The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details

Your name	Alexander Loiruk Lobora
Project title	Conservation of Mammal Biodiversity in Southern Tanzania.
RSG reference	07.03.08
Reporting period	February 2009
Amount of grant	£5829
Your email address	carnivores@habari.co.tz
Date of this report	May 2009

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Determining the species found in the area and their distribution			√	
Build capacity of wildlife managers and other stakeholders through training in mammal monitoring and identification techniques			√	
Raise awareness on conservation of mammal biodiversity in the areas through production of publicity materials, e.g. leaflets and posters		√		Only posters printed, Leaflets not printed due to budget deficit
Contribute data to the ongoing development of a Conservation Action Plan for Mammals in Tanzania			√	

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

i)   Budget constraint
At the time of writing this grant application, the anticipated budget for the two surveys was £5829 which was equivalent to Tanzanian Shillings 13,406,700 at an exchange rate of Tshs. 2300 per pound. When funds arrived in July 2008, the Tanzanian currency strengthened significantly over the pound which led to the drop of the exchange rate to Tshs. 1900 per pound and hence making the total grant received to be Tshs. 11,075,100, a reduction of about Tshs. 2,331,600 which affected project activities to some extent. We squeezed our project budget in order to accommodate this deficit and at times abandoned or combined related activities e.g. instead of printing posters and leaflets we only opted for posters as they would pretty much convey the same information. The survey period was also shorted without affecting the overall standard trap nights required for analyses. In so doing we managed to fill the gap and surveys were conducted successfully.

ii)   Rainfall
Our surveys where conducted between November and December 2008, a period believed to have no rainfall in the areas but contrary to this traditional trend, our team experienced torrential rains towards the end of the surveys as can be seen below. However, we successfully managed to finish the surveys as planned.

3. Briefly describe the three most important outcomes of your project.

i)   First ever camera trapping surveys in Lukwika Lumesule Game and Mbangala Forest Reserves and capacity building for managers
This was a pioneer survey in both Mbangala Forest and Lukwika Lumesule Game Reserves since they were gazetted in 1958 and 1995 respectively. The two areas are located in the southern edge of the

country bordering Republic of Mozambique. They have received little attention from researchers and the government at large even though they harbour important populations of flora and fauna. This lack of attention is not only because of their distance from main centres of research, but also because the poor infrastructure in the south inevitably discourages scientists to work in these areas as opposed to northern Tanzania. Lukwika Lumesule Game Reserve is a vital link in the efforts to create a wildlife corridor between the Niassa Park in Mozambique and the Selous Game Reserve in Tanzania which is one of the largest fauna reserves in the world. Furthermore, these were not only the first ever surveys in these areas, but were also conducted in a participatory manner, with full involvement of the managers of the two areas. The managers were trained on how to collect data using remote cameras, how the cameras work and how the data are eventually extracted for subsequent analyses. Five managers from each of the two areas where involved in these surveys from day one to the end of the surveys. We anticipate applying for cameras in the second RSG round that will be donated to the managers of the two areas to enable them continue the practice as well as collecting data that will feed into the National Mammal Database.

At Lukwika Lumesule Game Reserve, a total of 31 different mammals species were photo-trapped (Table 1) with the overall trap rate of 0.27 photographs/trap nights which is generally low compared for example with Ugalla Game Reserve with the 0.51 photographs/trap nights and this may be because it is miombo which generally has a lower density than other savannah areas. The observed leading species were grey duiker, warthog, savannah elephant and African civet (Table 1). The lowest captured rates were recorded for Sharpe's grysbok, hippo, honey badger, serval cat, chequered elephant shrew, slender mongoose, spotted hyena, zorilla, leopard and lion (Table 1).

Table 1: Mammal species photographed at Lukwika-Lumesule Game Reserve.

