Southern African Wild Cat *Felis lybica cafra*

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Namibian conservation status	Least Concern
Global IUCN status	Least Concern
Namibian range	728,200 km²
Global range	Throughout southern Africa, extending north into the south-eastern parts of Tanzania and Mozambique
Population estimate	Unknown
Population trend	Unknown
Habitat	Wide habitat tolerance. Occurs in woodlands, savanna, grasslands and semi-desert
Threats	▸ Hybridisation with domestic cat ▸ Disease transmission between free-ranging wild cats and domestic cats could affect the health and status of wild populations ▸ Habitat degradation (e.g. overgrazing, bush encroachment), and subsequent effects on rodent prey density ▸ Direct or indirect killing through predator control measures ▸ Road mortalities

DISTINGUISHING FEATURES

Southern African wild cats have varied coat coloration and markings ranging from grey to red-brown, with light to dark vertical stripes mainly on the legs and dark rings towards the tail tip (Nowell & Jackson 1996b, Pocock 1951). In Namibia some specimens have light, sandy, ground-coloured coats with brown or rufous markings, others have iron-grey coats with black or whitish markings. The back of the hind legs is black, extending from the foot pad to the elbow. Diagnostic features are the red-brown colour of the back of the ears and proportionately longer legs than domestic cats (Pocock 1951). They look very similar in size, shape and colouring to some breeds of the domestic cat. They could possibly be confused with the much smaller black-footed cat (*Felis nigripes*), however southern African wild cats have a larger body size, and have comparatively smaller ears and less distinct body spotting and striping than black-footed cats.

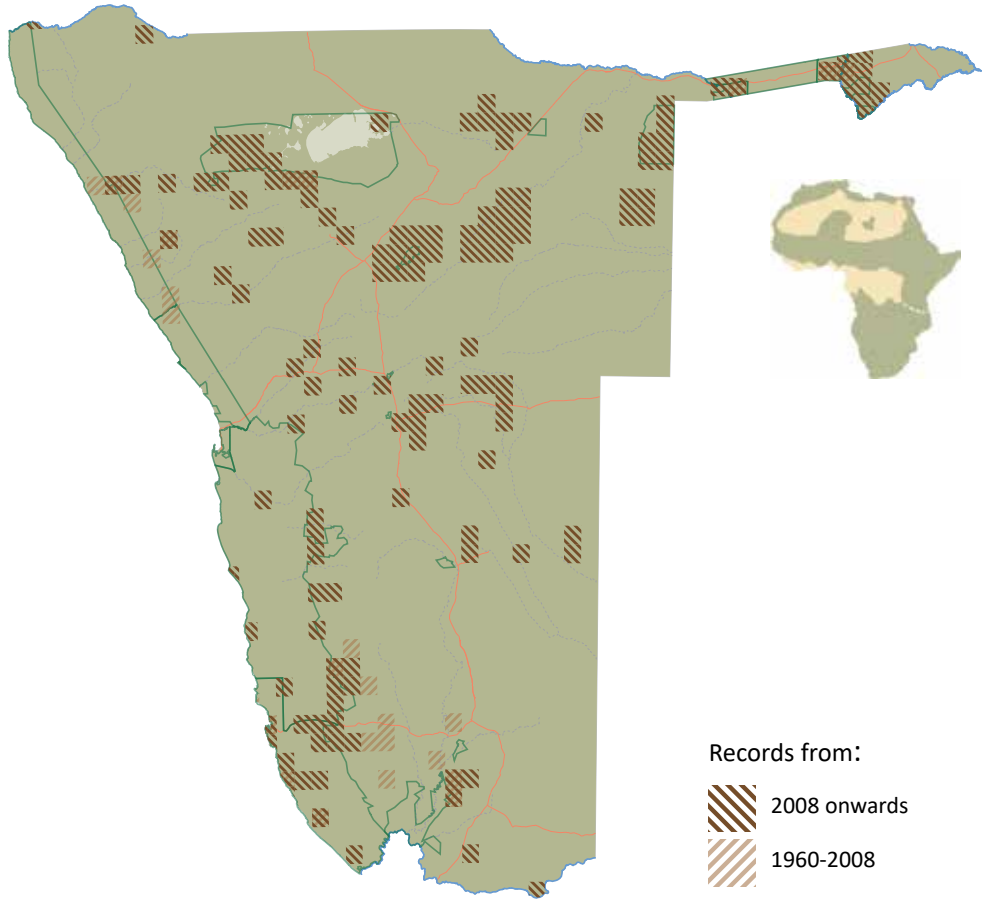
TAXONOMY AND DISTRIBUTION

There has been extensive debate about the taxonomy and relationship between the African *Felis lybica* and the European wild cat *Felis sylvestris* (Stuart *et al.* 2013), the origin of the domestic cat, and the classification and validity of their subspecies (Nowell & Jackson 1996b, Wiseman *et al.* 2000, Driscoll *et al.* 2007). The African wild cat *Felis lybica* has a very wide geographical range, occurring throughout West, East and North Africa, Middle East, central and south-west Asia into Afghanistan, Pakistan and India, China and

Distribution records of southern African wild cat, and present estimated area of distribution in Namibia.

