

of sufficient quantity or quality, are they found in significant numbers in the northern and southern parts of the range.

The range is a remote area where development has been minimal. Although there is some competition for water and grass between the antelopes and the nomadic Somali pastoralists' livestock, both are subject to similar environmental stresses, and the absence of western technology has forced the Somalis to graze their livestock in a manner similar to wild animals. This has kept livestock numbers far below what could be achieved with commercial ranching development, and several hundred years of co-existence has produced a balanced equilibrium between wild and domestic animals. Habitat conditions for the Hunter's antelope today are probably close to what they were decades ago, and the population is healthy.

But this situation could alter drastically with a change in land use. Government plans to develop the area include large-scale hydro-electric and irrigation schemes along the Tana River, and an increase in livestock numbers for commercial production. If these schemes are established on the east side of the Tana River, within the natural range of the Hunter's antelope, particularly in or near the antelope's wet and dry season concentration areas, they will cause serious inroads in the antelope's population. In opposition to these plans, Kenya's Department of Wildlife Conservation and Management is proposing the conservation of the region's wildlife, using the area's high potential for tourism to show a higher economic return. But much information on the wildlife ecology is needed before any firm stand can be made. Given data of this kind, which I hope my studies will provide, a workable compromise between these conflicting interests is very possible.

## Kenya's New Primate Reserve

*Katherine Homewood  
and  
Japheth Mkunga*

*Young crested mangabey*



**Two endangered monkeys, the Tana crested mangabey and the Tana red colobus, survive only in a small area of the Tana river in northern Kenya. The Government has now created a small reserve to protect them on land given up voluntarily by the local people. But the threat of a large irrigation project upstream could still jeopardise their survival. Mr Mkunga is Warden of the new reserve.**

The Tana Primate Reserve is one of Kenya's newest conservation areas, covering 175 sq km of floodplain and terrace land on both banks of the lower



RIVERINE ACACIA-GARCINIA WOODLAND, with grass and scrub invading the cleared area where cultivation has been abandoned

Tana river. It was created primarily to conserve two rare monkeys which are found nowhere else, the crested mangabey *Cercocebus galeritus galeritus* and the Tana red colobus *Colobus badius rufomitratus*, and also to preserve the riverine forest mosaic that they inhabit, which is itself unique in East Africa and may eventually be included in UNESCO's Man and Biosphere (MAB) programme. It will also, of course, provide a refuge for wildlife in an area that is being increasingly developed. Success depends on the continued support of the local people, who have given up their traditional farming and grazing land for the reserve, and so a major aim is wildlife education for local people who will get direct material benefits if, as is hoped, the reserve attracts tourists.

To preserve the wild and remote atmosphere, development is being kept to a minimum and access (by air, road or, exceptionally, river) limited to the dry season. The only buildings permitted are the Headquarters, which will house a small museum to show the area's unique geomorphology and ecology, the biology of the rare species, and the handicrafts of the local tribes. Instead of hotels or lodges five small camp sites, catering for a maximum of 50–60 visitors, are being established, two on each bank of the river, and the fifth to be run commercially on what was once the site of the District Commissioner's camp. Game viewing circuits will be provided with occasional hides and tree platforms, and there will be opportunities for game-viewing by night, guided walks through the forests to see the rare primates and spectacular bird life, and trips down the river by dugout canoe to see crocodiles, hippos and water birds. A vehicle parked on the east bank will make it possible to visit the habitat of Hunter's hartebeest, found only here and in the Arawale Reserve.

The Tana Reserve, however, still has problems. The destructive slash-and-burn techniques of some Pokomo people who still farm inside the reserve do not accord with conservation, and their permanent riverside fields bar the wild animals' way to the infrequent and vital watering points. Government policy is to resettle these people, either on a large irrigation scheme 80 km upriver or on minor local irrigation schemes. The pastoral Orma people also use the reserve and create grazing, trampling and burning problems. Only small herds

of calves and lactating cows are allowed in to feed and water, and Government policy is to absorb these pastoralists into gazetted co-operative ranching schemes, one of which is immediately adjacent to the reserve.

More serious problems arise from a large irrigation scheme and a number of important hydroelectric and reservoir dams being established upstream. The river control and overall decrease in flow may cause a qualitative change and/or a quantitative degradation in the vegetation, while a major extension to the irrigation scheme, now being considered, would threaten the reserve's survival as well as the livelihood of some 40,000 people downstream. If, instead of this large scheme, several small local irrigation schemes can be developed, the results would be much less destructive of the ecosystem as a whole and people could continue farming only a few kilometres from their original fields.

Commercial hunting is another problem. Always an important game area, this small reserve is virtually surrounded by much larger hunting blocks, or ranch land where hunting concessions are regularly leased. These make it difficult for game herds to move in and out, particularly for elephants which make diurnal treks across hunted land into the reserve to drink. The solution is the creation of buffer zones, particularly to the north, where they will create a safe corridor from the reserve to a non-hunting area belonging to the Livestock Marketing Division.

Problems specific to the Tana Reserve can be expected to arise from changes affecting the river, and the consequent changes in vegetation, and also from fluctuations in animal populations, both natural and through artificial concentrations as surrounding areas become increasingly hostile to wildlife. The reserve is a very small area and in no way a closed system. To keep track of such changes and maintain the aims of the reserve calls for a routine monitoring programme.

The Tana Reserve has great potential – for conservation, for the local economy, for educational and aesthetic purposes, and for academic research. But it will need careful management and the continued interest and support of the conservation movement to ensure that its problems are overcome and its aims fulfilled.

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Katherine Homewood, Wellcome Institute of Comparative Physiology, Zoological Society of London, London.

#### Rescue Showed Value of Research

The importance of research for conservation was demonstrated when populations of Galapagos land iguanas were attacked by feral dogs on two islands, Santa Cruz and Isabela. Survivors were taken by the National Park Service to the Darwin Research Station, and because Dr Dagmar Werner had been studying these threatened iguanas something was known of the conditions they required to make the rescue operation effective. One group has been put on a suitable small island where they should be safe.

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