

Side-striped Jackal *Canis adustus*



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Namibian conservation status	Least Concern
Global IUCN status	Least Concern since 1996
Namibian range	56,000 km ² in the north-eastern part of Namibia
Global range	~11,582,700 km ² in sub-Saharan Africa
Population estimate	<4,500
Population trend	Stable
Habitat	Well-watered woodlands, relatively high rainfall areas. Absent from forests
Threats	▶ No major threats ▶ Minor threats are confusion with black-backed jackals and persecution as livestock predator, persecution for role in rabies transmission, disease outbreaks, snaring, road mortalities

IDENTIFYING FEATURES

Side-striped jackals are small- to medium-sized canids (6.5 to 14 kg), slightly larger on average than black-backed jackals, and overall grey or greyish-buff in colour with a light or off-white side stripe halfway up the flanks (Kingdon & Hoffmann 2013, Skinner & Chimimba 2005, Loveridge & Macdonald 2009). The tip of the tail is, with a few exceptions, white. Their ears are shorter and rounder than those of the black-backed jackal.

DISTRIBUTION

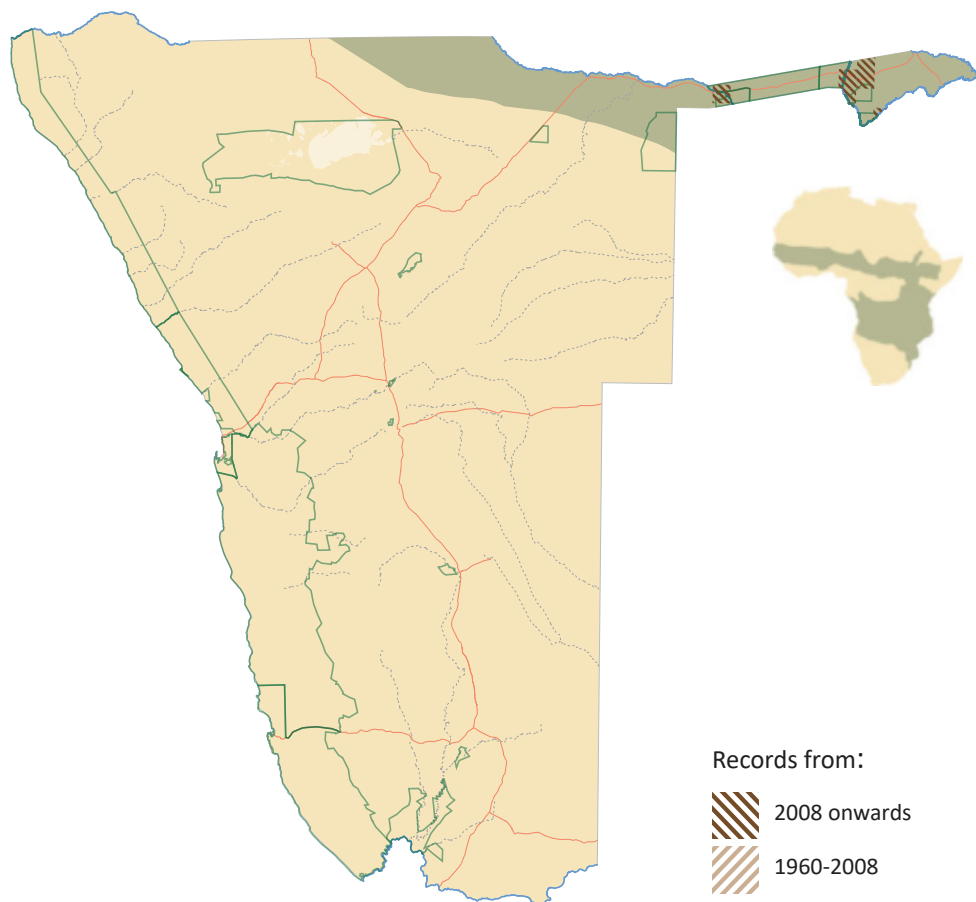
Side-striped jackals occur widely in sub-Saharan Africa but they are almost entirely replaced by the black-backed jackal in the south-west arid zone (Burnie & Wilson 2005, Skinner & Chimimba 2005, Loveridge & Macdonald 2009). They