S/N	Species	No. trapped	No. trapped /night	Probability of detection	Relative abundance index
1	Aardvark	2	0.0018	0.0018	0.1808
2	African buffalo	11	0.0099	0.0099	0.9946
3	African civet	38	0.0344	0.0344	3.4358
4	Blue monkey	2	0.0018	0.0018	0.1808
5	Meller's mongoose	7	0.0063	0.0063	0.6329
6	Bushbuck	14	0.0127	0.0127	1.2658
7	Bushpig	14	0.0127	0.0127	1.2658
8	Cape hare	5	0.0045	0.0045	0.4521
9	Common waterbuck	3	0.0027	0.0027	0.2712
10	Crested porcupine	4	0.0036	0.0036	0.3617
11	Greater kudu	20	0.0181	0.0181	1.8083
12	Grey duiker	43	0.0389	0.0389	3.8879
13	Hippopotamus	1	0.0009	0.0009	0.0904

14	Honey badger	1	0.0009	0.0009	0.0904
15	Impala	19	0.0172	0.0172	1.7179
16	Large spotted genet	3	0.0027	0.0027	0.2712
17	Leopard	1	0.0009	0.0009	0.0904
18	Lion	1	0.0009	0.0009	0.0904
19	Natal duiker	10	0.0090	0.0090	0.9042
20	Sable antelope	2	0.0018	0.0018	0.1808
21	Savannah elephant	34	0.0307	0.0307	3.0741
22	Serval cat	1	0.0009	0.0009	0.0904
23	Sharpe's grysbok	1	0.0009	0.0009	0.0904
24	Chequered elephant shrew	1	0.0009	0.0009	0.0904
25	Slender mongoose	1	0.0009	0.0009	0.0904
26	Spotted hyaena	1	0.0009	0.0009	0.0904
27	Striped ground squirrel	2	0.0018	0.0018	0.1808
28	Vervet monkey	4	0.0036	0.0036	0.3617
29	Yellow baboon	19	0.0172	0.0172	1.7179
30	Warthog	40	0.0362	0.0362	3.6166
31	Zorilla	1	0.0009	0.0009	0.0904

Structured interviews were also conducted in conjunction with camera trap exercise to supplement data that wouldn't otherwise be obtained from the remote cameras. Ten interviewees known to have good knowledge of wildlife were interviewed and this process revealed an extra 6 mammal species that were not photo-trapped including klipspringer, pangolin, rock hyrax, wild cat, wild dog and Zebra.

In Mbangala Forest Reserve, a total of 23 different mammals species were captured by camera traps (Table 2) with the overall trap rate of 0.23 photographs/trap nights which is again low due to more or less the same reasons above. The observed leading species were grey duiker, yellow baboon, four-toed elephant shrew and suni (Table 2). The lowest captured rates were recorded for aardvark, banded mongoose, greater kudu, bushbuck and bush hyrax.

The more interesting of these surveys is the trapping of Meller's mongoose *Rhynchogale melleri* in both sites. This is a rare species that had never been trapped before and that we found several individuals in each site. To the best of our knowledge, these surveys have put in place the first pictures of this species on record. From the little information available on the species it is generally a greyish brown in colour, with lighter undersides and head and darker feet and believed to be terrestrial, solitary and nocturnal. Unlike many other mongoose species Meller's mongoose does not only lack the naked crease on the upper lip but also covered with hairs on their hind feet whilst females have four mammae. By and large, these camera trap surveys have provided baseline data for mammal densities in each reserve which will allow managers to determine future trends in the relative abundance of wildlife and therefore to measure whether their conservation efforts are being successful.

Table 2: Mammal species photographed at Mbangala Forest reserve- survey:

