

Mammals

News Bites

The newsletter of the
Tanzania Mammal Atlas Project

The Children Killers of Minziro Forest Reserve

By Mwemezi Rwiza, Chediel Kazael
and Zawadi Mbwambo

Minziro Forest Reserve is a peculiar ecosystem. It is one of the three Guinea-Congo biomes in Tanzania. The other two are Mahale Mountains and Rubondo island. In August last year a group of enthusiastic Tanzania Mammal Atlas Project researchers paid a visit to Minziro. The purpose of this trip was to do a survey of mammals that inhabit this dense and huge forest. The writers of this article were among the researchers onboard this exciting expedition.



Tree Hyrax

(cont....pg 2

The Tanzania Mammal Atlas Project Update

By Alexander Lobora

Dear readers,

Welcome to the 2nd issue of the Tanzania Mammals Newsbites, the newsletter for the Tanzania Mammal Atlas Project (TMAP). In this issue, you will have the opportunity to learn more about the project achievements in the past few months and also our future plans. Before embarking on the above, may I take this opportunity to thank all of you for supporting TMAP in various ways including sending in mammal sightings, telling others about our work, distributing copies of our newsletter and visiting our office at the TAWIRI Headquarters.

Since the last issue, the project made good progress towards establishing a Conservation Action Plan for Mammals in Tanzania. The project database continued to expand from 7,000 to over 10,000 sightings. Furthermore, the Northern Serengeti and Northern Tanga forests surveys were successfully completed as planned in July and December 2006 respectively. We also printed our new mammal identification guides to help potential contributors correctly identify mammals in their area, and developed the project website (www.tanzaniamammals.org) which is now up and running. We encourage you to visit the site for the latest information on mammals in Tanzania. In it you will find species descriptions with identification

(cont....pg 3

In this Issue

- The Children Killers of Minziro Forest Reserves
- Project Update
The Tanzania Mammal Atlas Project
- Disease Transmission among Serengeti's Carnivores
- Investigating Human-Carnivore Conflict Around Ruaha National Park
- Dancing Monkeys of Grumeti
- Lion Counts
- Mammal Survey: Arusha National Park



Editorial

Alexander Lobora
Charles Foley
Edwin Konzo
Sarah Durant

When we got in Minziro nobody among us had an idea of what to or not to expect from this forest. We set up a camp just near to the edge of the forest. Every one of us was anxious and we needed to know what creatures existed in this ecosystem. Existence of some mammals could be easily evidenced without much effort though.

The beautiful Black and White Colobus monkeys could be observed without any struggle as they jumped from one tree branch to another. Forest birds could be easily seen and heard and made us feel we had discovered Eden. You want to see a Great Blue Turaco? Then go to Minziro – it's their home. Ever seen endangered Swallow? Yes, the Blue Swallow. If your answer is no, then you probably need to think of visiting Minziro someday.

On the first day we had our camp set up. Our tents were pitched and all our baggage and supplies put in order. We were all exhausted and longed for a rest but we had to do some cooking and washing. So we had our dinner precisely made and all other chores set. After having our dinner we said good night to each other and every one went to his tent with an anticipation of seeing a great next morning. Nobody knew what was like to sleep in Minziro forest, well we didn't care.

After like an hour or two we started hearing some strange calls. At first we tried to ignore the calls because they were heard far away from the camp. But as time elapsed the calls became louder and louder. It was not much about the calls being loud as it was about the nature of the call. It was as if a child was being strangled and in need for rescue. The voice became louder and closer as time went. Do people come to kill kids in this forest at night? But why would they do this? Or, may be a sacrificial rite? As we were pondering these and other questions the voice slowly started ceasing. We all pretended to have never heard anything and thankfully we fell asleep.

