Rhinolophus damarensis – Damara Horseshoe Bat


Ara Monadjem

Regional Red List status (2016)	**Least Concern***
National Red List status (2004)	Not Evaluated
Reasons for change	Non-genuine: New information
Global Red List status (2016)	Least Concern
TOPS listing (NEMBA) (2007)	None
CITES listing	None
Endemic	No

*Watch-list Data

While previously considered a subspecies of *Rhinolophus darlingi*, recent mitochondrial and nuclear DNA phylogenetic analysis supports the species status of *R. damarensis* as a separate western lineage (Jacobs et al. 2013).

Taxonomy

Rhinolophus damarensis Roberts 1946

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - RHINOLOPHIDAE - *Rhinolophus* - *damarensis*

Synonyms: *Rhinolophus darlingi* ssp. *damarensis* Roberts 1946

Common names: Damara Horseshoe Bat (English)

Taxonomic status: Species

Taxonomic notes: Previously considered a subspecies of *Rhinolophus darlingi* (Monadjem et al. 2010), where *R. d. damarensis* was known from Namibia and the Northern Cape (Meester et al. 1986). Jacobs et al. (2013) present genetic evidence that *R. darlingi* (*sensu lato*) is polyphyletic, comprising two cryptic species corresponding to the western populations that occur in arid habitats and the populations occurring in central and eastern southern Africa. Specifically, *R. damarensis* occurs in Angola, Namibia, and northwestern South Africa, while *R. darlingi* occurs in eastern South Africa, Mozambique, Swaziland, Zimbabwe, Botswana, Zambia and Malawi.

Assessment Rationale

This species is distributed across the arid western regions of southern Africa, predominantly occurring in the Northern Cape Province of the assessment region. It occurs in habitats unlikely to be extensively transformed and can roost in old mine adits. The estimated extent of occurrence is 173,750 km^2 and population size is inferred to be *c.* 20,000 individuals (based on 20–50 colonies consisting of <100 individuals each). Thus, this species qualifies as Least Concern. However, the population trend should be closely monitored since there is an ongoing threat of loss of roost sites due to old mines being re-opened for mining. Additionally population size should be calculated more accurately and a reassessment may be necessary once further data are available.

Regional population effects: Habitat is contiguous with Namibia and thus dispersal is assumed to be occurring.

Distribution

The species is restricted to the arid, warm western parts of southern Africa, with records reported from Angola, Namibia and western South Africa (Jacobs et al. 2013). Within the assessment region, it has been recorded predominantly from the Northern Cape Province and marginally in the North West Province. A record from the Western Cape Province (ACR 2015) is erroneous. The estimated extent of occurrence is 173,750 km^2. Within *R. damarensis* itself, there is cryptic diversification corresponding to a northern and southern lineage (having arisen more recently than the split with *R. darlingi*), which is possibly a response to changes in biome boundaries during the Miocene (Jacobs et al. 2013).

Population

While not much is known about abundance or population trends of this species, it occurs in small colonies of < 100 individuals per colony (D. Jacobs unpubl. data). We estimate that there are 20–50 colonies and thus infer that the overall population in the assessment region is *c*. 20,000 individuals. Systematic monitoring is necessary to more accurately estimate population size.

Recommended citation: Jacobs D, Taylor PJ, Cohen L, MacEwan K, Richards LR, Schoeman C, Sethusa T, Monadjem A. 2016. A conservation assessment of *Rhinolophus damarensis*. In Child MF, Roxburgh L, Do Linh San E, Raimondo D, Davies-Mostert HT, editors. The Red List of Mammals of South Africa, Swaziland and Lesotho. South African National Biodiversity Institute and Endangered Wildlife Trust, South Africa.

