cameras and the non-captures recorded for the duration, the camaras were removed and only live trapping continued. However, we intend to acquire camera traps in our future project to enable us to cover much area and also collect data over a longer period.

4. Describe the involvement of local communities and how they have benefited from the project.

An awareness campaign was carried out in three communities surrounding the forest reserve. It consisted of explaining to local populations the morphology, physiology and ecological importance of small mammals using live specimens, trapping equipment, pictures and PowerPoint presentations. At the end of the explanation, pupils and community members were allowed to ask questions in order to clarify any doubts.

5. Are there any plans to continue this work?

Yes, plans are far advanced to continue this project. This is because the surrounding communities and schools of the Bobiri forest are many, but our current project only covered three communities. The project team could not reach the public schools which are more than the private schools and therefore the other areas need conservation attention. Additionally, other communities whose inhabitants depend on resources from the Bobiri Forest Reserve for their livelihood were not part of this project and have been targeted to be part of our future conservation and community sensitisation programmes.

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

To make the data available to a larger community of academics and organisations with an interest in preserving the small mammal population, we intend to publish the results of this effort in an international peer-reviewed journal and a thesis. To raise awareness about the conservation of small mammals in Ghana, we also plan to continue to strengthen school clubs through FORIG school outreach programme.

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

In the future, we intend to expand our activities for raising awareness and educating people about conservation to larger communities. Our goal is to scale up our educational efforts to encourage pro-conservation behaviour among marginalised

people and conserve cryptic and secretive small mammals in Ghana and the Bobiri Forest reserve. We want to accomplish the following with our next project:

- To involve local communities in the development of a roadmap for conserving small mammals and other wildlife species in the forest reserve.
- To provide an opportunity for pupils, teachers and local community members to learn more about their environment, its importance and what people can do to help protect it.
- To educate, raise awareness, increase public interest and understanding of the environment with the aim of promoting conservation of lesser-known wildlife species.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

Yes, The Rufford Foundation was acknowledged in all our public presentations, and communications on the project activities.

Yes, I presented part of my work at a colloquium at my research institution and doctoral seminars of the department of wildlife and range management, KNUST. As part of acknowledgements, I used the Rufford logo and vocally thanked Rufford for being a major funder of my project.

9. Provide a full list of all the members of your team and their role in the project.

Hamdia Mahama Wumbeidow: team leader and led the development of the project ideas, implementation plan, training materials and co-delivery of the training to Pupils, community members and field data collection. She was responsible for progress and project final report.

Elikem Mac Nutsuakor: was the field coordinator and was responsible for arranging field visits, and support services during data collection (species identification).

Yahaya Musah: in charge of field equipment, purchasing of supplies and photography and species identification.

Jonathan Dabo: a Chief Technician from Forestry Research Institute of Ghana (Tree and vegetation enumerator/Botanist).

Nana and Pascal: carrying of traps and supplies in the field, tree spotter.

Teye: Driver

Prof. Samuel Kingsley Oppong: (Principal supervisor) a lecturer at the dept of wildlife, provided expert advice on sampling protocols.

10. Any other comments?