Aepyceros melampus melampus – Common Impala

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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

Hybridisation of the Common Impala with the more restricted Black-faced Impala (*A. m. petersi*) is hypothesised to be the major threat to this subspecies within the assessment region, although more evidence is required.

Taxonomy

Aepyceros melampus melampus (Lichtenstein 1812)

ANIMALIA - CHORDATA - MAMMALIA - CETARTIODACTYLA - BOVIDAE - *Aepyceros* - *melampus* - *melampus*

Common names: Common Impala, Impala (English), Rooibok (Afrikaans), Mhara (Shona), Phala (Sotho,Tswana, Venda), Impala (Zulu)

Taxonomic status: Subspecies

Taxonomic notes: Two subspecies are recognised, supported by molecular data (Nersting & Arctander 2001; Lorenzen et al. 2006): the Common Impala (*A. m. melampus*) and the Black-faced Impala (*A. m. petersi*). While there is no genetic structuring of Impala in East and southern Africa, microsatellite analysis does suggest some degree of isolation along the east-south gradient, which results in some distinct genetic clades, particularly in northern Kenya (Lorenzen et al. 2006, 2012).

Assessment Rationale

This species is widespread, common and abundant in numerous protected areas within the assessment region. There are well over 10,000 mature individuals (an estimated 158,220–228,012 individuals in 2012 in Kruger National Park alone), and nearly all (if not all) subpopulations are stable or increasing to the extent that large-scale culls are necessary for many areas, which may form the foundation of a sustainable wildlife-based economy in these areas if managed properly. Similarly, the global population is estimated at almost 2 million, of which about 50% are on private land (stable or increasing) and 25% in protected areas (stable). There are no immediate threats to this species, although artificial selection for desired colour traits and/or deliberate hybridisation with Black-faced Impala (*A. m. petersi*) may compromise the integrity of the wild population if these subpopulations are used in translocations or to establish new subpopulations. However, its future is secure as long as it continues to occur in large, adequately protected populations.

Regional population effects: The species range is generally continuous through East and southern Africa, with only the Black-faced Impala being isolated from these former populations. There is likely to be movement within extensive wildlife regions to facilitate genetic mixing and there is the potential for dispersal across transfrontier boundaries.

Distribution

The Common Impala's current distribution range remains largely unchanged from their historical range. The species is native to Angola, Botswana, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. It has become locally extinct in parts of Uganda, now only occurring in southwest Uganda in the Lake Mburo National Park (Averbeck 2002), and has been extirpated from Burundi, but has also been introduced to Gabon (East 1999; Fritz & Bourgarel 2013). Although the Common Impala occurs widely in southern and East Africa, from central and southern Kenya to northern KwaZulu-Natal, west to Namibia and southern Angola, the Black-faced Impala (*A. m. petersi*) is naturally confined to the Kaokoland in the northwest parts of Namibia, and neighbouring southwestern Angola (Lorenzen et al. 2006). To guard against its extinction, Black-faced Impala were translocated to southwestern Etosha on the edge of the historic Black-faced Impala range (Green & Rothstein 1998). Today, this subspecies occurs between the Otjimborombonga area (*c.* 12°45'E) and Swartbooisdrift on the Cunene River, southward to the Kaoko Otavi area in the southwestern part of Etosha National Park, and the Kamanjab District just south of the Park (Fritz & Bourgarel 2013). There is no information on the current status of this subspecies in Angola.

