Neoromicia zuluensis – Zulu Pipistrelle Bat


Trevor Morgan

Regional Red List status (2016)	**Least Concern**
National Red List status (2004)	Least Concern
Reasons for change	No change
Global Red List status (2016)	Least Concern
TOPS listing (NEMBA) (2007)	None
CITES listing	None
Endemic	No

The Zulu Pipistrelle Bat is also commonly known as the Aloe Serotine Bat, as the type specimen, collected by Roberts (1924), was found in an aloe.

Taxonomy

Neoromicia zuluensis (Roberts 1924)

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - VESPERTILIONIDAE - *Neoromicia* - *zuluensis*

Synonyms: *Neoromicia vansoni* Roberts 1932, *Eptesicus zuluensis* Roberts, 1924, *Pipistrellus zuluensis* (Roberts, 1924)

Common names: Zulu Pipistrelle Bat, Aloe Bat, Aloe Serotine, Aloe Serotine Bat, Zulu Serotine Bat (English), Aalwyndakvlermuis, Aalwynvlermuis (Afrikaans)

Taxonomic status: Species

Taxonomic notes: Referred to as *Pipistrellus zuluensis* by Happold et al. (2013), but classified as *Neoromicia zuluensis* by Kearney et al. (2002) and Simmons (2005). This species is closely related to *Neoromicia somalica* (Thomas 1901), and although previous authors have considered these species conspecific (Meester et al. 1986), recent interspecific chromosomal data recommends that *zuluensis* is specifically distinct from *somalicus* (Rautenbach et al. 1993).

Assessment Rationale

Listed as Least Concern in view of its wide distribution (estimated extent of occurrence within the assessment region is 246,518 km^2), presumed large population, and because there are no major identified threats that could cause widespread population decline. It occurs in many protected areas across its range and appears to have a degree of tolerance for human modified habitats. Savannah woodlands are generally well protected in the assessment region. However, more research is needed into the roosting behaviour of this species to identify key roost sites and monitor subpopulation trends.

Regional population effects: Its range is continuous with Zimbabwe and Mozambique through transfrontier parks, and thus dispersal is assumed to be occurring. However, it has relatively low wing loading (Norberg & Rayner 1987; Schoeman & Jacobs 2008), so significant rescue effects are uncertain.

Distribution

This species is widespread in East and southern Africa. The eastern distribution ranges from Ethiopia and South Sudan to Uganda and Kenya (Happold et al. 2013). The southern range extends from Zambia and the southern parts of the Democratic Republic of the Congo to eastern South Africa, and from eastern Angola to central Zambia, Zimbabwe, northern Botswana and northeastern Namibia (Monadjem et al. 2010). In southern Africa, it is recorded from scattered, and sometimes seemingly isolated, localities in Namibia, Botswana, Zimbabwe and South Africa (Happold et al. 2013). In the assessment region, the species is recorded from Limpopo, Mpumalanga, North West and KwaZulu-Natal provinces of South Africa, as well as in Swaziland. The type specimen is from Umfolozi Game Reserve, KwaZulu-Natal (Monadjem et al. 2010). Estimated extent of occurrence within the assessment region is 246,518 km^2.

Population

Species abundance is uncertain (Happold et al. 2013), but in general this is an uncommon species (ACR 2015). It is, however, well represented in museums with over 160 individuals assessed in Monadjem et al. (2010). It is not as common as *P. capensis* in southern Africa (Taylor 2000).

Current population trend: Stable

Continuing decline in mature individuals: Unknown

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 *Neoromicia zuluensis*. 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.

