

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	Emmanuel Amoah
Project title	Saving the Vulnerable West African Dwarf Crocodile from Local Extinction: A Community Approach in Awniafutu, Ghana
RSG reference	22226-1
Reporting period	July, 2017-September, 2018
Amount of grant	£5000
Your email address	emmanuelamoah610@gmail.com
Date of this report	5 th November, 2018

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
Estimate the abundance of dwarf crocodiles in the Anwafutu swamp forest				<p>During this project, we surveyed a 17.3 km of the forest and encountered 31 individuals of West African dwarf crocodiles. This gave an average encounter rate of 1.8 individuals/km.</p> <p>The recorded individuals comprised hatchlings, juveniles, sub adults and adults, presenting a very good demographic of the species at the site.</p> <p>There are still a lot of areas we could not cover during this phase of the project. This is because the swampy nature of the forest makes it really challenging to walk through. So it was only possible to cover such a distance within the project period.</p>
Identify threats of West African dwarf crocodiles in the Anwafutu swamp forest				<p>We identified the following threats.</p> <ul style="list-style-type: none"> - Hunting pressure is one issue of grave concern in the forest. We saw wire snares and other forms of hunting indices in most of the areas where we directly or indirectly encountered the species. More disturbingly, local hunters set traps around nests to capture the nesting female and also harvest the eggs for consumption or traditional medicine. This behaviour is of serious concern as it limits the number of new recruits into the population -Competition for food resources (fish and snails) between the locals and dwarf crocodiles. There is increasing pressure on the prey resources for dwarf crocodiles as local continually harvest fish and snails from the swamp forest. Thereby

				<p>reducing prey availability.</p> <p>- Logging activities are rapidly reducing habitat quality and available nesting areas. Dwarf crocodiles mostly select areas that do not get inundated during the rainy season for nesting. Because the Anwiafutu forest is a swamp, such areas are limited. The situation is further aggravated by logging activities in forest which is rapidly reducing the already scarce nesting areas.</p>
Raise awareness about West African dwarf crocodiles in Anwiafutu				<p>We were able to carry out all our proposed educational programmes in local schools as well as in the community. We educated about 500 locals and schoolchildren through PowerPoint presentations, video shows, focal group discussion as well as one-on-one interactions.</p>

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

Anwiafutu forest is a swamp habitat which means accessibility is highly influenced by rainfall. Our survey timeline was affected by unexpected rainfall pattern which delayed some of the field surveys. To avoid wasting resources, we relied heavily on our local contacts to know the conditions of the forest before travelling all the way from Kumasi to Anwiafutu (317 km).

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

Firstly, this work has helped established the threats of West African dwarf crocodiles in the Anwiafutu forest for the first time. Through this project, we have documented the major threats of the species namely, hunting, logging, and the competition for food resources (snails and fish) between locals and dwarf crocodiles. Knowing these has better position our team to develop mitigating measures in the near future to protect the species.

Secondly, the encounter rate estimate has given us an idea of the abundance of the species in the forest. The average encounter rate of 1.8 individuals/km recorded during this project is significant considering previous results in other parts of Ghana and West Africa in general. Frequency of indirect signs such as burrows and feeding remains encounters further suggest that there is significant population of West African dwarf crocodiles in Anwiafutu community forest. More importantly, the respective encounter rates recorded for the different transects during this project will serve as baseline information for monitoring population trend in such areas.

Finally, through this project, we have built upon our earlier community awareness campaigns undertaken in 2015. About 500 people in Anwiafutu are now aware of economic and ecological importance of crocodiles. Further, more locals now understand the threats their activities pose to dwarf crocodiles. Compared to 2015, we are gaining more support from locals in terms of willingness to support dwarf crocodiles conservation. For example, out of 100 respondents sampled, the percentage of respondents willing to support crocodile conservation increased from 33% (after the 2015 outreach) to 49.3% (after the 2017-2018 outreach). It is worth mentioning that two notorious dwarf crocodile hunters who rejected our call in 2015 to join the community volunteer group, have now voluntarily joined. We see this change as very important because it indicates our conservation message is gradually getting to the many of the locals.

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

Involving locals make them feel a part of the project. So we involved locals in all aspects of this project. During field surveys, we ensured we had one or two locals as part of our team. We also included locals in the organisation of the community awareness campaigns. More importantly, we engaged a 12 member community volunteer group and tasked them to act as local ambassadors for the species' conservation. As a way of encouraging volunteers to work, we gave them project t-shirts and a pair of safety boots.

5. Are there any plans to continue this work?

Yes, I plan to continue this work at Anwiafutu and also add another study area, Chirehin Community Land to this project site. Recent study conducted in the Chirehin Community Land as part of my master's programme documented a very good population of dwarf crocodiles but they are threatened by habitat destruction. I would like to add it to my study site for the subsequent phase of the project.

