Final Evaluation Report

Your Details	
Full Name	Adedapo Abiodun Matthew
Project Title	Ecological Survey of the Threatened and Relict Damselflies on the Obudu Plateau, Nigeria
Application ID	39737-1
Date of this Report	15th April, 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
To assess the distribution of the threatened damselfly species in both the protected and unprotected areas of the Obudu Plateau			✓	This project has determined the extent to which each threatened species is presently distributed on the plateau. An updated distribution range map will be published as part of the findings from this project.
To discover and describe the breeding sites and immature forms (larvae) of the threatened damselflies			✓	This project has made new discoveries of breeding sites of some of the threatened species on the Obudu Plateau e.g., the vulnerable *Pentaphlebia stahli* and the regionally vulnerable *Afroaeschna* scotias. Also, the description of the previously unknown larvae of two endangered species i.e., *Africocypha centripunctata* and *Allocnemis vicki* are part of publication drafts resulting from this project. Confirmation of the larvae of the critically endangered *Neurolestes nigeriensis* and *Pentaphlebia gamblesi* will require genetic analysis, as some discovered unknown larvae in this survey have not been directly linked with the adults of the species. Genetic analysis of materials of the two critically endangered species will help confirm the description of their larvae.

To determine the ecological conditions required for their viability in the freshwater habitat of Obudu Plateau			✓	Physicochemical and biological water quality of all freshwater systems harbouring the threatened species have been extensively determined in this project. Data on this, as well as gallery forest cover associated with the habitats of the species are now available for publication.
To educate the local community on ways of protecting the species by conserving their habitat			✓	Continuous education of members of the local communities of the plateau have been carried out both during each field trip and even off the field. Awareness campaigns and outreach to schools, community leaders, town hall and group meetings have been made. Informative and advocative materials on the threatened damselflies of Obudu have been distributed to both members of the Obudu community, and to influential organisations that can promote the protection of the species and habitats e.g., the Nigerian Conservation Foundation (NCF), Wildlife Conservation Society (WCS) Nigeria, Small Mammal Conservation Network (SMACON) and the Nigeria Tropical Biology Association (NTBA).
To train the local community youths to become citizen scientists and contribute to global data on our threatened species			✓	The Obudu Dragonfly and Damselfly Conservation Club (ODDCC) has been formed in this project, with 32 members, which far outnumbers the initially projected membership limit of 15 members. The ODDCC members, having received citizen science

				training, and have started monthly biomonitoring surveys of the community forests and are uploading their findings to the iNaturalist platform, where I help to confirm the identity of any dragonfly or damselfly observed from the Obudu Plateau.

2. Describe the three most important outcomes of your project.

a). The project has greatly improved the growing spotlight of odonates in Nigeria, as more prominent individuals and organisations are becoming interested in dragonflies, damselflies and their habitats. Most importantly, the interest of the Obudu local community youths in learning about and supporting the protection of the threatened damselflies is highly notable.

b). The discovery of the emergent form of the endangered *Africocypha* centripunctata, which confirms the identity of the larva, the unravelling of the distribution of the vulnerable *Pentaphlebia stahli* around the montane forests of the plateau, the first field recording of the ovipositing female of the regionally vulnerable *Afroaeschna scotias,* discovery of the second national record of *Idomacromia proavita* and the first field photographic record of the data deficient *Libyogomphus mamfei* in Nigeria all consolidate the survey effort in this project.

c). The level of protection of some of the habitats have improved compared to how they were before our conservation education series. Barbed wire fencing has now been observed in some areas where they were initially non-existent e.g., the boundary between the Okpazange village and the unprotected Igaga Waterfalls (new discovery site of the larva of *Pentaphlabia*). Significant repair works have been observed in the barbed wire fencing of some of the protected sites like the Emba Forest Patch and the Grotto Forest patch during this project. The Becheve Clan Head, through the Obudu Youth Community President has also expressed interest in the formal designation of the Avase Cataracts and its associated ecosystem as a protected landscape, having been noted to harbour some threatened species. Obudu community members of the newly formed Obudu Dragonfly and Damselfly Conservation Club, and the Obudu Threatened Species Survival Coalition have also assured our team of the willingness of the community to facilitate the designation of other identified special sites in this project as community protected areas.

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

While the weather condition of the Obudu montane forest was anticipated, the prolonged and harsher conditions between June 2023 and November 2023 were rather surprising. This greatly impaired field survey efforts in these periods as there was a very limited level of sunshine in the rainy season, some days went without clear skies throughout. This challenge was tacked by relying on both the weather forecast and local intelligence to determine the best week to travel to the plateau for surveys. Our team were on standby, ready to travel at short notice, as soon as we receive news of anticipated favourable weather condition for odonate surveys. We scheduled the cloudy days for local community school outreaches and dragonfly club meetings, while we set out field surveys as soon as the next bout of sunshine springs up. Although we ended up being under the rain in the field a few times, our preparation for the advent of rain increased per survey period.

