Myotis welwitschii – Welwitsch's Hairy Bat

Jakob Fahr

Regional Red List status (2016)	**Least Concern***
National Red List status (2004)	Near Threatened B
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

The species appears to be uncommon and is difficult to estimate population size as it usually roosts singly or in pairs in open woodland savannah habitats (Ratcliffe 2002).

Taxonomy

Myotis welwitschii (Gray 1866)

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - VESPERTILIONIDAE - *Myotis* - *welwitschii*

Synonyms: *Vespertilio venustus* Matschie 1899

Common names: Welwitsch's Hairy Bat, Welwitch's Bat, Welwitsch's Mouse-eared Bat, Welwitsch's Myotis (English), Welwitsch se Langharvlermuis (Afrikaans)

Taxonomic status: Species

Taxonomic notes: This species is monotypic (Meester et al. 1986; Simmons 2005). No subspecies are recognised.

Assessment Rationale

Listed as Least Concern in view of its wide distribution (estimated extent of occurrence for the assessment region is 331,034 km^2), its occurrence in multiple protected areas (including Great Limpopo Transfrontier Park), and because there are no major identified threats that could cause widespread decline. It has been shown to occur more extensively in the assessment region (new subpopulations recorded) than known in the previous assessment. It is unknown whether it tolerates human disturbed habitats. There is no evidence to suggest it qualifies for a threatened status under criterion B because it does not appear to be limited by roost availability. However, it is an uncommon species and further field surveys and research are necessary to delimit population size and trend, distribution and habitat selection more accurately. Once such data are available, this species should be reassessed.

Regional population effects: The range of this species is continuous across the borders of the assessment region through its occurrence in the Great Limpopo Transfrontier Park. Additionally, it has intermediate wing loading (Schoeman & Jacobs 2003) so dispersal effects are probably possible.

Distribution

This species has been widely, but patchily, recorded over much of East Africa and southern Africa, parts of southern Central Africa, and a single West African locality in southeastern Guinea (Monadjem et al. 2010; ACR 2015). In East and southern Africa, it is sparsely distributed in the eastern regions, with scattered records distributed from Ethiopia and the Sudan in the north, through Kenya, Tanzania and Malawi, to Zambia, Mozambique, Zimbabwe and northeastern South Africa (Fahr & Ebigbo 2003; Monadjem et al. 2010; ACR 2015). It has not been recorded from Namibia or Botswana (ACR 2015). Within the assessment region, it occurs in Limpopo, Mpumalanga, Gauteng, KwaZulu-Natal and marginally in the Free State. It is absent from Lesotho and there are no current records for Swaziland (Skinner & Chimimba 2005), but may in future be recorded from Swaziland (*sensu* Shapiro & Monadjem 2016). Its current estimated extent of occurrence for the assessment region is 331,034 km^2.

Population

Although this species is widespread, it is not common (ACR 2015). It tends to roosts singly and hence it is very difficult to estimate population size. It is poorly represented in museums, with just 30 records examined in Monadjem et al. (2010). We presume the population is stable given new subpopulations being recorded since the previous assessment. However, further monitoring and research is needed to estimate population size and trend.

Current population trend: Stable

Continuing decline in mature individuals: None

Number of mature individuals in population: Unknown

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: Unknown

Severely fragmented: No

Recommended citation: Monadjem A, Jacobs DS, Cohen L, MacEwan K, Richards LR, Schoeman C, Sethusa T, Taylor PJ. 2016. A conservation assessment of *Myotis welwitschii*. 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.

