

THE LARGER MAMMALS OF THE KORA NATIONAL RESERVE
WITH NOTES ON THE SCIURIDAE AND BATHYERGIDAE

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SUMMARY

This paper records the sightings by members of the project of forty-six species of mammals in the reserve (other than small RODENTIA) through encounters by members of the Project along main tracks. The restrictions on visibility imposed by the density and diversity of the vegetation, meant that all sightings were from the transect tracks, so the apparent large mammal densities do not represent population of the whole reserve area, much of which could not be surveyed.

Brief notes on the mammals are given together with notes on Sciuridae and Bathyergidae.

In conclusion it is suggested that the Kora National Reserve be regarded as a refuge and gene pool for the species and that its full development as a park for extensive tourism is neither desirable or practicable. The future of the reserve may finally be determined in years to come, through the effects of the two proposed barrages on the river as Kora High Dam and the Kora Regulator, when the area which now provides an important food resource, will be inundated.

INTRODUCTION

The habitats and major vegetation types of the Kora National Reserve are described by 1) Kabuye, Mungai and Mutangah; 2) Agnew, Payne and Waterman; 3) and Olang (this volume).

The density of the *Commiphora*, *Boswellia* and *Acacia* bush, referred to as nyika, was so dense over much of the Reserve that observations of large mammals was very difficult so that even an elephant on the track would take a few paces and disappear.

Another constraint on our recordings was the limited availability of transport which meant that two or more disciplines with very different objectives had to travel together. Additionally it was always essential (and a strict Project rule) that all parties travelled with armed Anti Poaching Unit guard, and that walking was more or less prohibited for security reasons. When groups of mammals were encountered it was difficult to arrive at the number of animals in herds or troops, particularly regarding parties of Baboon and Vervet Monkeys.

It was initially intended to plot the distribution of species on the standard map, this on test however, proved meaningless particularly as virtually all travel commenced either up or down stream, on the Tana River at an early or late hour. Travel inland (southwards), inevitably took place in the hot hours of the day, between 11.30 to 15.30 hrs, when most animals had retired to shelter in the shade of the denser bush in the valleys, away from the main tracks, which ran along the crests or ridges. A large percentage of large mammal observations were therefore made close to the Tana River however since most of the species were concentrated in the vicinity or at least within a short distance of permanent water the records

of mammal distribution probably reflected their true pattern.

The water dependant species which required to drink daily were located in the proximity of the river, but since these species mainly drank at night, their presence went unrecorded, especially in the case of herd species such as elephant, and buffalo. However, spoor observed on the mud and sand banks gave some indication of their activities and approximate numbers. Early morning travel along the river, revealed the spoor of animals that had crossed the tracks during the night, but it was almost impossible to translate these observations into terms of animal numbers.

Forty six mammal species were recorded, the most frequently observed being Baboon and Vervet Monkey, Dikdik, Waterbuck, Lesser Kudu, Gerenuk and Hippo. Less often seen were Elephant, Buffalo, Zebra, Giraffe, Oryx and Eland; Warthog, Jackal, Hyaena, Aardwolf, Cheetah and Wild Dog were uncommon, while only a few records were made for Bushbuck, Rhino, Bat-eared Fox, Ratel, Civet and Caracal. Others, with but a single record or so are Greater Kudu, Impala and Grant's Gazelle. The Mongooses (Herpestinae), were represented by three species. Lion and Leopard were present but their status is in doubt, in respect of whether they were animals being rehabilitated or wild inhabitants. As an indication of the frequency of sightings (CVS records) some 2500+ animals were noted in some 650 sightings over a period of 56 days travelling 2693km. (This includes two short pre-project and two short post-project periods in the Reserve).

LARGE MAMMAL RECORDS

Artiodactyla

Suidae

Warthog:Phacochoerus aethiopicus

Eleven sightings were recorded, widely distributed, usually single animals with a maximum of three on two occasions; a pair of adults with a juvenile on 22/7/1983 were observed near Transect 4A on return from the west, in the late afternoon, from Springs.

