

CEPF FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: Tanzania Forest Conservation Group

Project Title (as stated in the grant agreement): Filling the Knowledge Gap: Surveys of Poorly Known Sites and Species in the Eastern Arc and Coastal Forests

Implementation Partners for this Project: Trento Museum of Natural History, Italy

Project Dates (as stated in the grant agreement): April 1, 2005 – December 31, 2007
Extended to 30th June 2008

Date of Report (month/year): August 2008

II. OPENING REMARKS

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

The Filling the Knowledge Gap project was a joint project of the Tanzania Forest Conservation Group and the Trento Museum of Natural History, Italy (MTSN). The project involved surveys in 28 forests in the Rubeho Mountains, Udzungwa Mountains, North Pare Mountains, South Pare Mountains, Nguu and in coastal forests in Tanga and Lindi regions. The surveys have focused on the vertebrate fauna, indigenous knowledge and forest condition with a particular focus on sengi, galago, duiker, diurnal primate, hyrax and selected amphibian and reptile species.

The surveys were completed successfully by June 2008 and have resulted in:
the discovery of 14 species new to science;
vertebrate species lists for 28 forests;
quantitative assessments of disturbance in 14 forests;
a phylogenetic study of the amphibian genus, *Nectophrynoides*;
a more in-depth understanding of indigenous knowledge in these areas and greater capacity within TFCG and the Districts on biodiversity monitoring.

The findings and recommendations that have resulted from the surveys have:
been incorporated in landscape planning processes in Mufindi and Rubehos;
contributed to regional and national monitoring processes;
contributed to red list assessments;
been presented at three international scientific conferences;
resulted in two scientific publications (with a further three being finalised), two completed reports (with an additional four being finalized) and two awareness raising posters in Swahili.

The partnership between TFCG and MTSN has been extremely positive and one that we hope will extend beyond the lifespan of the project.

III. ACHIEVEMENT OF PROJECT PURPOSE

Project Purpose: Protected area authorities, conservation organisations and other stakeholders within the EACF Hotspot are planning and implementing conservation activities using current, relevant and accurate information on the status of selected sites and species

Planned vs. Actual Performance

Indicator	Actual at Completion
Purpose-level:	
Strategic plans of protected area authorities and conservation organisations integrate the results of recent research on the status of selected sites and species	Results of the surveys have been used to guide the development of landscape conservation plans for the Rubeho and Mufindi Forests. The data was used to prioritise sites within these areas for conservation investment and to identify critical issues in terms of forest management. Data on other areas will be integrated into landscape planning as part of the broader Eastern Arc Mountains landscape strategy development.

Describe the success of the project in terms of achieving its intended impact objective and performance indicators.

The sites that the project selected to work in were all relatively poorly known, particularly with regard to the vertebrate diversity. The surveys have succeeded in documenting the vertebrate biodiversity of the North Pare, Mufindi and Rubeho (Mpwapwa-side) forests and feeding this information into landscape planning processes. This has enabled stakeholders to prioritise sites on the basis of sound biodiversity data and to address the conservation needs specific to those areas.

Were there any unexpected impacts (positive or negative)?

The discovery of the giant sengi in the Udzungwa Mountains resulted in local and international media coverage of the Eastern Arc and Coastal Forests hotspot. Web items about the sengi and its habitat were featured on the BBC, National Geographic Society, Yahoo, ABC, Science and Nature websites and news items included in Local newspapers, radio and television. By documenting the high biodiversity values of the Ilole and Ipondelo / Chugu forests in the Rubeho Mountains, the surveys have provided a strong foundation for the process of gazettement these important forests. The Forestry and Beekeeping Division have expressed their interest in gazettement these areas.

