

Final Evaluation Report

Your Details	
Full Name	Ojonugwa Ekpah
Project Title	Survey of the Endangered Yellow Waxtail damselfly (<i>Ceragrion citrinum</i>) and related insects of ecotourism in Sunmoge, Omo Forest Reserve, Nigeria.
Application ID	32343-1
Grant Amount	£5880
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Date of this Report	01/01/2022

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
Community Outreach and Education: Provide environmental education to the residents of Sunmoge to reduce the extent of pollution of the habitat of the endangered <i>Ceriagrion citrinum</i> .				Demographic data and previous knowledge of dragonflies were obtained from the residents of Sunmoge village. Based on the findings, environmental education was offered to the residents. Their perception of ecological importance of dragonflies in their environment was improved at the end of the capacity building program.
Engage 20 primary school pupils of Sunmoge in a dragonfly survey within Sunmoge forest				Pupils who are children of Sunmoge village were taken into the forest in two batches to observe dragonflies. They were able to identify common species of dragonflies such as <i>Ceriagrion glabrum</i> as well as the rare and endangered <i>Ceriagrion citrinum</i> .
Deliver presentations and interactive sessions for 20 primary school pupils of Sunmoge				Before the field survey of dragonflies, the children were educated on the importance of dragonflies and could as well differentiate dragonflies from other biting flies. Each student could mention with confidence the role of dragonflies for example, that they feed on mosquitoes thereby reducing the risk of malaria fever.
Monitoring and Conservation Activities: Access the population of <i>C. citrinum</i> in Ijele-Sunmoge Village				The number of individual species of <i>Ceriagrion citrinum</i> encountered were recorded and GPS coordinates of the locations were documented. The information was used to map out Important Odonate Areas for conservation priority (kindly see in the publication on Q. 3).
Plant 200 tree seedlings in the fragmented Sunmoge forest				200 species of indigenous trees were planted around the fragmented area of Ijele-Sunmoge forest. However, during the project, more trees were felled by the residents

				despite the outreach.
Maintain a database of Odonata species in Igele-Sunmoge village				This aspect is still on-going. An Odonata species checklist of Igele-Sunmoge village and the entire Omo forest reserve is being created.
People Engagement: Provide advocacy and disseminate information about project activities to the local and international communities				This was done through presentation; some of which are the presentation in The Biodiversity and Development Institute https://www.youtube.com/watch?v=DCQNsOax2A8&t=17s and the Entomological Society of America conference 2021.
Attract at least 20 international ecotourists to Igele-Sunmoge village				No international ecotourist was able to pay a visit to Igele-Sunmoge village to sight <i>C. citrinum</i> . This could be due to the difficulty in accessing the area and the fear of insecurity.

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

There was a delay in getting canoe that was used to access Igele Sunmoge village. We then had to book for canoe many days before the visit. However, making contact with the residences was difficult due to bad mobile network in the area. During the capacity building, the project collaborator was made to translate from English language to the local dialect of the people as some of them did not understand English.

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

This project provided information about the average population of the endangered *C. citrinum* in the forest. Before now, information about the species were scanty and based on speculation. For example, *C. citrinum* is not listed on the African Dragonfly Biotic Index (ADBI) as presented by Vorster et al. (2020). The reason for this omission could be the lack of information about *C. citrinum*. Furthermore, we were able to predict an ADBI score for *C. citrinum*. Considering its restricted geographical distribution, threat status (Endangered) and species vulnerability, the ADBI of *C. citrinum* should be 7 especially that the species is endemic to Nigeria and Benin Republic (Ekpah et al., 2021). Furthermore, the project mapped out important Odonate areas (IOA) in the area to enhance proper conservation decision.

The fragmented forest areas on which the endangered *C. citrinum* depends was enriched by planting 200 trees. Since the trees were planted through the collective participation of the residents of Sunmoge, it is expected that the people protect them to see that they grow to maturity. This afforestation will impact on the landscape in relation to sustainable land use including shelterbelts, wind breaks and

amelioration of microclimate. The planted tree will also enhance biodiversity in Sunmoge by providing shelter for birds, bats and other related species.

The project provided an atmosphere for information sharing and awareness creation in favour of dragonflies in Igele-Sunmoge area. 20 children of Sunmoge benefited from this work through the coordinated field trip and environmental education. More awareness was created by the publication of project results in an international specialized journal https://www.researchgate.net/publication/354954435_IDF-Report_162_28092021

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

The residents of Sunmoge were engaged in a series of biodiversity conservation education. First, the *Baale* (Chief) of the community and the elders were visited and informed about the project concept and what they stood to benefit. Then a simple questionnaire was distributed to the residents to understand their perception of dragonflies. Twenty children of Sunmoge village benefited from the project as they were introduced to the world of dragonflies and their role in the environment. More importantly, the children were taken in batches into Sunmoge forest where they were taught how to survey dragonflies. Project materials, including t-shirts and bags were distributed to the children. Exclusive interview with the *Baale* (Chief) of Sunmoge was conducted by Nigerian Television Authority (NTA) correspondence.