First thing in the morning was about the calls. We all wanted to know exactly what was happening. Fortunately some researchers among us knew what it was and started explaining. As they explained to us we looked at them startled and not knowing what to say. They said it was a Tree Hyrax. Not the East African Tree hyrax, which has a strange enough call as it is, but the West African species. Yes it was; and of all the creatures that tried to manifest their presence in Minziro Forest Reserve, none of them could beat the Tree Hyrax.



Tree Pangolin in Minziro Forest Reserve

From page 1

pointers, and the latest distribution maps for the species. As you will see there are many gaps, even for the common species. We would like to encourage you to fill in data squares where you know a species occurs, and to do this we've developed an online submission form. The process is very simple. You open the mammal species checklist page, and fill in the grid square where you saw the animal. If you don't know the grid square number, simply open the map, find where you/were, and click on the map once, and the square number will be automatically filled in the form. Then scroll down and highlight which species you saw there and click submit. The whole process should only take a minute or two. The website also has copies of previous Newsbites, a searchable database of the papers housed in our library at the centre, as well as news of our latest surveys and discoveries. We hope that you will find this website useful and helpful towards conserving our precious mammal species. Of course if you have comments or suggestions on how we can improve the site, please let us know.

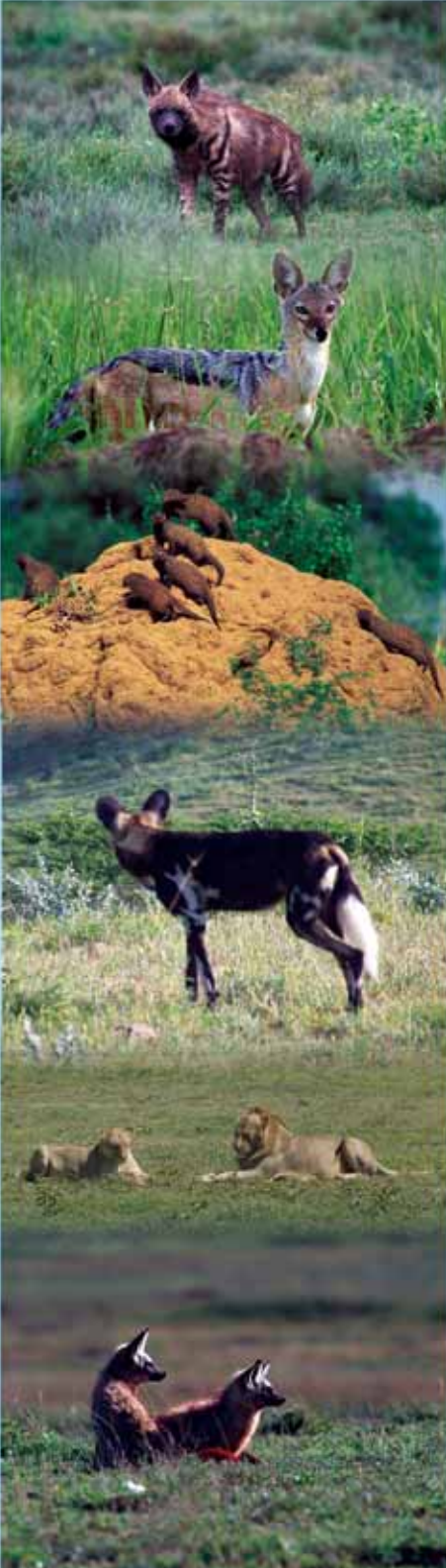
Camera trapping surveys carried out by the project continued to yield excellent data for our database. In 2006, we conducted five surveys using remote cameras in Mahale, Arusha and Serengeti National Parks, Minziro lowland forest and the Northern Tanga coastal forests. Notable achievements include the first discoveries for Tanzania of Giant pangolin *Manis gigantea* which was recorded in Mahale Mountains National Park in December 2005 and tree pangolin *Manis tricuspis* which was recorded by our survey team during the Minziro lowland forest survey in August to end of September 2006. This year we anticipate to continue our efforts in areas where we have little information such as Burigi/Bhiramulo Game Reserves in the north western part of the country, Ukaguru in Morogoro near the Udzungwa Mountains National Park, Zoranginge Forest Reserve which is situated in an area between Saadani National Park and Pangani, Tongwe/Pande in Tabora (an area between Ugalla Game Reserve and Mahale National Park), Southern Tanzania, Katavi National Park, Muhuwesi which is an area adjacent to Selous Game Reserve in the very south of the country, and the Nou Forest above the Babati escarpment. As I mentioned in the beginning, this project is a people driven initiative and therefore welcome you to submit ideas, comments and recommendations on the above proposed areas for survey this year. You can as well propose other areas that you think have high biodiversity of mammal species and have not been surveyed before. We look forward for your continued support this year and we will keep you informed of our endeavours. If you have any questions please don't hesitate to ask by sending an email to info@tanzaniamammals.org and if you have information that you would like to share with us especially mammal sightings please send it to edwin@tanzaniamammals.org.

