

Abundance of Small Carnivores in Nyika National Park, Malawi

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Aims and Objectives

This study investigated the population and distribution of cryptic viverrid species in Nyika National Park, Malawi.

Research aims were to:

- 1) provide an assessment of small carnivore abundance;
- 2) estimate seasonal movement of viverrid species to lower elevations;
- 3) explore effects of poaching on small carnivore distribution.

Introduction

I investigated the **abundance of small carnivores** at Nyika National Park over four weeks. Previous data from Biosearch Nyika (Overton, 2011), Central African Wilderness Safaris (CAWS) and Carnivore Research Malawi (CRM) was analysed to confirm locations of past sightings, including in miombo woodland south of the plateau, but there was a lack of detailed research on small carnivores at this site. Focal species were **blotched genet** (*Genetta maculata*), **African palm civet** (*Nandinia bintotata gerradi*) and **African civet** (*Civettictis civetta*), all Least Concern, ver. 3.1 (IUCN, 2019). One *G. maculata* was sighted near a dam by Chilinda village in April 2017, before the dry season began and camera traps have photographed blotched genets and African civets during warmer months. Local scouts reported sightings of many small carnivores but these have not been officially recorded. African viverrids are commonly **poached** for the **bushmeat, fur** and **pet trades** across the continent and population trends of these nocturnal species in Malawi are unknown.



Fig. 1: Chilinda Lodge, adjacent to the pine plantation and Chilinda staff village, Nyika National Park, Malawi, Photo credit: A. S. Gunn (2017)

Study Site

Nyika National Park was a field study site for Lilongwe Wildlife Trust and CRM between 2017-2018. The site is a **unique environment** that expands over 3,134km² and is a mosaic of montane and alpine forest [pine plantation] (Nyika-Vwaza Trust, 2016), grassland, marshland and features a number of dams. Nyika plateau (Nganda Point) is the highest point in Malawi, reaching peak elevation at 2,607m asl. There is miombo woodland to the south at the park entrance (CRM, 2014).

Chilinda village is located in the centre of the national park and is home to wildlife division staff and the lodge staff. Historically, Nyika National Park has **suffered from poaching** and **illegal fires** (Lilongwe Wildlife Trust, 2016) were present during the study period. Higher densities of Nyika's wildlife remain close to the village at night.

