Tragelaphus strepsiceros – Greater Kudu


Andre Botha

Regional Red List status (2016)	**Least Concern**
National Red List status (2004)	Least Concern
Reasons for change	No change
Global Red List status (2016)	Least Concern
TOPS listing (NEMBA)	None
CITES listing	None
Endemic	No

Greater Kudu were classified as royal game in the Albany and Fort Beaufort districts of the Eastern Cape between 1890 and 1905 where legislation for sport hunting provided the foundation for both game reserves, commercial hunting and ecotourism in the region (Gess & Swart 2014).

Taxonomy

Tragelaphus strepsiceros (Pallas 1766)

ANIMALIA - CHORDATA - MAMMALIA - CETARTIODACTYLA - BOVIDAE - *Tragelaphus* - *strepsiceros*

Common names: Greater Kudu (English), Koedoe (Afrikaans), Ibhalabhala (Ndebele), Thôlô (Sepedi, Sesotho, Setswana), Lishongololo (Swati), Nhongo (Tsonga), Tholo, Tholo-lurango (Venda), Iqudi (Xhosa), Igogo, Igoqo, iMbodwane, Umgankla (Zulu)

Taxonomic status: Species

Taxonomic notes: Based on the number of pale transverse stripes on the body (Haltenorth 1963), four African subspecies of *Tragelaphus strepsiceros* have been recorded (Ansell 1972); although only *T. s. strepsiceros* is present in southern Africa (Skinner & Chimimba 2005).

Assessment Rationale

This species remains Least Concern as it is widespread and abundant within the assessment region, occurring in numerous protected areas across its range. There is an estimated mature population size of 63,708–67,383 animals (2013–2015 counts) across the country, with the majority of the population occurring on private land. The largest subpopulation is in Kruger National Park (KNP) with an estimated 8,239–13,490 animals (2012 count). Using a sample of 23 formally protected areas across its range with adequate long-term data, the population has increased by 72–81% over three generations (1990–2015). Similar increases are inferred on private lands. The high numbers of this species on private land reflect its value as one of Africa's major trophy animals and it should continue to be utilised sustainably as part of the green economy. The wildlife industry is thus important for ensuring the continued existence of large numbers of Greater Kudu on private land. However, care should be taken to not establish further extra-limital subpopulations to prevent competition with local browsers. There are no major threats to this species and thus no immediate conservation interventions are necessary.

Regional population effects: There is presumably dispersal along the northern border of South Africa between Botswana, Zimbabwe and Mozambique through the Mapungubwe and Great Limpopo Transfrontier areas and northeastern KwaZulu-Natal.

Distribution

Historically, the Greater Kudu occurred over much of eastern and southern Africa, from Chad nearly to the Red Sea, south to the Eastern Cape, west to Namibia and north to mid-Angola (IUCN SSC Antelope Specialist Group 2016). While it has disappeared from substantial areas, mainly in the north of its range, it generally persists in a greater part of its former range than other large antelope species, as a result of its secretiveness and its ability to survive in settled areas with sufficient cover (IUCN SSC Antelope Specialist Group 2016).

Within the assessment region, it historically occurred in the Northern Cape, northeastern KwaZulu-Natal, North West, Limpopo, Mpumalanga and Gauteng provinces, with an isolated subpopulation in the Eastern Cape and scattered subpopulations in the Free State (Owen-Smith 2013). They currently occur in all provinces and Swaziland but are absent from Lesotho. They have remained fairly common throughout most of their range, even on ranchlands and close to settlements (Owen-Smith 2013). The expansion of wildlife ranching across the country is helping to increase the area of occupancy for the species, both inside and outside of the natural distribution. Natural range expansion, perhaps due to climate change, may also be occurring (Power 2014). While most kudu occur on private game farms and in protected areas, they also occur in free-roaming herds in the bushveld regions (Power 2014).

