



Together for birds and people

Instituting Standardised Sustainable Biodiversity Monitoring

In the Eastern Arc Mountains and Coastal forests of Kenya and Tanzania region

Nike Doggart



**CRITICAL ECOSYSTEM
PARTNERSHIP FUND**



Introduction

What is happening?

Since February 2005, BirdLife International and its Partners in Kenya and Tanzania, (Nature Kenya and Wildlife Conservation Society of Tanzania respectively), have been coordinating a project that aims to institute a standardized sustainable biodiversity monitoring system in the Eastern Arc Mountains and Coastal forests of Kenya and Tanzania (EACF) region.^① This initiative is funded by the Critical Ecosystems Partnership Fund (CEPF) and is meant to steer a coordinated approach to biodiversity monitoring at species (i.e. over 340 globally threatened species and others), sites (over 160 sites), and habitats/landscape levels within the region. Besides just monitoring species, sites and habitats, it is envisioned that the project will provide a mechanism to evaluate the impact of conservation activities arising from the five-year CEPF investment within the region and how the conservation outcomes will have been achieved (i.e. avoiding extinction, protecting sites and creating corridors where necessary). The long-term goal is to ensure that actual biodiversity monitoring is embedded into future core and routine conservation and research activities/programmes by governments, other conservation agencies and community based organizations operating across the region.

As a first step, through a stakeholder workshop held in Dar-es-Salaam in 2005, consensus was reached by stakeholders in the region:

- to institute a collaborative and coordinated approach to biodiversity monitoring based on the pressure-state-response model
- a list of indicators for monitoring at species, sites, habitat/landscape level and the appropriate monitoring tools/frameworks and
- to network among all stakeholders in data gathering, management, sharing and dissemination.

As a follow-up, BirdLife International through its Partners in Kenya and Tanzania is striving to enhance coordinated acquisition, storage, handling and sharing of biodiversity monitoring data across the EACF region. This is being implemented through:

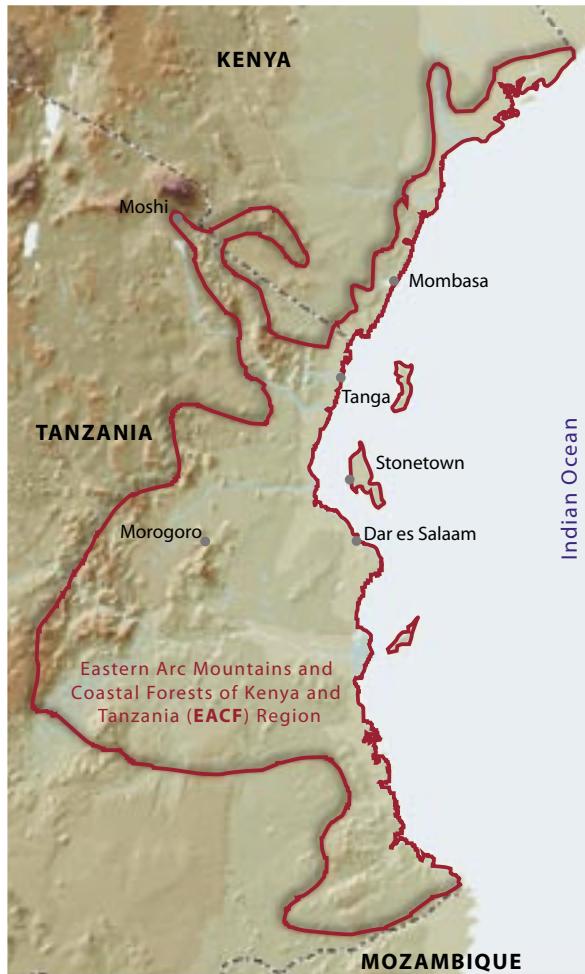
- developing continuous linkages with ongoing initiatives and the main repositories of biodiversity data and
- enhancing information sharing and dissemination to minimize duplication. You are invited to contribute to this initiative by **contributing information on what work you are doing in the region and sharing relevant information/data with us.**

^① The EACF region runs along the coasts of these two East African countries, includes Zanzibar, and has two distinct habitats - the Coastal Forests and the Eastern Arc Mountains. Previously classified as a biodiversity hotspot itself, the region now lies within two hotspots—the Eastern Afromontane Hotspot and the Coastal Forests of Eastern Africa Hotspot—identified as part of a hotspots reappraisal released in 2005.