usually occur in better watered, higher rainfall areas; within the southern African sub-region they are found in northern Botswana, throughout Zimbabwe and Mozambique, except for drier regions, and marginally in the north eastern parts of South Africa and north-eastern Namibia. During the past two decades, the South African population has expanded westwards into areas where black-backed jackals have been suppressed (Camacho *et al.* 2016). In Namibia, the side-striped jackal as a species seems almost unknown to freehold commercial farmers (Joubert & Mostert 1975). They erroneously reported its occurrence throughout the country, despite the only evidence being from the Waterberg area, possibly confusing it with black-backed jackals. Shortridge (1934) reported the side-striped jackal from the northern Otjozondjupa Region from 19°S latitude northwards, to the eastern Oshikoto and Ohangwena Regions and into the Zambezi Region. This distribution

Distribution records of side-striped jackal, and present estimated area of distribution in Namibia.

Inset: African distribution of side-striped jackal according to IUCN (Hoffmann 2014d).

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



Records from:



2008 onwards

1960-2008

was also suggested by Joubert & Mostert (1975). The current distribution seems to be similar and conforms with the latest IUCN distribution map, with side-striped jackal reported from Khaudum National Park (M Paxton pers. comm.), possibly at very low densities (L Hanssen pers. comm.), and confirmed by recent camera trap records from the Bwabwata National Park and the Zambezi Region. However, they seem to be absent from the State Forest in the northern part of the eastern Zambezi Region (L Hanssen pers. comm.). The Ministry of Environment, Forestry and Tourism also reports side-striped jackal occurrence for the Waterberg Plateau Park, but a camera trap study failed to confirm its occurrence (Stein *et al.* 2008).

POPULATION ESTIMATE AND TREND

The population size for side-striped jackal in Namibia is unknown. Historically they outnumbered black-backed jackal north-east of Grootfontein (Shortridge 1934). Two studies conducted in Zimbabwe show densities of 54–79 animals/100 km² and 20–30 animals/100 km² outside the breeding season, and almost double the number of animals during the breeding season (97–100 and 60–90 animals/100 km² respectively) (Rhodes *et al.* 1998, Loveridge & Macdonald 2009). Camacho *et al.* (2016) used a density estimate for South Africa of one breeding pair per 25 km²

within the assessment area, as suggested by Friedmann & Daly (2004). Using the same density for the IUCN's extent of occurrence within Namibia (Hoffmann 2014d), population size would be below 4,500 animals.

ECOLOGY

The side-striped jackal occurs in open woodlands and scrub, and is predominately associated with well-watered habitat (Fuller *et al.* 1989, Loveridge & Macdonald 2002). It is absent from forests and avoids open dry savanna, a habitat favoured by black-backed jackals (Skinner & Chimimba 2005, Loveridge & Macdonald 2009). Habitat used depends greatly on the absence or presence of black-backed jackals. These aggressively displace side-striped jackals from grassland, and habitat is segregated wherever they are sympatric, with the side-striped jackal using denser vegetation and the black-backed jackal using open areas (Loveridge & Macdonald 2002).

Side-striped jackals form social groups consisting of a mated pair that is stable over several years, offspring that returns during the breeding season and sometimes immigrants (Loveridge & Macdonald 2001). A litter of 3–6 pups is born in a den after a gestation period of 57–70 days (Ginsberg & Macdonald 1990). Food is regurgitated by the male and after

weaning at 10 weeks also by the female (Skinner & Smithers 1990). Cubs reach maturity at 6–8 months of age and can breed in their first year (Ginsberg & Macdonald 1990, Bingham & Purchase 2003); however, subadult mortality is high (Rhodes *et al.* 1998). Age at dispersal varies from 11 months to 2 years. Average dispersal distances in Zimbabwe were 4.6 km, but distances of up to 20 km have been recorded (Loveridge & Macdonald 2001). Side-striped jackals either disperse into a vacant territory, join unrelated groups or remain in the vicinity of their parental home range, to which they return during the breeding season to help rear the cubs (Loveridge & Macdonald 2001).