Common Impala have been introduced to numerous privately-owned game ranches and small reserves
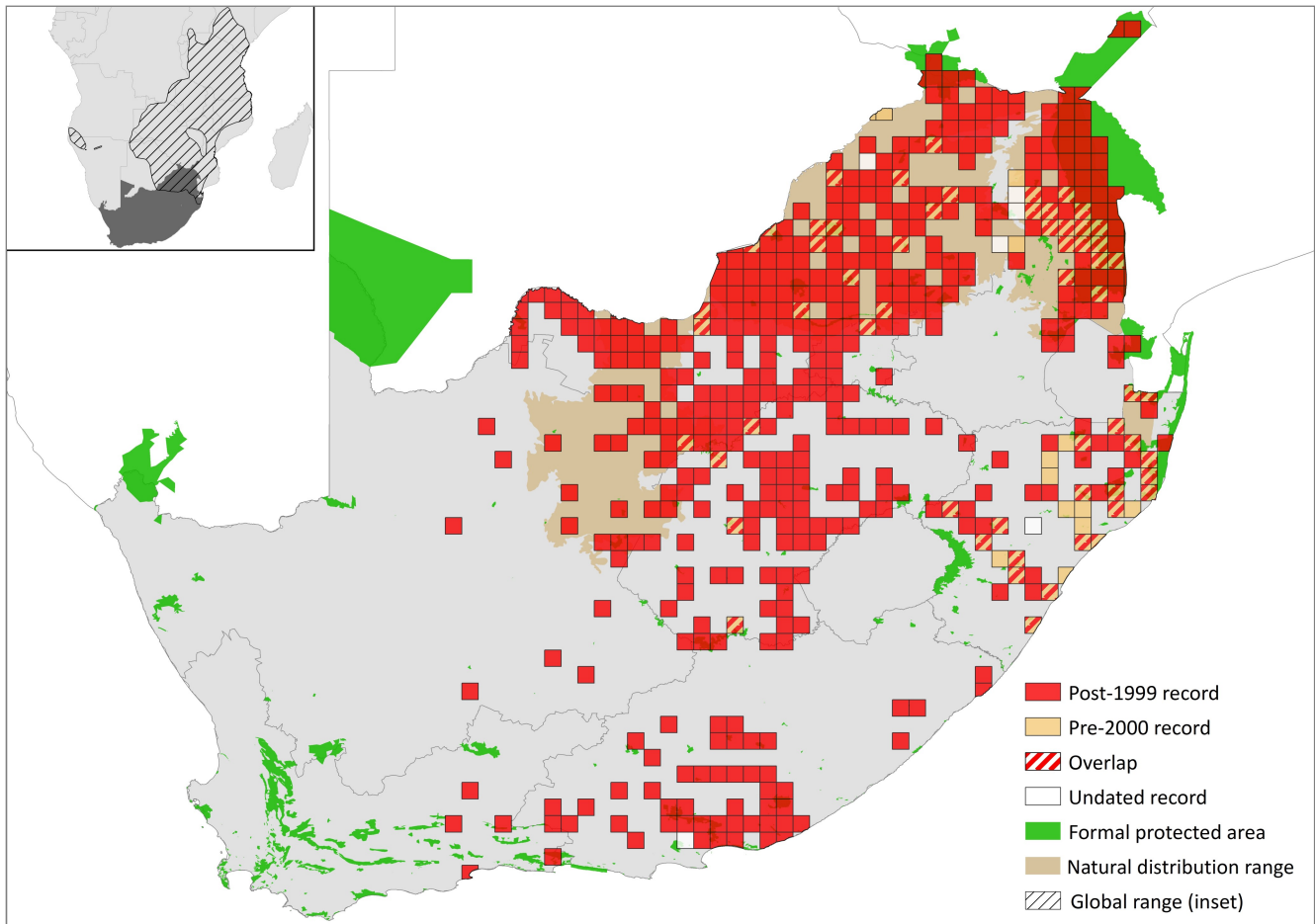
Figure 1. Distribution records for Common Impala (*Aepyceros melampus melampus*) within the assessment region

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

throughout southern Africa. Within the assessment region, this species now occurs in all provinces, although it is extra-limital within the Western, Northern and Eastern Cape provinces as well as the western regions of the North West Province (Figure 1) (Castley et al. 2001), and was also introduced into the Hluhluwe-iMfolozi Park in KwaZulu-Natal. Common Impala were introduced into the Tussen-die-Riviere Nature Reserve (Plug & Badenhorst 2001) in the Free State Province, mainly for hunting purposes (Watson 2006). Black-faced Impala have been introduced into South Africa for wildlife ranching and hunting purposes (G. Castley unpubl. data).

Population

Population estimates are available for most of the Common Impala's current range. East (1999) estimated the total numbers of Common Impala at ~ 2 million.

Although accurate estimates are not available, the subspecies is considered very common in the assessment region and occurs in almost all of the protected areas. For example, it is estimated that 158,220–228,012 individuals occur within the Kruger National Park alone (2012 distance sampling estimate) and the subpopulation is increasing (Ferreira et al. 2013). The species further occurs on several private game ranches throughout the assessment region. There are > 100 subpopulations within the assessment region. The only real isolation is between the KwaZulu-Natal subpopulations and those in the Lowveld (Mpumalanga, Limpopo) areas. Subpopulations are also fragmented by fencing but the constant trade in live animals of this species ensures gene flow is maintained. However, artificial selection for desired colour traits and/or deliberate hybridisation with Black-faced Impala (*A. m. petersi*) does pose a threat (see Use and Trade below).

