

Research report

Observations of pale and Rüppell's fox from the Afar Desert, Ethiopia

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Abstract

Multiple sight records of pale and Rüppell's foxes from northwestern and southern areas of the Afar Desert in Ethiopia extend the ranges of both species in the region. We report these sightings and discuss their possible implications for the species' biogeography.

Introduction

The Afar Desert (hereafter Afar), alternatively known as the Afar Triangle, Danakil Depression, or Danakil Desert, is a large arid area spanning Ethiopia, Eritrea, Djibouti and Somaliland (Mengisteab 2013). Its fauna remains poorly known, as exemplified by the fact that the first possible record of *Canis lupus* dates back only to 2004 (Tiwari and Sillero-Zubiri 2004; note that the identification in this case is still uncertain). Two *Vulpes* foxes are currently known from the Ethiopian part of Afar (Sillero-Zubiri 2009). Of these, the pale fox *V. pallida* is believed to be limited to the extreme northwestern corner of Afar, while Rüppell's fox *V. rueppellii* is known from areas along the borders with Eritrea and Djibouti (Figure 1) (Sillero-Zubiri et al. 2004, Cuzin et al. 2008, Sillero-Zubiri 2009, Sillero-Zubiri and Wachter 2012). Although both species are listed as Least Concern by the IUCN, they are uncommon or rare and little-known throughout much of their ranges, and data on their distribution is often fragmentary (Sillero-Zubiri et al. 2004). This note reports new sighting records of these two species, suggesting that the ranges of both species include the entire Ethiopian part of Afar.

Methods

Observations were recorded by JH in May 2007 while on a mammal-watching trip; by VD in March 2009 while conducting a study of Nile crocodiles *Crocodylus niloticus* in the region, and by MDB in October

2013 during a mammalogical expedition. Foxes were found opportunistically during travel on foot or by vehicle, as specified below. All coordinates and elevations were determined *post hoc* from Google Earth. Distances were estimated visually.

Results

On 14 May 2007, JH saw a fox in degraded desert near the town of Meta Hara, in the area bordered by Awash National Park to the north and Lake Basaka to the west, at approximately 8°92'N, 39°92'E (Figure 1 [1]), at 960m asl, at approximately 21:00h. JH was spotlighting from a pickup truck and saw numerous bat-eared foxes *Otocyon megalotis*, a few golden jackals *Canis aureus*, and one small canid identified as Rüppell's fox based on its relatively long and slender build and a white tail tip (terminal quarter of the tail). The animal took off fast when spotted, and despite chasing it across the desert for a few minutes the observer did not get closer than 25 metres. JH had not seen this species prior to the sighting, but has since seen it several times in Tunisia and elsewhere.

On 13 March 2009, a small fox was observed by VD in a rocky desert canyon near the road between the villages of Berahile and Ahmed Eli (alternatively known as Hamdella), at 13°53'53"N, 40°06'25"E (Figure 1 [2]), at 456m asl, near 00:00h. VD was spotlighting on foot, and observed the fox as it was standing still at a distance estimated to be less than ten metres for about 20 seconds before it turned and ran away. It was identified as Rüppell's fox based on overall small size,

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gracile build, large ears, and a white tail tip. VD was very familiar with this species, having worked with captive Rüppell's foxes in Israel and observed them in the wild in Israel, Egypt, and Pakistan. The rodent Speke's pectinator *Pectinator spekei*, a likely prey species, was common at that location.



Figure 1. Map of Ethiopia showing Afar Desert (shaded), known ranges of pale fox (Sillero-Zubiri and Wachter 2012) and Rüppell's fox (Cuzin et al. 2008), and the locations of all sightings described in the text (species identifications based on sightings only). 1 – Metete Hara, 2 – Berahile, 3 – Aledoghi Wildlife Reserve, 4 – Erta'Ale Volcano, 5 – Awash National Park (southern sector).

On 18 March 2009, a small fox was observed by VD at the base of a rocky slope near Highway 18 between the town of Awash and the village of Gewane, at 10°02'00"N, 40°36'23"E (Figure 1 [3]), at 600m asl, approximately one hour after sunset. The location of the sighting is now within Aledoghi Wildlife Reserve; although it is very arid, the extensive wetlands of Awash River floodplain are just across the highway. The fox was located from the highway by its eye shine and followed on foot for approximately six minutes before it switched from walking to running and disappeared from view; the closest approach distance was estimated to be 15 metres. It was identified as pale fox based on smaller ears and dark tail tip. VD had previously seen this species once, in northwestern Ethiopia near Axum. The only potential prey observed at that location was one Somalia gerbil *Gerbillus dumni*.

On 22 October 2013 MDB saw two foxes in sandy desert at the foot of Erta'Ale Volcano at approximately 13°31'44"N, 40°30'22"E, (Figure 1 [4]), at -60m asl, at 06:45h (in daylight). They were sighted about 100 metres from a jeep, and observed with 10x42 binoculars for about five minutes. The foxes were relaxed, resting in the sand without any cover for at least 200 metres around them. They were identified as pale foxes based on their gracile appearance, black tail tips and ears of smaller size than in bat-eared fox. A field guide (Kingdon 1997) was used for identification. MDB had previous field experience with bat-eared fox, but not with pale fox. On 15 March 2009, VD conducted two hours of spotlighting on foot at roughly the same location and did not record any canids; possible prey species observed included small birds roosting on the ground, mostly desert larks *Ammomanes deserti* and black-crowned sparrow-larks *Eremopterix nigriceps*.

