Mammals News Bites

The newsletter of the Tanzania Mammals Atlas Project

GIANT PANGOLIN *Manis gigantea:* A NEW MAMMAL SPECIES FOR TANZANIA

By Charles Foley & Chediel Kazael

In October of last year the Tanzania Mammal Atlas Project sent a two man team, Chediel Kazael and Zawadi Mbwambo, to take part in a biodiversity survey of Mahale Mountains National Park. Their job was to set up a series of camera traps in different parts of the forest so that we could discover what species of mammal are found in the area. Camera traps are an excellent mammalian survey tool, as they are completely unobtrusive and can take pictures day or night, irrespective of the weather conditions. They are particularly good at capturing nocturnal or shy mammal species, which would otherwise seldom be seen. However the downside of camera trapping, at least for the impatient among us, is that it is a game of delayed gratification. You set the cameras up and then wait for six weeks till the end of the survey and then carry your precious cargo back to a photo lab to be printed. But then there is that exciting moment when you finally start looking through all of the prints and seeing all of the animals that have unsuspectingly sauntered past your camera trap. The routine is always the same: you first

Project Update

The Tanzania Mammal Atlas Project

By Alexander Lobora

The Tanzania Mammal Atlas Project (TMAP) is a collaborative project between the Tanzania Wildlife Research Institute (TAWIRI) and the Zoological Society of London (ZSL) and financed by the Darwin Initiative of the United Kingdom. This is a three year project and is based at the TAWIRI HQ at the Tanzania Carnivore Project offices in Njiro, Arusha. The Project started officially in November 2005 following the very successful Tanzania Carnivore Project (TCP) carried out by TAWIRI and ZSL from 2002 to present. TMAP aims to help Tanzania meet its obligations under the International Biodiversity Convention by developing a national conservation action plan for its mammal species. In order to achieve this, TMAP will strengthen national institutions and increase capacity to monitor and conserve mammal biodiversity by

a) developing capacity to monitor mammal distribution and status in areas where little information is available;

b) establishing protocols to monitor small and cryptic species, and

c) collating all existing information in a centralized database with data on

In this Issue

Editorial

Sarah Durant
Alexander Lobora
Charles Foley
Edwin Konzo

GIANT PANGOLIN Manis gigantea:
A NEW MAMMAL SPECIES FOR TANZANIA

have a quick flick through all of the pictures to see if you haven't discovered a new species of tropical polar bear, and then follow up with a longer, more relaxed examination to capture any details you might have missed the first time around.

When we finally got our hands on the Mahale prints, we excitedly noted that there were several pictures of pangolins, which were the first we'd ever captured on film. Naturally we assumed that they were the Ground pangolin (Manis temminckii), which is the only pangolin known from Tanzania. This species is widely distributed in the country, though very seldom seen; it is shy and nocturnal, and probably also rare in most areas because it is heavily hunted for its scales, which are thought to confer good luck on the bearer. However when we looked closely at the picture printed above, of a Pangolin standing broadside to the camera, it dawned on us that this animal was too big to be a Ground pangolin and most likely to be a Giant pangolin, and a new record for Tanzania. Giant pangolins are large animals that can weigh up to 35 kilograms when fully grown. Unlike the ground pangolin, which regularly adopts a bipedal stance and uses its heavy tail as a balance as it moves along on its back feet, the giant pangolin walks on all four legs, and therefore has a more powerful and heavyset look to the front of its body. Other distinctive features are its comparatively longer snout and the fact that it has many more scales on its tail and body than the Ground pangolin.

The Giant pangolin is a forest species, primarily associated with the Congolese forest biome that stretches across West and Central Africa.

In occurs widely in the forests of Uganda, and there have also been sporadic records from Western Kenya, though until this sighting the species had never been confirmed to exist in Tanzania (in the 1960's there had been a possible sighting from the Udzungwa mountains but there is insufficient data to verify the record). The vegetation on the western slopes of Mahale National Park is an enclave of the greater Congo forest, and shares a number of predominantly Congolese forest mammal species, including Peters duiker (Cephalophus callipygus) and the Bushy tailed porcupine (Atherurus africanus), as well as a large complement of western bird species. It is therefore perhaps not surprising that the Giant pangolin should be found there, and it opens up the intriguing question of what other shy, nocturnal species are lurking there, unnoticed and missing from the Tanzania mammal species list.

