

## The Rufford Foundation

### Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
Your name	Albert Chambachogiga
Project title	Status Survey and Conservation of the Threatened West African Dwarf Crocodile <i>Osteolaemus tetraspis</i> in Wewe Catchment, Ghana
RSG reference	22023-1
Reporting period	23 months
Amount of grant	£5,000
Your email address	albertchambichoga@gmail.com
Date of this report	3 <sup>rd</sup> April 2019

**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
Population Status and Distribution Surveys				<p>With a team of two crocodile experts and five undergraduate students we conducted periodic surveys along Wewe River and its tributaries. In late June 2017, we captured a sub-juvenile individual at the Ahensan-Wewe tributary. From interviews, we recorded additional 31 individual crocodiles: five juveniles and 26 adults.</p> <p>Michael G. Starkey (SAVE THE FROGS!) made two observations at the same locality in 2013 and 2016 respectively. Additionally, local citizen scientists that we interviewed, sighted 29 dwarf crocodiles at different times between 2013 and 2018. Of these, 12 adults were reported killed. The university's construction workers incidentally killed six which all became a "feast" for them, and five were hunted by local people for food. Also, university workers rescued another adult individual from local inhabitants and took it to the Kumasi Zoo. Unfortunately, it died later as it was badly injured from harassments by the local inhabitants.</p> <p>This means of the 32 individual dwarf crocodiles, 37.5% were killed for food, whereas 62.5% are believed to be currently surviving. However, the numbers thought to be surviving may be overestimated as it is possible that some of those sighted may have later been killed.</p> <p>We failed to record crocodile eggs during both field and interview surveys. However, all the juvenile individuals (including the sub-juvenile) were sighted recently in 2017 and 2018. Therefore, we believe, there are still breeding populations in the Wewe catchment area.</p>
Re-forestation				<p>As dwarf crocodiles require closed canopy rainforest to reproduce and thrive well, we worked earnestly to re-forest their degraded habitats. With the help of university chapter members, school children, community volunteers and professionals from the Forestry Research Institute of Ghana (FORIG) we</p>

				<p>planted 1,000 native trees (<i>Terminalia ivorensis</i> (black afara), <i>Triplochiton scleroxylon</i> (wawa), and <i>Ceiba pentandra</i> (kapok)) to restore a 5 km section of degraded stream habitat where dwarf crocodiles are currently surviving. Seedlings were monitored by selected volunteers and dead ones were replaced</p>
Dwarf Crocs Conservation and Education				<p>We conducted one-on-one campaigns, educating local people including farmers and construction workers operating along the Wewe River to avoid conducting their activities within 30 m of the riparian buffer zone as enshrined in the laws of Ghana.</p> <p>We involved five undergraduate students of KNUST as research assistants and they built their capacities in crocodile research and conservation. We tutored them on the general biology, ecology, and behaviour of crocodiles. We also trained them on safety protocols when conducting crocodile research including wearing of appropriate protective gear such as rubber boots. We also took them through standardised methods for surveying and catching crocodiles that ensure minimum stress to the species and its habitats. We visited four community schools and reached an estimated 800 children through presentations on the need to protect crocodiles and their habitats. Among the schools we selected for campaigns we also organised storytelling competitions - the best storytellers were awarded. We also conducted radio talk shows on campus-based Focus FM to reach the mass public around and beyond the project area. We shared project activities and findings via social media and blogs to reach international audience.</p>

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

The majority of local community members had negative perceptions about crocodiles and felt they should be killed. There were also others who were crocodile consumers and hunters in communities of the project and were reluctant to join the project initially. They were afraid we were government agents operating in disguise to report their activities to authorities. This delayed the onset of surveys increasing our project timeline.

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

#### ***Location and threats records of dwarf crocodiles***

Prior to surveys of this project we collected important data on the location of dwarf crocodiles in the project area. According to local and foreign citizen scientists interviewed, dwarf crocodiles were located at the freshwater pool at the Wewe-Ahensan tributary, behind KNUST Brunei Hostel, freshwater pool at the Wewe-Ahensan tributary and along main Wewe River. We documented farm expansions and hunting for food to be the most persistent threats to the dwarf crocodile. However, new threats that we recorded included the incidental killing from construction activities within the riparian buffer zone of the Wewe River and its catchment areas. Certainly, the intensification of human activities in the catchment area has contributed to the recent upsurge in dwarf crocodile killings. In less than 4 years, the killings have increased by 200%. This is an important baseline data for formulating management recommendations to reduce threats to the dwarf crocodiles and ensure their long-term persistence.