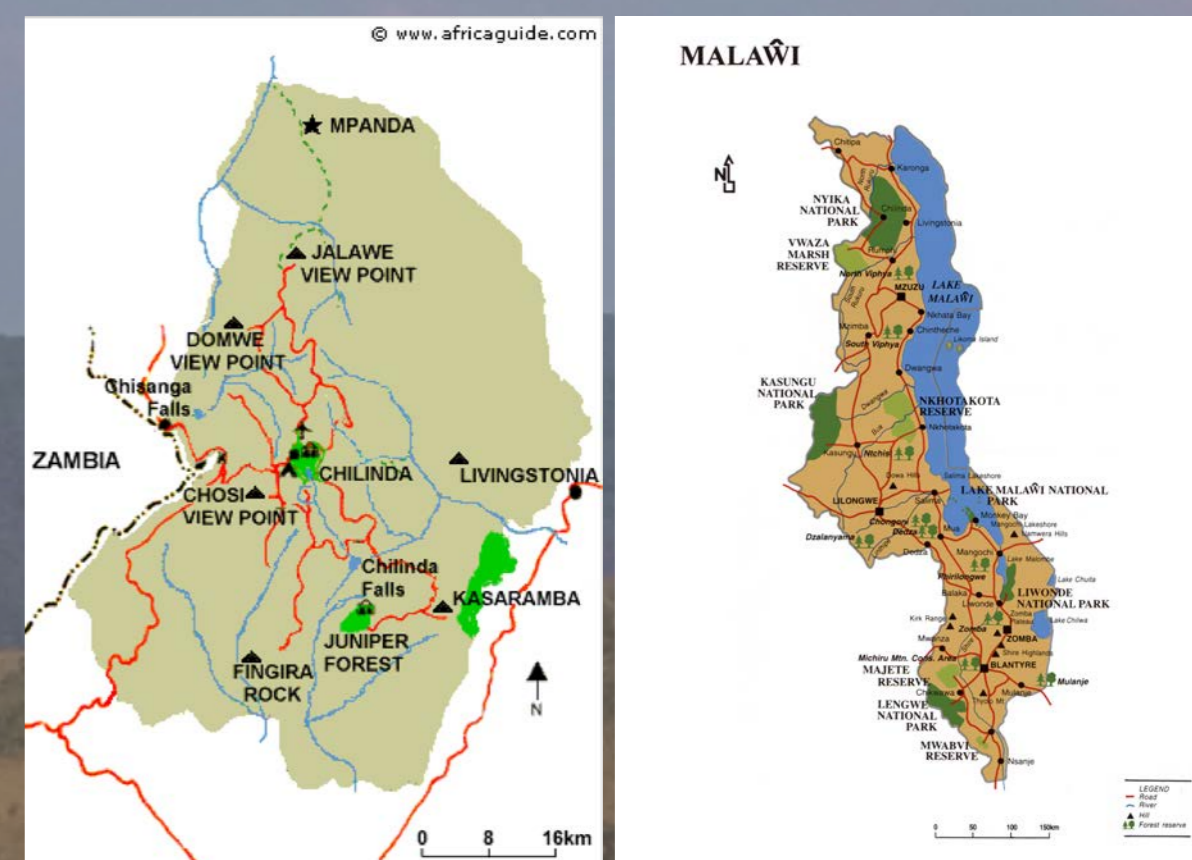


Fig. 2 and 3: Location Maps showing Nyika National Park (AfricaGuide, 2019) and the country of Malawi, (CRM, 2014)

Methods

Driven transects (10 daytime and 8 night-time/dawn) were on 13 different transects and over 10km; **walking transects** (10 daytime and 7 night with local armed guard) within 2km of the village and **camera traps** from the previous month were used to find evidence of species over 4 weeks. All relevant locations were recorded using GPS handheld devices. Survey participants included an armed local scout, a CRM research staff member, volunteers and myself. The risks were larger predators: spotted hyaena (*Crocuta crocuta*) and leopard (*Panthera pardus*) and the lack of small carnivores due to human activity. Walks were no longer than **2 hours** in duration at 04:00-06:00h and 18:00-23:00h. Successes were measured by **scats** and **communal latrines, spoors** and **sightings**. I recorded **population density** and location around Chilinda village using a data sheet to record information such as: time, location, species, duration of sighting, behaviour.

I calculated the percentages of carnivore species observed in each habitat on night walks and camera traps across 7 habitat types: miombo; pine plantation; mixed woodland; grassland; [around the] lodge; Dam 2 and Lake Kaulime) between June-August to **estimate species abundance and habitat preference**.



Fig. 4: Lake Kaulime, the location of a genet sighting, Nyika National Park, Malawi, Photo credit: A. S. Gunn, 2017

Results

Small carnivores were not sighted during day walks or any driven transects. There were **two sightings** of blotched genets on night walks, occurring at the pine plantation (22:00h) and Lake Kaulime (21:00h), yet **no scats or latrines** were found. Side-striped jackal (*Canis adustus*), domestic cat (*Felis catus*) (around the lodge) and spotted hyena were also sighted.

Camera traps captured African civets (3 times) and blotched genets (9 times), with **most activity** occurring in miombo habitat at **lower elevations**.

Sightings of genets occurred in a total of **6 habitat types**, with the highest frequency in pine plantations (26%), miombo (10%) and grassland (10%). No palm civets were observed.

