Rhinolophus landeri – Lander's Horseshoe Bat


Merlin Tuttle

Regional Red List status (2016)	**Least Concern**
National Red List status (2004)	Near Threatened B2
Reasons for change	Non-genuine
Global Red List status (2016)	Least Concern
TOPS listing (NEMBA) (2007)	None
CITES listing	None
Endemic	Edge of range

Lander's Horseshoe Bat has an extensive range across sub-Saharan Africa, but extends only marginally into the savannah woodlands of northeastern South Africa (Monadjem et al. 2010).

Taxonomy

Rhinolophus landeri Martin 1838

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

Common names: Lander's Horseshoe Bat (English), Landers se Saalneusvlermuis (Afrikaans)

Taxonomic status: Species complex

Taxonomic notes: The nominate subspecies *Rhinolophus landeri landeri* Martin 1837 and the subspecies *R. l. lobatus* Peters 1852 are known from southern Africa (Meester et al. 1986; Csorba et al. 2003). This species complex requires taxonomic revision because, across its range, the status and relationships of the nominate subspecies and the subspecies *R. l. axillaris* Allen, Lang and Chapin 1917, *R. l. lobatus* and *R. l. dobsoni* Thomas 1904 remain unclear. It appears that populations of *R. l. landeri* favour forest habitats, while populations of *R. l. lobatus* are more commonly associated with savannah woodland (Monadjem et al. 2010), and thus may be shown to be taxonomically distinct following phylogenetic analysis.

Assessment Rationale

Within the assessment region, the species is recorded from fewer than five subpopulations with an estimated extent of occurrence of 2,570 km^2. Although it could qualify for Vulnerable D2 based on limited localities, it occurs within the Great Limpopo Transfrontier Park and thus there are no plausible threats that could cause significant decline. As such, the localities do not qualify as locations. Additionally, it is able to survive in modified habitats and man-made structures and no decline has been observed. As habitats are connected across regions, and thus rescue effects are presumed to be possible, and the species is widespread and locally common outside of the assessment region, it qualifies as Least Concern.

Regional population effects: Although it has low wing loading (Norberg & Rayner 1987), its habitat is continuous into Mozambique and Zimbabwe through the Great Limpopo Transfrontier Park. Thus, we assume dispersal capacity is adequate for rescue effects.

Distribution

Although its range extends only marginally into the assessment region, it occurs widely over much of sub-Saharan Africa. Its range extends from Senegal and The Gambia through much of West and Central Africa to Ethiopia and Sudan in the east, continuing southwards to northeastern South Africa. This species has been recorded at altitudes of 900 m asl on Bintamane Mountain in Sierra Leone, 1,200 m asl on Cameroon Mountain (Rosevear 1965), and as high as 2,000 m asl on Mount Elgon in Kenya (Aggundey & Schlitter 1984). Within the assessment region, this species is found in the Great Limpopo Transfrontier Park in the northeastern region of Limpopo Province (Monadjem et al. 2010). From here, its range is continuous north through Zimbabwe, southeastern Zambia, southern Malawi, southern Democratic Republic of the Congo and northern Mozambique. Habitat models predict that it occurs extensively in southern Mozambique too (Monadjem et al. 2010). Based on known colonies, extent of occurrence in the assessment region is 2,570 km^2, and area of occupancy is 1,146 km^2 (based on occupied grid cells).

Population

In other parts of its range, this species is considered locally common and colonies can comprise of hundreds of individuals (ACR 2015). However, although widespread, it is not common anywhere in southern Africa (Monadjem et al. 2010). Only five subpopulations are currently known from the assessment region, but undiscovered subpopulations are possible. Although this species is gregarious, it only occurs in small numbers in the assessment region, usually only one or two and not more than twelve individuals (Skinner & Chimimba 2005).