Thank you and hope to hear from you soon.



DISEASE TRANSMISSION AMONG SERENGETI'S CARNIVORES

By **Meggan Craft**



In 1993-4, approximately 1000 lions died in the Serengeti ecosystem from canine distemper virus. This disease can infect most carnivore species and is spread through the air by close proximity to an infected individual. Scientists suspect that domestic dogs from Serengeti District (bordering the northwest of the National Park) might have been the source of this outbreak. But how could a domestic dog have spread a disease to a lion? Domestic dogs will not survive long inside the National Park and lions do not survive well in villages. Other species probably act as intermediaries between dogs and lions in the disease transmission chain. In the 1994 epidemic for example, spotted hyaenas and bat-eared foxes were infected, and species like these could then have spread the disease to lions.

A study is currently underway to investigate potential disease transmission routes among and between domestic and wild carnivores. One branch of the study aims to determine which wild carnivores interact with domestic dogs in villages nearby the National Park. Wild carnivores are known to both predate and scavenge in the villages. We are therefore interviewing residents to get a sense of which wild carnivores are seen around households, slaughter slabs, and trash pits. In addition, we plan to use motion and heat activated video traps to document species presence and record interactions between wild and domestic carnivores. We can then correlate interaction events with species abundance; for example, white tailed mongooses, genets, and jackals are most commonly seen in Serengeti District during night transects. Are these the same species interacting with domestic dogs?

The second branch of the study focuses on documenting interaction events among carnivores inside the Serengeti National Park. For hyaenas, jackals and lions, disease transmission among the same species can occur within social units, and between groups, for example during territorial defense, kleptoparasitism (stealing kills), or long-distance movements. Many inter-specific interactions occur when carnivores compete over food at a kill. Lions, spotted hyaenas, and jackals are frequently observed at the same kill at the same time. Disease could be spread during squabbles over food or even just by sharing the same food source.

Observations of carnivore interactions help to understand the ways in which disease could be transmitted among these wild and domestic species, and ultimately to find ways to reduce the threat of various diseases to both domestic and wild animals.

For more information: www.lionresearch.org

INVESTIGATING HUMAN-CARNIVORE CONFLICT AROUND RUAHA NATIONAL PARK

By Amy Dickman

Tanzania has some of the world's largest and most impressive protected areas, which safeguard vital habitat for a wide variety of wildlife species. Many of these species, however, have extremely large home ranges and can travel far from such reserves, into areas used by people for grazing livestock and growing crops. These human-dominated areas can also be very important habitat for many species, and may provide resources not available elsewhere. However, living alongside wildlife can be problematic for local people, especially when the species concerned are large carnivores such as lions and leopards, which can not only kill stock but may also occasionally pose a threat to humans as well. This can result in carnivores being killed by local people if they are considered to be a threat, and if this becomes a common response it can have serious consequences for local carnivore populations, so trying to lessen this conflict will be important both for people and wildlife.

