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First record of African wildcat (*Felis lybica cafra*) preying on a small antelope, the Damara dik-dik (*Madoqua damarensis*)

Francois Theart[1] • Kerstin Engelking[1] • Méline Klopfenstein[2] • Matthieu Müller[3] • Philipp Berg[4]

[1] Namibia University of Science and Technology, Windhoek, Namibia
[2] University of Portsmouth, Portsmouth, UK
[3] University of Konstanz, Konstanz, Germany
[4] Erongo Park, Omaruru, Namibia

Correspondence: F. Theart (francois.theart@gmail.com) and P. Berg (p.berg@cantab.net)

ABSTRACT The diet and foraging behaviour of carnivores are closely linked to their role in ecosystems. The African wildcat (*Felis lybica*) is a highly adaptable small carnivore that is widespread and common but rarely studied. The diet of this solitary felid has been reported to consist mainly of small rodents with the largest recorded prey being the springhare (*Pedetes capensis*). Here, we present the first photographic evidence of African wildcat predation on a small antelope, the Damara dik-dik (*Madoqua damarensis*). This observation expands the known prey spectrum of the species and demonstrates its behavioural flexibility in hunting small ungulate prey.

KEYWORDS African wildcat; diet; feeding habits; Namibia; predation; solitary carnivore; trophic diversity

INTRODUCTION

The African wildcat (*Felis lybica*) is a small, solitary carnivore that is highly adaptable and occurs in a wide ecological range (Skinner & Chimimba 2005). The subspecies *Felis lybica cafra* is widespread in southern Africa (Ghoddousi et al. 2022) and, in most of its range, occurs sympatrically with a whole suite of other carnivores, from small (<2 kg) to very large (>100 kg) species. The foraging behaviour and diet of carnivores, as well as the environmental conditions in which they occur, are important to understand their role in ecosystems (Roemer et al. 2009). Dietary overlap and competition between predatory species may be relevant (Caro & Stoner 2003), but has received attention primarily in the context of large predators (Hayward & Kerley 2008; West et al. 2024). The African wildcat has a broad prey spectrum and is believed to be the most common carnivore in most of its range (Skinner & Chimimba 2005). However, few studies with limited geographical coverage have been conducted on its feeding ecology and even long-term studies were based on small sample sizes (Herbst 2009; Herbst & Mills 2010). Murid rodents account for a large part of the diet, but depending on availability, a variety of other prey may be taken including reptiles, birds, and insects as well as other invertebrates (Kok & Nel 2004; Skinner & Chimimba 2005; Herbst & Mills 2010; Stadler et al. 2024). Larger mammals appear to be the exception, as only 0.2% of prey items (6 out of 2 553) in the southern Kalahari weigh over 500 g (Herbst & Mills 2010). The largest prey

documented were hare (*Lepus spp*.) and springhare (*Pedetes capensis*) (Kok & Nel 2004; Herbst & Mills 2010), with an average mass of just under 3 kg (Peinke & Brown 2003). A camera trap study reported an African wildcat that had captured a rock hyrax (*Procavia capensis*), and although adult rock hyraxes can weigh around 4 kg, the photographic evidence provided clearly showed a juvenile and hence smaller individual (Greyling et al. 2022). Skinner & Chimimba (2005) mention the identification of remains of a new-born grysbok or steenbok (*Raphicerus sp*.) in a stomach and that young of small antelopes may be taken, but that *F. lybica* was not able to take adults. The presence of sheep (*Ovis aries*) hair in stomach investigations was assumed to be a result of scavenging from sheep carcasses (Stadler et al. 2024). Although the African wildcat is primarily an active hunter and scavenging has not been documented in an extensive study in the Kgalagadi Transfrontier Park (Herbst & Mills 2010), rare cases of carrion consumption have been observed for the European wildcat (*Felis silvestris*) (Ruiz-Villar et al. 2020; Krofel et al. 2021). However, active predation of species larger than springhare and lagomorphs is generally not expected.

Here, we present the first photographic evidence of African wildcat predation on an adult of a small antelope, the Damara dik-dik (*Madoqua damarensis;* previously *M. kirkii*).