The first record was that of Army personnel building the camp in June when one was chased past the camp by a lion in the early evening.

Hippopotamidae

Hippopotamus:Hippopotamus amphibius

Thirty nine recorded sightings, while undoubtedly others went unrecorded. Well distributed from the west to east along the river. Schools varied in numbers with the largest concentration being 23 individuals.

There was some movement of family parties from their locations due to the fluctuations of water level and the intermittant movement of silt forming temporary sand banks. As grazing along the river was limited, animals penetrated several kilometres inland to secure food; movement was often along rough vehicle tracks. Regrettably no detailed examination of faeces was made to ascertain their forage, which inland certainly did not contain any green herbage as this was entirely lacking. Sparse ephemeral vegetation emerging on the temporary sandbanks was grazed, and on one occasion in the late morning.

At low water levels animals were often well exposed and on being disturbed, hurried to find their submarine pathways.

An aerial survey carried out by P.Hamilton and F.pertet from WCMD

recorded 220 Hippos between Osako in the east and just west of Adamsons Falls.

Giraffidae

Giraffe: Giraffa camelopardalis tippelskirchi

Reticulated Giraffe: G.c. reticulata

Thirteen sightings were recorded, usually single animals, occasionally three (2 adults, 1 juvenile) and once 15 in the vicinity of Osako to the east.

All records were in the vicinity of the river with the exception of a male seen twice well inland near Mwitamba. This male and another seen and photographed (CVS) near the river and the camp, and a party of three individuals to the east beyond the Chanyigi lugga were 'reticulated' in pattern. Other records were noted as 'Masai' type in pattern. Near Mansumbi on 18.11 a male was recorded (CVS) as 'pale yellow reticulations on light brown' - not the chocolate brown of the northern animals. The 'reticulated' is not supposed to occur south of the Tana River, which however is not a barrier to southward movement as crossings may be made in periods of low water.

It is therefore of considerable interest that animals exhibiting these two distinct patterns should be found within a limited area. There is no record from the Kora Project observers of any intergrading or mixing of pattern.

On 15.11 on the opposite bank of the river from the base camp a single Reticulated Giraffe was observed, but captured cross bred animals do retain a distinctly "reticulate" pattern.

Bovidae

Madoquinae

Kirk's Dikdik: modoqua (Rhynchotragus) kirki

By far the commonest antelope sighted in the Reserve, with 406 records distributed throughout the area. Mostly recorded in pairs and very occasionally a party of three but no small juveniles were recorded.

It was significant that after the invasion of the Reserve by domestic stock, during a visit at the end of the Project, 24-27.3.1984 less than a dozen animals were sighted though a considerable distance was travelled from the camp to the vegetation transects (see map) indicating that the trampling by the stock had completely upset the Dikdik territories, obliterated gland markings and middens.

We found no evidence to indicate the Gunther's (Long-nosed) Dikdik, M. guentheri was present within the Reserve.

Dikdik probably form the main prey for many of the smaller carnivores. On 18.8.1983 a pair of Jackal were observed in the early morning on a Dikdik kill, on the Monune - Mwingi track.

Tragelaphinae

Bushbuck: Tragelaphus scriptus

Two clear sightings were recorded of a dark animal, a male, on the river track half a mile west of the camp and at least one other unrecorded sighting at the same point was notified. This is an unusual locality for a species usually regarded as a highland dweller, and where vegetation appears hardly suitable for a species which normally depends on green

browse, of which there was very little except at the river edge. As with many species of both mammals and birds, it seems probable that these animals are itinerant individuals which have probably followed the riverine vegetation down from the Nyamboni range forests to the north-west.

Lesser Kudu: *Tragelaphus imberbis*

Fifty eight sightings, the majority in the early morning when they were observed along the river track to the east or west, and in late afternoons while returning to base camp. Few records from inland travel, possibly due to the times of day, when animals were probably in cover and shade.

Females outnumbered males (personal records) and no small juveniles are recorded. The Lesser Kudu is almost certainly prey for the larger carnivores, several skulls and skeletons being seen and some recovered.