Current population trend: Increasing

Continuing decline in mature individuals: No

Number of mature individuals in population: Unknown but > 10,000.

Number of mature individuals in largest subpopulation: 158,220–228,012

Number of subpopulations: > 100

Severely fragmented: Uncertain. Restricted by fences over most of their range but frequently traded at game auctions.

Table 2. Use and trade summary for the Common Impala (*Aepyceros melampus melampus*)

Category	Applicable?	Rationale	Proportion of total harvest	Trend
Subsistence use	Yes	Species is used locally as a meat source.	50%	Increasing
Commercial use	Yes	Used nationally and internationally for meat, live sales and trophy hunts.	50%	Increasing
Harvest from wild population	Yes	Species is harvested for meat, trophy hunts and live sales.	30%	Stable
Harvest from ranched population	Yes	Extensive ranching occurs. Harvested for meat, trophy hunts and live sales. Small proportion of subpopulations harvested sustainably as part of hunting packages or to control herbivore numbers.	60%	Stable
Harvest from captive population	Yes	Species is intensively bred for colour variants and sold to other breeders.	10%	Increasing

Habitats and Ecology

While the natural range of the subspecies comprises predominantly savannah communities, the Common Impala is a generalist and adapts well to other vegetation types. This has contributed to its success as a wildlife ranching species. While this may improve the survival of Common Impala in a variety of habitats, it may also be difficult to remove the species once it has been introduced to these areas if retaining natural species composition is a management objective. The Common Impala is an edge (ecotone) species which throughout its distribution range is associated with woodland which, preferring light woodland with little undergrowth and grassland of low to medium height. While the subspecies generally avoids open grassland and floodplains, it occurs on the ecotone between the two and will graze on open grassland with a flush of fresh green grass. It is absent from montane areas. Cover and the availability of surface water are essential habitat requirements.

Ecosystem and cultural services: The Common Impala is one of the most common antelope within the assessment region and could become the keystone species for a sustainable wildlife-based rural economy and low-carbon food supply. This venison market economy would be determined by sustainable harvest of populations within the assessment region but would still require further investigation to determine specific sustainable yields and associated benefits to local communities and the wildlife industry. Suggestions of how such wildlife driven systems might support both subsistence and commercial ventures are not known (Féron 1995). However, while the commercial farming of certain wildlife species can deliver economic benefits to rural communities it is important to consider the broader implications of such management objectives, particularly in relation to population demographics and impacts on vegetation communities (Gordon et al. 2004). Common Impala have previously been the focus of game cropping initiatives in Kenya and Zambia, although these were generally small-scale operations (Ntiamoa-Baidu 1997). More recently, Averbeck (2002) assessed the potential of cropping and safari hunting of Common Impala in Uganda, and concluded that cropping was not feasible given current levels of poaching and the required investment. Should the wildlife industry contemplate the intensive farming of Common Impala to facilitate sustainable cropping it will also be necessary to consider health regulations associated with human consumption (Ramrajh 2012) as well as the condition and welfare of the animals. Lewis *et al*. (1997) concluded that night cropping of wild impala was a satisfactory method to harvest Common Impala and resulted in better meat quality when compared to diurnal (Kritzinger et al. 2004). Wildlife health risks may compromise the success of cropping operations as Ezenwa (2004) has shown that parasite infection rates in Common Impala are higher in small reserves, as well as those with a high diversity of other bovids.

Use and Trade

The trade in this species is local subsistence and local, national and international commercial trade in meat, live sales and trophy hunts. There is no anticipated negative effect on the population. Trade has had a positive effect through the reintroduction of the species into former parts of its range. Even though it is not a high-value species in the ecotourism industry, it is still utilised within this sector. However, where this subspecies has been introduced into areas beyond its natural range, it can subsequently prove difficult to remove, resulting in possible competition with other species and may ultimately become a threat to the indigenous fauna in these areas.

Table 3. Possible net effects of wildlife ranching on the Common Impala (*Aepyceros melampus melampus*) and subsequent management recommendations

Net effect	Positive
Data quality	Estimated
Rationale	Although a popular game farm species, ranchers may be selectively breeding the species.
Management recommendation	No specific management interventions are required.

