

# Rapid carnivore survey in Babile Elephant Sanctuary, Ethiopia

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Cover picture: lioness 'Amele' at Ensessa Koteh Rescue Centre, rescued from Djibouti in 2019.

## Summary

The objective of this mission was to gather information on the status and ecology of Babile Elephant Sanctuary (BES) in eastern Ethiopia, with special reference to its ecological potential for large carnivores. We observed spotted and striped hyaenas (*Crocuta crocuta*, *Hyaena hyaena*), and although we did not find evidence of lions (*Panthera leo*) the regular occurrence of livestock depredation by lions as reported by many credible sources is an indication of their presence in some parts of the area. Leopards (*Panthera pardus*) were recognised by several informants as rare but definitely present, whereas informant information suggests that cheetah and African wild dogs (*Acynonix jubatus*, *Lycaon pictus*) are currently absent from the sanctuary. We had spotted hyaena respond to each of the five call-ups that we did; this is obviously the only abundant large carnivore, but we cannot speculate about densities of any of the species listed here.

With close to 40,000 permanent housing structures in BES (Born Free Foundation report 2019), and quasi omnipresence of livestock in all the areas we visited, human encroachment is undoubtedly the biggest limiting factor for wildlife in BES, and for large carnivores in particular. Due to the elevated risk of theft, we made only limited use of camera traps; over a total of 16 trap-nights we recorded spotted and striped hyaena, Guenther's dikdik (*Madoqua guentheri*), bohor reedbuck (*Redunca redunca*), sacred or hamadryas baboon (*Papio hamadryas*), common genet (*Genetta genetta*), white-tailed mongoose (*Ichneumia albicauda*), plus yellow-throated plated lizard (*Gerrhosaurus flavigularis*) a reptile uncommonly caught on camera traps. We also found elephant scat (*Loxodonta africana*).



Team photo, left to right: Hassen Abdi, Motuma Adula, Hans Bauer, Peter Kenchington

## Team

The team was composed of:

1. Hans Bauer (WildCRU)
2. Peter Kenchington (Born Free Babile Elephant Project)
3. Motuma Adula (Born Free Babile Elephant Project)
4. Scouts (EWCA) on rotation: Hassen Abdi, Aabdi Satar, abdi Yussuf, Salah Abdi, Sheikh Sharif, and Ibrahim Adam
5. Claudio Sillero (WildCRU – support from UK)
6. Liz Greengrass (Born Free – support from UK)

## Introduction

The lion is a charismatic species and there is considerable international interest in its status. Recent publications have highlighted declines of lion range and numbers across Africa, especially in West, Central and East Africa (Bauer et al, 2015a). The lion is listed as Vulnerable on the IUCN Red List of Threatened Species (Bauer et al, 2015b). The other large carnivores found in Ethiopia are spotted hyaena (Least Concern), leopard (Vulnerable), cheetah (Vulnerable) and African wild dog (Endangered). The distribution of these large carnivores across Ethiopia is poorly documented, and WildCRU in partnership with EWCA and sponsors endeavours to carry out a series of field surveys collectively referred to as the 'Large Carnivore Survey of Ethiopia', in line with national action plans for lion cheetah and African wild dog endorsed by EWCA (EWCA, 2012 a & b).



The mission was undertaken with permission from the Ethiopian Wildlife Conservation Authority and was hosted by the Born Free Babile Elephant Project. It was implemented in partnership with the Wildlife Conservation Research Unit, University of Oxford (WildCRU), the Ethiopian Wolf Conservation Programme (EWCP) and Mekele University (MU). The operational costs were generously covered by the Born Free Foundation and Leipzig Zoo.

*Figure 1: In addition to cattle, goats and sheep, camels are very common throughout the region*

## Methods

We used the following methods:

1. Call-ups, or calling stations; broadcasting animal sounds at high volume to attract carnivores.
2. Camera traps; fixed to trees, these automatically take a picture whenever their sensor detects movement in front of the camera). The cameras were operational for a total of 16 trapping-nights.
3. Surveying for tracks and signs (walking transects looking for footprints in sand or clay substrate, or looking for scats).
4. Listening for roars and other sounds.
5. Interviews with park staff and community members (using a set of pictures of animals found in the area).
6. Reviewing unpublished reports.

