

CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: National Museums of Kenya

Project Title (as stated in the grant agreement): *Assessment of Overall Spider Diversity and Establishment of the Status and Ecology of Two New Species of Spiders from Taita Hills*

Implementation Partners for This Project:

Kenya Forest service (KFS)
IUCN Eastern Africa Regional Office
Nature Kenya,
Birdlife International
The East African wildlife Society
Kenya Wildlife Service (KWS),
Local community

Project Dates (as stated in the grant agreement): October 1, 2006 - December 31, 2008

Date of Report (month/year): April, 2009

II. OPENING REMARKS

Provide any opening remarks that may assist in the review of this report.

The project went well sampling design allied enabled collection of numerous samples. Processing these samples is a long and arduous process, especially owing to the fact that some of the species were too small in size. All the processing (sorting and identification to morpho-species level) had to be done under a dissecting microscope at the National Museums of Kenya laboratories. Identification was done by the principal investigator and help from other professional experts outside museums of Kenya. Results being processed have established that the two study species are critically endangered. New distribution records were made and species that are very likely new recorded. Final technical report and publications are in process.

III. NARRATIVE QUESTIONS

1. What was the initial objective of this project?

- To explore the abundance and distribution of *Toxoniella taitensis* and *Toxoniella rogoae* at the Taita Hills.
- To develop a spider checklist and establish the species composition of the spider fauna in the study area.
- To establish the effect of habitat fragmentation on the spider species richness, species evenness and species diversity.
- To establish the variation in spider guild richness, evenness and diversity in relation to habitat fragments.

- To establish the most threatened spider species
 - Establish the value of spiders as indicators of disturbance and link the study results to a feasible conservation and management strategy for the Eastern Arc Mountains.
 - To provide baseline information for long term monitoring studies on the flora and fauna of these forests
2. Did the objectives of your project change during implementation? If so, please explain why and how.

No

3. How was your project successful in achieving the expected objectives?

The project was very successful in the following ways:

- Already the checklist is growing with some specimens identified to species level; several morpho-species have been sent to experts for further identification to the species level. However, it is now apparent that some species will remain as morpho-species level of identification for a while as taxon experts input will take long. Furthermore, it is expected that some species collected could be undescribed and such a process would take much longer than the time allocated for this study.
- Red-listing of critically threatened species of spiders. From the data gathered and from the training I got while undertaking the project (Second East African Regional workshop on RED Listing), it is now evident that two spider species are indeed critically endangered (CE). Other spiders collected from these forest fragments are also being assessed to assign a conservation status. The conservation recommendations and paperwork needed to complete this process is underway.
- Training of Para-taxonomists from Taita Hills: At least six people were trained by the project on field survey and collecting methods, partial processing and handling of invertebrates. They were also trained on how to identify in field and handle more common spider species and other invertebrates. The need for conservation and ways to achieve it were also emphasized during the entire period. These people could be used by other future researchers in research and conservation work in Taita Hills.
- Publishing research results in peer-reviewed journals. Data analysis is in progress and this study is expected to produce several publications, the first one being a scientific report to CEPF by end of February 2009. Other publications expected soon include peer-reviewed papers on conservation status and ecology, a checklist of spiders as well as a paper describing new species and or new distribution records of spiders in Taita hills. Copies of all publications will be sent to CEPF secretariat as well as NMK for the general library.
- Reference Collection. A spider reference collection for Taita Hills has been established at the National Museums of Kenya. In addition, we have sent some representatives of these spiders to Royal Museum of Central Africa in Tervuren, Belgium as a back-up.
- This study is producing a technical report and publications which will form baseline information for current and future studies of flora and fauna of Taita Hills.
- General effects of habitat fragmentation and destruction on invertebrates (as well

as other fauna) shall be discussed in the main technical report.

4. Did your team experience any disappointments or failures during implementation? If so, please explain and comment on how the team addressed these disappointments and/or failures.

Yes

i) Taxonomic challenge: There was a big challenge when it came to seeking further help on specimen identification from experts I had no control over the process. Sometimes there were delays in getting feedback, or no feedback at all while in other cases the samples could get lost. There were limitations in the condition/status of specimen being used e.g. number of mature individuals or broken specimens.

