Miniopterus inflatus – Greater Long-fingered Bat


Ara Monadjem

Regional Red List status (2016)	Near Threatened C2a(i)+D1*†
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 †Watch-list Threat

This species was overlooked in the previous assessment but has now been confirmed to occur widely but patchily in the eastern parts of South Africa (Monadjem et al. 2010).

Assessment Rationale

This species occurs widely but sparsely in northeastern South Africa with an extent of occurrence of 64,798 km^2. It is often sympatric at roost sites with other *Miniopterus* species, yet occurs in lower densities (typically only 5% the abundance of *Miniopterus natalensis*). Thus, it may be overlooked and occur more widely than thought. There are no major identified threats but as it occurs predominantly outside protected areas, disturbance to cave roosts (which makes it vulnerable to local extinctions) and agricultural transformation depleting its insect prey base may be causing localised declines. Additionally, although its current known distribution does not overlap with planned wind farm developments, the discovery of new subpopulations may reveal wind farms as an emerging threat. This species would qualify as Vulnerable C2a(i) but subpopulations are not significantly fragmented as they have relatively high wing-loading. As subpopulations typically comprise *c.* 50 individuals and this species is known from only five localities, there is an inferred minimum population size of 250 individuals. However, this is an underestimate and field surveys are required to identify as yet undetected subpopulations. Total mature population size is unlikely to be significantly more than 1,000 individuals. Thus, we list as Near Threatened C2a(i) and D1. Additionally, since it is almost certainly a species complex and may thus be revealed to be a South African or southern African endemic, we do not know the true range of the species. As such, this species should be reassessed pending further population data and taxonomic resolution.

Regional population effects: It has a relatively high wing-loading (Norberg & Rayner 1987) and thus dispersal is likely. However, it is sparsely distributed throughout its range and so significant rescue effects are uncertain.

Taxonomy

Miniopterus inflatus Thomas 1903

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - MINIOPTERIDAE - *Miniopterus* - *inflatus*

Common names: Greater Long-fingered Bat (English), Groot Grotvlermuis (Afrikaans)

Taxonomic status: Species complex

Taxonomic notes: The currently recognized *Miniopterus inflatus* is probably a complex of morphologically similar species. Meester et al. (1986) recognised two subspecies, one of which occurs in southern Africa, *M. i. rufus* (Sanborn 1936). Similarly, Juste et al. (2007) recognise *M. africanus* as distinct from *M. inflatus*. Molecular data suggest that this species' closest relative in southern Africa is *M. fraterculus* (Miller-Butterworth et al. 2005). Molecular research may reveal *M. inflatus* to be endemic or near endemic to the assessment region (A. Monadjem pers. comm. 2016).

Distribution

This species is more widespread than previously thought and is often overlooked (for example Friedmann & Daly 2004). Only scattered records exist for the species, occurring widely but sparsely over much of sub-Saharan Africa (Figure 1). It has been reported from Liberia and Guinea in West Africa; from Cameroon, Equatorial Guinea, Gabon, Central African Republic and the Democratic Republic of the Congo in Central Africa; from Ethiopia, Uganda, Kenya and Tanzania in East Africa; and from Namibia, Zimbabwe and Mozambique in southern Africa (ACR 2015). It may have been overlooked in Angola (Monadjem et al. 2010). Within the assessment region, there are clusters of records from the Eastern Cape, KwaZulu-Natal and Mpumalanga provinces (Monadjem et al. 2010). Its overall distribution is unclear due to confusion with *M. natalensis*. The current estimated extent of occurrence in the assessment region is 64,798 km^2. Field surveys are needed to identify previously undetected localities and subpopulations.