Greater Kudu: *Tragelaphus strepsiceros*

No sightings during the period of the Project, however a fine male was seen by A. Duff MacKay and the writer in 1976 when we travelled through the Reserve to join the polytechnic of Central London Tana River Expedition. A second animal was observed by us in October 1982 during a preliminary survey of the Reserve.

The nearest recorded locality for this species is to the north west and south of the Athi/Galana River.

Eland: *Tragelaphus oryx*

Rare, only three records, each of a single male, though foot prints were found at several points along the river indicating that more than one animal was involved. All sightings were near the river with one on the road near Osako.

Hippotraginae

Fringe-eared Oryx: *Oryx gazella callotis*

Only six more sightings, three inland to the south where the nyika thinned out with more open grassland. On 25/11 a herd of 5 animals; 1 Mwitamba grassland 5/8 (MC); 1 Mwingi/Kora boundary 11/4/1984 (MC). This sub-species is separated from the Beisa Oryx (*O.g.beisa*) by the Tana River.

Reduncinae

Waterbuck: *Kobus ellipsiprymnus*

Eighty sightings, these mostly recorded in the vicinity of the river, early morning, mid-day and evening. No inland records. Drinking at around mid-day was a feature noted. On many occasions animals were found on distinctive tracks to the water, indicating regular movement from water, inland to the Nyika. One beast seen inland at the base of Kiume inselberg. A waterbuck was taken by a crocodile (see crocodile) on 14.1.1984 (AD-MCK).

Singles, pairs or small parties, maximum 7, with a few accompanied by small juveniles, no suckling calves recorded. All were typical *K.ellipsiprymnus* with a narrow elliptic white band surrounding the rump, around the tail.

Aepycerotinae

Impala: *Aepyceros melampus*

One record, a single male on 1.8 only 1.7 miles from camp on the west

track along the river at 09.10 hours (PW & MC). Several animals were observed on the northern bank of the Tana River in July-August 1983.

Gazellinae

Grant's Gazella: Gazella granti

One sighting on 21 July 1983, a small herd flushed from within the Hagesu lugga, to the east of Kora, towards the Reserve boundary.

Waller's Gazelle or Gerenuk: Litocranius walleri

41 recorded sightings. Probably more evenly distributed in the Reserve than any other species due to their ability to go without water; seen along the river east and west and well inland to Mwetemba. Usually observed as single animals or pairs. No small juveniles were recorded. One animal on the bank opposite the camp was seen to stand upright and with its forelegs pull down a branch to a reasonable level before proceeding to feed. This was an unidentified broad-leafed species, not Acacia spp, (Grewia sp?). Gerenuk must have subsisted on foliage other than acacia, as few species, except along the river, provided any foliage.

Bovinae

Buffalo: Syncerus caffer

Four sightings only, though judging by tracks on sandbars and other drinking points, numbers of these animals were present particularly to the east of the Reserve near Kora Kora and the rapids. One herd was counted as 48 animals of all ages including some small calves; this herd was intercepted near the river on their way to water 21/11/1983 (CVS & Botanists). Cows were very nervous and truculent. Five adults and three juveniles were also found 3 km east of the camp on 21/11/1983 (CVS & Botanists). From droppings it was clear that the herd(s) spent most of their time deep in the dense nyika.

Perissodactyla

Equidae

Burchell's Zebra: Equus quagga boethimi

Only five recorded sightings though tracks were often seen. Four small herds of 7, 7, 12 were seen near the salt spring pans, close to the Kora rapids, to the east and once inland from the rapids. One herd of 20 was recorded near Osako to the east of the Reserve.

Rhinocerotidae

Rhino: Diceros bicornis

Only one sighting of this animal, a single beast 3/9/1983 near Lion Lugga (RP & BH) but tracks of two adults and a calf were found a day after Transect 4a was cleared (7 Sept) to the east of Murenge.

Terence Adamson now considers that there are at least five animals in the Reserve.