Solution: Where expertise knowledge was not forthcoming, I used the next taxonomic level (morphospecies) which was less detailed but which I was certain would be acceptable in analysis.

ii) Land adjudication issues: Lack of clear land adjudication information affected or sampling. In this case one farmer was completely opposed to completion of our sampling of Kichuchenyi forest fragment, claiming it was his piece of land.

Solution: We felt that attending to the issue would consume much of our time and therefore stopped further sampling in the fragment.

iii) Budget allocation. I had a problem allocating budget to some items as previously planned. This was tricky especially with transport owing change of market prices for fuel and car hire and reflection on country's economy especially after poll violence.

iv) Logistic problems: It was not always easy to freely access all the fragments due to weather and status of the road.

Solution: Omitted some fragments, in this case Vuria.

v) Dropping out of project assistants in pursuit of greener pastures. The changes in financial needs over a two year period necessitated some of research assistants to leave for greener pastures.

Solution: Hiring new ones although they had to be trained all over again. This had costs implications.

vi) Political instability: Sampling schedules, meetings and processing were affected in 2008 due to the violence that occurred in Kenya following the December 2007 polls.

5. Describe any positive or negative lessons learned from this project that would be useful to share with other organizations interested in implementing a similar project.

Positive lessons

Small grants can be very crucial in retrieving and floating scientific information/data that would otherwise appear difficult to gather. This can have a significant effect in research and conservation world.

Taxonomists are scarce and not easy to have all taxa identified in time

Negative lessons

That even with good planning it is not always easy to achieve the goals because many unexpected factors come into play. When doing a budget, one should factor some aspects of inflation especially when dealing with transport and salaries.

6. Describe any follow-up activities related to this project.

Will liaise with implementation partners stake holders and policy makers in implementing conservation measures recommended in the submitted scientific report for this ecosystem. Submission of a publication on checklist and status of the existing species will be next in line followed by red listing of species that meet the IUCN criteria.

More collaborative publications with lead scientists will follow in various taxa collected from the study sites since the current data set has a high potential. This will include work on un-described species and a conservation paper on fluctuating asymmetry of *T. taitensis* and *T. rogoae* in a highly fragmented forest habitat.

The study has permanently marked plots (via GPS) and future monitoring of the two spider species and other indicators of habitat health will continue using the already established study methods.

7. Please provide any additional information to assist CEPF in understanding any other aspects of your completed project.

This project has generated a huge data set over the two year period that will take time to process but eventually will be processed under the national Museums of Kenya Research Process. Such data has a potential of ecological, checklists and/or new species publications. Most obvious taxa for this work include Cicadelidae, Coleoptera and Orthoptera. In particular, I collected any Cicadas encountered and sent them to a specialist in South Africa whom we are collaborating on a co-publication. Other invertebrates will be data-based and stored at the National Reference collection of the National museums of Kenya for current and future use.

IV. ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
		\$	
		\$	
		\$	
		\$	

****Additional funding should be reported using the following categories:***

- A** *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*
- B** *Complementary funding (Other donors contribute to partner organizations that are working on a project linked with this CEPF project)*
- C** *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*

D *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

V. ADDITIONAL COMMENTS AND RECOMMENDATIONS

The study gave an opportunity to gather information that was vital for conservation of the Taita hills. New distribution records of *Toxoniella rogoae* were recorded. In addition this study gave NMK an opportunity to improve on the database of Kenyan spiders and improve on existing reference collection. Valuable information obtained from this study will go a long way in enhancing management and future conservation of Taita Hills and fauna and flora associated with them. We as the National Museums of Kenya are grateful to CEPF for the financial support that has enabled the completion of this study and which has also opened more avenues for future collaboration in research especially for Taita Hills. We look forward to implementing the recommendations of this study together with our partners and other stake holders.

VI. INFORMATION SHARING

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. One way we do this is by making programmatic project documents available on our Web site, www.cepf.net, and by marketing these in our newsletter and other communications.

These documents are accessed frequently by other CEPF grantees, potential partners, and the wider conservation community.

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