Bathyergus janetta – Namaqua Dune Mole-rat


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Regional Red List status (2016)	**Least Concern***
National Red List status (2004)	Near Threatened
Reasons for change	Non-genuine
Global Red List status (2016)	Least Concern
TOPS listing (NEMBA) (2007)	None
CITES listing	None
Endemic	Near

*Watch-list Data

While there is no evidence of population decline, its restricted range and habitat degradation from diamond strip-mining on the coast is a cause for concern (Jarvis 2013).

Taxonomy

Bathyergus janetta Thomas & Schwann, 1904

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

Synonyms: *Bathyergus inselbergensis*, *Bathyergus plowsi*

Common names: Namaqua Dune Mole-rat, Namaqua Dune Blesmol (English), Namakwa-duinmol, Namakwalandse Duinmol (Afrikaans)

Taxonomic status: Species

Taxonomic notes: Although previously regarded as only subspecifically diverse from the Cape Dune Mole-rat, *B. suillus* (Ellerman et al. 1953), the Namaqua Dune Mole-rat is now generally regarded as a distinct species (De Graaff 1981). Although no formal subspecies are recognised, there is considerable geographical variation in size and colour that may indicate coastal (smaller and paler) and inland (larger and black with silvery flanks) subspecies (Jarvis 2013).

Assessment Rationale

The Namaqua Dune Mole-rat was previously listed as Near Threatened due to the threat of continued habitat destruction of three isolated subpopulations. It is currently listed as Least Concern because there is no evidence for population decline and it occupies habitats that are highly protected and restricted from the public. However, the presumed lack of dispersal and increasing habitat destruction remain major concerns for subpopulations of this species. This is especially true along the coastal regions, where the threat of diamond mining is yet to be quantified. If the mines are rehabilitated, the species may still not be able to recolonize these sites. Resultantly, this species should be reassessed when data on the impact of mining become available.

Regional population effects: Due to disjunctions in the distribution, dispersal is impossible.

Distribution

This species ranges from the north-western regions of the Northern Cape (near Rondawel) northwards along the coast to about 90 km into southern Namibia (Figure 1) (Faulkes et al. 2004; Jarvis 2013). Inland, it extends from Springbok and Kamieskroon to Ezelfontein in the Kamiesberg Mountains (Roberts 1951; De Graaff 1981; Jarvis 2013). It is restricted primarily to sandy soils in coastal dunes. A number of isolated populations have been identified in the following areas of South Africa: Alexander Bay on the Orange River, from Port Nolloth to Groenrivier, from Steinkop to Kamieskroon, and in the red dunes of Klawer (Figure 1). Although this species rarely occurs above an altitude of 300 m, in the Kamiesberg it has been found at heights of 1,350 m asl (Skinner & Chimimba 2005). North of the Orange River, in the Sperrgebiet (Diamond mining area), Namibia, it occurs on seepage areas and inselbergs (isolated hills), where precipitation is higher than lower lying areas. Much of its distribution in Namaqualand overlaps with *Cryptomys hottentotus*, and towards Groenriviersmond and Rondawel, in the south of its range, it occurs sympatrically with *B. suillus* (Skinner & Chimimba 2005; Jarvis 2013). The estimated extent of occurrence within the assessment region is 10,234 km^2.

Population

Namaqua Dune Mole-rats are found commonly within their range. However, their habitat is highly fragmented and their distribution is restricted. Their patchy distribution is especially prominent in the most arid parts of the range where they are often associated with seepage lines where geophytes are found (Jarvis 2013). Their population density increases further inland where rainfall is higher, with up to 44 individuals / km^2 recorded (Herbst et al. 2004; Jarvis 2013).