IV. PROJECT OUTPUTS

Project Outputs: Enter the project outputs from the Logical Framework for the project

Planned vs. Actual Performance

Indicator	Actual at Completion
Output 1: Vertebrate biodiversity and habitat condition is documented for selected forests in the North Pare, Udzungwa and Rubeho Mountains.	Reports on the vertebrate biodiversity and forest of the North Pare and Mufindi / Udzungwa Mountains have been completed and posted on the internet at www.tfcg.org . A report on the Rubeho Mountains is in its final stages and is due to be distributed and posted online by November 2008. A detailed methods manual describing the methods used by the survey team was produced and is also available at www.tfcg.org
1.1. Field surveys of the vertebrate fauna and habitat condition have been completed and the results have been documented for selected forests in the North Pare, Udzungwa and	Field surveys involving a joint TFCG / MTSN team were successfully conducted in the North Pare, Mufindi / Udzungwa and Rubeho Mountains. A total of 17 forests were visited in these areas. Surveys of the mammal, bird, amphibian and

Rubeho (Dodoma-side) Mountains by Y3 Q2.	reptile fauna and forest condition were carried out at these sites. Survey reports have been distributed to key stakeholders and posted on the TFCG website (www.tfcg.org) for the North Pare and Udzungwa / Mufindi forests whilst that of the Rubeho Mountains is now being finalized.
1.2. At least four scientific publications submitted to relevant journals including the Journal of East African Natural History by Y3 Q3..	Two papers resulting from the surveys have been published in the Journal of Zoology and Oryx. Three papers are being prepared for inclusion in the Journal of East African Natural History and will be submitted by December 2008. An article on the surveys was also included in the Arc Journal in April 2007.
1.3. At least 25 copies of the three survey reports distributed to protected area's authorities and other relevant stakeholders as well as being available on the internet by Y3 Q3.	Reports on the North Pare and Mufindi forests are available on the TFCG web site and 25 hard copies of the reports have been circulated to the protected area authorities and other interested institutions and individuals. Presentations on the results of the surveys have been made to local stakeholders in each of the three mountain blocks. Posters summarizing the results of the surveys in Swahili have been prepared for the Rubeho and Mufindi areas and are being distributed to communities and other stakeholders in these areas. Presentations on the survey results were also presented to delegates at the 2007 TAWIRI conference in Arusha and to the CEPF SFD 3 Lessons Learnt Workshop in Dar es Salaam in 2006.
Output 2: Field data on the status of sengi, galago, duiker, diurnal primate, hyrax and selected amphibian and reptile species gathered and contributing to redlist re-assessments by relevant IUCN-SSC specialist groups and hotspot monitoring processes..	Through targeted surveys of sengis, galagos, duikers, diurnal primates, hyrax and selected amphibian and reptile species, data has been gathered relating to specific gaps in our knowledge about these taxa. The priority research questions that the surveys have addressed are outlined in the project's 'Methods Manual'. Data has been made available to the Afrotheria, primate and amphibian SSC specialist groups including an assessment of the new Giant sengi species that has been described as part of the surveys.
2.1. Key gaps in our knowledge of the distribution and conservation status of diurnal primates, duikers, galagos, sengis (elephant--shrews), tree hyraxes, selected amphibians(bufo nids and microhylids) and reptiles identified and filled through field surveys by Y3 Q3.	In addition to the 17 forests visited as part of Output 1 of this project, the team also visited eight coastal forests in Tanga and Lindi Regions, two forests in the Nguu Mountains and one forest in the South Pare Mountains. In these areas the team focused on specific issues relating to the distribution and conservation status of sengi, galago, duiker, diurnal primate, hyrax, reptiles and amphibians. The issues specific to each taxa were described in the project's methods manual.
2.2. Data on the distribution and relative abundance of duikers, galagos, diurnal primates, sengis, tree hyraxes, selected amphibians (bufo nids and microhylids) and reptiles is provided to the relevant IUCN-SSC Specialist Groups by Y3 Q3.	The Chair of the Afrotheria specialist group participated in a survey of a new species of giant sengi. Using this data the conservation status of the new sengi species has been assessed. Data on the status of galagos has been presented to the International Congress on Prosimians in 2007 and to the International Primatological Society 2008 Conference for inclusion in assessments of their conservation status. An advisor to the IUCN-SSC specialist group, Professor Simon Bearder from the Nocturnal Primate Research Group at Oxford Brookes