#### ***Conservation education and storytelling***

Initially, we had opposition from some sections of community folks who were crocodile consumers and hunters. There were also others who had a negative image about crocodiles among local people in the Wewe catchment area. A majority (96%) of the local respondents perceived crocodiles as harmful to humans. Therefore, they wanted their numbers to decrease and wiped out completely while, others wanted their numbers to increase for food. However, conservation education among local people paid off resulting in commendable change in negative behaviours toward crocodiles. For instance, upon interacting with locals about the importance of crocodiles in the ecosystem, some Wewe residents said "if you say they are important then we will not kill them again". Many of these people later became core project members following our campaigns and assisted in various aspects of the project. Through our one-on-one community campaigns, radio talks, social media posts and blogs over 2,000 understood the conservation needs of the dwarf crocodile.

We also involved local people in storytelling competitions as we as narration of the narration of proverbs, poems and folktales about crocodiles. Please refer to the additional information for the list.

#### ***Mentorship and training***

Through this project five community volunteers were trained on how to raise and care for local tree seedlings. We also involved five undergraduate students of KNUST as research assistants to build their capacities in crocodile research and conservation. We tutored them on the general biology, ecology, and behaviour of crocodiles. We also trained them on safety protocols when conducting crocodile research including wearing of appropriate protective gear such as rubber boots. We also took them through standardised methods for surveying and catching crocodiles that ensure minimum stress to the species and its habitats.

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

Community people, their leaders, school children and teachers and university students were involved at every stage of this project. Through community dialogues we identified crocodile hunters and consumers. In consultation with traditional leaders we formed community-based volunteers who assisted in field surveys and tree planting. Traditional leaders were also involved in workshops seeking lasting solution to threats and in the drafting of the Wewe Catchment Dwarf Crocodile Conservation Action Plan. These activities including campaigns has offered students and community folks knowledge on the ecology and conservation needs of the dwarf crocodile. It has also taught them to be environmentally conscious people and this will go a long way to sustain our conservation efforts.

**5. Are there any plans to continue this work?**

Yes. We will continue to seek funds to engage community-based volunteers to establish tree nurseries, plant more trees and ensure the protection of the dwarf crocodile in the Wewe River catchment.

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

We have already shared results with local stakeholders, on our social media pages and at the SAVE THE FROGS! Ghana KNUST website, [www.savethefrogs.com/countries/ghana/knust](http://www.savethefrogs.com/countries/ghana/knust). We are putting together a Wewe Catchment Dwarf Crocodile Conservation Action Plan which will be shared with the Ghana Wildlife Division and KNUST university authority. We plan to publish the findings of this project in the crocodile specialist group newsletter and in open access peer-reviewed journals for the wider scientific community.

**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 ran for nearly two years due to opposition faced in project communities which affected the implementation and completion on time.

**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
Allowance for 3 key project team members	150	250	+100	This was due to increase in project timeline and inflation.

Salary for caretakers of planted tree seedlings	420	420		There were no changes
Meals (breakfast and lunch) for preliminary training for 3 biology students and 5 local people	200	200		There was a slight increase by approximately £1 as a result of inflation.
Allowance for team members for 40 days field and interview surveys	250	250		There were no changes
Questionnaires for interview among hunters	15	20	+5	There was a slight increase due to inflation.
Planting of 1,000 native trees (seedlings, meals and water for volunteers)	225	300	+75	This was due to increase in inflation
Conservation Campaigns (Radio talk shows, vehicle rental, fuel)	1875	2000	+125	This was due to increase in fuel prices and inflation
Conservation Campaign materials (croc posters, flyers, calendars, t-shirts)	655	765	+110	There was a slight increase due to inflation.
Awards for best 3 croc story tellers during school outreach	30	30		There were no changes
Workshops (Venue, writing pad and pens, refreshment)	234	234		There were no changes
Wewe Catchment Dwarf Crocodile Conservation Action Planning	800	800		There were no changes
Dwarf crocs' distributional map	100	110	+10	There was a slight increase in producing map
<b>TOTAL</b>	<b>4954</b>	<b>5379</b>	<b>+425</b>	

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

With the alarming rate at which crocodiles are being harassed and killed, we acknowledge much more awareness should be created among local inhabitants.

