Final Evaluation Report

Your Details	
Full Name	Mohamed Julius Kibaja
Project Title	Systematic conservation surveys for the endangered Ashy red colobus monkey (Piliocolobus tephrosceles) in unprotected areas, western Tanzania
Application ID	28103-2
Date of this Report	July 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
Conducting further systematic surveys on population status and distribution, and by identifying new priority areas for conservation in the Masito-Ugalla Ecosystem and Mbuzi Forest area			■	Systematic surveys along transect in the Masito-Ugalla ecosystem and Mbuzi forest area were successfully carried out. Population densities in the Masito-Ugalla ecosystem and Ufipa escarpment are currently being analysed using DISTANCE Software. Total population sizes in some sites (Mbuzi and Chala forests where complete counts were conducted) were obtained. The current distribution of this primate was mapped in all sites covered during the study period. However, for monitoring, surveys are required on same transects each year. New surveys are required in forest fragments surrounding all the study sites as this will guide ecosystem-based conservation approach
Identifying and assessing conservation threats more comprehensively in both areas			■	Human signs were fully recorded along transects as well. Mapping of human signs (threats) and their respective encounter rates have been produced and have been incorporated in my PhD thesis. However, in some sites landcover and land use analyses are required besides line transects to evaluate conservation threats.
carrying out more Conservation awareness campaigns in the Masito-Ugalla Ecosystem and Ufipa Plateau		■		Conservation campaigns were conducted in villages surrounding the study sites. Campaigns targeted different focal groups including villagers, elders, village and religious leaders, students and District Forestry officers regarding the conservation of ashy monkeys and their habitats. Talks, excursions and poster displays were used to relay conservation education. However, to a large extent,

				conservation campaigns were halted by the pandemic. They also did not cover all the villages but rather only a few. Future conservation campaigns should be accompanied with initiation of long term environmentally friendly activities such as cultural tourism. Establishment of tourism activities (especially domestic tourism) particularly in Chala Forest and Ufipa escarpment is one of Principal investigator's future plans.
Providing data for predicting the potential suitable habitat for Ashy red colobus monkeys in the western parts of the country (the species range)				One hundred and ninety two GPS locations for groups across the study sites were recorded. Group locations from Gombe Stream National Park and Mahale Mountains National Park have been also compiled. For comprehensive modelling, data were also obtained from the Burigi-Chato National Park. Preliminary modeling of the potential suitable habitats indicates that the evergreen forest is the suitable habitat type for red colobus monkeys. The model also indicates that the Masito-Ugalla landscapes is suitable for conservation of red colobus.

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

a). Comprehensive mapping of distribution of ashy monkeys and accurate population size estimates. Distribution of ashy red colobus monkeys in all sites covered by this study has been comprehensively mapped and updated. Also, the group and population density of ashy monkeys in the Mbuzi forest area (Mbuzi Forest and adjacent areas) have been obtained and that in the Masito-Ugalla ecosystem is being quantified. The observation of a large number of groups in the Masito-Ugalla ecosystem provides an impression this large landscape dominated by deciduous woodland and less than 5% evergreen forest is not of low importance in conservation of arboreal primates. Thus, these findings are critical to intensify actions to conserve the forests that harbour this endangered primate in this vast landscape.

b). Comprehensive mapping of human signs and modelling of potential habitat suitability of red colobus. Human signs were fully recorded and mapped in all surveyed areas. Encounter rates were calculated based on the total transect length (refer to my PhD thesis, 2022). Types, source and impacts of threats are currently well known. The results of modeling suitable habitats indicate that the evergreen vegetation types are key habitats for ashy monkeys. These results are useful for designing practicable interventions and guiding conservation biologists in designing alternative activities for addressing various sources of threats.

c). Conservation campaigns were conducted in some villages surrounding the study sites. Different target groups including villagers, elders, village and religious leaders, students and District Forestry officers were sensitised about the presence and conservation of ashy monkeys and their habitats. However, to a large extent, conservation campaigns were seriously affected by the pandemic. I recommend conservation campaigns be accompanied with initiation of long term environmentally friendly activities such as ecotourism in some fragile sites like the Ufipa escarpment and Chala Forest.

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

The pandemic was the major problem that resulted in slow implementation of this project. When the project immediately began, the Covid-19 pandemic also affected the country, and this paralysed the smooth conduction of almost all activities related to this project for several months. Gatherings were banned for 3 months. After the ban was lifted, it took long time to mobilise the team. Local peopls in most villages covered by this project were reluctant to interact with people from cities. The conservation campaigns were first paused for about 7 months, even though surveys in some sites were going on. Even after the pandemic had gone, the Principal Investigator allocated about 50% of his time in the completion of his PhD studies abroad and this has also caused delays in completion and early reporting of this project.

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

This project (second round) has employed local people from adjacent villages who were trained to assist in data collection and in conservation campaigns. They were employed as field research assistants, guides and porters. Some helped in relaying information related to forest fires prevention in different places including religious houses (e.g., churches). Field research assistants and guides were trained on how to collect population survey data and in the use of equipment including binoculars, GPS, setting transects and camping techniques. The involvement of local communities has benefited this project as it has won strong support from some villagers.

