Rhinolophus swinnyi – Swinny's Horseshoe Bat


Erna Balona

Regional Red List status (2016)	**Vulnerable C2a(i)**
National Red List status (2004)	Endangered C2a(i)
Reasons for change	Non-genuine: New information
Global Red List status (2008)	Least Concern
TOPS listing (NEMBA)	None
CITES listing	None
Endemic	No

This species is strongly associated with woodlands and forests and the type specimen comes from Pirie Forest, Eastern Cape Province (Monadjem et al. 2010). It is thus threatened by deforestation.

Taxonomy

Rhinolophus swinnyi (Gough 1908)

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

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

Taxonomic status: Species

Taxonomic notes: Named after H. H. Swinny who collected the original specimens from the Ngqueleni district, Eastern Cape Province (Skinner & Chimimba 2005). Based on morphological similarities, it was suggested that *Rhinolophus swinnyi* might be a subspecies of *R. denti* (Csorba et al. 2003). However, new genetic analyses showed the two to be different species (Stofferg 2007; C. Schoeman & P. Taylor unpubl. data).

Assessment Rationale

This is a woodland and forest habitat species occurring widely but sparsely within the eastern parts of the assessment region. It qualifies as Vulnerable C2a(i) as the regional population is suspected to consist of fewer than 10,000 mature individuals, with no subpopulation having more than 1,000 mature individuals. Since this species has low wing loading, we assume that subpopulations are fragmented with limited dispersal between localities. The population is declining due to loss of habitat as a result of the re-mining of existing adits, and loss and degradation of woodland habitat.

Regional population effects: The subpopulations within the region are genetically distinct from those occurring north of the assessment region (Stofferg 2007; C. Schoeman and P. Taylor unpubl. data), which suggests that no dispersal is taking place. Additionally, since the species has low wing loading (Aldridge & Rautenbach 1987; Norberg & Rayner 1987; Schoeman & Jacobs 2008), we assume no significant dispersal is occurring and thus no rescue effects are possible.

Distribution

This bat has been recorded from the eastern parts of South Africa, much of Zimbabwe, and northwestern Mozambique, with additional scattered records further north in Malawi, Zambia, Democratic Republic of the Congo and Tanzania (including the island of Zanzibar) (Skinner & Chimimba 2005). It may be present in Angola but this needs confirmation. Within the assessment region this species is found in Limpopo, Mpumalanga, KwaZulu-Natal and Eastern Cape provinces of South Africa (Figure 1). It may have been overlooked in Swaziland and southern Mozambique (Monadjem et al. 2010).

Population

In parts of its range, it is considered to be uncommon, however, Taylor (2000) records that it is fairly common in Zimbabwe. It generally forms small colonies of fewer than ten animals (ACR 2015). Within the assessment region, this species is known from 16 colonies all of which have fewer than 1,000 mature individuals. The overall population is suspected to be less than 10,000 mature individuals.

Current population trend: Suspected to be declining.

Continuing decline in mature individuals: None

Number of mature individuals in population: < 10,000

Number of mature individuals in largest subpopulation: Fewer than 1,000 mature individuals.