Acquisition of resources for the project became quite difficult at some point, due to a sporadic inflation experienced in my country within the last year. I was able to maximise output by re-planning around the available funds, in addition to early, projected and bulk acquisition of supplies as soon as there is a fair price drop.

The issue of insecurity also affected the extent of survey during the project. Potential locations a few kilometers from the Cameroonian border could only be surveyed at some periods of the year, as we received news of security threats in these forests at other periods of the year. This challenge was overcome by relying on local intelligence, and the proficiency of our local community guides to make optimum use of the security situation.

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

Local communities were involved in all aspects of the project. Seventy-two percent of members of the newly established Obudu Dragonfly and Damselfly Conservation Club are from the villages on the plateau. Our field surveys also involve different members of the local communities, who are championing the cause for monitoring and protecting the species and habitats. There is also an excellent rapport between our team and officers of the protected reserves on the plateau. Branded t-shirts designed to showcase the most familiar threatened damselfly species in the project (*Africocypha centripunctata*) have been distributed to all members of the ODDCC and key individuals on the plateau. A total of 150 branded notes on "My Red Book of the Special Damselflies of Obudu" have been distributed to members of the local community comprising students in schools, teachers, community reserve workers and members of the ODDCC. Light refreshments also follow all club meetings. All local

personnel directly engaged in the survey of the species have also been given financial remunerations for their extra time and effort. The ODDCC has also been mobilised with basic dragonfly survey and citizen science biomonitoring accessories.

5. Are there any plans to continue this work?

There are plans to continue this work. Based on the outcomes so far, it is important to sustain the action plans on the species and habitats.

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

A manuscript of the social aspect of this project is presently under review in a reputable journal. The description of larval discoveries, new country records, updated distribution range and ecological notes of threatened species observed in this project will also account for more research publications. A public report is also being drafted, to be updated on the already existing information of the project available on the website of our research organisation (www.ecophilicnetwork.com) and the social media handles of team members in this project. It will also be shared with conservation stakeholders in Nigeria such as the Nigerian Conservation Foundation (NCF), Wildlife Conservation Society (WCS) Nigeria, the IUCN-APLORI Center for Species Survival in Nigeria (CSSN), the Nigeria Tropical Biology Association (NTBA), and the Nigerian Chapter of the Society for Conservation Biology (NSCB). A press release on the project has also been made via https://mainlandmetronews.com.ng/2024/05/07/obudu-montane-ecosystem-needs-protection-conservation-group-warns-of-endangered-species/ and other notable national and international media outlets are also showing interest in sharing the outcomes of this project.

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

Important next steps include supporting the sustainability of the local community species monitoring group with resources for evidence-based data collection, providing lasting solutions on some of the problems facing conservation of habitats of threatened damselflies in Obudu, and bridging the gap between the identified needs of the local communities residing on the plateau and the need for ensuring the survival of threatened damselflies on the Obudu Plateau. As the community has shown interest in dedicating identified special sites for protection, formal documentation of the entire process for actualisation becomes a necessity.

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?

The Rufford Foundation logo was used in materials produced in relation to this project i.e., banners, clothing materials and jotting notes. The Rufford Foundation logo was also placed on the information panel mounted at the project site. The foundation was publicised in all videos of the project shared publicly on social media platforms, as well as in a PowerPoint presentation to the Nigeria Tropical Biology Association and the Nigerian Chapter of the Society for Conservation Biology on findings related to the project. Furthermore, the foundation was publicized on our organisation's website in the list of funders of projects associated with our organisation. All research publications and press release resulting from this project also acknowledge the Rufford Foundation's funding.

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

Abiodun Adedapo (He/him): Project lead, conceptualization, fund acquisition and management, field survey team lead, conservation education team lead.
Ibrahim Fagbohun (He/him): Project assistant lead, field survey team assistant lead, conservation education team member.
Esther Kowobari (She/her): Conservation education team assistant lead, field survey team member.
Tolulope Oladeji (She/her): Conservation education team member, field survey team member.
Chioma Okafor (She/her): Conservation storyteller, social media team lead.
Sabastine Boakem (He/him): Local community team assistant, field survey guide.
Dr. Timothy Amoo: Community entry mediator, field survey team member, conservation education team member.
Dr. Oluwaseun Akinpelu: Logistics guide, security advisor.
Dr. Emmanuel Akindele: Project advisor and supervisor, logistics guide, security advisor, fund disbursement facilitator, manuscript draft editor.

10. Any other comments?

Thank you!