5. Are there any plans to continue this work?

I am continuing to work on these sites and will have plans to do surveys and community-based activities in some study sites. i) There is still a need for more detailed population surveys in the Masito-Ugalla ecosystem because more land has been added to this ecosystem into a relatively large one called the Greater Mahale ecosystem with an area of more than 18,200 km^2. This means that some sites within this new landscape have not been thoroughly surveyed. During the first and second round project surveys I observed that the landscape being affected by presence of agropastrolists, thus more monitoring surveys are required in the landscape. ii) My surveys have discovered new sites like Ufipa escarpment and Chala forests.

Primatologists worry that leaving these sites without any conservation intervention on the ground may face the same fate of the Mbuzi Forest. Thus, my plan is to continue intensifying campaigns in communities living around Chala and Ufipa escarpment and establish or initiate tourism-based activities to instil local people with positive willingness to support conservation activities in their areas. iii) There is also a need to study their behavioural ecology in dry savanna woodland of either the Masito-Ugalla ecosystem or Ufipa escarpment in order to learn how these arboreal and folivorous monkeys can survive in such dry woodland with very small natural patches of evergreen vegetation.

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

Parts of the results (e.g., preliminary results of behavioural ecology) have been presented as an oral paper at the joint meeting of the International Primatological Society and the Latin American of Society of Primatology in January 2022 in Quito-Ecuador. Detailed findings of this study have been also presented during my PhD defence on 1st July 2022 and published in my PhD thesis (University of Oslo). In addition, I plan to publish the results in high-impact, peer-reviewed journals including *Animal Conservation* and *American Journal of Primatology*. The findings will be disseminated to decision makers such as government and non-government conservation agencies for conservation intervention. The results will be also disseminated through awareness campaigns to local people using different media, including posters. The results will also be presented in the biannual Tanzania Wildlife Research Institute (TAWIRI) conferences, which draw national and international researchers, conservationists and government wildlife managers, including the Tanzanian Wildlife Directors of protected areas.

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

i) The next step is practical implementation of the findings/results of this study through collaboration with government and non-government organisations and conservation biologists. ii) I have plan to intensify campaigns in communities living around Chala and Ufipa escarpment and initiate tourism-based activities to make local people willing to support conservation in their areas. iii) Another important step is a plan to carry out more detailed population surveys in the Masito-Ugalla ecosystem because this ecosystem has been expanded to an ecosystem known as "Greater Mahale Ecosystem" with an area of more than 18,200 km^2. iii) I plan to continue studying the monkeys' behavioural and ecological flexibility (for two or three groups living in dry savanna woodland or deciduous woodlands and compare them with those living in forest habitats) to learn how these arboreal and folivorous monkeys can survive in such deciduous habitats with very small natural patches of evergreen vegetation. The result of this study will guide conservation biologists on how best to protect/manage ashy monkeys across their range (landscape or ecosystem-based conservation approach).

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?

I have used the Rufford Foundation logo for any materials (including presentations and posters) and reports pertaining to this project and final report. The foundation has been well known by my academic institutions and local institutions for supporting my research and conservation of wildlife in Tanzania and elsewhere.

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

Prof. Nils C. Stenseth (Research Professor and Chair of the Centre for Ecological and Evolutionary Synthesis CEES). He is my main PhD supervisor and will oversee the successful completion of this project including a timely reporting to the Rufford Foundation.

Dr. R. Adriana Hernandez-Aguilar (Co-supervisor). Researcher at CEES and Lecturer at the University of Oslo. She has been studying primates in the Masito-Ugalla Ecosystem since 1998. She will ensure that all the activities in this project will be fully implemented.

Dr. Fatina Athumani Mturi (Advisor). She is a researcher and Lecturer in the Department of Zoology and Wildlife Conservation, University of Dar es Salaam. As a primatologist who studied Zanzibar red colobus monkeys, will advise on how to effectively carry out the various activities such as surveys and implement conservation actions based on her knowledge of colobines.

Dr. Flora Magige. She is a Lecturer and Head of the Department of Zoology and Wildlife Conservation, University of Dar es Salaam. As the Head in my working institution, she will ensure that the activities of this project will be executed as planned.

The following are organizations that I will be collaborating with:

The Ugalla Primate Project. It has been working in the Masito-Ugalla and Greater Mahale Ecosystems. They will provide technical advice and logistics.

The Nkasi District Forestry Office, Tanzania. The Office will be an active partner in implementing the conservation actions and restorations of the degraded Mbuzi Forest. (The Nkasi Office however was not consulted in this present survey because the MBUZI FOREST it owns was severely converted into farms and there were rumours that the forest is fully owned by farmers-this was not confirmed.

10. Any other comments?

I thank The Rufford Foundation for this generous second round financial support of my PhD research and for the conservation of endangered ashy red colobus monkeys in unprotected areas in western Tanzania. I recommend more detailed population surveys in the Masito-Ugalla Ecosystem. My continued presence and

research in the study sites is critical because leaving some discovered sites harbouring this endangered primate without any conservation intervention or ongoing research will make them affected by human activities. I have a plan to intensify campaigns in communities living around Chala and Ufipa escarpment and initiate ecotourism-based activities to make local people willing to support conservation in their village land areas. There is also a need to study their behavioural ecology in dry savanna woodland of either the Masito-Ugalla ecosystem or Ufipa escarpment in order to learn how these arboreal and folivorous monkeys can survive in such dry woodland with very small natural patches of evergreen vegetation. The target is compared at least two or three groups living in deciduous woodland and one or two groups living in moist forest mosaic habitats.