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

I plan to share my result with all stakeholders including the Ghana Wildlife Division, Department of Wildlife and Range Management, and local conservation NGOs working in the area. In the near future, I will collect more data in the subsequent phase of the project and then publish all the findings in an international peer-reviewed journal.

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

I anticipated to use 12 months (July, 2017-June, 2018) but I used 14 months due to unexpected rainfall pattern which delayed our fieldwork.

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 survey: Cost of vehicle rental @£15/day for 5 days	£75	£75	£0	
Reconnaissance survey: Fuel Cost of 3gal/day for 5 days@ £3/gal	£45	£45	£0	
Reconnaissance survey: DSA for 4 project team members for 5 days@ £4/person/day	£80	£80	£0	
Fieldwork Component: Cost of vehicle rental for data collection (during the wet and dry seasons) @ £15/day x60 days	£900	£780	+£120	Due to delay in field surveys arising from unexpected rainfall pattern, the number of days for surveying was reduced to 52 days. This reduced the cost of vehicle rental.
Field Component: Fuel Cost of 3gals/day for 60 days (30 days dry season + 30 days wet season) @ £3/gal	£540	£468	+£72	The difference is as a result of reduced number of days for fieldwork
Field Component: DSA for 4 team members@ £4/person/day for 60days (30 days dry season+ 30 days wet season)	£960	£832	+£128	The difference is the 8 days DSA for 4 team member that was left due to reduced number of days for surveying
Conservation Education Component: Cost of developing and printing of questionnaires, brochures and project banner	£120	£275	-£155	We additionally developed and mounted metallic billboard which inflated our cost. Further, there was increment in the prices of printing.
Conservation Education Component: Cost of printing 30 RSG project T-shirts@ £5/T-shirt	£180	£248	-£68	There was an increment in the printing price of t-shirt
Conservation Education Component: Cost of	£450	£450	£0	

vehicle rental for conservation education (community and school outreach) for 3 return trips @ 150/trip				
Conservation Education Component: Fuel Cost of 10gals/return trip for 3 trips conservation education at local community @ £3/gal	£90	£90	£0	
Conservation Education Component: DSA for 4 team members during Conservation education outreach programmes @ £4/person/day for 30 Days	£480	£480	£0	
Stakeholder workshops of 30 participants: DSA @ £8/person/day for 2 days (one day per workshop)	£480	£480	£0	
Conservation Education Component: Travel allowance for 20 non-resident participants £15/person x 2 workshops	£600	£600	£0	
Total	£5000	£4903	£97	Exchange rate at the time grant was received was £1: GHS 5.2 DSA: Daily Subsistence Allowance

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

Looking ahead, the following are the next important steps:

- Continue with field survey to cover other areas in the Anwiafutu Community Forest.
- Continue awareness campaigns in the local community.
- Strengthen local volunteer group to better perform their advocacy role.
- Expand the study to cover Chirehin Community Land which is also known to harbour significant population of the dwarf crocodiles.

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

I used The Rufford Foundation logo on the project t-shirts, billboard, and PowerPoint presentations. I also used The Rufford Foundation logo on my NGO's (Threatened

Species Conservation Alliance) website: www.threscoal.org to acknowledge grant support for the project

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Mr Emmanuel Amoah (Team Leader)

I spearheaded the full execution of the project including fieldwork, awareness campaigns and report writing.

Miss Lydia Obeng Senior

Lydia played active role in field data collection and outreach programmes

Mr Martin Kusi Manu

He was in charge of development of distributional maps and other GIS aspects of this project as well as the analyses of questionnaires.

Local Assistants

We selected locals who have knowledge about the forest as well ecology of *O. tetraspis* and command respect in the community to assist us throughout the project.



Left: Emmanuel educating schoolchildren in Anwiafutu on the importance of crocodiles. Right: Emmanuel educating the congregation of Anwiafutu Church of Pentecost on dwarf crocodile conservation.



Left: Emmanuel with Anwiafutu dwarf crocodile conservation community volunteers. Right: The project team with a group of schoolchildren after an awareness campaign in Anwiafutu local school.



Left: Section of the audience during an awareness campaign in Anwiafutu. Right: Emmanuel standing by billboard mounted in Anwiafutu to create awareness.



Left: A sample of fish harvesting gear frequently encountered in the Anwiafutu swamp forest. Right: Hatchling of West African dwarf crocodile spotted during a night survey in Anwiafutu community forest.



West African dwarf crocodile spotted in the Anwiafutu swamp forest during a night survey.