Inset: African distribution of African wild cat according to IUCN (Yamaguchi *et al.* 2015); the rough northern limit of the southern African wild cat (*Felis lybica cafra*) is in southern Tanzania, as indicated.

The Namibian distribution in the main map is more up to date and does not necessarily agree with the distribution shown in the inset.



Mongolia (Kitchener *et al*. 2017). Numerous subspecies of *Felis lybica* have been described throughout its extensive distribution (Pocock 1951, Wozencraft 2005). In this assessment we refer to the species as the southern African wild cat *Felis lybica cafra*, one of the three subspecies of *Felis lybica* as described by Kitchener *et al*. (2017).

In Namibia, *Felis lybica cafra* occurs throughout the country, except in the driest parts of the coastal desert belt (Skinner & Smithers 1990), but they are found along ephemeral rivers in the Namib Desert. They are regarded as a common species, with a broad ecological habitat tolerance and a wide distribution range (Herbst *et al*. 2016).

Shortridge (1934) documented that southern African wild cats occur from the woodlands of the Zambezi Region to the coastal desert belt, with higher population densities in the northern and eastern sandy areas of Namibia. A survey on farmland by Joubert *et al*. (1982) noted that these were more common in the southern districts and less so in the central and northern parts of Namibia. However this survey only considered private farmland, and large communal land in the northern districts of the country was excluded.

Data from camera trap surveys throughout north-eastern Namibia confirmed the presence of southern African wild cats in the Bwabwata National Park, Nyae Nyae Conservancy and northern Khaudom National Park (Institute für Zoo und Wildtierforschung camera trap data 2018; L Hanssen pers. comm. 2018).

POPULATION ESTIMATE

In the southern Kalahari, the density of wild cats was estimated at 25 cats/100 km² (Herbst 2009). Annual home range sizes of adult females were 6.1 km²±1.1 SE while males were 9.8 km²±3.4 SE, with males overlapping with up to four different females (Herbst *et al*. 2016). Home range size is affected by prey abundance and ranges may be larger when food resources are less abundant. The home range of a female African wild cat in the Sharjah Desert in the United Arab Emirates was 52.7 km² (Phelan & Sliwa 2005), however this could represent an exception rather than the norm.

During a survey to record nocturnal wildlife in the Gondwana Canyon Park, seventeen southern African wild cats were recorded on a 302 km route covering the road network (Sliwa *et al*. 2019). The estimated density was 18 cats/100 km, representing a viable population when compared to the density of 25 cats/100 km in the southern Kalahari (Herbst 2009), described as the area with the largest subpopulation (Herbst *et al*. 2016). No other attempt

has been made to estimate the population density in Namibia.

In the western part of Namibia they probably occur at relatively low densities where they are mainly found along vegetated dry river beds or on rocky outcrops (Shortridge 1934, Skinner & Smithers 1990). On farmland and rural areas, agricultural activities may result in seasonal increased abundance of rodent prey which would favour southern African wild cats as they are known to be associated with agricultural environments (Skinner & Chimimba 2005).

ECOLOGY

Southern African wild cats have a wide habitat tolerance but need vegetation cover such as on mountainous areas, along river banks and in reed beds, or stands of tall shrubs or dense grass (Skinner & Smithers 1990). They are often associated with humans, possibly attracted by the increased food supply of rodent prey. Some individuals may willingly associate with humans, especially in remote areas where they can become semi-tame, or where they are raised from kittens (M Küsters pers. obs.). It is uncertain if these cats are pure wild cats or have hybridised with the local population of domestic cats.

They are opportunistic hunters and take a wide range of prey items. Small mammals (<500 g) constitute the main food resource (both in biomass and season), followed by birds and reptiles (Herbst 2009). Seasonal prey availability probably determines the proportion of different prey consumed (Sliwa *et al*. 2010). Distances travelled and duration of activity is longer during the cold winter months (Herbst 2009), possibly a direct result of low density prey at that time of year. They are mainly nocturnal but hunt during the day as well.