S/No.	Species	No. Trapped	No. Trapped /Night	Probability of detection	Relative abundance index
1	Aardvark	1	0.0012	0.0012	0.1227
2	African civet	10	0.0123	0.0123	1.227
3	Banded mongoose	1	0.0012	0.0012	0.1227
4	Blue monkey	10	0.0123	0.0123	1.227
5	Bush buck	2	0.0025	0.0025	0.2454
6	Bush tailed mongoose	2	0.0025	0.0025	0.2454
7	Bush hyrax	2	0.0025	0.0025	0.2454
8	Meller's mongoose	3	0.0037	0.0037	0.3681
9	Bushpig	15	0.0184	0.0184	1.8405
10	Cape hare	5	0.0061	0.0061	0.6135
11	Chequered elephant shrew	5	0.0061	0.0061	0.6135
12	Crested porcupine	3	0.0037	0.0037	0.3681
13	Four-toed elephant shrew	21	0.0258	0.0258	2.5767
14	Greater kudu	1	0.0012	0.0012	0.1227
15	Grey duiker	31	0.038	0.038	3.8037
16	Natal duiker	11	0.0135	0.0135	1.3497
17	Large spotted genet	10	0.0123	0.0123	1.227
18	Leopard	3	0.0037	0.0037	0.3681
19	Slender mongoose	5	0.0061	0.0061	0.6135
20	Sharpe's grysbok	1	0.0012	0.0012	0.1227
21	Suni	19	0.0233	0.0233	2.3313
22	Vervet monkey	7	0.0086	0.0086	0.8589
23	Yellow baboon	23	0.0282	0.0282	2.8221

i)   Establishment of the first species lists

Neither area had species lists before these surveys, making it difficult for managers to know what they were really managing. After these surveys, mammal species lists for the two areas were developed based on what we recorded from our remote cameras, direct mammal sightings from the team, and what was recorded from the questionnaire survey. In addition we have listed mammals that the literature indicates are likely to exist in the area (Appendices 1 and 2). The lists which display a Rufford logo in a prominent position will be printed and distributed to both reserves for further actions. They will also be made available online at the Tanzania Mammal Atlas Project website at www.tanzaniamammals.org.

ii)   Removal of wire snares in Mbangala Forest Reserve

150 wire snares were removed by our team in Mbangala Forest Reserve demonstrating how much poaching is occurring within the reserve. In Tanzania, both the forestry and Wildlife sectors are under the Ministry of Natural Resources and Tourism (MNRT) but fall under two different divisions namely the Forestry and Beekeeping Division (FBD) and Wildlife Division (WD) respectively. Therefore forest reserves fall under FBD and Game Reserves under WD. Although both areas are protected by law, FBD receives inadequate support from the government to enable them enforce

the law as required whereas WD has substantially more income by way of hunting fees which enables them to better protect areas under their jurisdiction and hence no snares where recorded in the latter throughout the survey period.

Activities related to consumptive and non consumptive tourism, research and education are permitted in Game Reserves whilst no consumptive related activities are permitted in natural forests (forest reserves and nature forest reserves unless there is a specific purpose and hence a specific licence) but consumptive behaviour is permitted in plantation forests with some paper work involved. Research and education are both permitted in both plantation and natural forests.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

The survey was conducted with the involvement of local communities surrounding both Mbangala Forest and Lukwika Lumesule Game Reserves. With the help of the District Natural Resources Officer of Nanyumbu, where the two survey areas are largely located (Mbangala Forest Reserve is administratively located in two districts namely Nanyumbu on the western side and Masasi on the eastern side), we were able to identify 7 villages living adjacent to the two survey areas prior to setting up cameras namely Masuguru, Chungu and Nakopi in Lukwika Lumesule Game Reserve and Marumba, Chilunda, Mchoti as well as Lipupu in Mbangala Forest Reserve. The team then visited each of the villages and met with the village government for a briefing and ultimately requested them to identify individuals who would participate in the species identification and conservation discussion. When the list was fully identified, the team then worked closely with the groups from each village to discuss with them the importance of conserving wildlife and their habitat whilst demonstrating how the cameras work and how they could identify individual species using photographs gathered from our previous surveys in other parts of the country. These groups practised to set cameras on their own in areas outside protected areas since they are not allowed to enter the reserves as they didn't have permits which the team had from the parent ministry. Towards the end of the sessions, selected individuals from these surrounding villages knew how to use cameras as a tool for surveying mammals, how to identify most of the mammals and had a better appreciation of conservation. Five people were selected from the identified 7 villages surrounding the two survey areas and taught to explain to others about the benefits of conserving wildlife and their habitat during the surveys. Our initial plan was too ambitious in that we wanted to train trainers but eventually realized that is really difficult to train trainers over the survey period and therefore opted to invest on sensitizing selected groups of individuals who were believed to be influential in the seven villages. We envisage that these sensitized groups will be the project legacy in that they will continue to sensitize others on how best to ensure the survival or rather the existence of mammals and their habitat in their areas for the benefit of the present and future generations.