5. Are there any plans to continue this work?

Yes. We plan to further provide conservation education and create awareness to protect rare species of dragonflies in Sunmoge and other forest areas. This is because little attention is given to the conservation of insects as many people consider insects to be harmful. Knowledge of the ecological role of dragonflies is poor in Nigeria. More importantly, protecting dragonflies is protecting the threatened Nigerian freshwater habitats on which they depend. There are therefore plans to study the critically endangered *Neurolestes nigeriensis* which is endemic to Obudu plateau in eastern Nigeria.

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

Project results were divided into two components: the survey of the species; and the conservation education which were published in IDF-report. The publication was uploaded to ResearchGate with over 600 reads so far. Also, there are regular posts on social media platforms of dragonfly species encountered in the forest. Pictures of the dragonflies as well as their scientific names are given. The Rufford Foundation was tagged in such posts which has received many 'likes' and comments on the Facebook page of Dragonflies and Damselflies of Southern Africa. There were also presentations of the project results to the international community through conferences one of which is the Entomological Society of America conference in 2021.

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

The project began on 1st January 2021 and was anticipated to end on 31st December 2021. However, project activities were satisfactorily concluded in October 2021 because some works were done concurrently. For example, according to the original plan, the production of report for publication was scheduled for 16th-20th December 2021 but the results were published in September 2021.

8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Supplies (project customized school bags, T-shirt)	830	830		
Fuel (diesel) 80litres of diesel	80	80		
Supplies (1 Field guide to dragonflies and damselflies of Africa)	40	40		
Equipment (1 ASUS Vivo Book 15 thin and light Laptop: with appropriate software and Wi-Fi) @£400 in all and cost of domain and hosting for the online database	400	400		
Feeding	1440	1440		
Waste bin	120	120		
Personnel costs (forest ranger)	200	200		
Personnel costs (labour for tree planting)	150	150		
Supplies (Tree nursery)	400	400		
Equipment (Nikon Cool Pix900)	500	550	+50	A bag for the camera and memory card were bought. The additional cost also included a

				protective lens which was attached.
Vehicle rental (canoe)	400	400		
Vehicle rental (car)	120	120		
Lodging	1200	1000	-200	The researcher sometimes lodged for free in the Elephant office apartment of Nigerian Conservation Foundation in Omo forest reserve.
Media coverage, Project banner and wine for Baale.		150		Originally not included in the budget.
TOTALS	5880	5880		

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

The important next step is the continuous monitoring of anthropogenic activities in the area. This is being done by visits to Igele-Sunmoge river and by gathering information from the project's local collaborators in Sunmoge. This is very important because from the analysis of questionnaire distributed in February 2021, 40 % of the residents of Sunmoge described their occupation as timber contractor meaning that they specialised in felling trees. The forests around Sunmoge in which the endangered *Ceriatron citrinum* is found is under continued threat due to deforestation hence the need to plant more trees.

10. 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?

The Rufford Foundation logo was used on the project t-shirts which were distributed to the participants including children of Sunmoge and the Baale (chief) of Sunmoge and the elders. The Rufford logo also appeared on the project banner on which information about the project were written hence serving as a background for the facilitators during the awareness creation in Sunmoge. Logo of The Rufford Foundation on the listed project materials appeared in the project video which was broadcasted on both local and national TV. (<https://www.youtube.com/watch?v=UGJOR9m2QA0>)

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

Clifford Omonu (male) is a wildlife ranger and with the support of other members of the team, he took photographs of the species and the habitats. He also involved in mapping out Important Odonate Areas.

Ibukun Lawal A. (female) works under the conservation education unit of the Nigerian Conservation Foundation. She assisted in developing conservation education programs for the children of Sunmoge village.

Augustine Ikwunne (male) is a staff of the Nigerian Conservation Foundation where he specializes in plants. He assisted the project lead in reforestation of Ijele-Sunmoge forest by tree planting.

12. Any other comments?

The project is a continuous work to conserve insects of ecotourism importance in Nigeria especially the dragonflies and butterflies. The creation of a database for these species requires a considerable amount of time. Awareness is being created and the perception of people towards insects are changing gradually.

Procured project materials (digital camera and laptop) were used efficiently during the project and are yet in good condition for re-used in subsequent similar projects. We thank The Rufford Foundation for funding the project with the support of IDEA WILD and the Nigerian Conservation Foundation.