We were in the BES 20 May – 27 May; our call-ups and camera traps were concentrated around two camps indicated in Fig. 2.

## Area description

The Babile Elephant Sanctuary (BES) is located in the Horn of Africa, between latitudes 08°22'30"-09°00'30"N and longitudes 42°01'10"-43°05'50"E and elevations ranging between 850m and 1,785m *a.s.l.* It is situated in the Somali-Masaai Biome type of the eastern lowlands of Ethiopia. Phytogeographically, this biome is a centre of endemism of bushland and thickets, and also consists of the semi-desert grasslands and scrublands. The most common tree species are *Acacia* and *Commiphora* species. At lower elevations, where rainfall is less consistent, the vegetation becomes semi-desert scrubland (EWNHS, 1996). This area has long been inhabited, and persistent political and military strife in the region has put pressure on wildlife and the environment for decades, with a spike in ethnic violence over recent years.

Yirmed Demeke (2008) summarised mammal diversity in Babile as follows: 'The newly recorded species are the unstriped ground squirrel (*Xerus utilus*), crested porcupine (*Hystrix cristata*), anubis baboon (*Papio anubis*), bat-eared fox (*Otocyon megalotis*), common duiker (*Sylvicapra grimmia*), common bushbuck (*Tragelaphus scriptus*), rock hyrax (*Procavia capensis*) and Abyssinian hare (*Lepus habessinicus*). The majority of the species (36.7% of the total) fall under the Order Artiodactyla followed by the Carnivora which accounted for 30%. The varied species that the Sanctuary holds include the African elephant, lion (*Panthera leo*), leopard (*Panthera pardus*), Menelik's bushbuck (*Tragelaphus scriptus meneliki*), black and white colobus monkey (*Colobus guereza*), bush pig (*Potamochoerus porcus*), hamadryas baboon (*Papio hamadryas*), armadillo (*Orycteropus afer*), lesser kudu (*Tragelaphus imberbis*), greater kudu (*Tragelaphus strepsiceros*), oribi (*Ourebia ourebi*), Salt's dik-dik (*Madoqua saltiana*), common bushbuck and spotted hyaena (*Crocuta crocuta*). Salt's dik-dik was the most numerous of these.'

A current analysis of 'lion geopolitics' (Dickman et al. in prep) identified the lion population in North West Hararghe, of which Babile is the largest part, as the population with the highest combined fragility scores in the continent. This actually means that socio-economic and ecological parameters are more adverse to lion conservation here than almost anywhere else in Africa.

