CENSUS OF KENYA'S ENDANGERED RED COLOBUS AND CRESTED MANGABEY

Introduction

The Tana River red colobus *Colobus badius rufomitratus* and Tana River crested mangabey *Cercocebus galeritus galeritus* are endemic to gallery forest along the flood-plain of the lower Tana River in eastern Kenya (fig. 1). These are two of Kenya's rarest mammals and they live in one of the most complex, unique and rare habitats in eastern Africa. The IUCN Red Data Book classified both subspecies as "endangered" (Lee *et al.*, 1988).

The main objective of the Tana River Primate National Reserve (TRPNR) is to conserve these two endangered primates and the biodiversity of their unique riverine forest habitat. The conservation of these two subspecies is the top priority for primate conservation in Kenya. As such, since 1972, the Tana River red colobus and crested mangabey have been the focus of several population censuses and detailed ecological/behavioural studies (see references in Marsh, 1986; Decker, 1994; Butynski & Mwangi, 1994).

Of additional concern is the conservation of the Zanzibar galago *Galago zanzibaricus*, a species which the Red Data Book (Lee *et al.*, 1988) lists as "vulnerable", and the Tana Sykes monkey *Cercopithecus mitis albotorquatus*, a subspecies endemic to the region (Kingdon, 1971). Four other non-human primates are found along the lower Tana River. These are the vervet monkey *Cercopithecus aethiops pygerythrus*, yellow baboon *Papio cynocephalus cynocephalus*, Garnett's galago *Otolemur garnettii* and Senegal galago *Galago senegalensis*.

This paper summarises the results of the 1994 census of primates along the lower Tana River.

Background

The TRPNR (fig. 1) was established in 1976 to protect some of the best remaining forest along the Tana River. The total area covered by the 16 distinct evergreen forests within the 171 km² TRPNR is between 9.5 and 17.5 km², depending on the definition used to define evergreen forest. The altitude is about 30 m. The TRPNR extends for about 36 km along the present channel of the Tana River.

The 65 km long lower Tana River is marked by a broad flood-plain which varies from 1 to 6 km in width. The edge of the flood-plain is 3-5 m below the level of the surrounding ground. When not in flood, the river here averages about 60 m in width but is 100 m in width in some places. The flood-plain is largely grass-covered but there are numerous patches of bush, woodland and forest. The total number of "distinct forests" along the lower Tana River is 71 and the total area they cover is roughly 37 km² (Butynski & Mwangi, 1994). These forests range in size from 1 - 1,100 ha.

The Census

The "quadrant census method" was used (Struhsaker, 1981; Butynski & Mwangi, 1994). The census was conducted in February and March 1994 by 10 - 13 biologists and field technicians from the Kenya Wildlife Service, National Museums of

Kenya and Institute of Primate Research. The census itself required a total of 710 "observer man hours" and 560 "security man hours", making it the most comprehensive effort to date to obtain data on the number and distribution of primates along the lower Tana River.

We censused 54 (76%) of the 71 forests found along the lower Tana River. Of the 17 uncensused forests, nine have never been reported to hold red colobus or crested mangabeys and five have not been reported to harbour either species since 1972 or 1975. Only three uncensused forests are known to have colobus or mangabeys as of 1989.

Results

Tana River red colobus have a distributional range which extends for about 60 km along the lower Tana River from Kipende to Mitapani (fig. 1). They were found in 34 (63%) of the forests censused. At least 86 groups occur. The total population is estimated at 1,100 - 1,300 animals. While the population appears to be down somewhat from the estimated 1,200 - 1,800 red colobus in 1975, the data indicate that there are about five times more red colobus than suggested by censuses conducted during the 1980s. The total area of forest occupied by red colobus is considerably less than 13 km².

Tana River crested mangabeys have a distributional range which is similar to that of the red colobus, extending for about 60 km from Nkanjonja to Hewani (fig. 1). Forty-eight groups of mangabeys were found in 27 (50%) of the forests. We estimate the total population size to be 1,000 - 1,200 animals. The population appears to be somewhat below the 1975 estimate of 1,200 - 1,600 individuals. The total area of forest occupied by crested mangabeys is less than 26 km².

While both the red colobus and crested mangabey are more abundant than suggested by other censuses undertaken in the past decade, both appear to have declined roughly 10 - 30% since 1975.

The TRPNR holds about 37% of the colobus groups and 56% of the mangabey groups. This means that a far greater portion of these two populations, and of their habitats, occurs outside of the Reserve than previously estimated. Of the animals outside of TRPNR, about 19% of the colobus groups and 10% of the mangabey groups live in forests under the management of the Tana Delta Irrigation Project (TDIP) while the remainder are on Trust/Government Land. These are not insignificant percentages when dealing with highly endangered animals and habitats.