Hyracoidea: Procaviidae

Rock Hyrax: Procavia johnstoni and Heterohyrax brucei

Hyrax were noted on several of the inselbergs but no specimens were

collected, however two skulls and remains have been identified as those of Heterohyrax brucei and Procavia johnstoni. On all the bare inselbergs only H.brucei seemed to be present, but on the boulder strewn, well vegetated slopes of Katania P.johnstoni become quite common.

Proboscidea
Elephantidae

Elephant: Loxodonta africana

Ten sightings, including a herd of 12 near the airstrip seen from the air, one of 11, one of 3 and two singles. However, judging by the accumulation of droppings on the tracks to Boka and Kamaguru and at the drinking points, considerable numbers of elephant are present in the Reserve particularly to the east. A single animal was recorded about 6 miles from camp, on the Monune Road to Mwingi; a group of 20+ on 4/8/1983 at 10.50 hrs, 25km from camp to the east (NCJ & MC) and about 30 in six groups in the vicinity of Komunyu 28.8.1983 (MC & PW).

George Adamson's estimate of the Reserve population was in the region of 600 head. A few small juveniles were noted.

Information on poaching, with the slaughter of at least five animals, was received during the Project period, these were killed on the western edge of the Reserve or in the contiguous North Kitui Reserve.

Feeding by the animals appeared almost restricted to Sansevieria, Hyphaene palm and Acacia spp bark.

Drinking was at night. Spoor indicated that large numbers of animals were using the river at night, but no animals were seen in its vicinity during daylight, due mainly to the frequent presence of pastoralists watering their domestic stock, and high current loads of poaching in the region.

Tubulidentata
Orycteropidae

Aardvark: Orycteropus afer

No sightings recorded and the only evidence for the presence of this animal was holes dug into termite mounds, and of a few earths.

Carnivora
Canidae

Side-striped Jackal: Canis adustus

Black-backed Jackal: C.mesomelas

Twenty one sightings recorded but regrettably some of these simply noted as 'Jackal' without positive identification as to species, however both Canis adusta and C.mesomelas were positively identified. Dikdik would appear to be an item of prey as a pair of Jackal were found early one morning feeding on a carcass.

Wild Dog: Lycaon pictus

The first record of these animals was on 26/10/1982 on the airstrip at Kora when 14 were counted by Dr.A.J. Meyerhold (pers. comm. to CVS). Four sightings of these Dogs recorded during the project period. A party of 21 were found resting as a pack below two Sterculia trees at 12.35 hrs. This large pack was found inland near Mansumbi 19/11/1983 (CVS & Botanists).

The dogs had dug up the soil around the base of the trees and were lying in two close heaps. On being disturbed they jumped up with one or two individuals in each group 'yippling' quietly and then all trotted off. Other groups consisted of 3, 4 and 6 individuals on the Mansumbi - Mwingi road. All sightings were well to the south of the river in less dense nyika. Prey would probably be Gerenuk or Lesser Kudu, and the young of other species.

Bat-eared Fox: Otocyon megalotis

A pair were seen (CVC) at night on the road to Kora from Mansumbi in October 1982 when undertaking preliminary survey work of the Reserve, and a second record was also at night approaching Kora on 28/12/1982 when a pair was seen on the track. During the project there was one sighting of two animals on 18.8 only 2 miles from camp on the track to Mwingi. Other sightings were reported at night but no records were entered in the logs. A single animal was found at 17.00 hrs on 11/8, 4.3km up the monune track (SA).

Mustelidae

Ratel or Honey Badger: Mellivora capensis

One sighting of three animals on the northern bank of the river at 17.45 hrs playing together by the waters edge where one beast proceeded to climb into a large tree. No records from Kora Reserve. Scats believed to be of this species were found, which contained bone fragments of a small mammal.

African clawless otter: Aonyx capensis

No sightings, but tracks in mud by a sandbar close to the Kora Falls were found and identified as those of an otter, probably of this species since the spotted-necked otter has a more westerly distribution, and the spoor seemed to lack claw marks.