Number of subpopulations: Unknown

Severely fragmented: No

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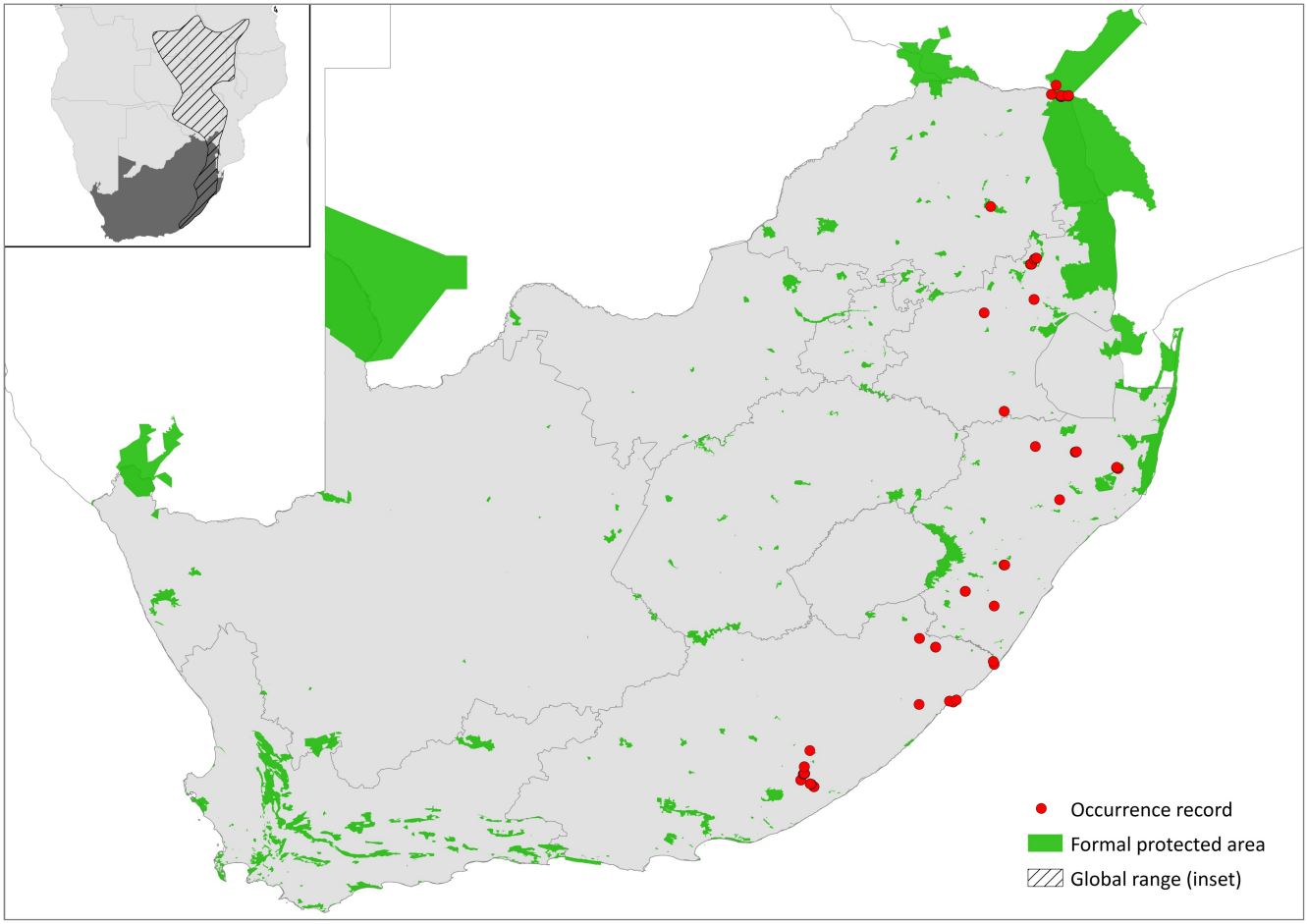

Figure 1. Distribution records for Swinny's Horseshoe Bat (*Rhinolophus swinnyi*) within the assessment region

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	Absent	-
Zimbabwe	Extant	Native

Habitats and Ecology

This species is found in temperate Afromontane forests in the southern part of its distribution range (Monadjem et al 2010). For example, Roberts (1951) recorded it in the Pirie Forest, Eastern Cape Province and Bronner (1990) recorded it in *Podocarpus* mist forests in the Ngome Forest Reserve, KwaZulu-Natal Province. Further north, it is found in moist montane rainforest, and dry and moist savanna woodlands (Cotterill 1996, 2002). It is probably more dependent on the availability of suitable shelter in which to roost during the day than on specific vegetation types (Skinner & Chimimba 2005). It is dependent on caves, mines and similar habitats for roosting. It appears to be sparsely distributed in parts of its range. In the assessment area, the species is recorded from the Mopane Bioregion, Mesic Highveld Grassland, Lowveld, Sub-Escarpment Grassland, Indian Ocean Coastal Belt, Sub-Escarpment Savanna and Drakensberg Grassland.

