

CEPF FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: William D. Newmark

Project Title (as stated in the grant agreement): *Conservation Biology of Ecological Indicators to Enhance Connectivity in the East Usambara Mountains, Tanzania*

Implementation Partners for this Project:

Project Dates (as stated in the grant agreement): August 1, 2005 - December 31, 2008

Date of Report (month/year): February 2009

II. OPENING REMARKS

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

The objective of this project was to develop land use management guidelines for corridors in the Eastern Arc Mountains by examining understory bird species survivorship, natality, and movement across a forest disturbance gradient in the East and West Usambara Mountains.

III. ACHIEVEMENT OF PROJECT PURPOSE

Project Purpose: Land use management guidelines are integrated into management plans for wildlife corridors in the Eastern Arc Mountains.

Planned vs. Actual Performance

Indicator	Actual at Completion
Purpose-level:	
<i>1. Written guidelines defining acceptable land use practices are incorporated within two years of the completion of the project in 90% of management plans written for wildlife corridors in the Eastern Arc Mountains.</i>	Land use management guidelines for corridors in the Eastern Arc Mountains were developed and distributed to stakeholders.

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

The project was successful in achieving its performance indicators.

Were there any unexpected impacts (positive or negative)?

No.

IV. PROJECT OUTPUTS

Project Outputs:

Planned vs. Actual Performance

Indicator	Actual at Completion
Output 1: Bird species movement, survivorship, and natality across forest seral stages in the East and West Usambara Mountains assessed and summarized.	Bird species movement, survivorship, and natality across forest seral stages in the East and West Usambara Mountains was assessed and summarized.
<i>1.1. A minimum of 120 field-days, 5,600 mist-net hours, 1,500 radio-tracking hours, and 900 nest-monitoring-days conducted annually.</i>	An average of 149 field-days, 7,029 mist-net hours, 1,242 radio-tracking hours, and 1,173 nest-monitoring-days were conducted annually.
Output 2: A field training programme for Tanzanian ornithology graduate students in assessing bird species movement, survivorship, and natality across forest seral stages in the East and West Usambara Mountains developed and implemented.	A field training programme for Tanzanian ornithology graduate students in assessing species movement, survivorship, and natality across forest seral stages in the East and West Usambara Mountains was developed and implemented.
<i>2.1. A minimum of one Tanzanian ornithologist trained after three years to assess bird species movement, survivorship, and natality across forest seral stages.</i>	Two Masters degree students from the University of Dar es Salaam and the project's chief field technician were trained to assess bird species movement, survivorship, and natality across forest seral stages.
Output 3: Land use management guidelines for wildlife corridors in the Eastern Arc Mountains designed and delivered.	Land use management guidelines for wildlife corridors in the Eastern Arc Mountains were designed and delivered.
<i>3.1. By completion of project, development of land use management guidelines for wildlife corridors in the Eastern Arc Mountains.</i>	By the completion of the project, land use management guidelines for wildlife corridors in the Eastern Arc Mountain were developed and distributed to stakeholders.

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

The project was successful in assessing understory bird species movement, survivorship, and natality across forest seral stages, training Tanzanian graduate students and field technicians, and developing land use management guidelines for corridors in the Eastern Arc Mountains.

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

Because of the loss or malfunctioning of several radio-transmitters, the average annual number of radio-tracking hours conducted over the project (1,242 radio-tracking hours per year) was slightly less than that which had been planned (1,500 radio-tracking hours per year). However, this did not affect the achievement of project objectives related to the evaluating understory bird movement, ranging behavior, and habitat selection.

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.

- Terrestrial insectivorous bird species (n = 4) in the East and West Usambara Mountains have large home ranges (mean fixed kernel = 10.05 ha; mean minimum convex polygon = 17.57 ha).
- Terrestrial insectivorous bird species (n = 4) in the East and West Usambara Mountains are gap-adverse - no bird was recorded over 4,968 bird radio-tracking hours to cross a forest gap > 15 m at any of the study sites.
- The most extinction-prone terrestrial insectivorous species (n = 2) -- species whose population growth rates between 1987 and 2005 were negative or have become locally extinct over the last 20 years at study sites in the East Usambara Mountains -- preferentially used primary and slightly disturbed forest in the Usambara Mountains.
- The relative abundance of terrestrial insectivores in the East Usambara Mountains is two times higher in primary forest than in slightly-disturbed or moderately disturbed forest.
- Understory bird community stability, as assessed by annual species turn-over, is highest in primary forest followed by moderately disturbed and slightly disturbed forest.
- The population growth rates for 21 understory bird species, including terrestrial insectivorous species, in the East Usambara Mountains between 1987 and 2005 did not differ significantly between primary, slightly disturbed, and moderately disturbed forest. This pattern in combination with the observation that the relative abundance of terrestrial insectivores in the Usambara Mountains is two times higher in primary forest than in slightly and moderately disturbed forest suggests that forest disturbance may be creating "attractive ecological sinks" that are depressing the population growth rates of these species across all sites in the East Usambara Mountains.
- Nest survivorship between 2002 and 2008 for eight of the more common resident understory bird species in the East Usambara Mountains ranged from 6.0% to 12.5%, the lowest nest survivorship reported for any tropical forest.
- These results have important implications for the design and management of corridors in the Eastern Arc Mountains. First, enhancing ecological connectivity among forest fragments in the East Usambara Mountains is very important given the large area requirements of many species, the average size of the remaining forest fragments in the Eastern Arc Mountains, and the gap-adverse nature of many species. Secondly, given that many of the more extinction-prone understory bird species preferentially use primary and slightly disturbed forest, and understory bird community stability is highest in primary forest, minimizing habitat disturbance, human and natural, in corridors is important.

- Proposed corridors in the Eastern Arc Mountains that are within or adjacent to nature reserves or national parks should be incorporated within the nature reserve or national park.

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

This project was able to build on 18 years of ecological research and monitoring of understory bird populations in the East and West Usambara Mountains.

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

Having highly motivated, well-trained, and locally-based field technicians was essential to achieving project objectives.

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	Date Received	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.)

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.

William Newmark in collaboration with Dr. Matthew Kauffman from USGS/University of Wyoming submitted in January 2009 a 5-year grant proposal to the National Science Foundation to conduct a multi-species demographic analysis of understory birds in the East and West Usambara Mountains. One of the objectives of the proposal, which is highly relevant to the CEPF activities in the Eastern Arc Mountains, is to conduct a multi-species population viability analysis of understory birds in the East and West Usambara Mountains.

VIII. ADDITIONAL COMMENTS AND RECOMMENDATIONS

VIII. 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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