Viverridae

Common genet: Genetta genetta

Large spotted genet: G.tigrina

One animal was seen at night on the road to Kora on 28/12/1982 (CvS). During the project there were two sightings: 16/7/1983 of 6 animals near the boundary of the Reserve and 2 in 19/7/1983 at base camp (MC). As specimens were not observed closely (or collected) specific identity remains uncertain. Genetta tigrina and G.genetta are recorded from the general area of Tsavo East and the Tana River.

African civet: Civettictis civetta

Three sightings: 1 on 22/7/83 near Kampi ya Simba at 20.00 hrs (MK & AM); during November 1983 a Civet frequented the camp and was seen on several evenings by A.P.U. and K & B driver. Remains of an animal were found amongst the rocks at the water hole in Monune lugga (CvS). scats were also found at Mansumbi, where the diet comprised seeds (Lannea?), millepedes, centipedes, scorpions, scales probably of a snake, and bones, some of which were probably of Dikdik. At another inselberg again, bones were probably those of Dikdik mixed with centipeds and fur (not Dikdik) (CvS).

Slender or Black-tipped mongoose: Herpestes (Galerella) sanguineus

Three definite sightings: One at the rock fall on Monune lugga,

11/9/1983 in late afternoon which crept down through rocks towards the spring pools, where birds were drinking but these were not attacked (DA & CVS). A single animal 13.1km from camp on the Mwingi road and of 3 animals 30/3/1984 on camp road to Komunyu (MC).

Ichneumon or Egyptian Mongoose: *Herpestes ichneumon*

A large and long animal was seen by MC on 30/3/1984 a lugga bank, on the Yumbandei track was probably this species, which has been recorded from the Tana River area. It was described as "1.0 m long, deep face, dark body, tufted tail, gait almost like a monitor lizard."

Dwarf mongoose: *Helogale parvula* and *H.hirtula*

The common dwarf mongoose (*H.parvula*) was observed around the base of the Kiume outcrop, but was nowhere common. A small dark pigmy mongoose was observed several hours at the base of the Katania outcrop and is probably referable to *H.hirtula*. Both species have been recorded from the Tana area and Tsavo to the south. Uncommon. *Helogale parvula* and *H.hirtula* are recorded from the Tsavo - Kitui area. There appears to be a distinct habitat separation between the two species, the former more widespread often occupying termitaria while the latter is more often associated with rock crevices.

White tailed mongoose: *Ichneumia albicauda*

A single record near Kampi ya Ndovu, 31/8/1983 (MC). One animal was a regular visitor to Kampi ya Simba.

protelidae

Aardwolf: *Proteles cristatus*

A single beast was spotted on the track towards Kora rock on 28/12/1982 evening, when making a brief visit for the preliminary reconnaissance of the Reserve (CVS).

Only one sighting during the project, at 22.00 hrs on 2/9/1983 some 10 miles along Monune lugga road (HN & NW).

Hyaenidae

Striped Hyaena: *Hyaena hyaena*

A single sighting on 4 September 2.7km from camp on Monune lugga-Mwingi road around 10.00 hrs which ran for a considerable distance ahead of the vehicle and disappeared, eventually into the bush near the track to the rapids (DA & CVS).

Spotted Hyaena: *Crocuta crocuta*

One logged record at Kiume outcrop on 18.7.1983 (MC). They were never heard calling at night which suggests that their density must be pretty low.

Lion: *Panthera Leo*

A lioness with cubs or juveniles were seen by all members of the project but these sightings were almost certainly of animals being rehabilitated by George Adamson who regularly fed the animals, often close to the camp. That wild lions were present, possibly more than one, is almost certain and wild males (often heard) are regarded as the mates of the Adamson females. 'Lions' were reported to us as having taken Somali stock. A girl was badly

mauled on the Kumunyu lugga on 27/7/1983. The young Somali child was taken to Garissa where she made a full recovery. The animal responsible was described as a male in rather poor condition, and some distance away from where the rehabilitated lionesses were currently resident rehabilitated animals. Spoor was found well down stream, below both sets of rapids towards Kora, again well outside the range of the Adamson animals and may well have been those of wild creatures. Most of the tracks observed were close to the luggas or the riverine fringe.

