Bathyergus suillus – Cape Dune Mole-rat


Heike Lutermann

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	Yes

In the 1660s, van Riebeeck, commenting on the region near the Berg River, said that the region was the kingdom of moles, for it was so undermined that one was forced to follow the rhinoceros trails to avoid sinking knee deep in the sand (Skead 2011).

Taxonomy

Bathyergus suillus (Schreber 1782)

ANIMALIA - CHORDATA - MAMMALIA - RODENTIA - BATHYERGIDAE - *Bathyergus* - *suillus*

Synonyms: *Bathyergus africana, Bathyergus suillus intermedius, Bathyergus maritimus*

Common names: Cape Dune Mole-rat, Cape Dune Blesmol (English), Kaapse Duinmol (Afrikaans)

Taxonomic status: Species

Taxonomic notes: Contrasting with previous research, a recent study (Visser et al. 2014) revealed that *B. suillus* is paraphyletic with regards to its sister species (*B. janetta*). Resultantly, this study recommends a systematic revision of the genus *Bathyergus*.

Assessment Rationale

Although it has a limited distribution, the Cape Dune Mole-rat is listed as Least Concern because it is common within its range and survives successfully within environments modified by humans, such as agricultural areas. In some areas it is considered locally abundant and even a pest. There are no major threats to this species.

Distribution

Endemic to South Africa, this species ranges along the coast of the Western Cape from Knysna to Lamberts Bay and Klawer (Figure 1). Additionally, this species is present in the Northern Cape near Groenrivier (Figure 1), having been recorded from Rondawel (Monadjem et al. 2015), where it occurs sympatrically with *B. janetta* (Faulkes et al. 2004). Where sand is more consolidated, it may occur sympatrically with *Georychus capensis* and/or *Cryptomys hottentotus*. Their range extends inland approximately 80 km from South Africa's western coastline. Generally, this species occurs at altitudes below 300 m asl, and its range is discontinuous along South Africa's West Coast, fragmented by mountains and rivers (Visser et al. 2014).

Population

This species can be locally abundant. Density has been recorded as 0.9 animal / ha in coastal fynbos (Davies & Jarvis 1986); within grassland habitats, densities have been recorded to reach over 300 animals / ha (J.U.M. Jarvis unpubl. data). It has a generation length of two years. Visser et al. (2014) found three major lineages across the species' distribution with the sister species, *B. janetta*, regarded as paraphyletic with respect to this species. These lineages pertain to the West Coast, Struisbaai and Sedgefield areas, evidently separated by the Hottentots Holland Mountains and the Breede River, which act as phylogeographic disruptors. Importantly, however, every studied population (10 in total) was genetically unique in both their mitochondrial and nuclear DNA. It therefore seems that populations greater than 30 km apart may be considered as subpopulations due to a lack of gene-flow between them. Additionally, Visser et al. (2014) also found populations to be demographically stable or even expanding, with limited evidence of inbreeding.

Current population trend: Stable

Continuing decline in mature individuals: No

Number of mature individuals in population: Unknown

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: At least 10

Severely fragmented: No

Habitats and Ecology

Cape Dune Mole-rats are subterranean and occur in loose sandy and loamy soils along South Africa's southern and western coasts, and in alluvial sandy soils in riverine habitats. This species is one of few mammals considered endemic to the Cape Floristic region of southwestern