	University, participated in surveys in the coastal forests.
2.3. The phylogeny of two key Eastern Arc amphibian taxa: bufonids and microhylids is clarified through genetic analyses by Y2 Q3.	A phylogenetic analysis of the genus <i>Nectophrynoides</i> was carried out by Dr Simon Loader at the Institute of Biogeography University of Basel. The study reveals a large cryptic diversity of species (over twice as many species as currently recognised). In addition, the molecular data provided an important insight into the pattern of species diversification in <i>Nectophrynoides</i> and how more generally species diversity accumulates in the Eastern Arc Mountains, a biodiversity hotspot.
2.4. Survey data shared with the BirdLife-led hotspot monitoring process, the Forestry and Beekeeping Division (including CMEAMF) and the CEPF Outcomes database by Y3 Q3.	Hard copies of the completed survey reports have been provided to the Forestry and Beekeeping Division and BirdLife International Africa Secretariat. Excel sheets with the survey data for Mufindi and North Pare have also been provided to CEPF, BirdLife and the National Biodiversity Database of the University of Dar es Salaam. Data has also been included in the biodiversity database at the University of Copenhagen.
2.5. Indigenous knowledge documented on diurnal primates, duikers, galagos, sengis and tree hyrax by Y3 Q3.	Local knowledge about the status, behaviour and habitat associations of primates, duikers, sengis and hyrax was documented through interviews with women and men living in communities around the forests. Data on local names, uses and stories about the species were also collected. The results of these surveys are included in the survey reports that are (or will be) available on the TFCG website.
Output 3: The capacity of civil society organisation and protected area authorities to conserve and monitor the unique species and forests of the Eastern Arc and Coastal Forest hotspot is enhanced.	15 District, Division and Village staff participated in the surveys and received training on survey techniques. The TFCG staff have also returned to Mufindi, Mpwapwa and Mwanga to share the data with the protected area authorities and demonstrate how they can be incorporated in protected area planning and management.
3.1. Partnership between TFCG and MTSN consolidated through an MoU to be signed by Y1 Q2.	A memorandum of understanding was signed between TFCG and MTSN outlining the basis for the partnership between the two organizations.
3.2. Selected members of local communities trained in monitoring techniques by Y3 Q1.	Seven community members were trained in survey techniques (5 in Mufindi District, 2 in Mwanga District).
3.3. PAA staff trained in monitoring and survey techniques by Y3 Q1.	Eight District Natural Resources staff and one division forest officer were trained in survey techniques.
3.4. TFCG's capacity to implement biodiversity surveys and monitoring increased.	The TFCG Research Officer has been trained in a wide variety of biodiversity survey methods and in report production.

Describe the success of the project in terms of delivering the intended outputs.

The project has succeeded in documenting the biodiversity values of some of the less well-known forest areas in the Eastern Arc Mountains and Coastal Forests and has contributed to our knowledge of some of the more cryptic animals found in the region. The project has also discovered 14 new vertebrate species (Udzungwa (1), Mufindi (5), North Pare (2), Rubeho (6)), mostly amphibians, all Eastern Arc endemics.

The findings and recommendations of the project have been incorporated in landscape planning processes in Mufindi and Mpwapwa Districts. In the case of the findings of the surveys in the Rubeho Mountains, efforts have now been initiated to gazette, Ilole and Chugu, two of the important (but legally unprotected) forests visited by the survey team.

