

A CAMERA-TRAP SURVEY OF FOREST MAMMALS IN the ULUGURU NORTH FOREST RESERVE

Summary report



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Front page photos

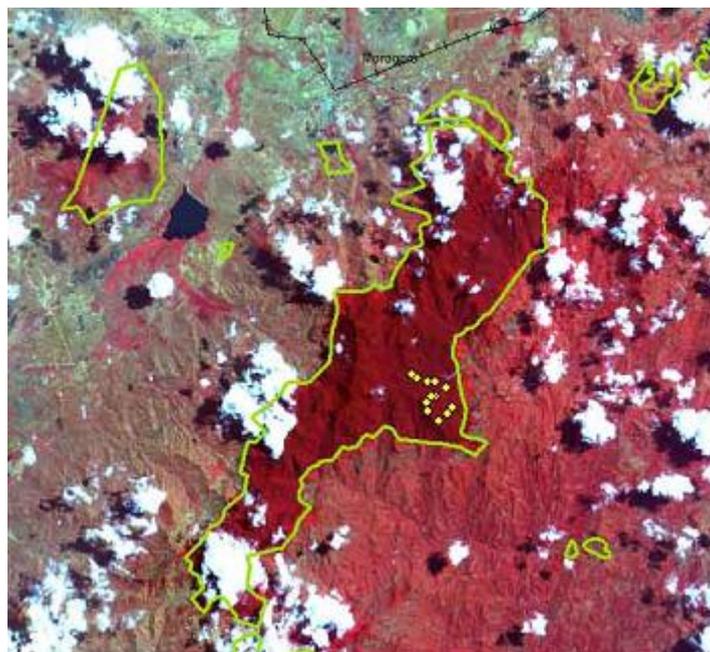
Blue duiker, *Cephalophus monticola*, top left
Black and rufous sengi, *Rhynchocyon petersi*, top right
Lowe's servaline genet, *Genetta servalina lowei*, bottom

Aim of the survey

This is a summary report presenting the results obtained from a camera-trap survey that was aimed at assessing presence of Abbott's duiker *Cephalophus spadix*, a Tanzanian-endemic and endangered forest antelope, in the Uluguru North Forest Reserve, which is part of the Eastern Arc Mountains. There are no confirmed records of this species in the last years. This antelope lives in a range of forest habitat, but especially moist forests; in the Udzungwa Mountains it occurs from 300 to over 2000 m in altitude. Uluguru North Forest Reserve comprises 85 km² of moist forest at 800-2340 m a.s.l. The survey was planned in collaboration with Dr. Neil Burgess (Conservation and Management of the Eastern Arc Mountains Forests, Forest and Beekeeping Division, Tanzanian Government).

Methods

Twelve Vision Scouting Camera units (Non Typical Inc., Park Falls, Wisconsin, USA) were deployed in the east-central area of Uluguru North Forest Reserve between 27th October until 10th December 2005 (see satellite map below). The camp was established in the forest reached from the Tegetero Mission. Trapping effort is computed as the total number of 24-h periods cameras were operating, i.e. until the film was full or cameras were retrieved. Cameras were set to take pictures 24 hr per day on 200 ASA Kodak colour print film, with a 1-min delay between exposures. The date and time of each exposure were shown on the film. We defined trap-rate as the ratio between number of photographs and trap-days multiplied by 100 and we used it as a proxy of relative abundance.



Landsat image of the Uluguru North Forest Reserve (Reserve boundaries in green) with locations (yellow dots) of camera-traps.

Cameras were placed on presumed duiker trails judged from presence of dungs, tracks or removed leaf litter, within approximately 2 km of 6°56.15' S, 37° 42.36' E at an elevation of 1250-1550 m. a.s.l. This area comprises pristine, sub-montane moist forest habitat.

Results

A total of 93 photographs were obtained from 10 operating cameras. Two cameras were stolen. Total trapping effort was 409 days (mean of 410 trap-days per camera). Eight species were captured, listed in the table below according to decreasing trap rate.

Checklist of species camera-trapped in the Uluguru North Forest Reserve,
ordered by decreasing camera-trapping rate

Common name	Latin name	Num. Photos	Mean Trap-rate [°]	Num. Cameras*
Giant-pouched rat	<i>Cricetomys gambianus</i>	28	13,71	5
Tanganyika mountain squirrel	<i>Paraxerus lucifer</i> (?)	36	12,06	8
Black and rufous sengi	<i>Rhynchocyon petersi</i>	10	6,16	4
Bushy-tailed mongoose	<i>Bdeogale crassicauda</i>	12	5,53	6
Lowe's servaline genet	<i>Genetta servalina lowei</i>	2	5,00	1
Sykes's monkey	<i>Cercopithecus mitis</i>	1	3,23	1
Blue duiker	<i>Cephalophus monticola</i>	3	2,72	4
Marsh mongoose	<i>Atilax paludinosus</i>	1	2,44	1

[°] Number of photos/trap-days*100

* Number of camera-sites where the species was camera-trapped

The only forest antelope recorded was the blue duiker (3 photographs), and also the dung piles found were presumed to belong to this species. No signs of other forest antelopes were found.

Among the other mammals recorded, the 2 photos of Lowe's servaline genet represent a new record for the Uluguru mountain block, as this genet subspecies was thought to occur only in the Udzungwa Mountains. The range extension is of approximately 140 km (see Rovero et al. 2006, *Oryx*, 40(2): 139). The other species recorded are not surprising for the area; of notable interest is the presence of marsh mongoose which is uncommon, and the black and rufous sengi, an IUCN-Endangered and restricted-range species. The identification of the squirrel gen *Paraxerus* needs confirmation.

Other mammals recorded were the Angolan black and white colobus *Colobus angolensis* (seen and heard in few occasions), the bush pig *Potamochoerus larvatus* (dungs) and, not certainly, the African clawless otter *Aonyx capensis* (dung).

Remarks

Whilst camera-trapping can only assess presence and not determine absence of target species, it seems unlikely that Abbott's duiker is still present in the area. This matches discussions with one elder at the nearest village who, however, said that Abbott's duikers are still present in Uluguru South Forest Reserve. If present, it must be at severely low densities. Even though we sampled a relatively small portion of the forest, we covered a variety of forest habitats, from valley bottoms to ridges and a representative portion of elevation range within sub-montane forest. Additional surveys at higher elevation and in Uluguru South Forest Reserve would be required to gather further evidence.

The little amount of signs of large forest mammals - with no signs recorded of the red duiker *Cephalophus harveyi* and few signs of bush pig which are usually common in non-encroached forests - suggests that the area has been severely exploited of wildlife from hunting. Hunting still occur, as one active nylon snare was found in the study area. Overall, the number of species trapped is relatively low when compared to other Eastern Arc block using the same method and deploying the same camera-trapping effort. For example, in 3 small forest patches in the North Pare Mountains 16 species were camera-trapped while 12 species were camera-trapped in Kanga Forest Reserve in the Nguru South Mountains.

Acknowledgments

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Camera-trap photos



Top-left: mountain squirrel *Paraxerus* sp., top-right: blue duiker *Cephalophus monticola*, bottom left: Sykes' monkey *Cercopithecus mitis*, bottom-right: marsh mongoose, *Atilax paludinosus*