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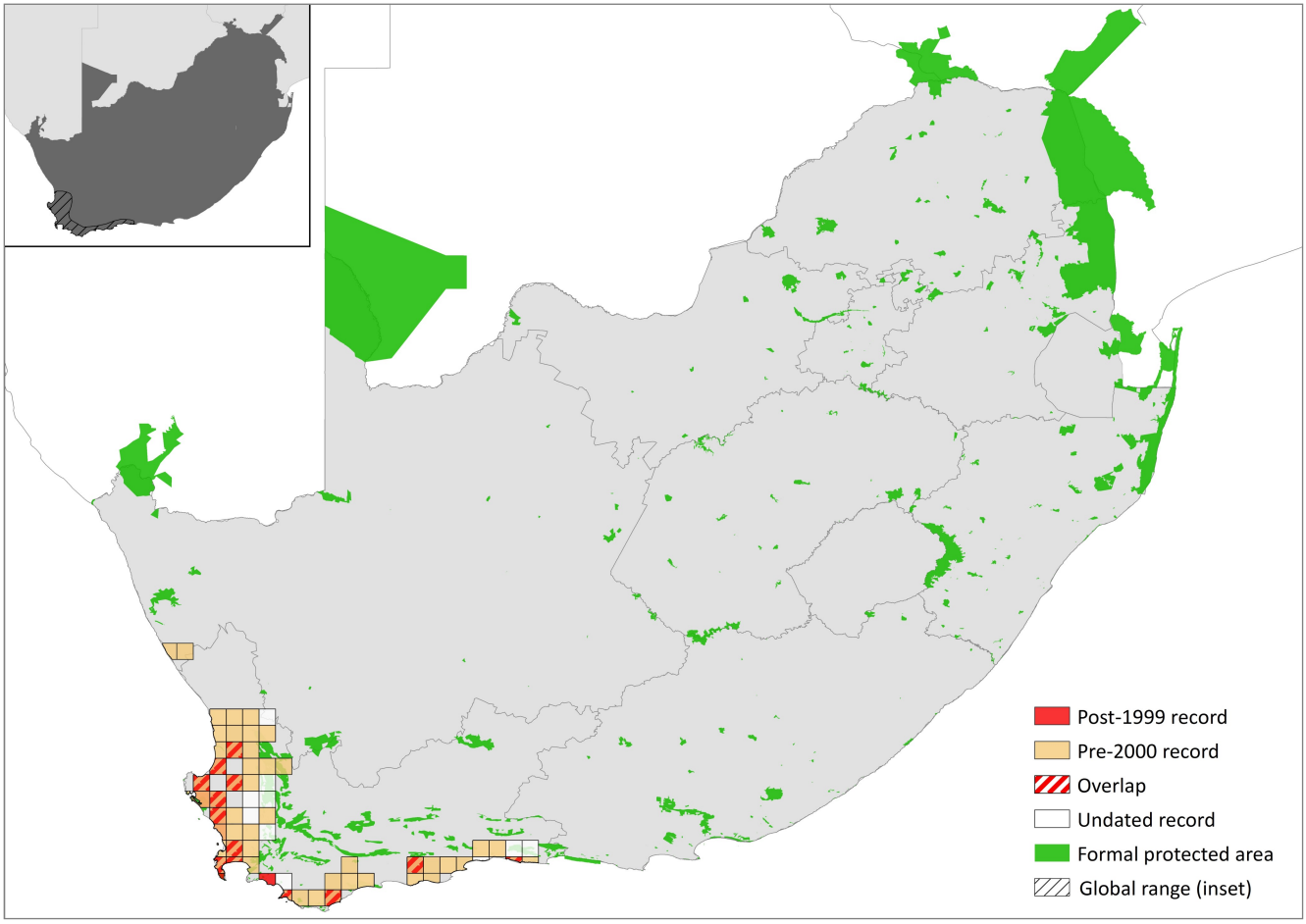

Figure 1. Distribution records for Cape Dune Mole-rat (*Bathyergus suillus*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

South Africa (Visser et al. 2014), and along with *G. capensis*, has a clear preference for fynbos vegetation (Mugo et al. 1995). Cape Dune Mole-rats are most commonly associated with sandveld habitats (Bennett & Faulkes 2000), and adapt successfully to landscapes transformed by humans, such as wheat fields, other agricultural areas and road verges. This species is often regarded as a pest on sporting areas (golf courses, bowling greens and tennis courts), and on wheat farms, where its mounds cause damage to reaping machine blades. It also undermines roads and chews through cables and irrigation pipes.

Cape Dune Mole-rats are generally solitary with individual burrows. They are seasonal breeders and produce between one and six young per litter (Hart et al. 2006). They consume underground roots and bulbs, as well as grasses and green forbs from above ground (Davies & Jarvis 1986). Independent from water, they are able to meet moisture requirements from food.

Ecosystem and cultural services: Similar to other Mole-rats (*C. hottentotus* and *G. capensis*), the Cape Dune Mole-rat is an important eco-engineer and plays a role in modifying soil properties and increasing the humic content of the sands in which it occurs (Hagenah & Bennett 2013). Burrowing activities by mole-rats may also enhance infiltration and the water holding capacity of soil (Hagenah & Bennett 2013).