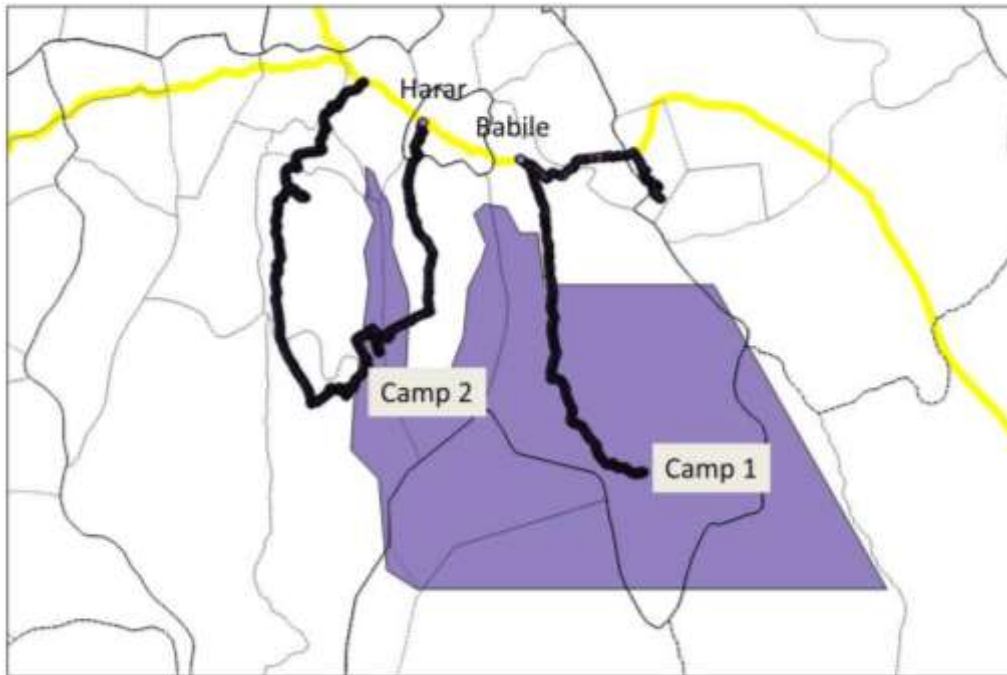


Figure 2: Location of Babile Elephant Sanctuary in eastern Ethiopia, showing our GPS tracks and camps.

## Results

In 16 trapping nights and five call-ups, we observed the mammal species listed in Table 2. We also captured a photo of a yellow-throated plated lizard (*Gerrhosaurus flavigularis*), a species found in semi-arid savannas across eastern Africa. Furthermore, we found scat of elephant (*Loxodonta africana*).

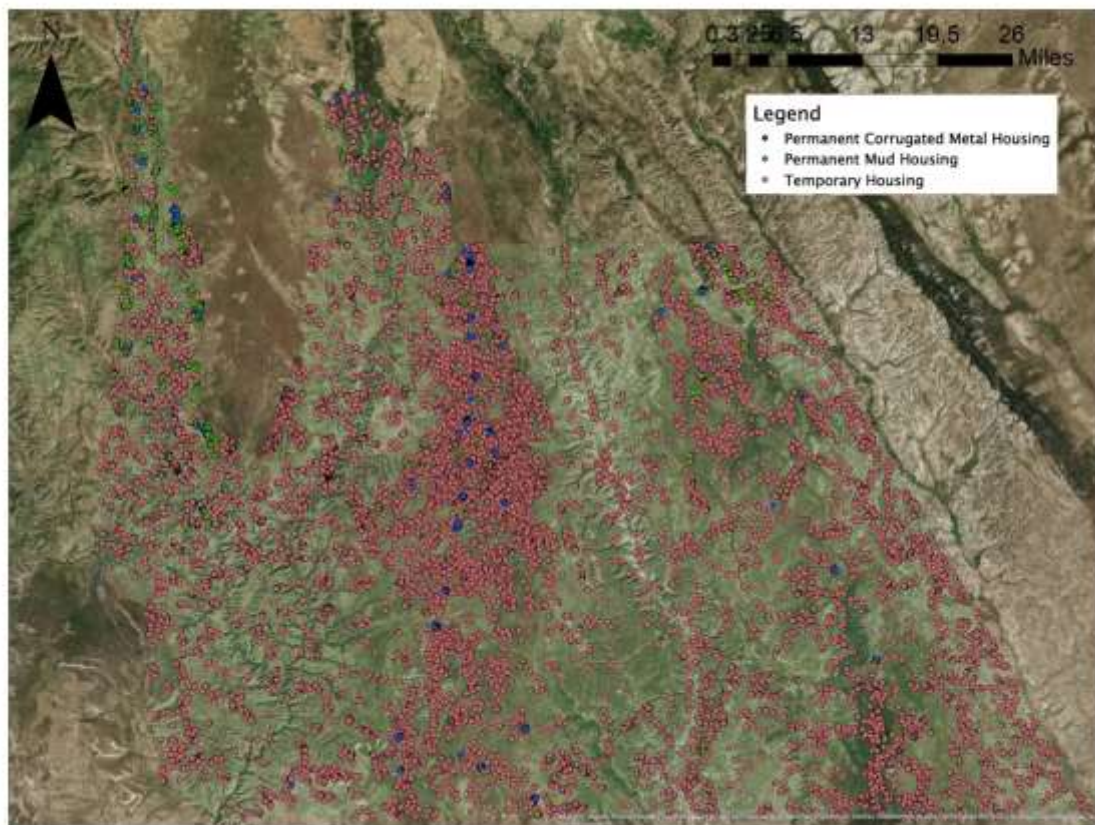
Table 2: mammal species observed during our mission to the BES