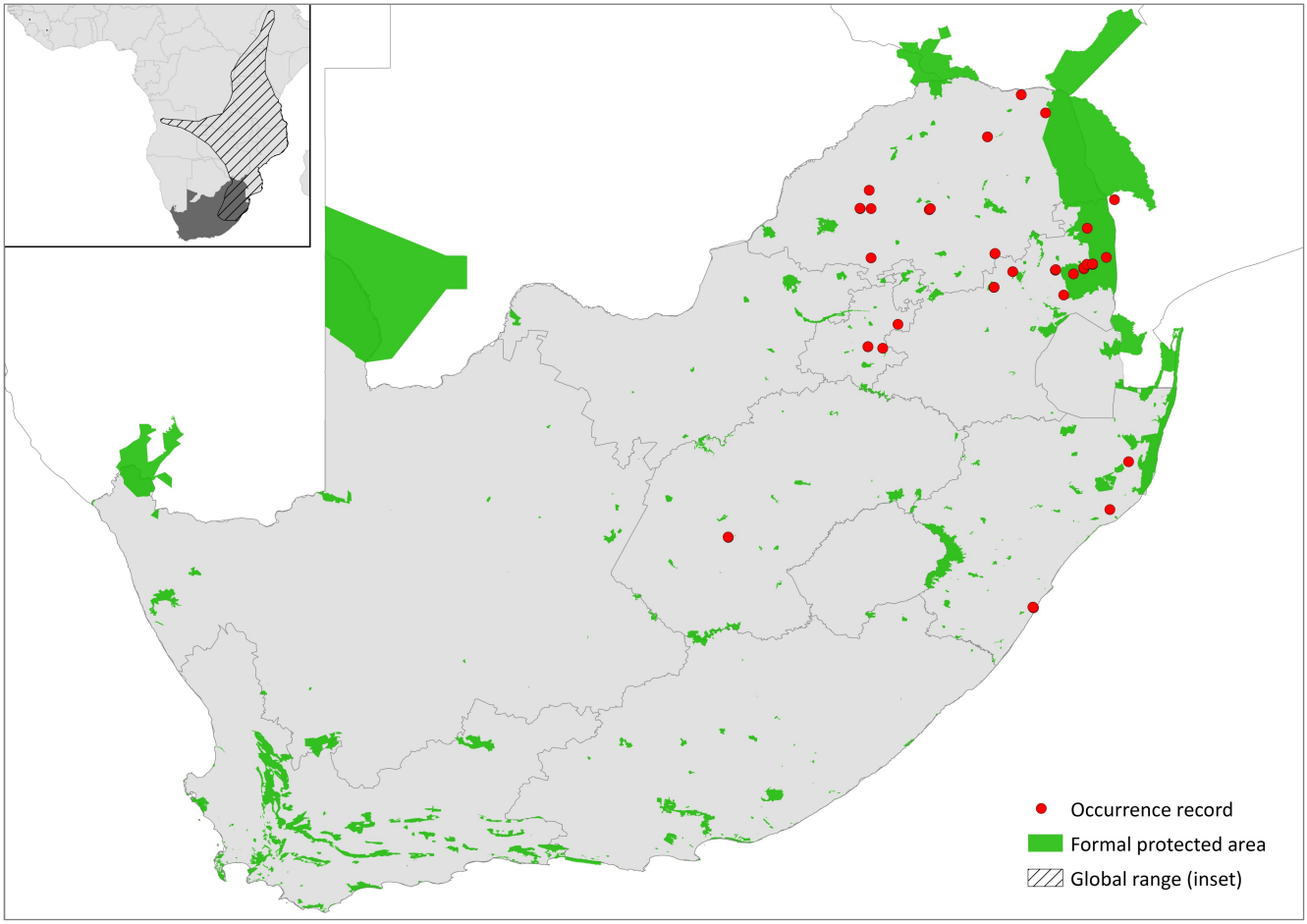

Figure 1. Distribution records for Welwitsch's Hairy Bat (*Myotis welwitschii*) within the assessment region

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	Possibly extant	Native
Zimbabwe	Extant	Native

Habitats and Ecology

This species mainly inhabits open woodland and savannah (Ratcliffe 2002), but has been recorded from a range of habitats including tropical dry forest, montane tropical moist forest, both dry and moist savannah, shrublands, and high altitude grassland (ACR 2015). It may be associated with mountains covered by a woodland-forest mosaic vegetation in some areas (Fahr & Ebigbo 2003; Monadjem et al. 2010). Anecdotal observations of day roosts include factories, houses, low bushes, trees (externally in hollows and among leaves, including rolled banana leaves), and deep in caves (such as Makapan's Cave in Limpopo) (summarised in Ratcliffe 2002). It is generally a solitary rooster (Ratcliffe 2002), and clinging to surfaces in trees or shrubs (Monadjem et al. 2010). It is a clutter-edge forager and, based on limited observations in Mpumalanga, its diet comprises aerial prey such as Coleoptera and Hemiptera (Monadjem et al. 2010).