In addition, we have established a network with key people in the seven villages and to date, we have received about 50 sightings from them since we finished the surveys and we foresee receiving more sightings in future.

5. Are there any plans to continue this work?

Yes. As mentioned above, this is the first ever survey conducted in southern Tanzania and moreover, it aimed at determining presence and absence only. It would therefore be important to revisit the

areas and conduct a more systematic survey aiming at determining densities of some key species such as leopards and elephants. Such a study will build on the data here, to establish wildlife trends over a longer period. Furthermore, education being the key to everything still needs to be disseminated to many more people in these areas using a combination of campaigns such as leaflets, posters, public meeting, etc. The reserve authorities and their respective parent organisations will be alerted to the high snaring within the reserves (particularly in the forest reserve) and a follow up survey would establish whether remedial action had been taken or whether further action such as sustained campaign programme needs to be developed to mitigate such off-take. Two species that were reported by officials to be mostly preferred are sable and kudu antelopes.

6. How do you plan to share the results of your work with others?

First and foremost, the data gathered from the two surveys have been submitted to the national mammal database based here at the carnivore centre at TAWIRI and have been entered into the database and used to develop a conservation action plan for mammals in Tanzania (www.tanzaniamammals.org). Prior to these surveys, there were no data available from these areas.

These action plans are national and provide a framework of priorities for conservation that will be used by all stakeholders countrywide. We also intend to submit a publication in one of our national conservation newsletters, *Carnivore Newsbites* and *Miombo Newsletter* to share our findings with the wider community. Additionally, I intend to present results of the survey to the TAWIRI Scientific Conference in December 2009. This is a key national conference which brings together both local and foreign research scientists working in Tanzania as well as wildlife managers in the country including Tanzania National Parks (TANAPA), Forestry and Beekeeping Division (FBD), Ngorongoro Conservation Area Authority (NCAA) and the Wildlife Division (WD). The full report of our findings will be sent to the FBD and WD for further action.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

The assessment of mammal distribution and identification of species and their current distribution patterns using Geographical Information System (GIS) was conducted as anticipated from November to December 2008. Training of wildlife managers in the two areas in Mammal identification and monitoring techniques, particularly the use of remote camera traps, was also done as envisaged in November 2008. Posters targeting at raising awareness in the two areas were produced and distributed to the surrounding communities as planned from November to December 2008. The data emanating from these surveys have been submitted to the national mammal database to aid the ongoing development of country's Mammal Action Plan development as planned. Overall, the RSG was used between October and December 2008 as anticipated.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Fuel to Lukwika Lumesule Game Reserve	168	180	-12	Stronger shilling

Fuel for survey in Lukwika Lumesule Game Reserve	240	300	-60	Stronger shilling
Fuel for travelling from Lukwika Lumesule to Mbangala Forest Reserve	24	40	-16	Stronger shilling
Fuel for survey in Mbangala Forest Reserve	240	210	30	underestimated
Fuel for travelling back to Arusha from Mbangala Forest Reserve	168	190	-22	Stronger shilling
Car Maintenance	130	200	-70	Stronger shilling
Camera trap training	230	230	0	
Topographic maps	60	60	0	
Film purchasing	720	720	0	
Batteries	1216	1216	0	
Film processing	200	200	0	
Meals	452	452	0	
Accommodation	480	480	0	
Publicity	950	750	200	Reduced to cover the deficit
Stationeries	81	90	-9	Stronger shilling
Publications	420	420	0	
Bank and Auditing charges	50	40	10	Charges lower than anticipated
TOTAL	5829	5878	51	

1 £ sterling=1900 Tanzanian Shillings

9. Looking ahead, what do you feel are the important next steps?

(i.) Put together a final report for submission to FBD and WD.
(ii.) Disseminate survey results using leaflets and the Swahili which is the national language to the 7 identified villages.
(iii) Put together the manuscript to be submitted to the TAWIRI Scientific Conference in Dec' 2009.
(iv.) Put together the manuscript to be submitted to one of the conservation journals.
 (v.) Print and distribute species lists to the managers of the two surveyed areas.
(vi.) Put together a proposal for the second RSG.