METHODS

The observation was made incidentally on 08 June 2024 at Mokuti Etosha (18.823°S, 17.066°E), air temperature was 7 °C. Mokuti Etosha is a 40 km² private reserve in north-central Namibia with typical southern savanna woodland. It borders the eastern edge of Etosha National Park (ENP), a 22 700 km² protected area that hosts a diverse community of predators and ungulates. The eastern part of ENP receives an average annual rainfall of approximately 400 to 450 mm (Turner et al. 2022). The predator–prey interaction was observed from a motor vehicle and was photographically documented by the authors. In the absence of actual measurements, information on average body sizes and mass was retrieved from the literature. No animals were captured, handled or manipulated and the article is based on purely observational data.

RESULTS AND DISCUSSION

At around midnight, an adult Damara dik-dik (*Madoqua damarensis*) emerged from a thicket, pursued by an African wildcat. The dik-dik was chased into the undergrowth beneath a small tree (*Dichrostachys cinerea*) where the wildcat pounced on the dik-dik and killed it by biting its neck (Figure 1). The wildcat subsequently started eating the dik-dik from the rump and dragged it into the bush about 10 minutes after feeding. We observed the wildcat for about 30 minutes in total. The dik-dik was alone and there was no sign of illness or injury. A wildcat had also been observed on 20 May 2024 at about 20h00 at the same location attempting to hunt a dik-dik but had been unsuccessful.

Assuming an average weight of 5 kg and 25 cm shoulder height for an African wildcat and 5 kg and 44 cm shoulder height for a Damara dik-dik (Tinley 1969; Skinner & Chimimba 2005), this represents the largest documented prey actively hunted by an African wildcat (approx. 100% of its own body weight). It is known that other solitary felids such as leopard (*Panthera pardus*) can overpower prey larger than their own body mass, although they preferentially prey upon smaller species (Hayward et al. 2006).

Damara dik-diks are small monogamous antelopes and have been studied in this area (Tinley 1969; Dujardin & Fox 1997) with few documented predation events. Tinley (1969) listed predation by leopard, caracal (*Caracal caracal*), and humans and mentioned African wildcat as a potential dik-dik predator. Dujardin and Fox (1997) reported predation by lion (*Panthera leo*), leopard, and giant eagle owl (*Ketupa lactea*). Because of their small size, dik-diks can retreat into dense undergrowth, but similarly the small African wildcat is able to follow them where larger predators cannot. Antelopes of the genus *Madoqua* do not occur in South Africa, Botswana, and Zimbabwe, where studies on *Felis lybica* diet have previously focused. This observation therefore also shows the importance of prey species presence for studying geographical differences in diet. Although research has been conducted on several carnivores in the Etosha area, the African wildcat has not received much attention (Weise et al. 2021). Herbst (2009) described that the hunting technique for mammals

Figure 1 Successful predation of a Damara dik-dik (*Madoqua damarensis*) by an African wildcat (*Felis lybica cafra*) in Namibia.

larger than 500 g comprised typical feline behaviour similar to the one observed in this case. The success rate was lower for larger prey (6 out of 16, 38%) compared to all hunting attempts (2 553 out of 3 676, 80%) during a 46-month observational study (Herbst 2009).

In 2024, Namibia experienced one of the worst droughts in 100 years (FAO 2024). Whether dik-diks become more susceptible to predation, as reported for some herbivores (Mills et al. 1995; Loveridge et al. 2006), or foraging behaviour of wildcats was altered, is unknown. While the population status of the African wildcat is assumed to be stable, large data gaps exist, and there may be some population declines due to land-use change and the risk of hybridisation with domestic cats (Ghoddousi et al. 2022). In addition, human-wildlife conflict has been reported in connection to predation on poultry (Chisaka et al. 2024) and assumed predation on sheep lambs (Stadler et al. 2024), which often results in culling or poisoning of wildcats. While preying upon poultry is expected, no evidence has been found for active predation on lambs (Stadler et al. 2024). In Namibia, human-wildlife conflict usually involves larger predators (Walters et al. 2024) but has been reported for the African wildcat in connection with small livestock farming (Küsters 2022). A suspicion of wildcat predation on goats on a Namibian farm has proven to be unfounded (Rust et al. 2016) and although this species is capable of preying on animals up to the size of dik-diks, this appears to be an exception.

CONCLUSIONS

To our knowledge, this represents the first evidence supported by a photograph of African wildcat predation on small ungulate prey. This observation expands the known prey spectrum and maximum prey size of the species. In view of the wide distribution of the African wildcat, further investigation of its diet across previously unstudied areas and the potential influence of environmental factors and seasonal variation appears appropriate.

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