This project began as my Masters study last year, and I am now continuing it for my PhD, working with Sarah Durant of the Tanzania Carnivore Project, and Pete Coppolillo of the Wildlife Conservation Society. The aim of the project is to talk to local people living in the Lunda-Mkwambi Game Controlled Area (close to the borders of the Ruaha National Park) to find out about any problems they are experiencing with wildlife, and to investigate which factors affect these conflicts. Following the work done by Tom Maddox in northern Tanzania, I focused on the attitudes of local pastoralists, especially the Maasai and Barabaig tribes, and have so far talked to 104 pastoralists since the project began.

The pastoralists interviewed so far have reported having a lot of problems with wildlife, and were particularly troubled by large carnivores, which attacked their livestock. However, some people report having very intense problems and lots of losses, while other people in the same area suffer very few problems. This study will explore why certain households experience more conflict than others, and will examine a variety of factors, including tribe, number of stock owned, livestock husbandry

methods and distance from the Park boundary to see if they are important determinants of conflict. I have chosen six villages to examine in-depth, and am conducting game counts around each village, to see whether areas with lower densities of natural prey compared to livestock seem to have more problems with carnivore depredation. I will also be looking at how densities of five key predators (cheetah, African wild dog, lion, leopard and spotted hyaena) vary between the target villages and if that is linked to the intensity of conflict. One of the most interesting possible ways of doing that is to use trained detection dogs to find large carnivore scat (droppings), and we can use the numbers of scats found as an index of how many large carnivores live in that area. Also, the contents of those scats will tell us what the carnivores have been eating, so that we can see how much evidence there is of them eating livestock rather than wild prey species.

Developing a better understanding of what causes human-carnivore conflict will be important for suggesting possible ways in which the problems might be eased. This could have important benefits both for local people, by reducing the numbers of stock lost to predators, and also for large carnivore populations, by reducing the likelihood of local persecution. The project is still in its early phases, but the results will be presented as soon as possible in Mammal News Bites, so watch this space.





DANCING MONKEYS OF GRUMETI

By Claire Lewis

The Patas Monkey (*Erythrocebus patas*) is the largest species in the guenon tribe, Cercopithecini. It has many alternate names: red monkey, military monkey, Hussar monkey, Sergeant-Major monkey (due to facial whiskers and erect posture), and the dancing monkey because they raise all four feet off the ground to express pleasure or excitement. This is a fascinating but little known species that inhabits fragmented semi-arid country from western Senegal to East Africa, north of the equatorial forests and south of the Sahara.

They are visually striking with brick red upper parts and long, slender all white limbs. They differ geographically - the Patas Monkeys in Ethiopia, Uganda and Kenya (*E.p. pyrrhonotus*) have a blackish face with a white nose and moustache and those found in West Africa (*E.p. patas*) and northern Tanzania (*E.p. baumstarki*) have all black faces. This is especially important for Tanzania sightings as the individuals we have recorded here at Grumeti Fund, in Nyakitono Open Area, have no white facial markings and the males have greyer underparts. Any sightings in other parts of Tanzania (particularly in the Kilimanjaro region) with differing facial markings will be of great interest for mapping the distribution and taxonomy of this species. Interestingly, once females are pregnant and whilst nursing, her normally black nose turns white. Some scientists believe that this pigmentation change warns males not to expend energy courting a pregnant or nursing female. Patas monkeys are special in so many ways but have been described as the superlative monkey, as just about everything about them is bigger, faster and defies adjectives:

- It is the most terrestrial of all primates
- Its limbs are of equal length (unique amongst primates)
- Its the world's fastest primate, running at speeds of up to 55 kph
- It is the only species that shows locomotion using the tips of the fingers (digitigrady) rather than the palms of the hand (palmi-grady) as in other primates
- It is the exception to the rule of the big, aggressive Old World Monkeys, in that it will run away rather than fight