Current population trend: Unknown

Continuing decline in mature individuals: No

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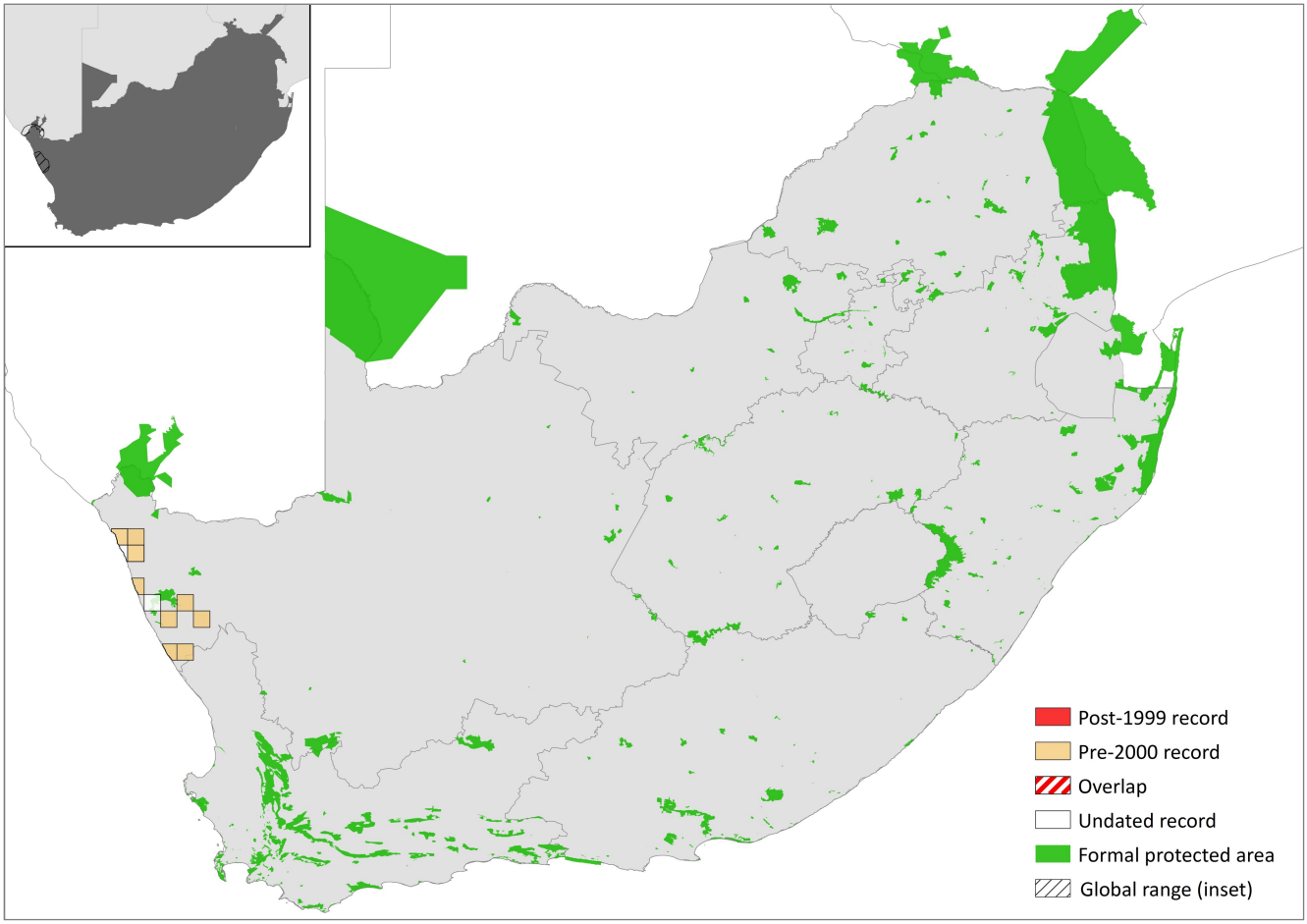

Figure 1. Distribution records for Namaqua Dune Mole-rat (*Bathyergus janetta*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Number of mature individuals in population: Unknown