To sustain our conservation efforts and ensure the long-term survival of the dwarf crocodile we recommend: i) the development of alternative livelihood for farmers whose livelihood depend on critical habitats, ii) marking riparian buffer boundaries with crocodile signage to alert land users of croc habitats, and iii) further involve stakeholders to expand reforestation to cover all detected ranges of the species.



**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?**

All project materials (calendars, flyers, posters and t-shirts) were customised with the Rufford Foundation logo. We mentioned RF in all articles and project updates we shared on social media. During campaigns and project meetings we acknowledged RF.

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

**Albert Chambichoga:** Team Leader and crocodile expert: planning and coordinating all aspects of the project.

**Nana Kofi Boateng:** Local crocodile expert (hunter); assisted with surveys and storytelling sessions.

KNUST student volunteers and trainees: **Michelle Mimi Vandyck, Owusu Gyamfi Charles Osei, Prince Obed Asamoah,** and **Raheem Awafo Abdul.**

**12. Any other comments?**

We appreciate RF for supporting us to promote crocodile conservation in Ghana. We also thank Michael Starkey, Kerry Kriger and Gilbert Adum, all of SAVE THE FROGS!, for their contribution towards this project. Finally, we thank all community folks of Ayeduase, Kentinkrono, Kotei, Ahensan and Ayigya as well as volunteers who assisted on this project. In particular, we thank the KNUST undergraduates.



Left: Juvenile of dwarf crocodile we caught in the Ahensan-Wewe tributary. Right:

An undergraduate trainee holding the recorded dwarf crocodile



Dwarf crocodiles incidentally killed by construction workers left under a foot bridge across the Wewe River—waiting to be eaten



Project leader (Albert Chambichoga) presenting conservation educational materials to a teacher of a local school





Project leader (Albert Chambichoga) presenting conservation educational materials to the head of a local school



Project leader (Albert Chambichoga) presenting an award to one of the best-performing croc storytellers



Project leader (Albert Chambichoga) presenting an award to one of the best-performing croc storytellers



Project leader (Albert Chambichoga) presenting conservation educational materials to the headmistress of a local school





Project team engaging local schoolchildren



The project team engaging local schoolchildren and teachers



Design of RSG-branded t-shirt

### **Collection of Proverbs, Poems and Folktales about Crocodiles Narrated by Local Children and Elders**

#### **a. Proverbs**

##### **b.**

- ❖ No matter how long a log lasts in a river it can never turn into crocodile.
- ❖ If your in-laws are crocodiles, you don't fear crossing the river.
- ❖ If you think you have the sharpest teeth, go to the house of crocodiles for a teeth test.
- ❖ He who struggles with the crocodile and gets free, it automatically calls you its friend.
- ❖ When they insult you that your head is as big as a crocodile, no need to get furious just know that you are a hero.
- ❖ Don't be afraid of crocodiles because not everyone would be killed by crocodile.

#### **c. Poems**

##### **THE NILE CROC**

When I was a little crocodile  
I wondered for a long while  
When will I get to cross the Nile

My father said, "Oh my dear child, it's just a matter of time"  
You will cross without paying a dime

#### **THE LITTLE POOR CROC**

I am a little poor croc  
Being stuck on the high rock  
Anytime I have to go out  
I make sure I check on my clock  
If it's not midnight I will never move from the rock  
If not, men will rock me

#### **c. Folktales**

#### **THE LITTLE POOR CROC AND WHY CROCS KILL PEOPLE**

Have you ever wondered why crocodiles kill more people than any other wild animal? Once upon a time, there lived Little Croc on rocks in a river. Little Croc was so poor and weak to the extent that he could not join the other crocs to swim, eat or play.