- The home range of the Patas Monkey is the largest known for any nonhuman primate: up to 30 square miles
- The Patas Monkey can store as much food in its cheeks as it can fit in its stomach
- The male Patas monkeys have the longest canine teeth of all the African long-tailed monkeys but they are usually used not against predators but against each other
- Patas Monkeys live fast and die young with an early sexual maturity (3 years) and short life span (around 4 years) females, on average in studied areas, only survive long enough to produce two offspring

Patas Monkeys are quiet creatures that live in harem groups 'ruled' by the females with the single accompanying male acting as a watchman. Their vocabulary consists of restrained hoots, chirrups, low whistles and coughs but perhaps best of all, to show annoyance, Patas Monkeys merely yawn

When feeding they will spread out over several hundred metres with the male acting as sentry further away from the main troop and, with his much larger size (typically twice that of the female) and more conspicuous colouring, observers will often report a sighting of one animal. At night, when sleeping, they can cover an area of up to two hectares

They are truly omnivorous and highly dependent on Whistling Thorn (*Acacia drepanolobium*). Their diet consists of gum, ants, fruit, insects, bird's eggs and small mammals

Although widespread across Africa they are rare in eastern Africa. Studies in Kenya, particularly on the cattle ranches around Laikipia Plateau have provided a good idea of numbers and ecology but distribution and abundance in Tanzania is relatively scarce. Historically they ranged through northern Tanzania, in the Serengeti area and west of Kilimanjaro and, as mentioned before, this is where it gets interesting... *E.p. baumstarki* has never been studied but phenotypically they more closely resemble the West African subspecies and this is thought to be the subspecies we have found in the western Serengeti at Grumeti Fund. Sightings from west Kilimanjaro would be particularly interesting to determine if they are visually more similar to the Kenya subspecies or those in the west.

LION COUNT

By John Kaaya

There have been few efforts in the past to estimate the number of lions in Africa. Former IUCN/SSC Cat Specialist Group Chairman Norman Myers carried out status surveys for the leopard *Panthera pardus* and cheetah *Acinonyx jubatus* in Africa, and also looked, in less detail, at the status of the lion. Several recent surveys have provided the first current estimates of the African lion population, with some ground truthing. The African Lion Working Group (ALWG), a network of lion specialists affiliated with the IUCN/SSC Cat Specialist Group, conducted a mail survey and compiled estimates of 100 known African lion populations. The ALWG African lion population estimate is 23,000, with a range of 16,500 - 30,000 (Bauer and Van Der Merwe 2004). Chardonnet (2002) compiled estimates for 144 individual African lion populations, grouped into 36 largely isolated subpopulations. His methodology included extrapolation of estimates of known populations into areas where lion status was unknown, and his total figure is larger: 39,000 lions in Africa, with a range of 29,000 - 47,000.

Approximately 30% of the individual population estimates compiled by the African Lion Working Group were based on scientific surveys. Techniques for these surveys included total count based on individually identified body features, sampling by use of calling stations playing recordings of hyaena and/or lion prey, and mark-recapture methods including radio telemetry, photo databases, and spoor counts (Bauer and Van Der Merwe 2004).

In the early 1990s, the status of the African lion population was described as follows by the IUCN/SSC Cat Specialist Group's Cat Action Plan: "East and Southern Africa are home to the majority of the continent's lions; in West Africa, numbers have greatly declined" (Nowell and Jackson 1996: 20). This situation does not seem to have changed much, according to the new surveys: both find that the lions of Eastern and Southern Africa comprise approximately 90% of the estimated continental population (Bauer and van der Merwe 2004, Chardonnet 2002). The African Lion Working Group found that "in East and Southern Africa, many large lion populations have been stable over the last three decades. Like lion numbers, habitat for lions is also suspected to have declined over the past two decades. Myers (1975) suggested lion range to total two million square miles or 5,178,000 km², remarking that extent was likely only about half of lion