Condition of the forests varied greatly. Some forests, even those outside the Reserve, were in excellent condition, little utilised by people and probably expanding in size. Other forests, particularly those outside the Reserve and near villages, were being rapidly degraded, cut for farmland and lost. Due to the lack of security along much of the east bank of the Tana River, most forests on that side of the river are in relatively good condition.

Threats

It appears that the greatest present threat to the forests of the lower Tana River is conversion to farmland. The other immediate important problems facing these forests are fire, felling of large trees for canoes, and pole cutting. Poaching occurs but appears to be at a low level within the forests.

A new near-term threat to these forests may be posed by the construction of the Mutonga and Lower Grand Falls Dams. These dams are scheduled to be completed in about the year 2001.

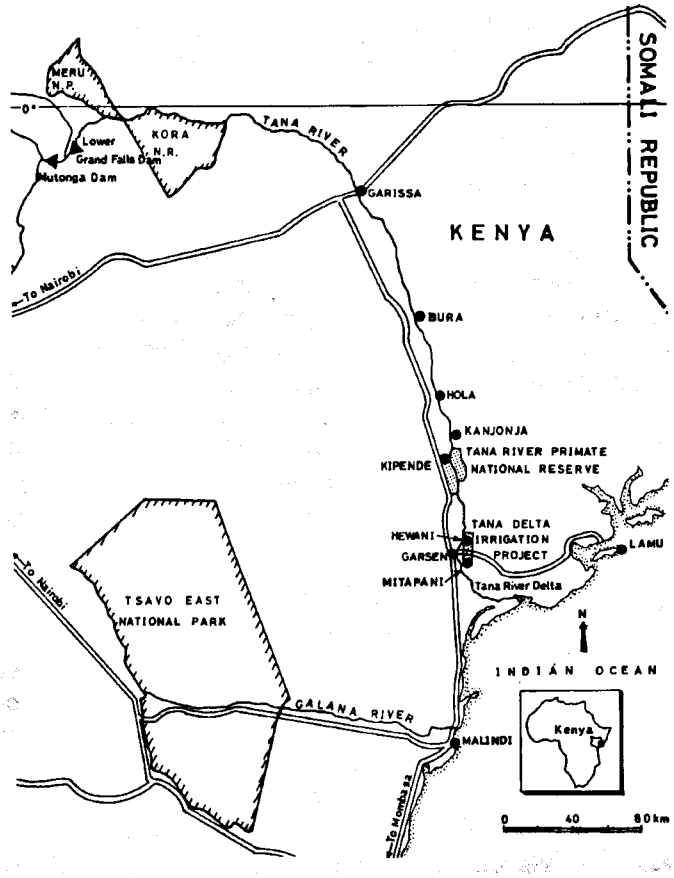

Figure 1. Location of the Tana River Primate National Reserve, the sites for the planned Mutonga and Lower Grand Falls Dams, and other places mentioned in the text.

According to an environmental assessment report by Nippon Koei Co. (1995), the dams will greatly reduce river discharge, silt deposition and the level of groundwater. The expected result is the loss of the riverine forest and the species therein, including the red colobus and crested mangabey. Gene banks and *ex-situ* conservation are two mitigation measures mentioned in the report. For more information on the proposed dams and their predicted impact on the forests of the lower Tana River, please see page 14.

Recommendations

Some of the recommendations arising from this census are as follows:

- Obtain accurate information on the size of Tana River red colobus and crested mangabey groups throughout their range so that more recent, and more representative, data on mean group size are available.
- Obtain accurate data on the size, shape and location of all lower Tana River forests.
- Meet with Tana and Athi Rivers Development Authority (TARDA) and TDIP biologists and officials to: (1) review the TDIP environmental monitoring data, (2) obtain an up-date on TDIP ground activities and future plans, (3) make a current assessment of the impact of past, present and future TDIP activities on red colobus and crested mangabeys living within the TDIP managed area and, if necessary, (4) find additional ways to enhance the long-term survival prospects of the two endangered primates and the forests.
- Given the importance of forests outside of the TRPNR to primate and biodiversity conservation along the lower Tana River, serious thought should be given to reconsidering how the World Bank Global Environment Facility funds to the TRPNR Conservation Project are to be used. It may be most effective to increase the size of the project area so as to include, to some degree, all of the riverine forests of the lower Tana River.
- Census all lower Tana River forests which the 1994 census did not reach and recensus several other forests.
- Examine the impact, feasibility and costs of introducing red colobus to the Greater Wenje Forest in the north-east of the Reserve.

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