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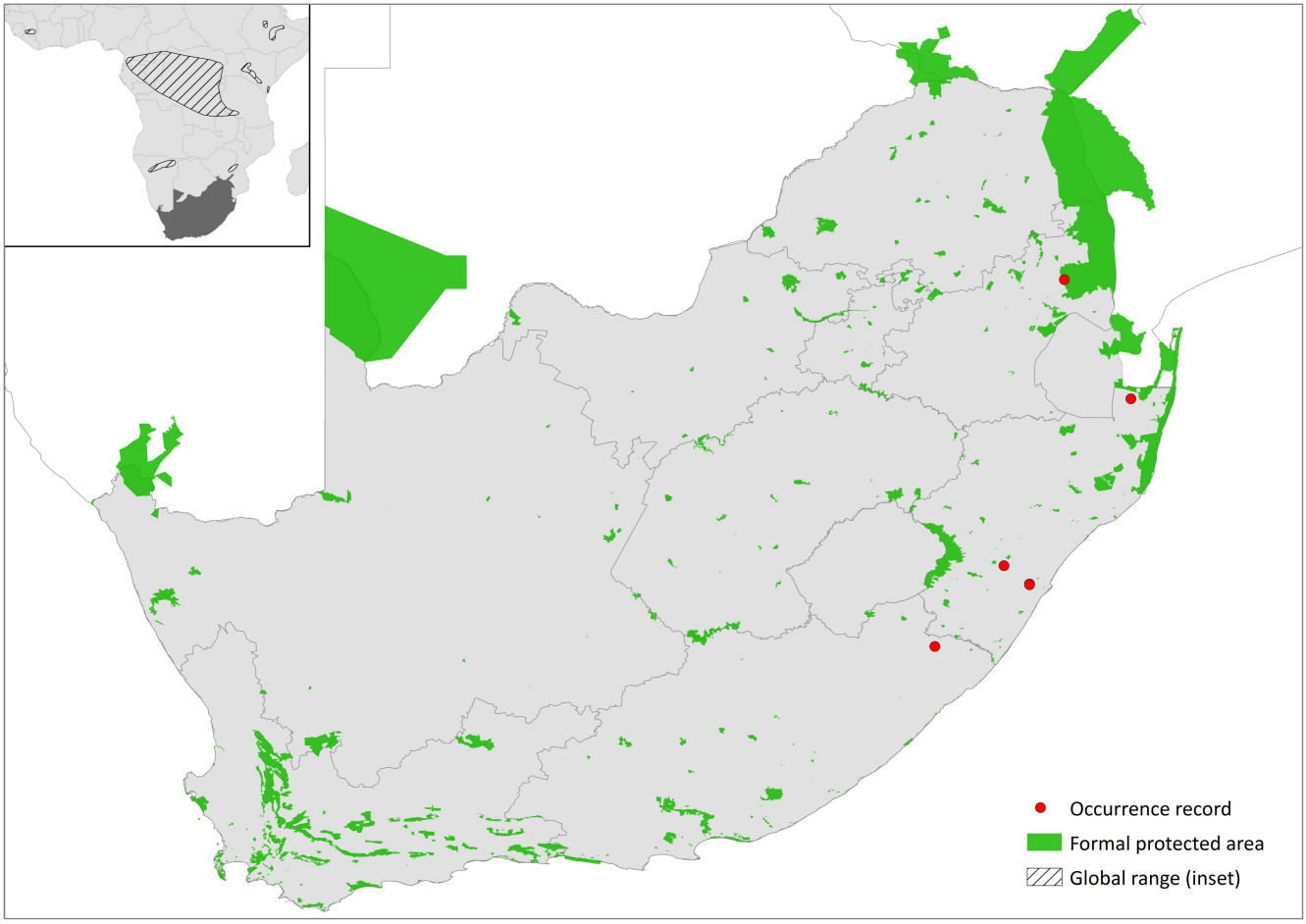

Figure 1. Distribution records for Greater Long-fingered Bat (*Miniopterus inflatus*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Population

This is generally considered to be a locally rare species, although it can be common in some areas (Schlitter 2008). It is poorly represented in museums with only 24 specimens examined in Monadjem et al. (2010). Where it co-occurs with *M. natalensis*, it does so in very low numbers (Skinner & Chimimba 2005), possibly only 5% of the total as it occurs singly or in small groups of 4–6 individuals (W. White pers. obs. 2015). For example, in Namibia, Churchill et al. (1997) recorded a cluster of 50 individuals sharing a roost with *c.* 500 *Rhinolophus fumigatus* and over 200 *Nycteris thebaica*.