Agreed indicators for monitoring biodiversity in the EACF

It is imperative that standard and practical biodiversity monitoring indicators are implemented to measure conservation outcomes² in the EACF. Stakeholders agreed on a set of 19 indicators (Table 1) as a first set useful especially for collating information at the local site or species level and giving the user flexibility in choosing from a variety of indicators and tools.

To aggregate information at the regional level, a second set of fewer (nine) indicators (Table 2) has been derived from the first set of indicators to help in reporting at the EACF regional scale.



² Conservation Outcomes are the full set of quantitative and justifiable conservation targets in a hot spot that need to be achieved to prevent biodiversity loss. Having these targets in place ensures that conservation action focuses on the species at greatest risk of extinction and the sites and landscapes that are most important for their protection. These targets are defined at three levels, which are species, sites, and landscapes, representing discrete units along an ecological continuum and using a data-driven process and standardized criteria.

Why are the data needed (and how is it going to be used)?

The data are needed for coordinated monitoring of the conservation status and threats of key taxa, sites and ecosystem processes in the EACF region. Information arising from the monitoring will be used to:

- guide effective site management and conservation action and re-direction of investment as required
- facilitate Red Lists Assessments and re-assessments
- Publicize existing information to minimize duplication of effort and ensure sharing of information is enhanced.
- update information on literature and contacts relating to species, sites and landscape conservation activities

What will happen to the data once received?

The information received will be fed quickly and directly into mainstream government Protected Area planning and information systems as well as the EACF region Conservation Outcomes database and reporting mechanism. The information will be refined and availed for, among others:

- contribution to assessing the achievement of the CBD 2010 Biodiversity Target, focusing on reducing the rate of loss of the components of biodiversity
- contribution to governments for conservation planning and policy formulation
- use as reference in making Red-listing decisions for species in the EACF
- contribution to various relevant conventions to help in decision making
- contribution towards achievement of Millennium Development Goals, especially, Goal 7 (Ensure Environmental Sustainability)



How will the data be accessed?

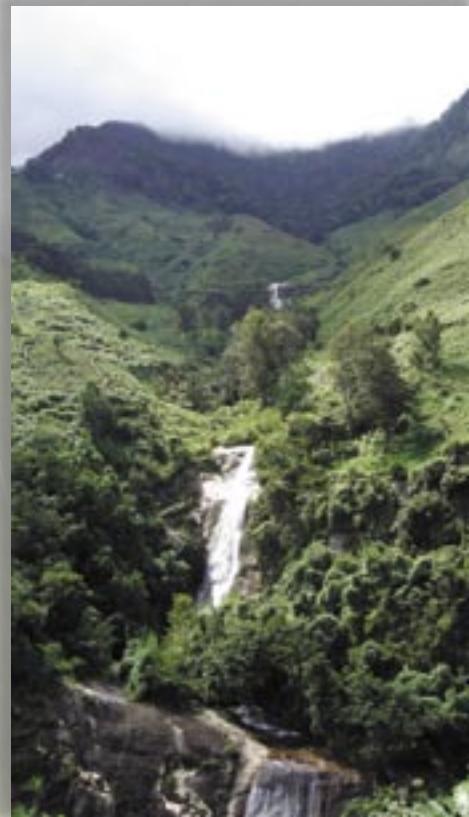
- Regular reports on the biodiversity status and trends (State), threats (Pressure) and actions (Response) to address them will be produced and disseminated widely over the duration of the project
- Requests for information from the continually updated Conservation Outcomes Database held by Nature Kenya and WildLife Conservation Society of Tanzania However, direct links and communications among actors are also encouraged.