10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

Yes, the logo was placed in 1,500 copies of the poster, which was widely distributed in communities surrounding the survey sites. Posters with the RSG logo were also placed on both sides of the field vehicle throughout the survey period. Posters were also placed on the notice boards of the district headquarters and 7 identified village headquarters. Furthermore, the logo is also prominently placed in the newly developed species lists for both Mbangala Forest and Lukwika Lumesule Game reserves (Appendices 1 and 2). We envisage that the RSG logo will continue to be in all subsequent versions of the species lists of the two areas since this project is the first author.

11. Any other comments?

The grant has been very useful and demonstrated that a lot can be achieved with a relatively small budget.

Appendices below

Appendix 1: The first species list for Lukwika Lumesule Game Reserve

S/No.	English Name	Swahili name	Scientific Name	Source
		SPECIES LIST OF LUKWIKA LUMESULE GAME RESERVE,2009		
1	Aardvark	Muhanga	*Orycteropodidae afer*	Camera trap
2	African/Cape buffalo	Nyati/Mbogo	*Syncerus caffer*	Camera trap
3	African civet	Fungo	*Civettictis civetta*	Camera trap
4	Blue monkey	Kima	*Cercopithecus mitis*	Camera trap
5	Meller's mongoose		*Rhynchogale melleri*	Camera trap
6	Bushbuck	Pongo	*tragelaphus scriptus*	Camera trap
7	Bushpig	Nguruwe mwitu	*Potamochoerus larvatus*	Camera trap
8	Cape hare	Sungura	*Lepus capensis*	Camera trap
9	Common waterbuck	Kuro	*Kobus ellipsiprymnus*	Camera trap/Sighted
10	Crested porcupine	Nunguri/Nnungu	*Hystrix cristata*	Camera trap
11	Greater kudu	Tandala mkubwa	*Tragelaphus strepsiceros*	Camera trap/Sighted
12	Grey duiker	Nsya	*Sylvicapra grimmia*	Camera trap/Sighted
13	Hippopotamus	Kiboko	*Hippopotamus amphibius*	Camera trap/Sighted
14	Honey badger	Nyegere	*Mellivora capensis*	Camera trap
15	Southern impala	Swala pala	*Aepyceros melampus*	Camera trap/Sighted
16	Large spotted genet	Kanu	*Genetta trigrina*	Camera trap
17	Leopard	Chui	*Panthera pardus*	Camera trap
18	Lion	Simba	*Panthera leo*	Camera trap
19	Natal red duiker	Funo/Ngarombwi	*Cephalophus natalensis*	Camera trap/Sighted
20	Sable antelope	Palahala	*Hippotragus niger*	Camera trap/Sighted
21	Savannah elephant	Tembo	*Loxodonta africana*	Camera trap/Sighted
22	Serval cat	Mondo	*Felis serval*	Camera trap
23	Sharpe's grysbok	Dongoro shapi	*Raphicerus sharpei*	Camera trap
24	Slender mongoose		*Herpestes sanguinea*	Camera trap/Sighted
25	Spotted hyaena	Fisi/Nyangao	*Crocuta crocuta*	Camera trap
26	Striped ground squirrel		*Euxerus erythropus*	Camera trap/Sighted
27	Vervet monkey	Tumbili	*Cercopithecuspygerythrus*	Camera trap/Sighted
28	Warthog	Ngiri	*Phacochoerus africanus*	Camera trap/Sighted
29	Yellow baboon	Nyani	*Papio cynocephalus*	Camera trap/Sighted
30	Zorilla	Kicheche	*Ictonix striatus*	Camera trap
31	Chequered elephant shrew	Njule madoa	*Rhynchocyon cirnei*	Camera trap/Sighted
32	African clawless otter	Fisi maji mkubwa	*Aonyx capensis*	Literature
33	Dwarf mongoose	Kitafe	*Helogale parvula*	Literature
34	Ichneumon(Egyptian) mongoose	Nguchiro	*Herpestes ichneumon*	Literature
35	White-tailed mongoose	Karambago	*Ichneumia albicauda*	Literature
36	Common genet	Kanu	*Genetta genetta*	Literature
37	Wild cat	Paka mwitu/Paka pori/Kimburu	*Felis sylvestris*	Questionnaire