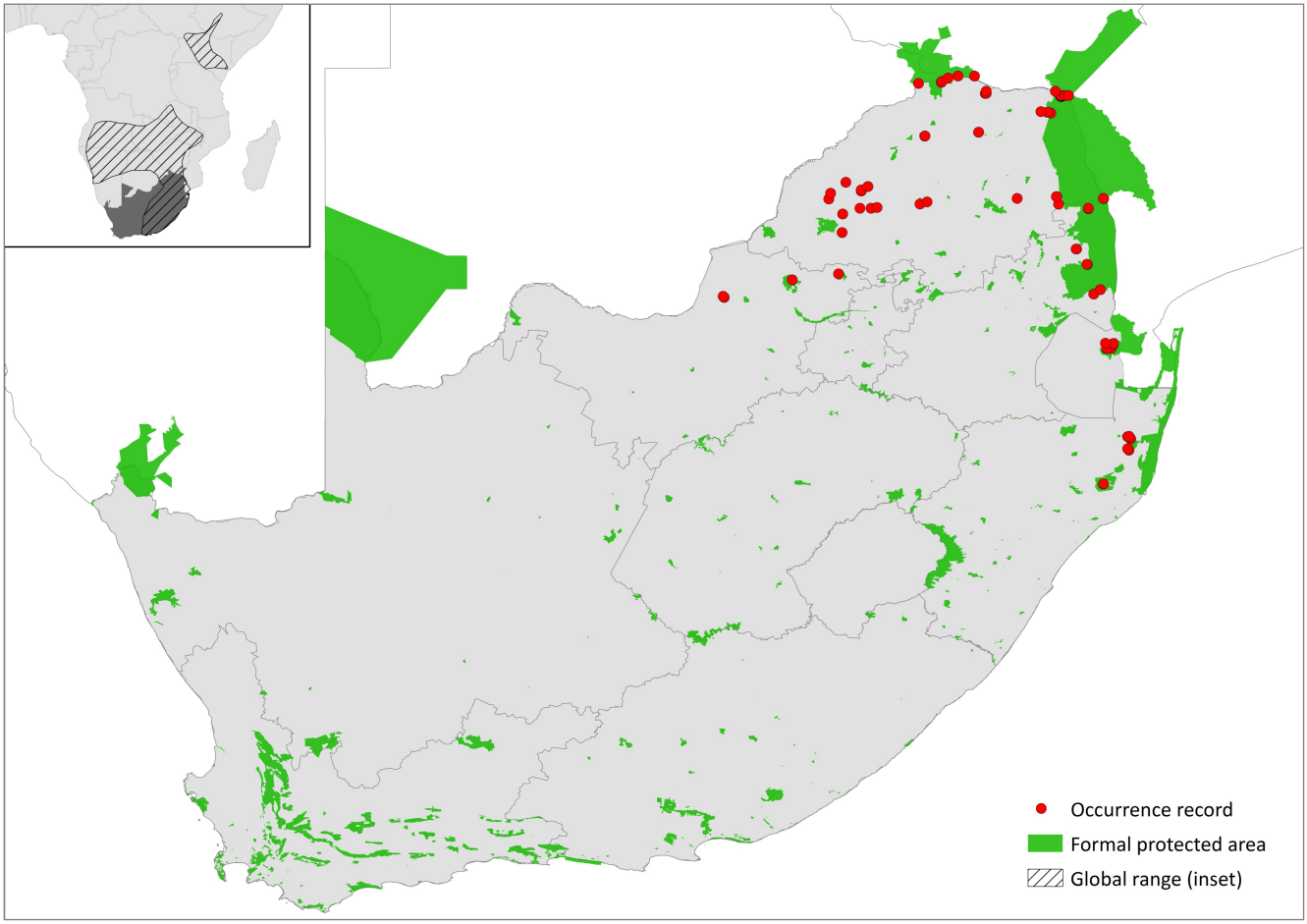

Figure 1. Distribution records for Zulu Pipistrelle Bat (*Neoromicia zuluensis*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Habitats and Ecology

Populations of this bat have been recorded from dry and moist savannah, savannah woodland (including miombo woodland), lowveld and into more arid shrublands (Happold et al. 2013), where surface water sources or riparian corridors are available (Monadjem et al. 2010). In the assessment region, it is recorded from the Mopane Bioregion, Lowveld and Central Bushveld. Roosting sites of this species are not well known (Monadjem et al. 2010). They are insectivorous; in the Kruger National Park, their diet consisted mostly of Coleoptera and to a lesser proportion, Lepidoptera (Aldridge & Rautenbach 1987). Seamark and Bogdanowicz (2002) reported that their faeces may contain vegetative matter. Morphometric data and field studies reveal that this species is able to forage over water, as well as other areas, such as highly cluttered vegetation, tree canopies, open spaces between lower branches and tree-trucks, as well as in clearings around buildings (Fenton & Bogdanowicz 2002; Happold et al. 2013). Although little information is available for the reproductive ecology of this species, females are known to give birth at the end of November and the beginning of December (Skinner & Chimimba 2005).

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 harvested within the assessment region.