Home range sizes vary and increase during the breeding season. Sizes from 0.2 km² (breeding season 1.2 km²) in Zimbabwe to 4 km² on farmland, with a mosaic of suitable habitats, have been recorded (Rhodes *et al.* 1998, Loveridge & Macdonald 2001). Side-striped jackals are nocturnal and cover on average 10.3 km per night, walking at 1.4 km/h (Rhodes *et al.* 1998, Loveridge & Macdonald 2009).

They are omnivorous and their diet consists mainly of small mammals, reptiles, birds, insects, carrion and vegetable matter (Estes 1999) and they occasionally scavenge at kills. The side-striped jackal's diet shows strong seasonal and local variations, and in peri-urban and urban areas they are known to scavenge at rubbish dumps (Loveridge & Macdonald 2009).

THREATS

There are no major direct threats from humans in Namibia. However, side-striped jackals are sometimes confused with black-backed jackals and persecuted for killing livestock, despite little evidence for this (Shortridge 1934, Loveridge & Macdonald 2009). Snaring and road mortalities happen

on occasion. Trade is only known from East Africa and does not seem to be a threat elsewhere (Loveridge & Macdonald 2009).

Side-striped jackals are heavily persecuted for their role in rabies transmission in some countries. Also, rabid dogs in Zimbabwe transmit rabies to side-striped jackals causing epidemics, which could become a concern with growing dog populations (Rhodes *et al.* 1998, Bingham *et al.* 1999). However, they show the potential for quick population recovery due to a high turnover rate (Bingham & Purchase 2003). Their unspecialised and opportunistic behaviour and their ability to occur in peri-urban and urban areas suggests that the side-striped jackal population is only vulnerable in cases of extreme habitat modification or intense disease outbreaks (Loveridge & Macdonald 2009). Side-striped jackals may also be susceptible to a variety of other pathogens, such as canine distemper virus, or diseases such as mange, making them a potential indicator species to monitor disease that can threaten other species' populations (Alexander *et al.* 1994).

CONSERVATION STATUS

The Namibian conservation status is Least Concern. The population seems stable and their range has most probably not decreased. Griffin (2003) also listed the side-striped jackal population as secure in Namibia without known local conservation problems. Internationally, it is listed as Least Concern on the IUCN Red List (Hoffmann 2014d) and has been so since its first assessment in 1996 (Lower Risk/Least Concern). The species is not included in the CITES Appendices. However, it is the rarest of the three jackal species that occur in Africa (Ginsberg & Macdonald 1990).



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ACTIONS

The side-striped jackal occurs only marginally in Namibia. Despite its different ecology and behaviour it may be mistaken for the black-backed jackal and therefore, some similar actions are recommended.

Management

- ▶ Adjust Event Book reporting and conservancy reports to distinguish between black-backed jackal and side-striped jackal.
- ▶ Develop standard methodologies for farmers to identify the correct problem animal species in predation events.

Awareness

- ▶ An educational campaign focused on predator identification, targeted at farmers in the north of the country, could help to reduce mistaken persecution of this species.
- ▶ Promote citizen science participation in online reporting platforms, especially private camera trap owners and farmers (e.g. via NAU) and explain the importance of such data in the national and global context. It is important to record all types of data, e.g. sightings, photos, human-carnivore conflict, mortalities, carnivore signs (dens, marking posts).
- ▶ The ecological differences between side-striped jackal and black-backed jackal, the role that they play, and their benefits to land owners need to be explained and widely distributed.
- ▶ Jackals are no longer referred to as “problem species” in the draft Protected Area and Wildlife Management Bill – there are only problem individuals. This information needs to be distributed once the Act is promulgated.

Research

- ▶ There should be standardised distribution monitoring through national multi-species carnivore monitoring programmes using camera traps, questionnaires, citizen science participation and sign surveys.
- ▶ Individuals and organisations likely to have data on side-striped jackals should be directly approached, for compilation of their data.
- ▶ Westwards range expansion has been noted for this species in South Africa, and there are possible records of side-striped jackals from central and western Namibia which might indicate a similar phenomenon. This aspect deserves attention.

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