Giant pangolins were recorded at two different sites in the park: at Kasoge, which is close to the park headquarters, and consists mostly of secondary forest that has been logged or cleared for cultivation in the past, and Kibasi, further to the south, which is riverine forest surrounded by mature Miombo and dense stands of bamboo. The camera traps captured a total of seven pictures of Giant pangolin, representing at least five different individuals, which suggests that, despite having only recently been discovered in the area, these pangolins may actually be relatively common in Mahale. Very little is known about the habits of this fascinating animal, and Mahale National Park may prove to be an excellent place for someone to conduct the first comprehensive study on this species.

The Tanzania Mammal Atlas Project

the distribution, status and, where possible, abundance, for all mammals. For the time being, TMAP will exclude rodents, bats, insectivores, and marine mammals in it's surveys and analysis given the difficulty of monitoring such species. These steps will hopefully generate sufficient data to establish an action plan that will be used as a framework to guide future conservation management and policy in Tanzania.

Whilst the Project has only been in place for only ten months, we have been able to draw upon the past successes of the Tanzania Carnivore Project and use it as a model to accomplish a lot in a short time. Key among these was the continuation and expansion of the vibrant office atmosphere that existed during TCP and the continuation of camera trapping surveys. To date, the project has employed seven project staff including the Project Manager, Mr. Alexander Lobora, a Field coordinator, Mr. Mwemezi Rwiza, a Database and GIS officer, Mr. Edwin Konzo, an Assistant Field coordinator, Mr. Chediel Kazael, a Project Secretary, Miss Flora Kipuyo, and two project drivers, Mr. Zawadi Mbwambo and Mr. Jumanne Ramadhani. The project has also been able to procure new equipment for the office and for field work, establish a new and improved Mammal Atlas Database, initiate field surveys in Mahale, Arusha and Serengeti National Parks as well as Minziro lowland forest, train staff in camera trapping survey techniques, and develop a digital library of hundreds of papers relevant to mammal distribution in Tanzania, just to mention a few.

Our activities for the next quarter include the completion of the camera trapping survey in the northern Serengeti, printing mammal identification guides to help our contributors and interviewees correctly identify Tanzanian mammals, initiate advanced training in website design and management and desktop publishing for our staff and develop the project's website. We also intend to initiate field camera trapping surveys in northern Tanga forests and Ruaha National Park.

We would like to request every one of you reading this newsletter to please contribute your mammal sightings data to TMAP to help management authorities and other decision makers make informed decisions about Tanzania's wildlife. We are interested in primarily the species name, the location of the sighting (such as a GPS reading or the name of the nearest village/town), approximately how often you see the animal in the area, and, when possible, how many they are. A data checklist is now available and can be sent to you if you provide us with your email or postal address. This checklist will also be available for download once our project website is ready. You can send us the above information either by email at info@tanzaniamammals.org or by post to: Project Manager, Tanzania Mammal Atlas Project, P.O Box 661 Arusha, Tanzania. Everyone contributing data will be kept informed on project activities through our project website at www.tanzaniamammals.org and also through the project newsletter which will be sent quarterly by email or post. Thank you and we hope to hear from you soon!

THE GREATER KUDU

By **Laly Lichtenfeld and Christa Anderson**

Tanzania's greater kudu is one of the largest antelope species in the country. It is notably larger than the lesser kudu, though both share blue-gray coats with light white vertical striping for camouflage. The primary distinguishing feature of a male greater kudu is its spiraled horns. Adult male kudu have vertical horns that complete two tight spirals, finishing with an ivory-colored tip. Female kudu do not have horns but are still recognizable by their distinct coloration and large size in comparison to the lesser kudu. Both the male and female greater kudu have short crests of hair running along their backs.

Few other antelopes can feed as high up in the vegetation as a browsing kudu, which nibbles away at a wide variety of plant species. They are also experienced jumpers, bounding away from predators which they detect with their large ears and attentive nature. Living in herds helps to safeguard these animals, adding more sharp eyes and waggling ears to keep a steady lookout. A few females and all of their offspring of recent years comprise small herds of 3-15 animals. Male kudu guard herds of females in their territory but will tolerate other males as long as the intruders keep their distance from the females. Herds are usually very flexible and mobile.

Female greater kudu usually have one calf following a nine-month gestation period. The calf is left in the tall grass away from the herd for two to three weeks. The mother kudu will visit her calf a few times each day to suckle the little one. After the young are a month old, they form a nursery group of calves within the herd. Young kudu are a delight to watch. They are very playful, inciting mock fights and joining in running and leaping games. When the young get themselves riled up, sometimes even the adults of the herd will let loose and jump around.