Current population trend: Stable

Continuing decline in mature individuals: No

Number of mature individuals in population: Unknown, but possibly < 1,000

Number of mature individuals in largest subpopulation: Unknown, but possibly < 50

Number of subpopulations: Five currently known.

Severely fragmented: No

Habitats and Ecology

It appears to be associated with moist savannah habitats (Monadjem et al. 2010). The availability of roosting sites (primarily caves) and food are probably more important habitat requirements than the type of vegetation (Skinner & Chimimba 2005). It may be a clutter-edge forager (Monadjem et al. 2010), but, since it has higher wing loading and aspect ratio than *M. natalensis* (Norberg & Rayner 1987; Jacobs 1999), this species probably spends most of its time in relatively open habitat. It congregates in small groups of up to 50 individuals (Churchill et al. 1997). All three *Miniopterus* species appear to use the same roosts in KwaZulu-Natal. While *M. natalensis* and *M. fraterculus* roost in large clumps of conspecifics, usually on the ceiling, *M. inflatus* roosts individually or in small groups of 4–6 bats, frequently on the walls as well as the ceilings (W. White pers. obs. 2015). The Greater Long-fingered Bat is the largest of the three long-fingered bat species within the assessment region (Skinner & Chimimba 2005). There is no information on the diet of this species (Monadjem et al. 2010).

Ecosystem and cultural services: None known

Use and Trade

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

Table 2. Threats to the Greater Long-fingered Bat (*Miniopterus inflatus*) 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*: loss of natural habitats. Current stress *1.3 Indirect Ecosystem Effects*: loss of insect prey base.	Driver et al. 2012 Jewitt et al. 2015	Indirect (land cover change from remote sensing)	National Regional	Ongoing
2	*6.1 Human Intrusions & Disturbance*: recreational activities and traditional ceremonies disturb roost sites.	-	Anecdotal	-	Increasing with settlement expansion.
3	*3.3 Renewable Energy*: mortality from collision with wind turbine blades.	-	Anecdotal	-	Unknown

Table 3. Conservation interventions for the Greater Long-fingered Bat (*Miniopterus inflatus*) 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*: identification and protection of key roost sites required.	-	Anecdotal	-	-	Identifying sites for protection, KwaZulu-Natal Bat Interest Group

Threats

There do not appear to be any major threats to this species, although some roosting caves may be disturbed by tourism activities (Schlitter 2008). Extensive transformation of natural habitat, particularly in KwaZulu-Natal (Jewitt et al. 2015), is likely to be causing declines where the insect prey base is depleted as a result of loss of native vegetation or the use of pesticides.

Its high wing loading and aspect ratio (Norberg & Rayner 1987) suggests that this bat is a fast flyer in relatively open spaces. Additionally, similar to its close relative *M. natalensis*, it is also likely to be migratory. These factors are likely to result in this species flying in the rotor sweep zone of wind turbines both while foraging and commuting during migration. While its known distribution does not overlap with planned wind farm developments in the region, newly discovered subpopulations may be revealed to be threatened by wind farms, similar to *M. natalensis*.

Current habitat trend: Stable, but possibly declining in quality, particularly from agricultural expansion (Driver et al. 2012; Jewitt et al. 2015). However, this species occurs widely across vegetation types so long as adequate roosting sites are available.

Conservation

This species occurs marginally in Kruger National Park (Mpumalanga Province) and Shongweni Resources Reserves (KwaZulu-Natal Province). Regulations to limit disturbance of important roosting caves are important (Schlitter 2008). However, identifying key roosting sites is a prerequisite. No direct conservation interventions are possible without further delimitation of its distribution, population size and ecology.

Research priorities:

- Systematic monitoring to identify key roost sites and delimit geographical distribution more accurately.

Encouraged citizen actions:

- Limit disturbance to roost sites.
- Deposit any dead specimens to the Durban Natural Science Museum or Ditsong Museum of Natural History.

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Greater Long-fingered Bat (*Miniopterus inflatus*) assessment

Data sources	Field study (unpublished)
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.*