Table 4. Threats to the Common Impala (*Aepyceros melampus melampus*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Rank	Threat description	Evidence in the scientific literature	Data quality	Scale of study	Current trend
1	*8.1.2 Invasive Non-Native/Alien Species/Diseases*: intensively managed farms introducing exotic Black-faced Impala. Current stress *2.3.1 Hybridisation*.	Lorenzen & Siegismund 2004	Empirical	Local	Possibly increasing
2	*5.1.1 Hunting & Collecting Terrestrial Animals*: expanding human settlements leads to increase in bushmeat poaching.	-	Anecdotal	-	Possibly increasing
3	*2.3.2 Small-holder Grazing, Ranching or Farming*: increased number of intensively managed subpopulations. Current stress *2.3.5 Inbreeding*: by selecting for colour variants.	-	Anecdotal	-	Possibly increasing

Threats

There are currently no major threats to the species. However, private landowners within the assessment region may be hybridising Common Impala with Black-faced Impala, which would compromise the genetic integrity of the Common Impala population. This has been identified as a severe threat to the Black-faced Impala (Green & Rothstein 1998). However, there was no evidence of natural hybridisation between Black-faced Impala and introduced Common Impala in Etosha National Park, Namibia (Lorenzen & Siegismund 2004). Similarly, selected breeding for colour variants by game ranchers may pose a threat to the genetic diversity of the Common Impala population though increased rates of inbreeding. Such threats should be quantified and monitored. Expanding human settlements, especially along protected area boundaries (Wittemyer et al. 2008), or around conservancies and game farms, may also result in increased poaching of the Common Impala within the assessment region (Lindsey et al. 2013).

Current habitat trend: Increasing. Game ranching continues to increase the area of occupancy and habitat quality for this generalist species. However, its presence may also ultimately pose a threat to populations of other native wildlife that are unable to compete with this habitat generalist.

Conservation

The Common Impala is one of the most abundant antelopes in Africa, with about a quarter of the population occurring in protected areas. Its future is secure as long as it continues to occur in large, adequately protected and managed populations in protected areas and private farms and conservancies. Landowners should continue to form conservancies to sustain wild and free-roaming herds and to share the economic and cultural benefits of this species with local communities. However, regulation of translocation is required to prevent inbreeding and hybridisation with the extra-limital Black-faced Impala and to prevent Common Impala causing habitat degradation outside of its natural range. Similarly, reintroduction efforts should consider whether it is within the natural range of the subspecies (Figure 1) and should reintroduce a suitable founder size. For example, the success of Black-faced Impala translocations was heavily influenced by the size of the founder population as well as the presence of predators in the recipient area (Matson et al. 2004). Reintroductions should follow the IUCN guidelines (IUCN SSC 2013).

Recommendations for land managers and practitioners:

- Sustainable utilisation of the Common Impala should be a priority for private landowners and communities who want to galvanise a wildlife-based economy. Conservationists should provide incentives for landowners to provide affordable, low-carbon protein to local communities and to create conservancies where the benefits of this subspecies are shared.

- An important consideration for wildlife managers is the possible role that Common Impala may play in propagating foot and mouth disease in other wildlife and domestic livestock populations. Impala are known carriers of foot and mouth disease and have transmitted the disease to cattle in the past (Vosloo et al. 2006). Consequently, control measures may need to be put in place in situations where wildlife and livestock may interact (Vosloo et al. 2009), or where Common Impala are sourced from potential foot and mouth disease areas for reintroduction to other areas.

- There are no requirements for future supplementation from captive stocks, and captive breeding for conservation is not recommended.

Research priorities:

- The extent of artificial selection and hybridisation within the wildlife ranching industry.

Table 5. Conservation interventions for the Common Impala (*Aepyceros melampus melampus*) 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	*5.2 Policies & Regulations*: prevention of hybridisation, inbreeding and extra-limital introduction through translocation regulation at provincial and national level.	-	Anecdotal	-	-	None

- Detailed information related to the trends in Common Impala populations within private reserves.
- The feasibility of this species as an alternative and sustainable source of protein in rural communities.
- Methods of creating wildlife-based economies from this species and its efficacy as a source of protein for local communities.
- More robust harvesting models are required that will help managers calculate off-take rates that will ensure sustainable populations. Currently no research is being conducted on such models.
- Evaluation of this species' impact on the environment where it has been introduced/or applications to introduce it are pending approval.

Encouraged citizen actions:

- Raising awareness among the hunting community of the risks to wildlife populations from proliferation of selectively-bred colour variants.

Data Sources and Quality

Table 6. Information and interpretation qualifiers for the Common Impala (*Aepyceros melampus melampus*) 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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Details of the methods used to make this assessment can be found in *Mammal Red List 2016: Introduction and Methodology.*

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