The project has resulted in the following reports and publications:

- Doggart, N. C. Leonard, A. Perkin, M. Menegon and F. Rovero 2008. The biodiversity and forest condition of Udzungwa Mountain Forests in Mufindi District. TFCG Technical paper No 18. DSM, Tz 1 – 142.
- Doggart, N., C. Leonard, A. Perkin, M. Menegon and F. Rovero 2008. The vertebrate biodiversity and forest condition of the North Pare Mountains. TFCG Technical Paper No 17. DSM, Tz. 1 - 79 pp.
- Doggart, N., C. Leonard, A. Perkin, M. Menegon and F. Rovero In prep. The vertebrate biodiversity and forest condition of the Rubeho Mountain. TFCG Technical Paper No 19. DSM, Tz. 1 - xx pp.
- Doggart, N., C. Leonard, A. Perkin, M. Menegon and F. Rovero In prep. The vertebrate biodiversity of the South Pare Mountains. TFCG Technical Paper No 20. DSM, Tz. 1 - xx pp.
- Doggart, N., C. Leonard, A. Perkin, M. Menegon and F. Rovero In prep. The vertebrate biodiversity of the Nguu Mountain. TFCG Technical Paper No 21. DSM, Tz. 1 - xx pp.
- Doggart, N., C. Leonard, A. Perkin, M. Menegon and F. Rovero In prep. The vertebrate biodiversity of selected Coastal Forests in Tanga and Lindi Region. TFCG Technical Paper No 22. DSM, Tz. 1 - xx pp.
- Rovero, F., G.B. Rathbun, A. Perkin, T. Jones, D.O. Ribble, C. Leonard, R. R. Mwakisoma and N. Doggart 2008. A new species of giant sengi or elephant-shrew (genus *Rhynchocyon*) highlights the exceptional biodiversity of the Udzungwa Mountains of Tanzania. *Journal of Zoology* **274**: 126–133.
- Rovero, F., M. Menegon, C. Leonard, A. Perkin, N. Doggart, M. Mbilinyi and L. Mlawila 2008. A previously unsurveyed forest in the Rubeho Mountains of Tanzania reveals new species and range records. *Oryx* **42**: 4 – 5.

Were any outputs unrealized? If so, how has this affected the overall impact of the project?

None

V. SAFEGUARD POLICY ASSESSMENTS

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

N/A

VI. LESSONS LEARNED FROM THE PROJECT

Describe any lessons learned during the various phases of the project. Consider lessons both for future projects, as well as for CEPF's future performance.

Project Design Process: (aspects of the project design that contributed to its success/failure)

Partnership: Initially TFCG and MTSN applied independently to CEPF to carry out surveys in the Hotspot. In response to our applications, CEPF recommended that the surveys be carried out as a partnership, in keeping with CEPF's commitment to a partnership approach. As a result TFCG and MTSN formed a partnership and applied jointly. The partnership between the two

organizations has been extremely positive combining the different technical and scientific expertises available in the two organizations.

Pre-planning with other Civil Society Organisations: Prior to submitting our initial applications, various Tanzanian CSOs met to look strategically at how to ensure a good 'spread' of applications in the priority areas of the hotspot. By identifying the priority sites and gaps in our knowledge we were able to target our letters of inquiry in such a way as to reduce duplication.

Involvement of project advisors: from the outset, the project involved a team of project advisors: respected scientists with expertise in fields relevant to the project including the Chair of the IUCN SSC Afrotheria Specialist Group. The involvement of the project advisors has proved an invaluable way of linking the results of the surveys with broader scientific processes as well as securing excellent feedback on our proposed methods and final survey reports. Two of the project advisors were also able to participate in the field surveys providing an opportunity for expert evaluation of our methods and approach in the field.

Project Execution: (aspects of the project execution that contributed to its success/failure)

Partnership: clear definition of roles, frequent and open communication, clear guidelines on reporting and a shared common goal have contributed to a positive partnership between TFCG and MTSN throughout the duration of the project. During the project the Directors of MTSN and TFCG have had the opportunity to meet and to express a commitment to future partnership projects.

Involvement of CEPF: regular opportunities to meet with the CEPF Grant Director during his visits to the hotspot have given us an excellent opportunity to communicate the progress of the project and to discuss challenges as they have arisen.