One day on a very sunny day he came out to feed himself. He sang one of his usual sorrowful songs:

**I am a little poor croc  
Being stuck on the high rock  
Anytime I have to step out  
I make sure I check on my clock  
If it's not midnight I will never move from the rock  
If not, men will rock me**

A giant croc heard the song and decided to come out to find out who the poor croc was. The giant croc said to Little Croc, "I like your voice and talent and I want us to be friends." Before Little Croc could say jack, a hunter from nowhere shot him dead. The giant croc became furious and started chasing the hunter. That is why to this day, crocodiles keep chasing and killing humans.

#### **WHY HUMANS HATE CROCODILES**

Once upon a time, there lived a man, his wife and their toddler son. One day they went to the farm, which was close to a river. They lay the baby to sleep whiles they worked. The child later woke up and not seeing the parents started crawling towards the river. When the baby got to the bank of the river and saw a croc, he started playing with it. He sat on the croc and it took him into the water to swim. They swam to the baby's satisfaction and the crocodile returned him. When the parents came, they realised the baby was wet but thought he might have probably urinated on himself. This became a daily routine for the lovely croc and the baby until one day the parents came to where they usually left the baby earlier than usually and did not find him. They searched everywhere and upon going to the river lo and behold the baby was happily riding on the back of the croc. Immediately parents saw that they were in frantic shock, but the croc quickly brought the baby to them into to prevent them screaming. They both gave thanks to the croc and took their baby away. The



next day the same thing happened but the parents were no longer scared because they knew that the croc became friends with their baby. The croc even used to come to visit them at their farm while they are working. One day, the croc took the baby to the river where the baby fell off into the river and drowned. When the parents came to the river, the croc came out with tears to prove that it did not kill its friend intentionally, but the parents did not believe, claiming it was "shedding crocs tears". Out of rage the parents killed the croc. Thence, humans began to hate crocs and kill it anytime they spot one.

### **THE TALKING CROC**

Once upon a time, there lived a young prince called Awampaga. He was a lover of animals; he loved all kinds of animals from ants to elephants. He never permitted the killing of animals. Everyone hated him because of this. There came a time when his father the King passed on and Awampaga was the next to ascend the throne. But his people did not like him and set him up to get a certain herb from the evil forest to be used for his coronation. He set up his journey into the forest, and right from the edge to the darkest part where he was to get the herb, he encountered all kinds of scary creatures. But because of his love for animals he remained unharmed. However, he lost his way and came across a croc that was ensnared by a hunter. Awampaga wanted to save the croc but he was scared that being wounded it would eat him up. He decided to pray first so that God will save him.

**Prayer: Heavenly father, you know how much I love animals. I don't know how long this croc has been trapped, it might be hungry but please I am going to save its life so please give it patience for it not to hurt me. Amen.**

To his surprise the croc also concluded with him by replied "Amen." "Please, I am not going to hurt you said the croc, just save me and one day I will save you too", the croc further assured Awampaga. Awampaga immediately set the croc free. Then it asked him to make himself comfortable and wait as it goes to get something to eat. True its words it returned in a jiffy, even with some food too for him. They became friends and began to share stories. "Trust me I know your entire story already", said the croc. It narrated everything including his mission in the forest and promised to help him out. It found the herb and more so carried Awampaga and ran with the speed of light to the village. Just when they got there another person was been installed as the new king. To the surprise of everybody, the croc began to talk in the most thunderous voice ever, "over my dead body, you wicked and foolish people, you sent you're king-to-be to suffer and perish in the forest. Well I am sorry the gods of the land have saved your king and I brought him back for what is rightful his. You must crown him as your king." The place became as quiet as a cemetery and immediately the kingmakers crowned Awampaga as the king. To this day, Awampaga still remains the king of his people and the croc is the oracle and guardian angel.