Leopard: Panthera pardus

A single leopard was sighted sheltering below a small rocky ridge 40 m west of Kampi ya Ndovu (R.P. and A.D.Q.A.). This may well have been one of a missing pair being rehabilitated by T.F. at his leopard camp at Komunyu Inselberg. However F.P. & P.M. reported an animal near Baboon Hill 23.8.1983 and the A.P.U. reported a pair near the camp 26/8/1983. In the former instance a wild leopard may well have been involved since the remaining female was still confined at leopard camp, although this sighting was only about 5 km from the sighting above, so it could well have been the same animal.

Cheetah: Acinonyx jubatus

Some early cheetah records were not logged, however two animals were seen at 22.00 hrs about 9 miles east of the camp on 22/7 (M.K. & A.P.U.). N.M.C. spotted a female with two cubs on 25/7/17 miles from camp on the road to Mwingi from Mansumbi at 15.00 hrs, while P.W. & M.C. saw a single animal on 31/7/ 22 miles on the Mwitamba road. Another single animal was seen by C.V.S., M.C. & P.W. to the east on the Kilamangulu track inland some 12 miles from the river in more open bush country on 29/7. The last sighting was of 2 by the lugga behind Baboon rock in 9/4/1984 and a pair of sub-adults hunting waterbuck near Katania 9/4/1984. The widely separated sightings between July and September 1983 suggest that the population is at least 12-15 individuals.

Caracal: Caracal caracal

Five sightings of this somewhat unexpected species were logged. One was seen at night at the camp by the A.P.U. guards, 19/7/1983; a singleton 10.6km downstream to the east at 09.30 hrs on 17/7/1983 (C.V.S. & M.C.). Another single animal near Baboon Rock on 21/8/1983 at 06.30 hrs (S.A.) and two sightings on the Kora/Mwingi road on 27 and 29/8/1983 (M.C. et. al.). One was seen outside the Kora Reserve boundary in the contiguous North Kitui Reserve on 26/11/1983 (C.V.S.). A pair of Caracal took up residence close to the Tana River on the Monune lugga track in September 1983 which were observed almost daily for over two weeks in the same locality.

African Wild Cat: Felis sylvestris lybica

A single record by M.C. of an individual on 18/7/1983 which emerged from a small rock crevice near the summit of the Kiume outcrop.

Prosimii
Lorisidae

Lesser galago: Galago senegalensis

Lesser Bushbabies were numerous in the Reserve but as they were only heard or seen at nights, there are few records. Over 12 were spotted in car headlights on the road to Kora after Mansumbi on 28/12/1982 on the

preliminary survey (CvS.). Only one was spotted at night on a special trip along the river on 18/7/1983 but four specimens were secured at night along the Monune track on 24/11/1983. These had stomachs full of resins or gums. Blood smears were without parasites (CvS). The racial form is undetermined. Local information indicates that this species is common throughout the KCNR.

A few specimens were secured in 1976 on the Tana River Expedition at Kora Kora to the east side of the Reserve, by the river (CvS).

Anthropoidea
Cercopithecidae

Olive Baboon:- Papio anubis.

Yellow Baboon:-Papio cynocephalus.

Troops were fairly numerous, but generally found within a few kilometres of the river or within the riverine vegetation, the exception being troops able to water at the springs at the Monune lugga rock barrier, and similar localities such as Komunyu. Baboons, being common and numerous were generally omitted from the logs or simply recorded as "Baboons" with no further data. In CvS personal log there are over 52 sightings involving an estimated 958 individuals. The largest troop encountered was on 'Baboon Rock', appropriately named by the project after a count of 67 individuals were found on 23/7/1983, these were typical p. anubis. Large numbers of smooth rock holes on this inselberg would provide good water for a considerable period after rain and were obviously used extensively by baboons and other animals, including elephant. Baboons fed extensively on the fruits of Hyphenae and were also seen to take fruits of Lannea, whose seeds were found in the faeces.