Linkages with other CEPF projects: the project has linked with several other projects supported by CEPF including the BirdLife Monitoring Project, the Frontier-Tanzania BREAM project, the Field Museum small mammals survey project, the TFCG TALK project, the TFCG 'Restoration of forest connectivity in Mufindi' project and the WWF and MTSN Udzungwa Connectivity projects. These linkages have been fostered through the CEPF Coordination Unit, particularly through the regular Lessons Learned workshops. These linkages have enabled us to link the results of the surveys with conservation planning processes, awareness raising activities and other biodiversity surveys. This has demonstrated the important role that the local coordination units can play in maximizing the impact of different aspects of CEPF's investment.

Reporting: CEPF's clear and simple progress and financial reporting format (through Grant Writer) was very helpful.

Technical Report writing: the preparation of the reports and scientific papers has taken considerably longer than was originally anticipated. Although CEPF granted an extension of the project to deal with this, even that has not been enough. This has been an important lesson learned for us.

VII. 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
MTSN	A	US\$ 44,000	Support for the salaries of Michele Menegon and Francesco Rovero.

MTSN	A	US\$ 8,000	Use of two MTSN vehicles for field surveys.
MTSN	A	US\$ 4000	Use of MTSN equipment including cameras, recording equipment, computers and satellite phones.
TFCG	A	US\$ 2000	Use of TFCG equipment including Sherman traps, camping equipment, computers and GIS software.
TFCG	A	US\$ 4000	Salary support to Nike Daggart for additional time spent on report production.

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

Provide details of whether this project will continue in the future and if so, how any additional funding already secured or fundraising plans will help ensure its sustainability.

TFCG and MTSN are currently seeking funds to conduct additional surveys as a follow up to the Filling the Knowledge Gap project. TFCG have received additional funds to conduct related surveys in the East Usambaras and in the Coastal forests of Lindi and Kilwa. These build on the training that the TFCG Research Officer has received through the Filling the Knowledge Gap project.

VIII. ADDITIONAL COMMENTS AND RECOMMENDATIONS

We would like to thank all those who have helped to make this project such a success including:

CEPF

John Watkin, CEPF Grant Manager;
Tom Butynski, Advisor to the CEPF Coordination Unit who visited the field team in the North Pare Mountains;

Project Advisors

Dr. Neil Burgess, WWF-US;
Professor Simon Bearder, Oxford Brookes University who visited the field team in the coastal forests;
Dr. Galen Rathbun, California Academy of Sciences who visited the field team in the Udzungwa Mountains;
Dr. Simon Loader, University of Basel;

Professor Jon Fjeldsa, Zoological Museum of the University of Copenhagen;
Dr. Andrew Marshall, University of York;
Professor Kim Howell, University of Dar es Salaam.

Field team

Charles Leonard, TFCG
Andrew Perkin, TFCG / Oxford Brookes University
Francesco Rovero, Trento Museum of Natural History, Italy
Michele Menegon, Trento Museum of Natural History, Italy

Others

Norbert Cordeiro, Field Museum, Chicago who provided detailed comments on our North Pare survey report.
Claire Bracebridge who provided training to the TFCG Research Officer in small mammal survey techniques;
Leonsi Mlawila and Maneno Mbilinyi, Field Ornithologists in Mufindi and the Rubehos
Charles Meshack, Executive Director, TFCG
Dr. Jaclyn Hall, University of Florida for map production;
Communities and local government staff in the areas that we visited.
TAWIRI, COSTECH and the Forestry and Beekeeping Division who granted the survey team permission to conduct the surveys.

There remains so much to learn about the forests of the Eastern Arc and Coastal Forests, I hope that the CEPF partners will consider continuing to support the excellent research that they have financed over the last five years.

VIII. INFORMATION SHARING

CEPF aims to increase sharing of experiences, lessons learned and results among our grant recipients and the wider conservation and donor communities. One way we do this is by making the text of final project completion reports available on our Web site, www.cepf.net, and by marketing these reports in our newsletter and other communications. Please indicate whether you would agree to publicly sharing your final project report with others in this way.

Yes _____

No _____

If yes, please also complete the following:

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