Though greater kudu are usually non-aggressive, the spiral horns of the male kudu are well suited for fighting. Two males who do engage in a clash over a female will face each other head on and interlock horns in a pushing match. The spiraled horns connect so well that occasionally two kudu become inextricably joined together at the horns. A few examples of kudu skulls entwined at the horns have been found.

The greater kudu ranges throughout Southern and Eastern Africa. For the most part, their populations are doing well. The greater kudu is preyed on by carnivores like lions, leopard and hyaena, and they are hunted for meat and trophy in many parts of Africa. But, these threats have not been significant enough to endanger them. In Tanzania, greater kudu can be found throughout the country, though it favors hilly areas with substantial cover. Kudu can be seen in Tarangire National Park during the daytime. However, kudu that live in areas with high human population pressures or predation will become almost nocturnal and may rarely be seen. In the future, habitat loss will be one of the most important factors determining the long-term fate of this magnificent species.
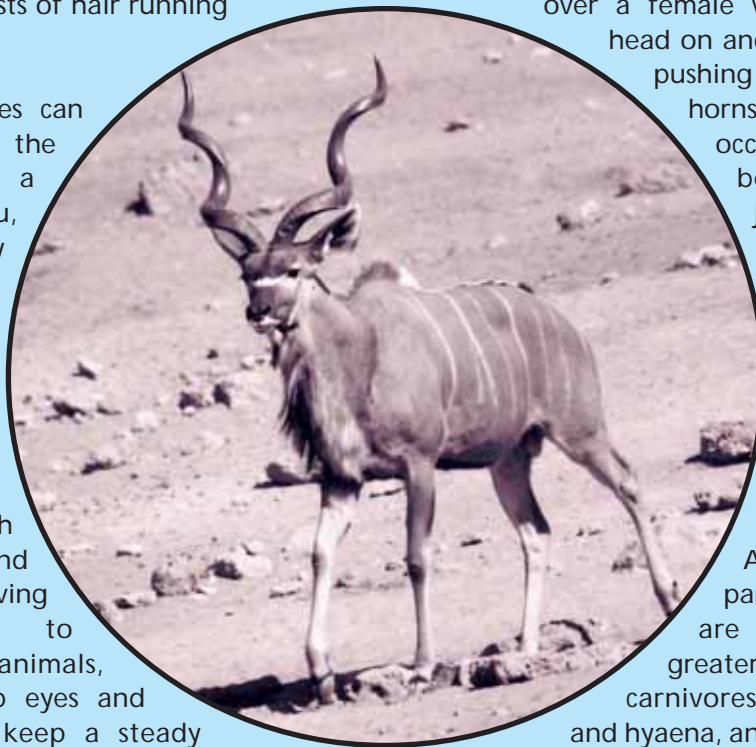
MAHALE MOUNTAINS NATIONAL PARK SURVEY

By Chediel Kazael & Mwemezi Rwiza

Mahale Mountains National Park (MMNP) covers an area of 1,613 km^2 and is about 128km south of Kigoma town, on a broad peninsula that projects into Lake Tanganyika. Lake Tanganyika is bordered by Kigoma and Rukwa regions (Tanzania), Shaba and Kivu (DRC), Northern Zambia and Burundi. Among the chains of lakes on the bottom of western Great Rift Valley, Lake Tanganyika is outstanding for its extraordinary north-south extension (670km) and depth (1,470m). It is the second largest of African lakes, the second deepest (next to Baikal) and the longest lake of the world. Apart from chimps, MMNP is also a home for kudu, eland, roan and sable antelopes, giraffe, buffalo, elephant, lion, leopard as well as spectacular birdlife.

The park is a unique ecological zone with lowland forest, Miombo and open woodlands, moist and dry Savannah grasslands. Access is by boat or plane, both of which are available for charter. There are no roads and all game viewing is done on foot.

Camera Trapping is now considered a relatively efficient method for detection and recording of elusive and/or shy animals. Tanzania Mammal Atlas Project (TMAP) at Tanzania Wildlife Research Institute (TAWIRI) conducted a three months survey at Mahale Mountains National Park beginning October 2005. In this survey, a total of 36 thermo-sensitive Deer Cam cameras were set at Kasoge lowland forest from 21st October to 3rd November 2005. Due to time limitations, the traps were taken down and shifted to other stations/sites. There were a total of three sites upon which camera traps were set in turn. Before setting up traps, an area was examined for animal signs e.g. footprints, scats, droppings and pellets. A height of about 0.3 to 1.5m above the ground was used and cameras were inclined at such an angle as to trigger photo capture as the animal crosses the detection zone. At the end of the survey, a total of 36 exposed films were collected.