range in the 1950s. The African Mammal Databank project estimated the lion's potential area of occurrence at approximately 10 million km², while noting that much of the most suitable habitat is fragmented and unprotected. The most detailed range calculation is Chardonnet's (2002) estimate of approximately three million km², with about half having some form of protection, from national park to hunting reserve. Estimating the size of the African lion population is an ambitious exercise involving many uncertainties. The three main efforts (Ferrereras and Cousins 1996, Chardonnet 2002, Bauer and Van Der Merwe 2004) all use different methods. The African Lion Working Group compiled individual population estimates primarily from protected areas (23,000 lions: Bauer and Van Der Merwe 2004). In 1980, Ferreras and Cousins (1996) predicted 18,600 lions to occur in protected areas. This was probably an underestimate as not all protected areas inhabited by lions at that time were included. Still, the comparison suggests that the number of lions in African protected areas has remained stable or possibly increased over time. But Ferreras and Cousins (1996) predicted that most lions in 1980 were found outside protected areas. Chardonnet (2002) finds that unprotected areas still comprise a significant portion (half) of the lion's current African range.

Conservation measures

Like lion numbers, habitat for lions is also suspected to have declined over the past two decades. Since the 1960s, the human population, land cultivation and numbers of livestock have steadily increased (Ferrereras and Cousins 1996, Chardonnet 2002). Outside these protected areas, the lion is becoming extremely rare. Their numbers are threatened by both direct and indirect persecution. They are persecuted directly when lions are killed due to threats to human beings and livestock. The overlap of large carnivores, livestock and people can engender conflicts that often threaten the future viability of carnivore populations in the pastoral systems of Africa (Ogutu et al 2004). Indirectly, they are threatened when there is competition for or prey with human beings due to poaching, trophy hunting and competition for grazing areas. These factors have greatly reduced the numbers of lions in many protected areas.



MAMMAL SURVEY Arusha National Park

By Mwemezi Rwiza & Chediel K. Mrisha


From the 7th of March 2006 to the 28th of May 2006 the field team from the Tanzania Mammal Atlas Project conducted a camera trap survey exercise in Arusha National Park. A total of 20 stations were set up with a total of 40 cameras, two cameras per station. This design means that both sides of a passing animal will be photographed which allows individual animals of distinctive species such as leopards to be identified, and therefore the density of that species can be determined.

The following is a list of mammal species that were photographed in Arusha National Park: Blue monkey, Olive baboon, Large Spotted genet,

Honey badger, Bushy tailed mongoose, Banded mongoose, White tailed mongoose, Zorilla, Leopard, Spotted hyaena, Aardvark, African elephant, Burchell's zebra, Hippopotamus, Bush pig, Warthog, Giraffe, Bushbuck, Harvey's duiker, Suni, Kirk's Dikdik, Waterbuck, African buffalo, Crested porcupine, Giant pouched rat and Cape hare.



Suni are particularly abundant in the forested areas of the park, and they can easily be seen by driving through the forest tracks in the late afternoon. We also found healthy populations of Harvey's duiker, bushbuck and dikdik, providing an ample prey base for carnivores, of which leopard and spotted hyaena were common. The bushy tailed mongoose was also surprisingly common, considering that this species had only been added to the park list in the last few years. However, it is almost strictly nocturnal and therefore very seldom seen.



From the **Secretaries Desk** *By Flora Kipuyo*

Dear readers,
In this second issue of the Tanzania Mammal Atlas Project (TMAP) NewsBites, I would like to invite you to visit our library. The library was established at the start of the Tanzania Carnivore Program and therefore much of the information is carnivore related. However, through the Tanzania Mammal Atlas Project, the library is now being restocked to contain information on all mammals. To date we have a collection of 1239 scientific papers and 83 books including scientific report and proceedings. You can review the contents of our collection online at www.tanzaniamammals.org or else stop by our office and review the articles at your leisure - the library is intended for use by all visitors to the centre. I would like to take this opportunity to thank all those who have donated books and scientific papers and also request for more donations. Please contact the Project Secretary for more information at flora@tanzaniamammals.org.

Well done to them and many thanks to all of you for your contribution and please keep them coming!