Use and Trade

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

Threats

Populations may be locally threatened by local use of timber and firewood, and general conversion of land to

Table 2. Threats to the Swinny's Horseshoe Bat (*Rhinolophus swinnyi*) 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	*2.1.3. Agro-industry Farming*: habitat loss from agro-industry expansion.	Jewitt et al. 2015	Indirect (remote sensing)	Regional	Ongoing
2	*2.1.2. Small-holder Farming*: habitat loss from small-scale farming.	Jewitt et al. 2015	Indirect (remote sensing)	Regional	Ongoing
3	*5.3.3. Logging & Wood Harvesting*: habitat degradation from fuelwood harvesting.	Coetzer et al. 2010	Simulation	Local	Increasing
4	*1.1 Housing & Urban Areas*: habitat loss from settlement expansion. Current stress *1.2 Ecosystem Degradation*: habitat degradation from increased wood harvesting.	GeoTerraImage 2015	Indirect (remote sensing)	National	Ongoing
5	*3.2. Mining & Quarrying*: re-mining old adits reduced roost sites.	-	Anecdotal	-	-

Table 3. Conservation interventions for the Swinny's Horseshoe Bat (*Rhinolophus swinnyi*) 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 required.	-	Anecdotal	-	-	-
2	*1.1 Site/Area Protection*: protected area expansion to incorporate additional roosts sites and subpopulations.	-	Anecdotal	-	-	-

agricultural use (ACR 2015). For example, Wessels et al. (2013) estimate that, at current levels of fuelwood extraction in the Lowveld, woody biomass in the region could be depleted within a 13 year period. Re-mining of old mine adits is a significant threat in the assessment region, as it results in loss of suitable habitat for this species.

Current habitat trend: Declining in area and extent. In KwaZulu-Natal Province, 7.6% of natural habitat was lost between 2005 and 2011, with an average of 1.2% natural habitat transformed per annum since 1994, primarily due to agriculture, timber plantations, human settlements and industry and mines (Jewitt et al. 2015). Similarly, in the Lowveld region of Mpumalanga and Limpopo provinces, Coetzer et al. (2010) estimated that between 1993 and 2006, there was a 40% increase in rural settlements in the Kruger to Canyons Biosphere Reserve, with a concomitant 7% loss of natural vegetation. Overall, between 2000 and 2013, there has been a 0.8–8.8% and 6–15% rate of rural and urban settlement expansion, respectively, in Eastern Cape, KwaZulu-Natal, Mpumalanga and Limpopo provinces (GeoTerraImage 2015), which is inferred to increase rates of woodland degradation. Climate change may also be reducing the extent of suitable habitat (Erasmus et al. 2002).

Conservation

In the assessment area, the species is present in the protected areas Kruger National Park, Hluhluwe-iMfolozi Game Reserve, and Driebos State Forest. Key interventions for this species include protection of known roost sites through appropriate management to limit disturbance, and protected area expansion to incorporate further subpopulations.

Recommendations for land managers and practitioners:

- Report discoveries of new roost sites.

Research priorities:

- Further field surveys to discover new roost sites to inform protected area expansion.
- Monitoring of known subpopulations to establish population trend.

Encouraged citizen actions:

- Limit disturbance to roost sites.

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Swinny's Horseshoe Bat (*Rhinolophus swinnyi*) assessment

Data sources	Field study (unpublished), indirect information (literature, unpublished)
Data quality (max)	Estimated
Data quality (min)	Inferred
Uncertainty resolution	Best estimate
Risk tolerance	Evidentiary

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Assessors and Reviewers

David Jacobs[1], Corrie Schoeman[2], Lientjie Cohen[3], Kate MacEwan[4], Ara Monadjem[5], Leigh Richards[6], Theresa Sethusa[7], Peter Taylor[8]

[1]University of Cape Town, [2]University of KwaZulu-Natal, [3]Mpumalanga Tourism and Parks Agency, [4]Inkululeko Wildlife Services, [5]University of Swaziland, [6]Durban Natural Science Museum, [7]South African National Biodiversity Institute, [8]University of Venda

Contributors

Lizanne Roxburgh[1], Domitilla Raimondo[2], Matthew F. Child[1]

[1]Endangered Wildlife Trust, [2]South African National Biodiversity Institute

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