Species recorded during the survey include Aardvark, African civet, African clawless otter, African elephant, Blue duiker, Blue monkey, Bushbuck, Bush pig, Bushy tailed mongoose, Chimpanzee, Crested porcupine, Giant Pangolin, Giant pouched rat, Hippopotamus, Large spotted genet, Leopard, Serval, Slender mongoose, Spotted hyaena, Tree porcupine, Warthog, White tailed mongoose and Yellow Baboon, the Giant pangolin, which was never recorded before in this area (see photo on page 2). As a result of this survey, the giant pangolin (Mania gigantea) is now added to the list of mammals of Tanzania and in the Mahale Mountain Species list in particular. The Giant pangolin, a water-dependent species, inhabits moist forested belts in regions with high abundance of ants and termites.

WHY IS GEOGRAPHIC INFORMATION SYSTEMS (GIS) IMPORTANT IN WILDLIFE MANAGEMENT AND RESEARCH ?

By Edwin S. Konzo

Geographic Information Systems (GIS) is a relatively new development in computer technology for wildlife and natural resource managers and other decision makers. A GIS consists of specialized software, computer hardware and personnel for performing spatial (geographic) analysis. A user is able to capture, manage, integrate, manipulate, analyse and display data that are spatially referenced to the earth's surface. Geographically referenced data (spatial data) are any data that can be represented on a map as a point, line and area (polygon).

Many of the things that wildlife managers do with paper maps, such as calculate the area of a forest reserve, measure distances between wildlife habitat and a road, and calculate the amount of fragmentation in wildlife habitat, can now be automated with GIS technology. A GIS can combine many maps or types of geographic information such as geology, hydrology, land cover, elevation, etc, to create new information, analyses, and map. Wildlife managers can use GIS for monitoring wetlands for waterfowl habitat, for mapping wildlife habitat, for analysing radio telemetry data, for characterizing the spatial structure of habitats, for predicting wildlife densities, for modelling the spatial distribution of species, for designing reserve systems, and for examining the cumulative impacts of habitat loss, amongst others. A GIS can assist a user by answering the following questions: What species are found at …? (to determine the biodiversity at a given site), Where is it…? (to determine species distribution), How has it changed …? (to identify population trend and assess conservation priorities), Which data are related…? (to investigate what factors influence species distribution or population trends), and What if …? (to model scenarios of proposed human development). A GIS can also be an important tool in assisting decision making (policy, planning and management) for wildlife research and conservation, GIS is not only useful to wildlife managers but has other applications including land use inventory, vegetation mapping, and urban planning etc.

The Tanzania Mammal Atlas Project (TMAP) uses GIS to create mammal distribution maps, analyse distribution trends with overlays of protected areas in Tanzania, assess areas where we are data deficient, and investigate factors influencing mammal distribution – eg. distance from human settlement, protected areas, water courses, etc. Such analyses will assist us in determining the distribution and potential threats to our target mammal species, which will be incorporated into the conservation action plans.

TBA Funding database

The Tropical Biology Association has just launched a funding database to assist African conservation biologists find scholarships, fund their research projects or finance training opportunities. The database is a web-based directory of over 185 sources of MSc or PhD scholarships, fellowships, internships, project funding, training opportunities, travel grants and volunteerships. It was developed as part of the TBA follow-up support programme for its course trainees and is now available to the wider African conservation community. To sign up to the funding database, please visit the TBA website: www.Tropical-Biology.org

GRUMETI FUND – MANAGING THE EDGE OF THE SERENGETI

By Claire Lewis
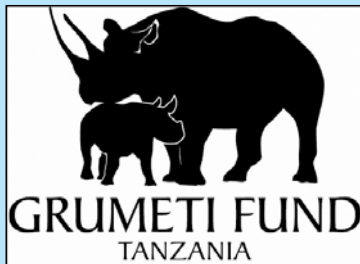
Grumeti Fund (GF) was established by Grumeti Reserves Ltd as a not-for-profit organisation. It is funded through the commercial tourism activities of Grumeti Reserves Ltd where all profits go directly through GF to development projects in Serengeti and Bunda districts. The mission statement of GF is to rehabilitate and maintain the indigenous biodiversity of the western Serengeti-Mara system to the benefit of local communities, district, national, and international stakeholders through structures that are both financially sustainable, environmentally responsible and politically acceptable

Grumeti Fund has been operating on the western edge of the Serengeti National Park for nearly four years. The area that falls under Grumeti Fund is the Ikorongo and Grumeti Game Reserves and the Ikoma Hunting Block. Each year during July-August the area fills with the migrating herds on their route northwards to Kenya and therefore forms an important part of the Serengeti-Mara Ecosystem and its conservation. Since 2002 development in community and conservation spheres has been undertaken, mainly under the programme of anti-poaching, wildlife monitoring, community and block development.