Lastly, on 23 October 2014 MDB saw a small fox during a night drive in shrubby desert in the southern sector of Awash National Park, at 8°54'20"N, 40°03'23"E, (Figure 1, [5]), at 1,043m asl, at 20:27h. The fox was briefly seen from a jeep as it was sitting approximately 30 metres from the road. It was identified as *Vulpes sp.* rather than a bat-eared fox (also seen that night) based on smaller ears, lighter overall

coloration, paler face, and lack of black markings on face and ears (the tail was out of sight). The fox disappeared from sight before a better view could be obtained. On 20-23 March 2009, VD conducted many hours of spotlighting on foot and by pickup truck in approximately the same area; he did not record any canids, but noted that least gerbil *Gerbillus pusillus*, a likely prey item, was very common.

Discussion

The roads leading to Erta'Ale Volcano (including the road through Berahile) and the vicinity of Awash National Park/Awash town are the only parts of Afar regularly visited by foreigners (Asteraye Tsigie-Tesfahunegn, pers. comm.). Assuming correct species identification, sightings of the two fox species from both areas therefore suggest that these two species most likely occur throughout Afar. This would mean a range extension of 250-350km for each species (Figure 1).

However, local people seem to be almost completely unfamiliar with *Vulpes* foxes. JH's driver and guide claimed not to have seen them before (Hailu and Worhenke Gebressadyk, pers. comm.), although their level of spotlighting experience is unknown. In March 2009, VD conducted informal interviews of local residents in villages and nomads' camps in the vicinity of Berahile town and Erta'Ale Volcano (both in northwestern Afar, n=7) and of park rangers in Yangoudi-Rassa and Awash National Parks (in southwestern Afar, n=3), asking them to list wild mammals of the respective areas. Colour plates in Dorst and Dandelot (1970) were used as visual aids. In northwestern Afar, only one particularly experienced local guide was familiar with *Vulpes* foxes, but reported that they were rarely seen (Hajji Hussein, pers. comm.). In Yangoudi-Rassa, both responders mentioned only jackals (*Canis sp.*), while in Awash, the respondent mentioned only jackals and bat-eared foxes.

Lack of earlier records and unfamiliarity of local residents, guides and park rangers with *Vulpes* foxes suggest that the population density is very low. It should, however, be noted that local people often lack materials to observe, let alone study, nocturnal mammals, and that very few tourists wander out of camps at night in this part of Ethiopia. Low densities of both species might be either normal for inhospitable habitats at the periphery of these species' distribution, result from very recent colonization, or be a consequence of human-caused habitat degradation. Recent range extension due to desertification has been suspected for Rüppell's fox (Sillero-Zubiri et al. 2004). If these species have recently colonized Awash area, they might be posed for a huge range extension: Awash is located at the northern entrance to the Rift Valley of Ethiopia, along which rocky arid habitats seemingly appropriate for both species stretch all the way to the deserts of northern Kenya (White 1983; also VD pers. obs.). These observations, if documented correctly, once more stress the importance of amateur mammalogists for collecting species-specific information in remote areas. With the current ecotourism increase in Ethiopia in general and specifically in Afar, it is expected that more sightings will follow.

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References

- Cuzin, F., Lenain, D.M., Jdeidi, T., Masseti, M., Nader, I., de Smet, K. and Murdoch, J. 2008. *Vulpes rueppellii*. The IUCN Red List of Threatened Species. Version 2014.3. <www.iucnredlist.org>. Downloaded on 15 January 2015.
- Dorst, J. and Dandelot, P. 1970. *A Field Guide to the Larger Mammals of Africa*. Collins, London, UK.
- Kingdon, J. 1997. *Field Guide to African Mammals*. A & C Black Publishers, London, UK.

Mengisteab, K. 2013. *The Horn of Africa*. Polity, Oxford, UK.

Sillero-Zubiri, C. 2009. Family Canidae (dogs). Pp. 352-447 in Wilson, D.E. and Mittermeier, R.A. (eds.), *Handbook of the Mammals of the World. Vol. 1. Carnivores*. Lynx Edicions, Barcelona, Spain.

Sillero-Zubiri, C., Hoffmann, M. and Macdonald, D.W. (eds.) 2004. *Canids: foxes, wolves, jackals and dogs. Status survey and conservation action plan*. IUCN/SSC Canid Specialist Group, Gland, Switzerland and Cambridge, UK.

Sillero-Zubiri, C. and Wacher, T. 2012. *Vulpes pallida*. The IUCN Red List of Threatened Species. Version 2014.3. <www.iucnredlist.org>. Downloaded on 15 January 2015.

Tiwari, J. K. and Sillero-Zubiri, C. 2004. Unidentified canid in the Danakil desert of Eritrea, Horn of Africa. *Canid News* 7.5 [online] URL: http://www.canids.org/canidnews/7/Unidentified_canid_in_horn_of_Africa.pdf.

White, F. 1983. The vegetation of Africa, a descriptive memoir to accompany the UNESCO/AETFAT/UNSO Vegetation Map of Africa (3 Plates, Northwestern Africa, Northeastern Africa, and Southern Africa, 1:5,000,000). UNESCO, Paris.

Biographical sketch

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Jon Hall is a keen amateur mammalogist and has spent the past 25 years looking for mammals around the world. He runs www.mammalwatching.com.