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: Unknown

Severely fragmented: Yes

Habitats and Ecology

Along the coast, this species is located primarily on sand dunes, while inland they make use of loam and consolidated alluvial soils, where there are geophytes and succulent vegetation (Jarvis 2013). They are considered endemic to the Succulent Karoo biome of southern Africa (Mugo et al. 1995). Average rainfall in this area is usually less than 400 mm / annum. Like *Georychus capensis*, this species is typically solitary and subterranean, living in burrow systems up to 5.8 m below the soil surface. They are seasonal breeders (Herbst et al. 2004) and following a gestation period of 52 days, *B. janetta* giveg birth to between two and seven young. Their home range ranges from 398 m^2 to 12,438 m^2 (Herbst 2002). They generally consume subterranean storage organs such as succulent roots and bulbs, and occasionally pull plants, such as daisies and herbs, from the surface down into their burrows to feed on underground (Jarvis 2013).

Ecosystem and cultural services: Similar to other Mole-rats (*Cryptomys hottentotus* and *Georychus capensis*), the Namaqua 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

This species is not known to be traded or utilised in any form.

Threats

Habitat loss through diamond mining threatens the subpopulations along the coastal belts of southern Namibia and the north-western parts of South Africa. Fortunately, the general public is entirely prohibited from entering these regions, therefore limiting the threats of human disturbance. However, data are needed on the impact of diamond mining on this species. To a lesser extent, overgrazing by goats and sheep threatens to reduce the quality of aboveground vegetation on which

Table 2. Threats to the Namaqua Dune Mole-rat (*Bathyergus janetta*) 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	*3.2 Mining & Quarrying*: open cast mining on the coastal belts of the Northern Cape and southern Namibia. Current stress *1.2 Habitat Degradation*.	-	Anecdotal	-	Ongoing
2	*2.3.2 Livestock Farming & Ranching*. Current stress *1.2 Habitat Degradation*: from overgrazing.	-	Anecdotal	-	Ongoing
3	*11.1 Habitat Shifting & Alteration*: habitat loss and degradation from climate change.	Hoffman et al. 2009	Indirect	Regional	Increasing

they forage. Finally, climate change could present an increasing threat to this species by reducing habitat quality and availability, as the geophytes on which these animals feed could dry out and disappear ((Hoffman et al. 2009).

Current habitat trend: Declining due to diamond mining activities and overgrazing by livestock.

Conservation

Although this species lacks formal protection in many areas, it occurs within the Namaqua National Park (South Africa), the |Ai-|Ais/Richtersveld Transfrontier Park (South Africa and Namibia), and Sperrgebiet (Namibia), which have extremely low levels of human disturbance and contain key habitats for this species. Although locally abundant, subpopulations of this species are fragmented and reintroductions are not possible. No current conservation interventions are in place for this species. Data on the impact of diamond mining should be collected before a conservation strategy can be formulated.

Recommendations for land managers and practitioners:

- Livestock farmers should reduce stocking rates to conserve ground cover.

Research priorities:

- Investigating the current extent of distribution and number of subpopulations.
- Long-term monitoring of population dynamics to establish baseline informaton.
- Determining the impact of diamond mining.

Encouraged citizen actions:

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

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Namaqua Dune Mole-rat (*Bathyergus janetta*) assessment

Data sources	Museum records
Data quality (max)	Suspected
Data quality (min)	Suspected
Uncertainty resolution	Expert consensus
Risk tolerance	Evidentiary

References

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Hoffman MT, Carrick PJ, Gillson L, West AG. 2009. Drought, climate change and vegetation response in the succulent karoo, South Africa. South African Journal of Science **105**:54–60.

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Table 3. Conservation interventions for the Namaqua Dune Mole-rat (*Bathyergus janetta*) 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, specifically into core hotspot areas.	-	Anecdotal	-	-	-

Mugo DN, Lombard AT, Bronner GN, Gelderblom CM. 1995. Distribution and protection of endemic or threatened rodents, lagomorphs and macrosceledids in South Africa. South African Journal of Zoology **30**:115–126.

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