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.

Threats

There appears to be no major threats to this species (ACR 2015). It is able to utilise semi-disturbed vegetation or landscapes for roosting and foraging. However, there is ongoing habitat loss from agricultural and human settlement transformation, especially in KwaZulu-Natal (Jewitt et al. 2015) and Gauteng (Driver et al. 2012; GeoTerraImage 2015). Selective logging of trees for fuelwood and charcoal production may also cause local declines. Pesticide use in agricultural landscapes may reduce the insect prey base.

Current habitat trend: Stable. Savannah habitats are generally well protected within the assessment region (Driver et al. 2012). However, an average of 1.2% natural habitat has been transformed per annum since 1994 in KwaZulu-Natal, primarily due to agriculture, timber plantations, human settlements and industry and mines (Jewitt et al. 2015).

Photo 1. Welwitsch's Hairy Bat (*Myotis welwitschii*) showing wing reticulations (Jakob Fahr)

Conservation

This species has been recorded from Great Limpopo Transfrontier Park, and is expected to occur in many other smaller protected areas. No direct conservation measures are currently needed for this species. However, the species would benefit from continued protected area expansion to protect additional subpopulations, such as that being planned to link Maputaland to the Lubombo Transfrontier Conservation Area (Smith et al. 2008). Additionally, this species would benefit from holistic land management that reduces pesticide use and conserves buffer strips of natural vegetation to sustain insect biomass.

Recommendations for land managers and practitioners:

- Reduce pesticide use in agricultural landscapes and maintain buffer strips of natural vegetation.

Research priorities:

- Quantification of severity of local threats.
- Research is needed to determine the population size, distribution and trends (through monitoring of known subpopulations).
- Research into general ecology, habitat selection and foraging ecology.

Encouraged citizen actions:

- Citizens can assist 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.

References

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Table 2. Threats to the Welwitsch's Hairy Bat (*Myotis welwitschii*) 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 Annual & Perennial Non-Timber Crops*: habitat loss from agro-industry expansion. Current stress *1.3 Indirect Ecosystem Effects*: loss of prey base.	Jewitt et al. 2015	Indirect (remote sensing)	Regional	Ongoing
2	*9.3.3 Agricultural & Forestry Effluents*: indirect poisoning. Current stress *1.3 Indirect Ecosystem Effects*: loss of prey base.	-	Anecdotal	-	Stable
3	*5.3.3 Logging & Wood Harvesting*: habitat degradation from fuelwood harvesting.	-	Anecdotal	-	Ongoing

Table 3. Conservation interventions for the Welwitsch's Hairy Bat (*Myotis welwitschii*) 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 to incorporate additional roosts sites and subpopulations.	-	Anecdotal	-	-	-
2	*2.1 Site/Area Management*: protection of key roost sites in place.	-	Anecdotal	-	-	-
3	*2.3 Habitat & Natural Process Restoration*: reduction of pesticide use in agricultural landscapes and conservation of buffer strips of natural vegetation.	-	Anecdotal	-	-	-

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Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Welwitsch's Hairy Bat (*Myotis welwitschii*) assessment

Data sources	Field study (unpublished), indirect information (expert knowledge), museum records
Data quality (max)	Inferred
Data quality (min)	Suspected
Uncertainty resolution	Expert consensus
Risk tolerance	Evidentiary

Assessors and Reviewers

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

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

Contributors

Samantha Page-Nicholson[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.*