At Grumeti Fund, we are repeatedly reverting to our Mission Statement and through our activities continually strive towards the improvement of habitats, improvement in resident game numbers and biodiversity. The primary asset of any protected area is its wildlife and in order to make rational and strategic decisions in its management one needs understanding of the status and dynamics of wildlife populations. We aim to gain knowledge of population size and trends through comparing year on year estimates and to achieve this we utilise a number of standardised techniques to obtain an idea of population density, distribution and abundance.

Data is collected on scout patrols, from observation posts, tourist guides and wildlife management staff. Dedicated vehicle based wildlife monitoring transect drives have been conducted over the last 12 months and data sets are now at a stage where initial analysis can be carried out for population estimates and densities. Casual wildlife observations by all staff on the property, enhances the knowledge of distribution and age structure of populations. With all this data being generated we are beginning to understand our resident populations and have begun contributing sighting data to the Tanzanian Mammal Atlas Projects as well as assisting a primatologist in Kenya in re-drawing the distribution map for Patas Monkeys. Other interesting data has revealed a previously unknown distribution for oribi and a small roan population, which requires further study.

On site training for staff has included use of GPS units, identification tools and observational skills training. We hope to enhance data collection with additional training in assessing accurate age and sex structure of observed animals. In addition to the wildlife observation data collected, we also record habitat condition, map fire outbreaks and record meterological data throughout the property. All the current training and data analysis will serve as a good basis for the intended black rhino monitoring required when a new founder group of black rhino is reintroduced by GF to the Serengeti-Mara Ecosystem in the coming year.

Apart from generating income and government revenue, the proposed reintroduction has the

following objectives:

- To restore the missing link in the "Big Five" and flagship species within Western Serengeti in general, and the concession area, in particular as a necessary measure to attract the elite, up-market, international travellers, which are critical for sustainable long-term funding for rhino conservation;
- To restore the missing link in the area's biodiversity;
- To improve security and monitoring of wildlife in the area, and thus benefiting the ecosystem as a whole, including commercial operations of the project;
- To raise the value of the land for all stakeholders, nationally, regionally and internationally; and
- To strengthen opportunities for sustainable income of local communities living adjacent to the concession area.

If you have any questions or comments please write to Claire Lewis on research@grumetireserves.com

The Tanzania Mammal Atlas Database

By Edwin S. Konzo

Dear readers,

we would like to introduce you to the Tanzania Mammal Atlas Database. A database is a collection of data/information that is related to a particular subject or purpose; in this case, the Tanzania Mammal Atlas Database stores information on mammal sightings throughout Tanzania. The data are obtained from our camera trapping surveys, interviews with local residents, published literature, and contributors (like you!) from different regions of Tanzania. The database was substantially upgraded from the existing Tanzania Carnivore Project's database in July 2006 with assistance from TAWIRI-CIMU (Conservation Information Monitoring Unit), with particular expert advice from Ragnvald Larsen. The database now has a user-friendly data entry form and Web-based analysis templates for quick calculations of statistics and reports. ArcView GIS software is easily linked to the database to enable us to correlate geographic data and to simplify and expedite the production and updates of mammal distribution maps. The information in the database will greatly assist with the ultimate aim of the Project: to produce conservation action plans for all our target mammal species.

Before coming to the end, let me take this opportunity on behalf of the project team to thank those of you who have participated in contributing mammal sightings since 2003 for the Tanzania Carnivore Project and now the Tanzania Mammal Atlas Project. Please keep your sightings coming and become one of our top 10 contributors!

Top 5 data contributors from Jan 2003 – July 2006

1. Claire Lewis, Grumeti Fund
2. Janemary Ntalwila, Istituto Oikos
3. Sultana Bashir, Serengeti cheetah project
4. Anne Hilborn, Serengeti cheetah project
5. Kirsten Skinner, Serengeti lion project

Our database contain 7140 data entries up to August 2006

- 5363 from participant contributions
- 1777 from camera trap surveys

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