**SURVEY QUESTIONNAIRE ON THE DISTRIBUTION AND ABUNDANCE OF THE WEST AFRICAN DWARF CROCODILE (*Osteolaemus tetraspis*) IN KNUST WEWE RIVER CATCHMENT, KUMASI, GHANA**

DATE: DD / MM / YY  
[ ] / [ ] / [ ]

TIME: hh / mm  
[ ] / [ ]

**SECTION 1 (INTERVIEWEE'S BIODATA)**

1. NAME: .....
2. SEX:  
A) Male [ ] B) Female [ ]
3. Are you a resident of this area?  
A) Yes [ ] B) No [ ]
4. How long have you been living/working in this vicinity?  
A) 2 years and below [ ] B) 3years – 5years [ ] C) 6 years and above [ ]
5. What do you do for a living?  
A) Hunter [ ] B) Farmer [ ] C) Fisherman [ ] D) Fisherwoman [ ] F) Student [ ]  
E) Others.....

**SECTION 2 (ABUNDANCE AND DEMOGRAPHY)**

6. Are you aware there are crocodiles in the KNUST Wewe River Catchment?  
A) Yes [ ] B) No [ ]
7. Have you spotted any crocodiles?  
A) Yes [ ] B) No [ ]
8. Which crocodiles in these photos did you observe?  
A [ ] B [ ] C [ ] D [ ]

**(If Dwarf Crocodile):**

9. When was the last time you spotted the crocodile?

A) Less than one year [ ] B) 1– 3years [ ] C) Over 3years [ ]

D) Others.....

10. How many times have you spotted the crocodile?

A) Once [ ] B) Twice [ ] C) More than twice [ ]

D) Others .....

11. Have you spotted eggs of the crocodile?

A) Yes [ ] B) No [ ]

12. How many individual crocodiles did you observe at a time?

A) One [ ] B) Two [ ] C) More than two [ ] D) None [ ]

13. What was the stage of the crocodile you observed?

A) Juvenile (Small) [ ] B) Adult (Big) [ ] C) Not sure [ ]

14. Are crocodile numbers:

A) Increasing [ ] B) Decreasing [ ] C) Staying the same [ ] D) Not sure [ ]

15. Do you know of any other aquatic dwelling animal in the Wewe River?

A) Yes [ ] B) No [ ]

**SECTION 3 (DISTRIBUTION, BEHAVIOUR AND SEASONS)**

16. Where did you observe the crocodile?

A) In the river [ ] B) Bank of the river [ ] C) Farm [ ] D) Forest [ ]

E) Within the community [ ] F) Wetland [ ] G) Others .....

17. Can you give directions to the exact location you observed the crocodile?

A) Yes [ ] B) No [ ]

If yes; Global Positioning System (GPS) coordinate .....

18. In what state did you see the crocodile

A) Feeding [ ] B) Basking [ ] C) Mating [ ] F) Nesting [ ]

E) Others.....

19. In what time of the day did you spot the crocodile?

A) Morning [ ] B) Afternoon [ ] C) Evening [ ]

D) Others.....

#### SECTION 4 (THREATS AND HUMAN-CROCODILE CONFLICT)

20. What did you do to the crocodile you observed?

A) Killed it [ ] B) Chased it away [ ] C) Left it alone [ ] D) Rescued it [ ]

21. Has the crocodile been hunted in this area?

A) Yes [ ] B) No [ ]

22. How many crocodiles have you seen hunted or killed?

A) One [ ] B) More than one [ ]

23. Do people destroy eggs/nests of the crocodile?

A) Yes [ ] B) No [ ] C) Not sure [ ]

24. What do you think are the threats to the Wewe River Catchment?

A) Construction/Building [ ] B) Hunting [ ] C) Farming [ ] D) Pollution [ ]

E) Firewood extraction [ ]

#### SECTION 5 (CONSERVATION ISSUES)

25. Do you think it is important having crocodiles in the Wewe Catchment?

A) Yes [ ] B) No [ ]

If Yes; state reasons

.....  
.....

26. Do you want to see crocodile numbers:

Increase [ ] Decrease [ ] Stay the same [ ] Wiped out completely [ ]

27. What management remedies do you think can help improve habitat conditions of the Wewe River Catchment?

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.....

Any other comments:

.....  
.....  
.....



A record of West African Dwarf Crocodile in KNUST Wewe Catchment (photo credit @Michael Starkey).