English name	Scientific name	Source
Carnivores	Carnivora	
Striped hyaena	<i>Hyaena hyaena</i>	Camera trap
Spotted hyaena	<i>Crocuta crocuta</i>	Direct observation
White-tailed mongoose	<i>Ichneumia albicauda</i>	Camera trap
Common genet	<i>Genetta genetta</i>	Camera trap
Ungulates, even-toed	Cetartiodactyla	
Guenther's dikdik	<i>Madoqua guentheri</i>	Direct obs, camera trap
Reedbuck	<i>Redunca redunca</i>	Camera trap
Primates	Primates	
Olive baboon	<i>Papio anubis</i>	Direct observation
Hamadryas baboon	<i>Papio hamadryas</i>	Camera trap
Senegal bushbaby	<i>Galago senegalensis</i>	Direct observation

During our mission we talked to many (>50) community members, often using the picture recognition sheet in Annex 1. We used an unstructured survey approach, and we report only anecdotal information. All respondents were aware that lions were regularly heard in their area, and occasionally lions killed livestock. Most people carry firearms and would shoot at lions on a livestock carcass; and they have become very cautious and skittish. As a result, they were not often seen.

Leopards were seen much less frequently. In contrast, many people had difficulty identifying cheetah and wild dog from the photographs. Even if they were identified, people debated whether they were present. While some maintained that these species do occur, others argued that this was no longer the case today.

Based on this informal conversations and out own observation we came to the following conclusions. Despite the absence of physical evidence for lions during this mission we are confident that lions and leopards do occur in parts of BES. As for cheetah and African wild dogs, we would argue that from a precautionary point of view, until proof of presence is provided, these species be considered functionally extirpated from the BES.



*Figure 3: Settlements inside Babile elephant Sanctuary. Source: Born Free Foundation, unpubl. report*

The main explanation for the scarcity of wildlife observations during our BES mission is obvious: the sanctuary is literally packed with people and livestock. We did not see any areas without people, and even when we thought we have found an area devoid of people, people and livestock soon appeared at a call-up. Figure 3 shows a recent map of settlements in the BES as visible on Google

Earth. A total of 40,000 housing structures were tallied in 2018, that is double of what it was in 2015. At this rate, the encroachment of the BES is such that very soon it will no longer be considered a protected area, but merely a 'paper park'.

## Discussion

Like most of Ethiopia, spotted hyaenas were abundant and apparently coexisting peacefully with people. We also found a striped hyaena, which is quite rare. We were unable to find evidence of lions, but we were confident that they are present there and that the area should be mapped as lion range. We were equally convinced that leopards do occur in the BES, but we were doubtful of the occurrence of resident cheetah and African wild dog, both species should be considered functionally extinct in BES.

We observed dikdik on numerous occasions, According to Yirmed (2008), the most common species in BES was Salt's dikdik, but in our experience every didkdik spotted was a Guenther's dikdik. It is possible that both species still occur there, and that we had an unrepresentative sample. This poses an interesting question, that could be addressed by graduate field projects carried out by students working in the area for a longer period of time.

In light of the recent ethnic conflict in BES and surrounding areas, but also the much longer history of instability, humanitarian issues are a preoccupation of the local administration ([https://en.wikipedia.org/wiki/Oromo%E2%80%93Somali\\_clashes](https://en.wikipedia.org/wiki/Oromo%E2%80%93Somali_clashes) ). The BES is *de facto* a host for thousands of Internally Displaced People. Coupled with longer-term demographic trends of of both people and livestock, it will be challenging to find a park management model that would provide local development opportunities for the local people while safeguarding the interests of conservation of such an interesting area.

## Acknowledgements

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## Annex 1: Picture recognition sheet



## Annex 2: Additional pictures



Figure 2: Spotted hyaena



Figure 4: Bohor reedbuck



Figure 6: Common genet



Figure 3: Striped hyaena



Figure 5: Guenther's dikdik



Figure 7: White-tailed mongoose



Figure 8: Hamadryas baboon



Figure 9: Typical savannah habitat



Figure 10: Guenther's dikdik