What are the benefits of contributing to this initiative?

- Linkage to a wider partnership of stakeholders and access to information on 'who is working where and on what' within the region. This will facilitate sharing of information and experiences as well as accessing relevant contacts.
- The information contributed will become part of more detailed and accessible information resource which will be disseminated widely. Participants will have access to up-to-date and refined information on other taxa and sites of interest.



P.K. Ndang'ang'a



Your contribution is invited

This initiative depends on your contribution, which you can make through sharing information that may add value to biodiversity monitoring in the EACF region. Some guidelines for submitting data/information are listed below.

A) Identify the specific indicators (Table 1) for which you have information. For each of the indicators that you have information, please provide the following:

1. The indicator assessed

2. Name of site/species/landscape assessed

3. Dates of assessment

4. Tools/Methods used to obtain information

5. Overall conclusions (e.g. the inference from Management Effectiveness Tracking Tool or any other tool used to tell whether threats at the site area increasing/decreasing or effective interventions are on at the site).

NB: For this part you may provide three types of results for each data point (after the baseline):

(i) Actual level of indicator

(ii) Change since baseline, and

(iii) Change since last monitored

6. Author(s), reference(s) or link(s) to follow if more details are needed.

7. The name of the authority to be acknowledged for the information provided

B) If you are undertaking other research or conservation action on a species in the region, please provide information on the species name, the kind of research or action, and whether the work is ongoing or completed.

C) If you are working at one of the sites in the region, strive to have a Management Effectiveness Tracking Tool (METT) filled for the site and returned to the contacts below.

Send the information to the following contact persons:

In Kenya through Nature Kenya: Alex Ngari
(office@naturekenya.org)

In Tanzania through Wildlife Conservation Society of Tanzania (WCST): Exper Pius or Saidi Mbwana
(wcst@africaonline.co.tz)

Information can also be submitted to BirdLife Africa Partnership Secretariat through: Paul K. Ndang'ang'a (paul.ndanganga@birdlife.or.ke) or George Eshiamwata (george.eshiamwata@birdlife.or.ke)

NB: The source of data will be credited within the database through full referencing and quoting of the sources of data. All reports produced and circulated from this work will include full references and acknowledgement of the sources of data.

habitats, sites



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and species

Table 1 : List of monitoring indicators and tools agreed by stakeholders in the EACF

Indicator	Level at which it is applied	Main tools/methods for obtaining information
STATE INDICATORS	Forest quality and forest health	Site/habitat - Disturbance Transects - IBA Monitoring Framework - Remote Sensing (aerial surveys and image analysis)
	Area of different types of forest and degree of fragmentation	Site/habitat - Remote Sensing (aerial surveys and image analysis) - Habitat characterization and ground-truthing - Patch analysis
	Presence of endemic and globally threatened species	Site/habitat - Methods will vary with the taxa selected
	Change in species IUCN Red List Category (Vulnerable, Endangered, Critically Endangered, etc.)	Species - IUCN Red List Index - Data Analysis
	Change in species abundance for a few key species (e.g. endemics, threatened, migratory, or other 'flagship' species)	Species - Field Surveys - IBA Monitoring Framework
	Forest Cover Change	Landscape Site/habitat - Remote Sensing (aerial surveys and image analysis) - Forest Health Monitoring Framework
	Gaps in a) national legal recognition; b) international acceptance of nationally legislated reserves; c) making biodiversity conservation an official goal of key biodiversity areas.	Site/habitat - GIS - Evaluating gazettement list - Questionnaire with site managers - IBA Monitoring Framework - Site Surveys
	Percentage area within Protected Areas	Landscape Site/habitat - Maps - GIS - World Database on Protected Areas
	Environmental (ecological and economic) services from the site e.g. quality and quantity of water flowing from the site, soil erosion, non-timber forest products, pollination	Site/habitat May include: - Hydrological surveys - Soil erosion measurements - Economic valuation and PRA