Use and Trade

Cape Dune Mole-rats are utilised by local communities as an additional source of protein, where the meat is considered a delicacy (Skinner & Chimimba 2005). For example, De Graaff (1981) recorded that four or five were caught weekly by some families, this being their only source of protein apart from fish.

Threats

The main threat to this species is habitat destruction due to the expansion of human settlements and intensive agricultural production (*sensu* Rouget et al. 2003). While intensive agricultural production may reduce available habitat, they can exist in agricultural landscapes, sometimes in high numbers if the area remains unworked for a couple of years. For example, all animals sampled in a study by Visser et al. (2014) were from agricultural areas that displayed no inbreeding and had demographically stable populations. Additionally, they are commonly killed on roads while dispersing above ground. Males sometimes range longer distances than usual in search of a mate, and mole-rats are also forced above ground when

Table 2. Use and trade summary for the Cape Dune Mole-rat (*Bathyergus suillus*)

Category	Applicable?	Rationale	Proportion of total harvest	Trend
Subsistence use	Yes	Bushmeat	Unknown	Stable
Commercial use	No	-	-	-
Harvest from wild population	Yes	Bushmeat	Unknown	Stable
Harvest from ranched population	No	-	-	-
Harvest from captive population	No	-	-	-

Table 3. Threats to the Cape Dune Mole-rat (*Bathyergus suillus*) 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	1.*1 Housing & Urban Areas*: habitat loss from settlement expansion.	Rouget et al. 2003	Indirect	Regional	Ongoing
2	*2.1.3 Annual & Perennial Non-timber Crops*: habitat loss from intensive agricultural production.	Rouget et al. 2003	Indirect	Regional	Ongoing
3	*5.1.1 Hunting & Collecting Terrestrial Animals*: bushmeat hunting.	De Graaf 1981	Empirical	Regional	Unknown
4	*4.1 Roads & Railroads*: collisions with vehicles.	-	Anecdotal	-	Ongoing
5	*5.1.3 Hunting & Collecting Terrestrial Animals*: persecution.	-	Anecdotal	-	Ongoing

seasonal flooding takes place. In some parts of its range this species is classified as a pest, resulting in pest control procedures. Climate change is unlikely to have an impact on this species as geology and drainage evolution have a larger influence on its distribution than does climate.

Current habitat trend: Stable

Conservation

This species occurs within several protected areas in the Western Cape, including Table Mountain National Park, Cederberg Wilderness Area and De Hoop Nature Reserve. No interventions are necessary at present but protected area expansion to protect genetically divergent populations would benefit this species.

Recommendations for land managers and practitioners:

- Population monitoring, including recordings of road kill incidents.

Research priorities:

- A taxonomic revision of the genus *Bathyergus* is necessary, given the findings of Visser et al. (2014).
- Long-term monitoring of the population to assess the severity of putative threats.
- Identification of core conservation areas for this species.

Encouraged citizen actions:

- Report sightings on virtual museum platforms (for example, iSpot and MammalMAP), especially outside protected areas.

Data Sources and Quality

Table 5. Information and interpretation qualifiers for the Cape Dune Mole-rat (*Bathyergus suillus*) assessment

Data sources	Field study (literature), museum records
Data quality (max)	Inferred
Data quality (min)	Inferred
Uncertainty resolution	Best-estimate
Risk tolerance	Evidentiary

References

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Table 4. Conservation interventions for the Cape Dune Mole-rat (*Bathyergus suillus*) 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	*1.1 Site/Area Protection*: protected area expansion.	-	Anecdotal	-	-	-

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Assessors and Reviewers

Nigel Bennett[1], Jacobus Visser[2], Sarita Maree[1], Jenny Jarvis[3]

[1]University of Pretoria, [2]University of Johannesburg, [3]University of Cape Town

Contributors

Claire Relton[1], Matthew F. Child[1], Nico L. Avenant[2], Margaret Avery[3], Rod Baxter[4], Duncan MacFadyen[5], Ara Monadjem[6], Guy Palmer[7], Peter Taylor[4], Beryl Wilson[8]

[1]Endangered Wildlife Trust, [2]National Museum, Bloemfontein, [3]Iziko South African Museums, [4]University of Venda, [5]E Oppenheimer & Son, [6]University of Swaziland, [7]Western Cape Nature Conservation Board, [8]McGregor Museum

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