Threats

There appears to be no major threats to this species as a whole (ACR 2015). However, climate change has been identified as an increasing global threat to other bat species (Sherwin et al. 2013), and may similarly impact *N. zuluensis*. More research is needed to determine this. Disturbance to key roost sites has also been recognised as a common threat to other bat species in the assessment region; but further information into the roosting behaviour of *N. zuluensis* is required in order to understand whether disturbance is a serious threat.

Current habitat trend: Stable. Savannah woodlands are not threatened in the assessment region (Driver et al. 2012).

Conservation

In the assessment region, the species is recorded from many protected areas, including Kruger National Park, Baobab Tree Reserve, Mapungubwe National Park, Blouberg Nature Reserve, Percy Fyfe Nature Reserve, Borakalalo National Park, Pilanesberg National Park and Hluhluwe-iMfolozi Park. It seems probable that this adaptable species is present within a number of additional protected areas. No direct conservation measures are currently needed for the species as a whole, but research into its habitats and ecology is recommended.

Recommendations for land managers and practitioners:

- Reduce pesticide use in agricultural landscapes.

Research priorities:

- Identifying roost site selection and basic ecology.
- Determining population size, trends and potential threats.

Encouraged citizen actions:

- Citizens can assist the conservation of the species by reporting 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.

Aldridge HDJN, Rautenbach IL. 1987. Morphology, echolocation and resource partitioning in insectivorous bats. Journal of Animal Ecology **56**:763–778.

Boyles JG, Cryan PM, McCracken GF, Kunz TH. 2011. Economic importance of bats in agriculture. Science **332**:41–42.

Driver A, Sink KJ, Nel JN, Holness S, van Niekerk L, Daniels F, Jonas Z, Majiedt PA, Harris L, Maze K. 2012. National Biodiversity Assessment 2011: An Assessment of South Africa's Biodiversity and Ecosystems. Synthesis Report. South African National Biodiversity Institute and Department of Environmental Affairs, Pretoria, South Africa.

Fenton MB, Bogdanowicz W. 2002. Relationships between external morphology and foraging behaviour: bats in the genus *Myotis*. Canadian Journal of Zoology **80**:1004–1013.

Happold M, van Cakenberghe V, Kearney T. 2013. *Pipistrellus zuluensis* Zulu Pipistrelle (Aloe Bat). Pages 657–659 in Happold M, Happold DCD, editors. Mammals of Africa. Volume IV: Hedgehogs, Shrews and Bats. Bloomsbury Publishing, London, UK.

Kearney TC, Volleth M, Contrafatto G, Taylor PJ. 2002. Systematic implications of chromosome GTG-band and bacula morphology for southern African *Eptesicus* and *Pipistrellus* and several other species of Vespertilioninae (Chiroptera: Vespertilionidae). Acta Chiropterologica **4**:55–76.

Kunz TH, Braun de Torrez E, Bauer D, Lobova T, Fleming TH. 2011. Ecosystem services provided by bats. Annals of the New York Academy of Sciences **1223**:1–38.

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

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.

Data Sources and Quality

Table 2. Information and interpretation qualifiers for the Zulu Pipistrelle Bat (*Neoromicia zuluensis*) assessment

Data sources	Field study (unpublished), indirect information (literature, 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.*

Norberg UM, Rayner JM. 1987. Ecological morphology and flight in bats (Mammalia; Chiroptera): wing adaptations, flight performance, foraging strategy and echolocation. Philosophical Transactions of the Royal Society B: Biological Sciences **316**: 335–427.

Rautenbach IL, Bronner GN, Schlitter DA. 1993. Karyotypic data and attendant sympatric implications for the bats of southern Africa. Koedoe **36**:87–104.

Schoeman MC, Jacobs DS. 2008. The relative influence of competition and prey defences on the phenotypic structure of insectivorous bat ensembles in southern Africa. PLoS One **3**:e3715.

Seamark ECJ, Bogdanowicz W. 2002. Feeding ecology of the common slit-faced bat (*Nycteris thebaica*) in KwaZulu-Natal, South Africa. Acta Chiropterologica **4**:49–54.

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

Simmons NB. 2005. Order Chiroptera. Pages 312–529 in Wilson DE, Reeder DM, editors. Mammal Species of the World. Johns Hopkins University Press, Baltimore, USA.

Skinner JD, Chimimba CT. 2005. The Mammals of the Southern African Subregion. Third edition. Cambridge University Press, Cambridge, UK.

Taylor PJ. 2000. Bats of Southern Africa: Guide to Biology, Identification, and Conservation. University of Natal Press, Pietermaritzburg, South Africa.