PRESSURE INDICATORS	Change in extraction intensity of key species	Species	<ul style="list-style-type: none"> - Market Survey (timber, bush meat etc) - Disturbance Transects/ surveys - CITES - Changes in density - Geographic distribution - Hunting levels/Cartridge frequency - IBA monitoring framework
	Changes in human population density in wards/divisions containing Eastern Arc or Coastal Forests	Landscape	<ul style="list-style-type: none"> - National Statistics - GIS
	Fire Frequency	Landscape Site/habitat	<ul style="list-style-type: none"> - Remote Sensing (MODIS fire points), - Direct Observation - Disturbance Transects - IBA monitoring framework
RESPONSE INDICATORS	Changes in forest management effectiveness	Site Landscape (modified from site tool)	<ul style="list-style-type: none"> - METT (Management Effectiveness Tracking Tools) Indices
	Presence and use of management plan to protect threatened species	Site/habitat Species	<ul style="list-style-type: none"> - Management Plans - IBA Monitoring Framework
	Actions and research targeting key (threatened/ endemic/migratory) species	Species	<ul style="list-style-type: none"> - IBA Monitoring Framework - Survey of research initiatives, by looking at: <ul style="list-style-type: none"> ● Number of research projects per year ● Number of publications per year ● Amount of funding allocated for research per year
	Policy development (include site, species focused issues)	Landscape Site/habitat Species	<ul style="list-style-type: none"> - Legal Notices - Revised policies, laws, regulations
	Number of sites from which benefits accrue to local communities	Site/habitat Landscape	<ul style="list-style-type: none"> - Household Questionnaires - PRA - RRA
	Change in policies/rules to reduce tourist practices with negative impact on threatened/endemic species	Species Site/habitat	<ul style="list-style-type: none"> - Surveys/assessment of tourism related policy change - IBA Monitoring Framework
	Increase in ecotourism projects protecting species threatened by tourism	Species Site/habitat	<ul style="list-style-type: none"> - Survey/assess ecotourism projects in EACF

Table 2 : List of a collapsed set of monitoring indicators and tools for aggregating information at the regional level

	Indicator	Level	Tool/Method
STATE INDICATORS	Change in status of threatened species*	Species	Red List Index measuring changes in overall projected extinction risk of species (based on trends in numbers of species in each Red List category)
	Change in habitat extent in Key Biodiversity Areas (KBAs)*	Landscape	Analysing satellite data to track habitat change in KBAs over years
	Change in fragmentation in biodiversity conservation corridors*	Landscape	Analysing satellite data to track changes in the proportion of habitat far ($> 1 \text{ km}$) from non-habitat edge, and the proportion of habitat not in small ($< 100 \text{ km}^2$) isolated patches
PRESSURE INDICATORS	Change in extraction intensity of globally threatened species for commercial use	Species	Data derived from TRAFFIC database and Disturbance transects
	Change in human population density in administrative districts contained in the Eastern Arc Mountains and Coastal Forests of Kenya and Tanzania	Landscape	Review of National Bureaus of Statistics Reports in Kenya and Tanzania





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RESPONSE INDICATORS	Change in protection status of Key Biodiversity Areas (KBAs)*	Site/ Landscape	Tracking the change in percentage of KBAs with official protection status using e.g. the World Database on Protected Areas (WDPA) database and requesting for information elsewhere.
	Change in Management Effectiveness of Protected Areas/KBAs.	Site/ Landscape	The World Bank/WWF Management Effectiveness Tracking Tool (METT). METT will be used to assess the % of sites being managed effectively and the mean % change in scores across sites between assessments.
	Change in number of threatened species with action in place	Species	Assessment of species-related data collected using a species data request form
	Change in number and percentage of globally threatened species that have national protection status	Species	Review of relevant acts, policies, legal notices in Kenya and Tanzania

*These four indicators are also being used to monitor biodiversity conservation outcomes at a regional scale elsewhere (e.g. Madagascar).



A. Perkin

More information?

For more information on this initiative, please contact:

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