Population

Throughout Africa, East (1999) estimated a total population of around 482,000 Greater Kudu with the

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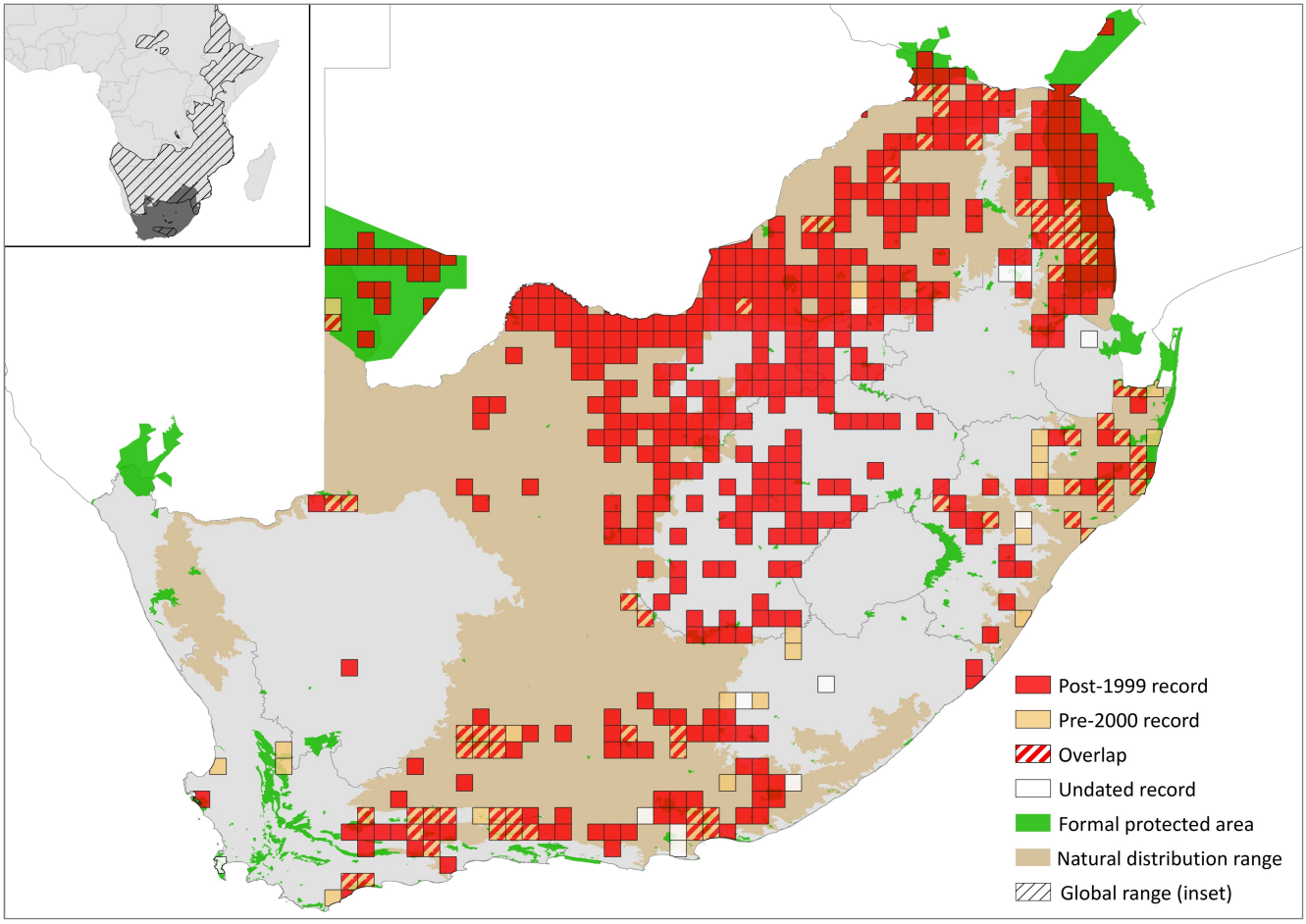

Figure 1. Distribution records for Greater Kudu (*Tragelaphus strepsiceros*) within the assessment region

Table 1. Countries of occurrence within southern Africa

Country	Presence	Origin
Botswana	Extant	Native
Lesotho	Absent	-
Mozambique	Extant	Native
Namibia	Extant	Native
South Africa	Extant	Native
Swaziland	Extant	Native
Zimbabwe	Extant	Native

largest populations found in Namibia and South Africa, where the species remains widely abundant on private farmland. Within the assessment region, there are estimated to be at least 25,794–31,045 animals on formally protected areas (68 areas; 2013–2015 counts) and an additional 65,217 animals on private game farms and ranches (740 properties; 2013–2014 counts) across the country; which yields an estimated current total of at least 91,011–96,262 animals in the assessment region. If we assume that 70% of these are mature individuals this yields a mature population size of 63,708–67,383 animals. KNP is the largest subpopulation, with an estimated 8,239–13,490 animals in 2012 (using distance sampling transects) (Ferreira et al. 2013).