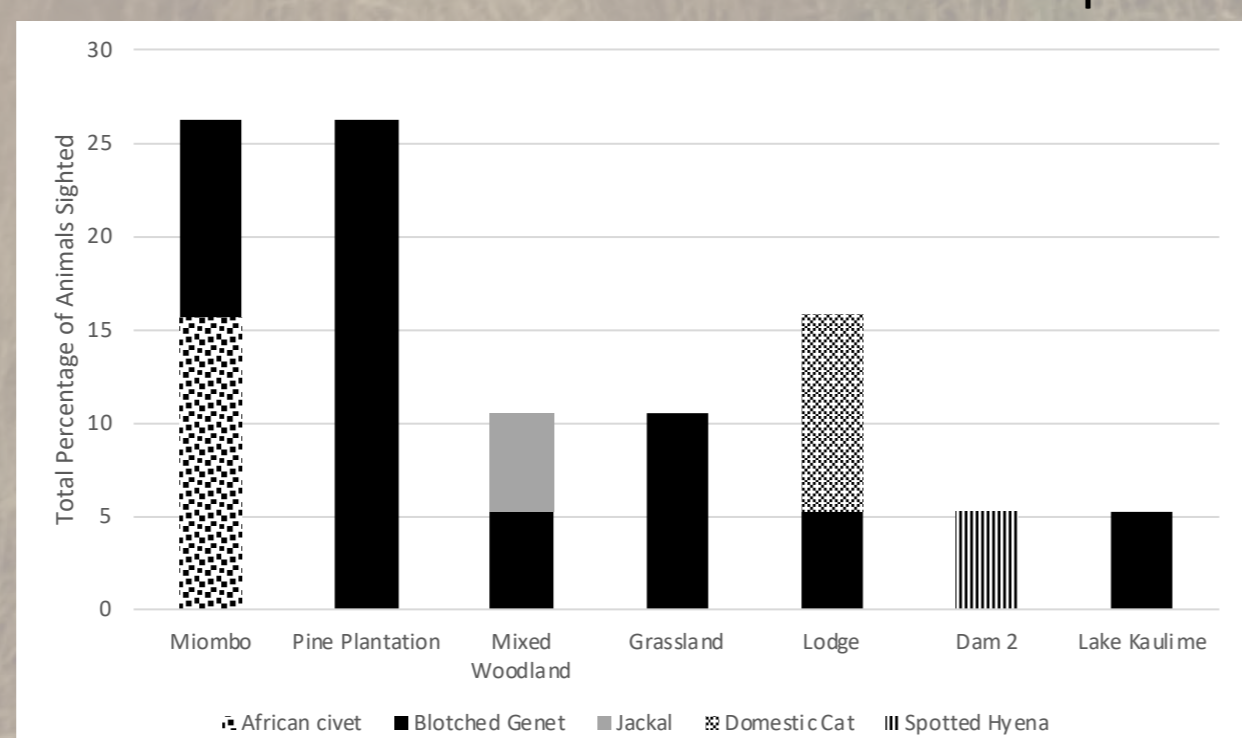


Fig. 5: Chart to show Total Percentage of Carnivore Species Sighted during Night Walks and from Camera Traps in 7 Habitat Types between June-August 2017 in Nyika National Park, Malawi

Discussion

July is the **coldest month** on Nyika plateau and I had a **small sample size**, suggesting that small carnivores may increase nesting time during this period. Due to their home ranges, it is unlikely that the focal species move into the miombo woodland during the dry season, but those living at lower elevations appear to be more active during this season, where the climate is less harsh and there may be a higher abundance of prey.

African civets and blotched genets were found on the same camera traps, as it is common that their **territories overlap** and they will share communal latrines (civetries) (MpalaLive!, 2019). Genets were found in the most habitat types. Their proximity to the lodge and pine plantation reflects **behavioural flexibility** to inhabit areas of anthropogenic alteration, in comparison to the civet. This may also be an **effect of poaching threats**, due to the densities of other wildlife species gathering at Chilinda overnight. The presence of the domestic cat around the lodge may have an effect on non-domestic carnivores and prey species around Chilinda.

Further research on population abundance and distribution of these cryptic small carnivores is required to maintain the future health and **management of natural habitats and wildlife species** in Malawi.

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