38	Lesser elephant shrew	Sengi	*Elephantulus rufescens*	Literature
39	Four-toed elephant shrew	Isanje	*Petrodromus tetradactylus*	Literature
40	Eland	Pofu	*Taurotragus oryx*	Literature
41	Savannah cane rat		*Thryonomys gregorianus*	Literature
42	Marsh cane rat		*Thryonomys swinderianus*	Literature
43	Side striped jackal	Bweha	*Canis adustus*	Literature
44	Wild dog	Mbwa mwitu	*Lycaon pictus*	Questionnaire
45	Banded mongoose	Nkuchiro	*Mungos mungo*	Sighted
46	Marsh mongoose	Nguchiro wa maji	*Atilax paludinosus*	Literature
47	Meller's mongoose		*Rhynchogale melleri*	Literature
48	Bush hyraxes	Perere mawe	*Heterohyrax brucei*	Sighted
49	Suni	Paa mwekundu/Suni	*Neotragus moschatus*	Literature
50	Bohor reedbuck	Tohe Ndope	*Redunca redunca*	Literature
51	Lichtenstein's hartebeest	Konzi	*Alcelaphus buselaphus*	Literature
52	Greater galago	Komba ya Miombo	*Otolemur crassicaudatus*	Literature
53	South African galago	Komba ya Kusini	*Galago moholi*	Literature
54	African hedgehog	Karungu yeye	*Atelerix albiventris*	Literature
55	Scrub hare	Sungura	*Lepus saxatilis*	Literature
56	Klipspringer	Mbuzi mawe	*Oreotragus oreotragus*	Questionnaire
57	Giant pouched rat		*Cricetomys gambianus*	Literature
58	Brush furred mice		*Lophuromys flavopunctatus*	Literature
59	Striped(white-naped) weasel	Chororo	*Poecilogale albinucha*	Literature
60	Southern reedbuck	Tohe kusi	*Redunca arundinum*	Literature
61	Ground pangolin	Kakakuona	*Smutsia temminckii*	Questionnaire
62	Rock hyrax	Pimbi	*Procavia capensis*	Questionnaire
63	Zebra	Pundamilia	*Equus burchelli*	Questionnaire
64	Crocodile	Mamba	*Crocodylus niloticus*	Sighted
65	Monitor lizard	Kenge	*Varanus albigularis*	Sighted

Appendix 2: The first species list of Mbangala Forest Reserve

	SPECIES LIST OF MBANGALA FOREST RESERVE,2009		TAWIRI Tanzania Wildlife Research Institute