THREATS

Throughout its distribution range, the primary threat to wild cats is hybridisation with the domestic cat (Skinner & Smithers 1990, Nowell & Jackson 1996b, Herbst *et al*. 2016). However, evidence suggests that hybridisation, at least in parts of South Africa and in isolated protected areas, may not be as extensive as previously thought (Wiseman *et al*. 2000, Le Roux *et al*. 2014). This is also reported for European wild cats (Steyer *et al*. 2018). Hybridisation mainly occurs on the periphery of protected areas (Le Roux *et al*. 2014). Unfortunately due to the uncertain taxonomy of *Felis lybica*, the distribution of its subspecies and morphological similarities, it is almost impossible to distinguish pure African wild cats from tabby-like domestic cats and in particular their hybrids (Herbst 2009).

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The extent of hybridisation in Namibia is not known and warrants investigation. Due to their relatedness, southern African wild cats are vulnerable to potential pathologies infecting domestic cats, such as feline immunodeficiency virus, feline leukaemia virus, feline calcivirus and feline foamy virus (Daniels *et al*. 1999). Disease prevalence needs urgent investigation.

Habitat loss, habitat degradation and persecution, are some of the leading causes threatening wild felid populations (Sliwa *et al*. 2010). In Namibia, poor rangeland management such as overstocking can lead to habitat degradation and in turn, affect small mammal abundances and potential prey numbers. This ultimately reduces the habitat suitability for southern African wild cats outside protected areas.

On farmland with small livestock, wild cats are considered a problem animal and are often shot during night hunts (M Küsters pers. obs.). The survey by Joubert *et al*. (1982) reported a high number of southern African wild cats killed in the Keetmanshoop District through predator control measures. Current numbers of mortalities through predator control are not known. Other non-selective predator control measures, including gin traps, cage traps and hunting dogs may cause significant mortalities, especially if measures are deployed in abundance and over a large area. The extent of road mortality and its effect on local populations is not known.

CONSERVATION STATUS

The southern African wild cat is not legally protected in Namibia, or over most of its distributional range (Nowell & Jackson 1996b, Herbst *et al*. 2016). They are listed as a "wild animal" (Nature Conservation Ordinance 4 of 1974) and therefore have reduced protection status from prosecution and indirect mortality. Although common and widespread, their abundance, status and health are not known throughout their range (Herbst 2009), including in Namibia.

Internationally, the species is listed as Least Concern in the IUCN Red List, and it is in Appendix II of the CITES Convention (Yamaguchi *et al*. 2015). In South Africa it is also listed as Least Concern in the Regional Red List

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and not protected under the Threatened or Protected Species regulations (National Environmental Management: Biodiversity Act 10/2004) (Herbst *et al.* 2016).

The geographical boundaries between the neighbouring subspecies of the African wild cat *Felis lybica* are speculative (Kitchener *et al.* 2017). This taxonomic uncertainty and lack of data on genetic and molecular differences between sub-species will hamper effective conservation measures.

ACTIONS

- Secure the genetic purity of southern African wild cats and prevent genetic introgression in protected areas by strictly prohibiting and removing domestic cats within national parks and other conservation areas.

- Implement protocols (i.e. the ethical capture and eradication) for the authorities to control feral domestic cats in all national parks and protected areas.

- Investigate the extent of potential introgression, hybridisation and disease prevalence of free-ranging southern African wild cats in and around protected areas (e.g. Bwabwata and Mudumu National Park in northern Namibia and in Hardap National Park and communal conservancies in southern Namibia). In specific, studies should focus on:

  - Sampling of wild-ranging wild cats in isolated areas with low introgression risk to define the genetic profile of "pure" wild cats (e.g. Etosha National Park, Gondwana Canyon Park), and also collecting of samples for disease prevalence.

  - Sampling of wild-ranging wild cats in areas with marginal introgression risk to determine the genetic profile of such individuals and disease prevalence (e.g. Von Bach and Naute Game Parks and Hardap National Park, specific farms of recorded "tame" wild cats).

  This could possibly be implemented through the veterinary outreach programme of the UNAM School of Veterinary Medicine. This should include a national campaign or awareness programme, addressing the issues of hybridisation and disease transmission.

- Identify a study site (e.g. Gondwana Canyon Park, Sliwa *et al.* 2019) in Namibia and conduct an ecological study on southern African wild cats with similar techniques to the work by Herbst & Mills (2010) to verify and assess the status of populations in the future.

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