Generation length is estimated to be 6.2–8.5 years (Pacifici et al. 2013; IUCN SSC Antelope Specialist Group 2016), which corresponds to a 18–25 year three generation period (1990/1996–2015). Limited subpopulation data are available over this period, but using a sample of 23 formally protected areas across the range of the species, there has been an estimated 72–81% increase in the population over three generations (4,324–7,812 animals). We assume that similar increases have occurred on private lands. The number of free-roaming herds outside game farms or protected areas may have also increased since the 1990s (Power 2014). Throughout Africa, population trends are generally increasing in protected areas and on private land and decreasing elsewhere (IUCN SSC Antelope Specialist Group 2016).

Population densities estimated from aerial surveys are frequently less than 10 animals / 100 km^2, even in areas where this species is known to be at least reasonably common (IUCN SSC Antelope Specialist Group 2016). Higher densities of 20–40 animals / 100 km^2 have been estimated by aerial surveys in some other areas (IUCN SSC Antelope Specialist Group 2016). In general, aerial surveys underestimate Greater Kudu density as the species inhabits thicket areas. For example, ground counts in areas where the Greater Kudu is common have produced population density estimates from 30 animals / 100 km^2 to 410 animals / 100 km^2 (East 1999). Thus, estimating density and abundance of this species with distance sampling through line transects of pellet groups may be more accurate than aerial counts (Ellis & Bernard 2005), as estimates of abundance were two to three times greater than helicopter counts.

Current population trend: Increasing

Continuing decline in mature individuals: No

Table 2. Use and trade summary for the Greater Kudu (*Tragelaphus strepsiceros*)

Category	Applicable?	Rationale	Proportion of total harvest	Trend
Subsistence use	Yes	Bushmeat poaching, biltong hunting	Minority	Unknown, but possibly increasing
Commercial use	Yes	Trophy hunting, live animal sales	Majority	Increasing
Harvest from wild population	Yes	Trophy hunting, live animal sales, bushmeat poaching	Minority	-
Harvest from ranched population	Yes	Trophy hunting, live animal sales	Majority	-
Harvest from captive population	Unknown	-	-	-

Number of mature individuals in population: 63,708–67,383

Number of mature individuals in largest subpopulation: 5,767–9,443 (KNP)

Number of subpopulations: *c.* 808, of which 68 occur on formally protected areas.

Severely fragmented: No. It is a browser found mainly in savannah woodlands and is difficult to contain within livestock fenced areas.

Habitats and Ecology

Preferred habitat includes mixed scrub woodland (O'Kane et al. 2013), Acacia, and Mopane bush on lowlands, hills, and mountains. It is one of the few large mammals that can exist in settled areas, such as in the scrub woodland and bush that reclaims abandoned fields and degraded pastures (IUCN SSC Antelope Specialist Group 2016). They are browsers and can exist for long periods without drinking, obtaining sufficient moisture from their food, but become water dependent at times when the vegetation is very dry (Valeix et al. 2011; Owen-Smith 2013). In Limpopo, Mopane (*Colophospermum mopane*) leaves contributed most significantly (47% of intake) in the dry season (Makhado et al. 2016). Overlap in resource use with other browsers has been reported, and it might be higher in areas where kudu are synoptic with similar sized species such as Nyala (du Toit 1990; O'Kane et al. 2011). However, kudu have been observed forage mainly on branch ends while Nyala forage mainly on shoots and mature leaves. This species has been introduced into many extra-limital areas, including areas of Texas, USA where it may compete with native White-tailed Deer (*Odocoileus virginianus*) for browse forage (Gray et al. 2007). The home range of a typical kudu herd ranges from 7.9–24 km^2 (Owen-Smith 1979; du Toit 1990).

Ecosystem and cultural services: Key species for the sustainable, wildlife-based economy.

Use and Trade

The Greater Kudu is much sought after by hunters, both for the magnificent horns of bulls and more generally for their high-quality meat (Owen-Smith 2013). They are one of the most commonly hunted species in southern Africa, and generate the highest proportion (13.2%) of hunting income in South Africa (Patterson & Khosa 2005). Greater Kudu are also a favoured game-ranching species, because as browsers they do not compete with domestic livestock (Owen-Smith 2013). The percentage of animals in offtake from ranching versus wild is not known. It also has subsistence value (both recreational and illegal bushmeat). Wildlife ranching and the private sector have thus generally had a positive effect on this species as it has been widely reintroduced onto private properties within its natural distribution.