On 18/7 on Kiume inselberg, close to Baboon Rock, a troop of 9 undoubted cynocephalus, the slender, long-legged yellow baboons, were observed. Their bark was rather different from that of anubis and they appeared to be more 'at home' in the trees than on the rockcliff and inselbergs. The presence of what is generally regarded as the yellow coastal baboon, cynocephalus, in such close proximity to anubis types is of interest and again raises the point concerning their affinities and relationship. Authorities differ as to their status, whether good species, races or even forms, but it appears improbable to have two races in such close proximity. However, a similar case is reported from Amboseli N.P. in the International Primate Research Report, p.38, 1982-1983, in which "a male of one group transferred to the other and became integrated, consorting with oestrous females!" This interaction and the status of the two forms requires detailed investigation. Hundreds of skulls of coastal animals should be available for study following the 'vermin control' programme of the past two years.

Vervet Monkey: Cercopithecus aethiops

The vervet Monkey was ubiquitous along the riverine though virtually none were recorded inland and at any distance from water. Over 80 sightings recorded, of around some 356+ individuals. These monkeys were so common that team members did not usually record them. Numbers more often than not were 'guesstimates', stopping time being all too often insufficient to make a reasonable count of numbers in a troop. The monkeys were fairly evenly distributed along the section of the river where the track ran parallel to the bank. The maximum number in a troop recorded (CvS), with a reasonably accurate count was 16 of mixed ages, one of 15 and

many around 10-12 individuals - young of all ages were present. Leaf-eating, supplemented with occasional figs (Ficus spp) and green pods of Acacia elatior and its flowers appeared to be their basic diet.

Rodentia
Sciuridae

Unstriped Ground Squirrel: Euxerus erythropros

Ground squirrels were reasonably common over most of the Reserve but in general were not recorded in the log books. CvS. records 83 sightings over the period of his participation in the project, several of these well inland to the south. A tame pair of animals inhabited the Adamson compound at Kora, which were preyed on by Marabou Storks.

Bush Squirrel: Paraxerus ochraceus.

The Bush Squirrel was seen by most members of the Project, while a pair lived within holes in the acacia in the camp. Up to six individuals there often seen feeding close to our base camp. CvS. records 35 sightings, the majority along the Tana river, and lugga mouths.

Hystricidae

Porcupine: Hystrix cristatus

No sightings of living animals, but one was found dead on the Kiume track (MC.), and their presence was evident from shed quills, a number of earths and faecal droppings, as well as excavations in their search for roots and bulbs.

Bathyergidae

Molerat or Blesmol: Heliophobius argentocinereus

It was due to our neglect that the species concerned was never ascertained on the evidence of a specimen, yet the earthworks, the cones of excavated soil, were a feature of the red soil areas in the nyika down to the riverine fringe, where alluvial soils were inhabited by the Naked Molerat or Sand Puppy. The Molerat was well distributed in the nyika and into the North Kitui Reserve but scarce towards the east with the change in the type of soil, which contained higher fractions of coarse quartz gravel.

Naked Molerat or Sand Puppy: Heterocephalus glaber

Frequented the alluvium, particularly along the riverine habitat. One mound near the river edge was particularly active and subject to many photographs by members of the project, as the animals backed out towards the exit to kick out the soil. This was the only active excavation observed between July and September 1983. When entering the Reserve from the west the Blesmol seemed common on red soils at the top of the altitudinal slope, to be frequently replaced by the Naked Molerat on entering the KNR.

DISCUSSION

The Kora National Reserve is unlikely, in its present state, to become a general tourist attraction since all the mammal species recorded may be seen to better advantage in other Parks and Reserves.

To remove bush cover and make viewing easier would be detrimental, and

would probably defeat the objective of conserving an area of undisturbed Acacia-Commiphora bush. It was clear from our study that in order to see animals it was essential to be on the tracks early in the morning. Late afternoons, early evenings were of little advantage, when the main objective was viewing large mammals.

The Reserve should be protected from poachers and fire, and maintained with little disturbance, as a sanctuary and a holding ground or gene pool, where predator and prey may reach a reasonable state of equilibrium. Stock grazing, however drastic the conditions outside the Reserve, should not be permitted within the Reserve, since this leads to vegetation damage, soil compaction and erosion, as well as the inevitable conflict with wild predators.