S/No	English name	Swahili name	Scientific name	Source
1	Aardvark	Muhanga	*Orycteropus afer*	Camera trap
2	African civet	Fungo	*Civettictis civetta*	Camera trap
3	Banded mongoose	Nguchiro	*Mungos mungo*	Camera trap
4	Blue monkey	Kima	*Cercopithecus mitis*	Camera trap
5	Bushbuck	Pongo/Mbawala	*Tragelaphus scriptus*	Camera trap
6	Bush hyrax	Perere mawe	*Heterohyrax brucei*	Camera trap
7	Bush tailed mongoose	Kitu	*Bdeogale crassicauda*	Camera trap
8	Bushpig	Nguruwe mwitu	*Potamochoerus larvatus*	Camera trap
9	Cape hare	Sungura	*Lepus capensis*	Camera trap
10	Chequered elephant shrew	Njule madoa	*Rhynchocyon cirnei*	Camera trap
11	Crested porcupine	Nunguri/Nnungu	*Hystrix cristata*	Camera trap
12	Four-toed elephant shrew	Isanje	*Petrodromus tetradactylus*	Camera trap
13	Greater kudu	Tandala mkubwa	*Tragelaphus strepsiceros*	Camera trap
14	Grey duiker	Nsya	*Sylvicapra grimmia*	Camera trap/Sighted
15	Large spotted genet	Kanu	*Genetta tigrina*	Camera trap
16	Leopard	Chui	*Panthera pardus*	Camera trap
17	Natal duiker	Funo/Ngarombwi	*Cephalophus natalensis*	Camera trap
18	Sharpe's grysbok	Dongoro Shapi	*Raphicerus sharpei*	Camera trap
19	Slender mongoose		*Herpestes sanguinea*	Camera trap
20	Suni	Suni/Paa mwekundu	*Neotragus moschatus*	Camera trap
21	Vervet monkey	Tumbili	*Cercopithecus pygerythrus*	Camera trap
22	Yellow baboon	Nyani	*Papio cynocephalus*	Camera trap/Sighted
23	African buffalo	Nyati/Mbogo	*Syncerus caffer*	Literature
24	Savannah elephant	Tembo	*Loxodonta africana*	Literature
25	Sable antelope	Palahala	*Hippotragus niger*	Literature
26	Serval cat	Mondo	*Felis serval*	Literature
27	Spotted hyaena	Fisi/Nyangao	*Crocota crocuta*	Literature
28	Lion	Simba	*Panthera leo*	Literature
29	Impala	Swala pala	*Aepyceros melampus*	Literature
30	Hippopotamus	Kiboko	*Hippopotamus amphibius*	Literature
31	Honey badger/Ratel	Nyegere	*Mellivora capensis*	Literature

32	Zorilla	Kicheche	*Ictonyx striatus*	Literature
33	African clawless otter	Fisi maji mkubwa	*Aonyx capensis*	Literature
34	Dwarf mongoose	Kitafe	*Helogale parvula*	Literature
35	Ichneumon(Egyptian) mongoose	Nguchiro	*Herpestes ichneumon*	Literature
36	White-tailed mongoose	Karambago	*Ichneumia albicauda*	Literature
37	Common genet	Kanu	*Genetta genetta*	Literature
38	Wild cat	Paka mwitu	*Felis sylvestris*	Literature
39	Lesser elephant shrew	Sengi	*Elephantulus rufescens*	Literature
40	Eland	Pofu	*Taurotragus oryx*	Literature
41	Blue duiker	Ndimba/Chesi	*Cephalophus monticola*	Literature
42	Savannah cane rat		*Thryonomys gregorianus*	Literature
43	Marsh cane rat		*Thryonomys swinderianus*	Literature
44	Side striped jackal	Bweha	*Canis adustus*	Literature
45	Wild dog	Mbwa mwitu	*Lycaon pictus*	Literature
46	Marsh mongoose	Nguchiro wa maji	*Atilax paludinosus*	Literature
47	Meller's mongoose		*Rhynchogale melleri*	Literature
48	Harvey's duiker	Funo	*Cephalophus harveyi*	Literature
49	Bohor reedbuck	Tohe Ndope	*Redunca redunca*	Literature
50	Kongoni(hartebeest)	Kongoni	*Alcelaphus buselaphus*	Literature
51	Wildebeest	Nyumbu	*Connochaetes taurinus*	Literature
52	Greater galago	Komba ya Miombo	*Otolemur crassicaudatus*	Literature
53	South african galago	Komba ya kusini	*Galago moholi*	Literature
54	African hedgehogs	Karunguyeye	*Atelerix albiventris*	Literature
55	Scrub hare	Sungura	*Lepus saxatilis*	Literature
56	Klipspringer	Mbuzi mawe	*Oreotragus oreotragus*	Literature
57	Giant pouched rat		*Cricetomys gambianus*	Literature
58	Brush furred mice		*Lophuromys flavopunctatus*	Literature
59	Striped (white- naped) weasel	Chororo	*Poecilogale albinucha*	Literature
60	Southern reedbuck	Tohe kusi	*Redunca arundinum*	Literature
61	Ground pangolin	Kakakuona	*Smutsia temminckii*	Literature