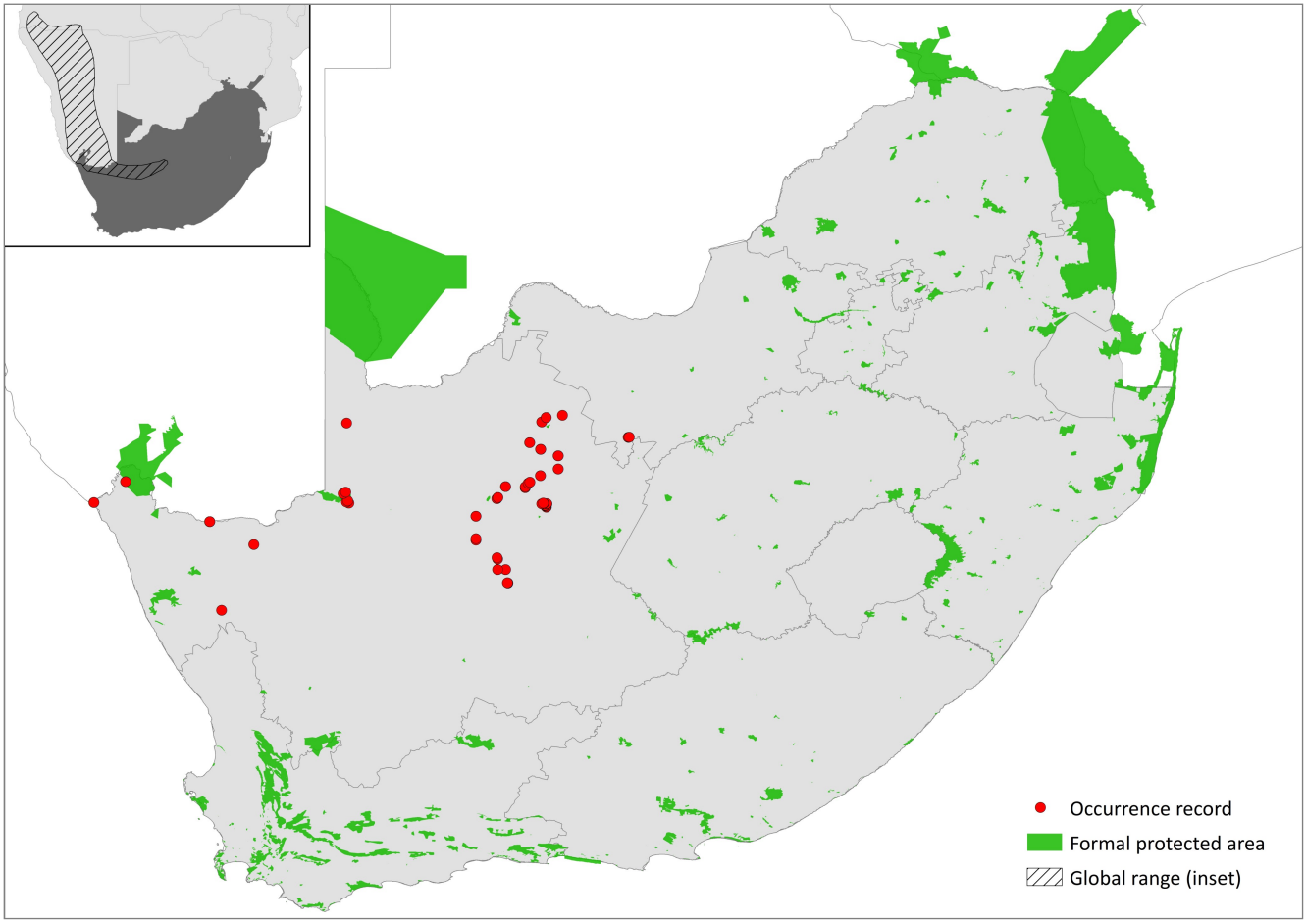

Figure 1. Distribution records for Damara Horseshoe Bat (*Rhinolophus damarensis*) within the assessment region

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	-

Current population trend: Stable

Continuing decline in mature individuals: No

Number of mature individuals in population: < 20,000

Number of mature individuals in largest subpopulation: 100

Number of subpopulations: 20–50

Severely fragmented: No

Habitats and Ecology

It has been recorded from arid savannah and shrubland habitats within the Nama-Karoo Biome (Jacobs et al. 2013). It has specifically been recorded from the Eastern Kalahari Bushveld, Kalahari Duneveld, Bushmanland, Gariep Desert, Southern Namib Desert, Richtersveld and the Upper Karoo vegetation types. The species predominantly roosts in natural caves. However, it has been observed in old gold and asbestos mines (Monadjem 2008). The cryptic *R. damarensis* and *R. darlingi* lineages may have arisen independently of each other, and thus convergence in morphological and echolocation characteristics may be the result of neutral evolutionary processes (Jacobs et al. 2013).

Ecosystem and cultural services: Unknown

Use and Trade

Not known to be utilised or traded in any form.

Threats

The species is potentially threatened by the re-opening of mine adits, as well as re-use of old mines. However, it occurs in areas of low human density and so there are no major identified threats. Climate change may become a future threat (*sensu* Sherwin et al. 2013), but more research is necessary.

Current habitat trend: Stable

Conservation

Within the assessment region, the species is recorded from the formally protected Richtersveld National Park and the Augrabies Falls National Park. While no direct interventions are currently necessary, monitoring of populations trends in response to the threat of mining is required.

Table 2. Threats to the Damara Horseshoe Bat (*Rhinolophus damarensis*) 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*: roost loss and disturbance from re-opening old mines.	-	Anecdotal	-	Unknown

Table 3. Conservation interventions for the Damara Horseshoe Bat (*Rhinolophus damarensis*) 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*: protection of key roost sites.	-	Anecdotal	-	-	-

Recommendations for land managers and practitioners:

- Identify and protect important roost sites for this species.
- Reduce pesticide use in agricultural landscapes.

Research priorities:

- Systematic surveys to identify further colonies and assess population size and trend.
- Identifying and quantifying the impact of potential threats, including climate change.
- From a research perspective the formal taxonomic reinstatement of this taxon is required.

Encouraged citizen actions:

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

References

ACR. 2015. African Chiroptera Report 2015. Page i-xix + 7001 pp. AfricanBats, African Chiroptera Project, Pretoria, South Africa.

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Meester JA, Rautenbach IL, Dippenaar NJ, Baker CM. 1986. Classification of southern African mammals. Transvaal Museum Monographs **5**:1–359.

Monadjem A. 2008. Bats recorded from Koegelbeen cave and selected other sites in the Northern Cape, South Africa. African Bat Conservation News **18**:2–4.

Monadjem A, Taylor PJ, Cotterill FPD, Schoeman MC. 2010. Bats of Southern and Central Africa: A Biogeographic and Taxonomic Synthesis. University of the Witwatersrand Press, Johannesburg, South Africa.

Sherwin HA, Montgomery WI, Lundy MG. 2013. The impact and implications of climate change for bats. Mammal Review **43**: 171–182.

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Damara Horseshoe Bat (*Rhinolophus damarensis*) assessment

Data sources	Field study (unpublished), indirect information (expert knowledge), museum records
Data quality (max)	Inferred
Data quality (min)	Suspected
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.*