Another feature of importance is that of water supplies for the game animals; there were natural springs and waterholes in or near the luggas, and it should be noted that Kora is an area with low rainfall and the 'sand rivers' seldom flow. In 1982 and early 1983 water holes and springs were available to the game animals such as Boka, Kilamangilu and Kamunyu, whereas with the Somali stock invasion in mid and late 1983, these springs and water holes became wells, which were often excavated to several metres, thus precluding their use by game animals, with the result that the game had to rely on the river and so forsake their normal home ranges or grazing/foraging areas. Furthermore, the Somali custom of cutting living forage from the riverine vegetation is detrimental and deprives game animals of this resource.

We witnessed the invasion of thousands of camels, cattle, donkeys and shoats (See Olang this volume). Their constant passage to water and the sparse, almost non-existent forage areas created dust bowl conditions, as a result of which there will be grave erosion during subsequent periods of heavy rainfall.

Consequent dry conditions prevailing in the Reserve during the Project period, the herb flora was virtually unknown except for sample gatherings made in December 1982, and November-December 1984. The result of the stock trampling will have had serious repercussions on the distribution and volume of these plants; again to the disadvantage of the game animals.

It was very obvious that during a short visit from 24/2/1984 to 27/2/1984 by A.D.Q.A. & CVS., there had been considerable ecological disturbance, particularly along the riverine and very few head of game was recorded. Territorial markings and dung areas would have been obliterated by the passage of stock. Even the baboons and vervets are dependant to a great extent on the riverine resources and they were infrequent compared with the numbers seen during the Project period of 1983. We travelled 187 km in 3 days seeing only 7 species with a total of 37 animals, 24 of which were baboons!

CONCLUSION

The Kora National Reserve, under normal rainfall conditions has a bimodal rainfall pattern, which is expected in April-May and again in November-December, as seen in December 1982 (CVS et. al. & Botanists December 1984). After good rain the Reserve presents a very different appearance with grass in the tracks up to 1.5 m tall, herbs in full flower and all tree species in full leaf, although subsequent to a period of extended drought reproductive activity seems to be delayed, at least in the Acacia spp.

There was evidence of much lush growth, providing a good food resource for mammals and birds and significant numbers of mammals were seen, in

October and November 1982, in areas where none were present during the Project period; suggesting that they were distributed over a greater area. George and Terence Adamson (pers. comm.) noted that all water holes and springs were full and we found the large rock pool at Kwangatuni, near Mansumbi to be full and the foam-nesting tree frog, Chiromantis petersi was breeding.

Birds were breeding around Kampi ya Simba at Kora, where Vulturine Guinea Fowl were accompanied by flocks of chicks, in late 1982 and at Easter 1985.

Nevertheless, even under 'normal' conditions the arid bushland of the KNR is unsuited for development for tourists wishing to view game animals. Its very natural high tree density, which reduces visibility to a few metres enhances its value as a refuge or gene pool, and sanctuary for the larger mammals. It might be used in part as a connecting link in the future, from Tsavo (East) National Park to a bridge, causeway or dam, linking the KNR with Meru National Park or Bisanadi National Reserve.

At this juncture it would be inappropriate to comment on the effect of the proposed barrages at Kora (see map) which though flooding a considerable area of game habitat and submerging the rather narrow belt of riverine vegetation, it could well be beneficial to the area as a whole and might stabilise the present highly irregular character of the waterflow in the river. On the other hand it might well have serious consequences affecting the forests of the lower riverine vegetation which support the relict population of the Tana Red Colobus, Colobus badius rufomitratus and the Tana Mangaby, Cercocebus galeritus galeritus.

Additionally having raised the water levels and the inclination of the existing alluvial terraces may make it virtually impossible for many tree species within the riverine fringe to reestablish themselves.

The final conclusion is for the minimum disturbance of the Kora National Reserve, maintaining it as a natural resource but protected from intrusions by stock and poaching.

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