Threats

The Greater Kudu remains abundant and well managed in most parts of its range within the assessment region. There are no major identified threats. However, competition for resources from livestock ranching and bushmeat poaching could lead to localised declines. Farmers have also expressed concern about illegal poaching of this species from the roads (Power 2014), and numbers are unusually low in certain tribal areas where they were expected to be common (Buijs 2010). Additionally, kudu were one of the most poached species in Borakalalo National Park, North West Province (Nel 2015). However, this does not seem to be affecting the species' overall long-term survival as they seem to be quite resilient to hunting pressure and remain abundant and well managed in other parts of its range (IUCN SSC Antelope Specialist Group 2016). In the North West Province, kudu have been regarded as a problem species by a small number of farmers owing to crop raiding (Power 2014). While hybridisation between the Greater Kudu and the Lesser Kudu (*Tragelaphus imberbis*) has not been recorded, hybridisation between Greater Kudu and

Table 3. Possible net effects of wildlife ranching on the Greater Kudu (*Tragelaphus strepsiceros*) and subsequent management recommendations

Net effect	Positive
Data quality	Inferred
Rationale	Wildlife ranching has reintroduced this species widely across the country.
Management recommendation	Create conservancies large enough to encompass the natural home range size of herds.

Table 4. Threats to the Greater Kudu (*Tragelaphus strepsiceros*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Rank	Threat description	Evidence in the	Data quality	Scale of	Current trend
1	*5.1.1 Hunting & Collecting Terrestrial Animals:* bushmeat poaching.	Nel 2015	Empirical	Local	Unknown but possibly increasing
2	*2.1.2 Annual & Perennial Non-timber Crops:* habitat loss and degradation through livestock ranching. Current stresses *1.1 Ecosystem Conversion* and *1.2. Ecosystem Degradation.*	-	Anecdotal	-	Unknown

Nyala can occur (Dalton et al. 2014). However, hybrid animals are considered to be sterile (Dalton et al. 2014); and thus this is not a serious threat. The species is susceptible to rabies infection and there have been reports of losses of 30–70% of total populations, leading to important economic repercussions (Scott et al. n.d.). However, no rabies cycles have yet been reported for South Africa.

Current habitat trend: Stable.

Conservation

Greater Kudu are well represented in protected areas. It also occurs widely outside protected areas, including large numbers on private farms and conservancies in southern Africa (Namibia, Zimbabwe and South Africa), where it is a mainstay of the trophy hunting industry. The species remains widely abundant on private farmland in South Africa and seem to be expanding their distribution outside protected areas. For example, within the North West Province in 2010, there were an estimated 1,771 individuals on provincial protected areas and 13,789 individuals on private lands in the province (Power 2014). No major conservation interventions are necessary for this species. However, ongoing harvest and trade management is necessary to ensure the sustainability of offtake on small ranchlands and protected areas. Internal fences should be removed to form conservancies and allow greater available space for the species.

Recommendations for land managers and practitioners:

- Landowners should continue to form conservancies to sustain wild and free-roaming herds.

Research priorities:

- Effects of wildlife ranching on this species.
- Niche overlap and competition with other browsers.
- Population and harvest level trends, especially on private land.
- Potential of inbreeding with Lesser Kudu.

Encouraged citizen actions:

- Report sightings of free-roaming individuals outside private lands or protected areas on virtual museum platforms (for example, iSpot and MammalMAP).

Data Sources and Quality

Table 6. Information and interpretation qualifiers for the Greater Kudu (*Tragelaphus strepsiceros*) assessment

Data sources	Field study (unpublished)
Data quality (max)	Estimated
Data quality (min)	Estimated
Uncertainty resolution	Best-estimate
Risk tolerance	Evidentiary

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Table 5. Conservation interventions for the Greater Kudu (*Tragelaphus strepsiceros*) ranked in order of effectiveness with corresponding evidence (based on IUCN action categories, with regional context)

Rank	Intervention description	Evidence in the scientific literature	Data quality	Scale of evidence	Demonstrated impact	Current conservation projects
1	*2.1 Site/Area Management:* drop internal fences to form conservancies.	-	Anecdotal	-	-	-
2	*3.1.1 Harvest Management:* ensure that offtakes are sustainable on ranchlands.	-	Anecdotal	-	-	-

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Details of the methods used to make this assessment can be found in *Mammal Red List 2016: Introduction and Methodology.*