Current population trend: Stable

Continuing decline in mature individuals: No

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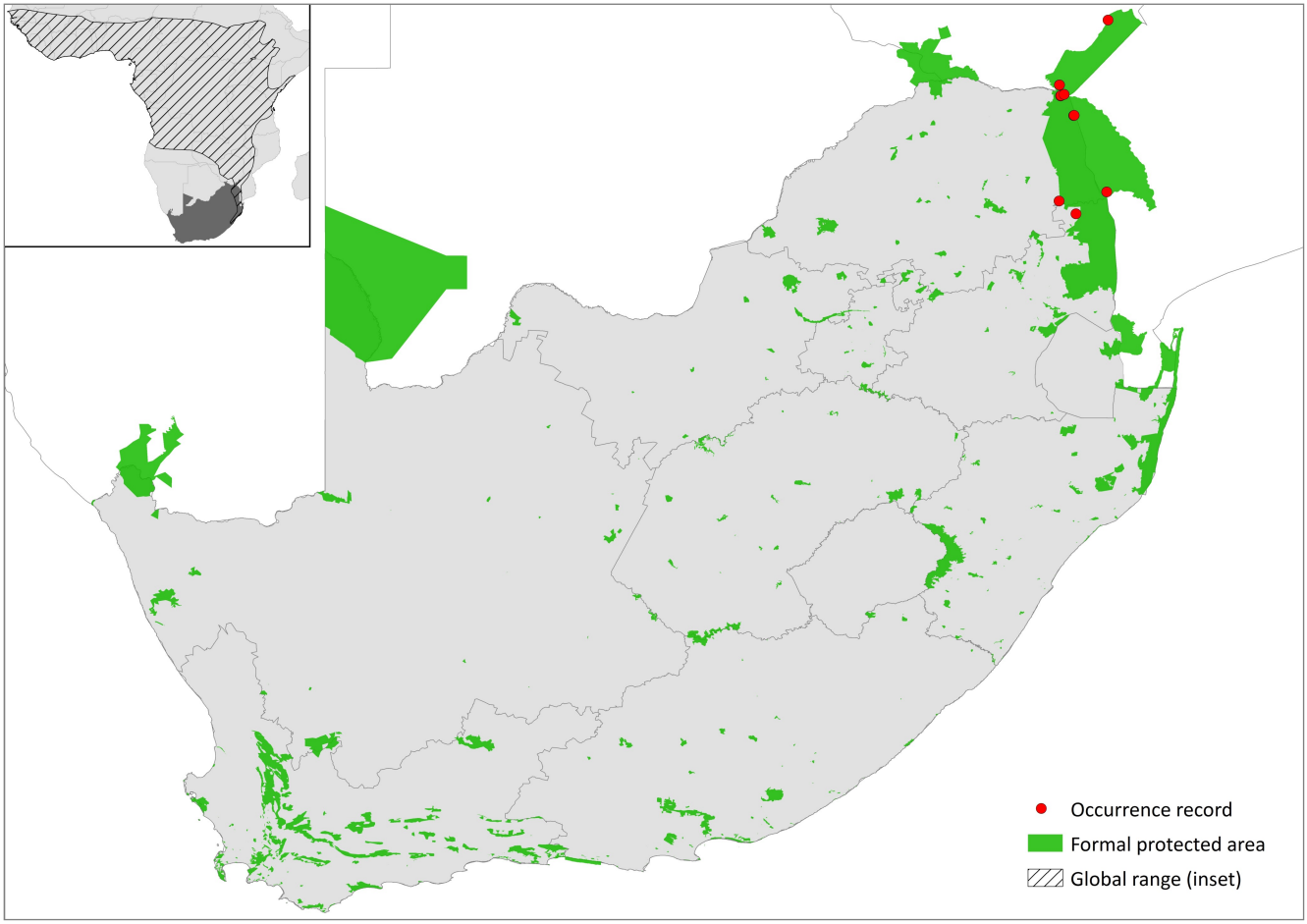

Figure 1. Distribution records for Lander's Horseshoe Bat (*Rhinolophus landeri*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Number of mature individuals in population: Unknown

Number of mature individuals in largest subpopulation: 12

Number of subpopulations: Five subpopulations have been recorded in the assessment region. However, it is likely to be under-collected and more than 10 subpopulations are suspected.

Severely fragmented: No

Habitats and Ecology

Generally, this species is associated with both forest and savannah woodlands. It has also been recorded from the Lowveld, sparsely wooded transition areas, dense thornscrub, tropical moist forest and riverine forest (Rosevear 1965; Menzies 1973; Happold 1987; Taylor 1998). In Central and West Africa, it most commonly occurs in forest habitats (Csorba et al. 2003), while in southern Africa, this species is typically associated with riparian woodland (Smithers & Wilson 1979) and, in the assessment area, is known from the Mopane Bioregion. These bats roost in mine adits, rock crevices and caves, but have also been observed roosting in Baobab Trees (*Adansonia digitata*), hollow trees, buildings (Rosevear 1965) and water wells (Koopman et al. 1978). When roosting in caves, individuals hang from the ceiling well separated from each other (Skinner & Chimimba 2005).

They are insectivorous, mostly feeding on Lepidoptera, but to a lesser extent, Orthoptera are also taken (Fenton et al. 1977). This species is a clutter forager (Monadjem et al. 2010), and at a feeding site in Zimbabwe, Fenton et al. (1977) found that they were highly selective for certain moth species. There is very little information available on the reproductive ecology of this species.

Ecosystem and cultural services: As this species is insectivorous, it may contribute to controlling insect populations that damage crops (Boyles et al. 2011; Kunz et al. 2011). Ensuring a healthy population of insectivorous bats can thus decrease the need for pesticides.

Use and Trade

There is no evidence to suggest that this species is traded or utilised in any form.

Threats

There are no major threats to this species within the assessment region as it occurs predominantly in a

protected area and is able to survive within modified habitats.

Current habitat trend: Stable. The savannah biome is well protected within the assessment region (Driver et al. 2012).

Conservation

No specific conservation interventions are currently necessary. This edge of range species occurs within the Great Limpopo Transfrontier Park, and its range is thus continuous with Zimbabwe and Mozambique.

Recommendations for land managers and practitioners:

- Field surveys to discover new roost sites and confirm occupancy of existing roost sites.

Research priorities:

- Systematic monitoring to estimate population size and trends.
- It is likely that this species is under collected, thus continued research into its distribution is necessary.
- Taxonomic research is necessary to resolve the species complex.

Encouraged citizen actions:

- Citizens can assist in the conservation of the species by reporting sightings on virtual museum platforms (for example, iSpot and MammalMAP), and therefore contribute to an understanding of the species distribution.

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Data Sources and Quality

Table 2. Information and interpretation qualifiers for the Lander's Horseshoe Bat (*Rhinolophus landeri*) assessment

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