Chaerephon pumilus – Little Free-tailed Bat


Merlin Tuttle

Regional Red List status (2016)	**Least Concern**
National Red List status (2004)	Least Concern
Reasons for change	No change
Global Red List status (2008)	Least Concern
TOPS listing (NEMBA) (2007)	None
CITES listing	None
Endemic	No

In southern Africa, this is the smallest of the Free-tailed Bats (Rautenbach 1997); it is a solitary aerial forager, exhibiting fast and erratic movements in flight, usually from about 12 m off the ground (Skinner & Chimimba 2005).

Taxonomy

Chaerephon pumilus (Cretzschmar 1826)

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - MOLOSSIDAE - *Chaerephon - pumilus*

Synonyms: *Dysopes pumilus* (Cretzschmar 1826), *Dysopes dubius* (Peters 1852), *Dysopes limbatus* (Peters 1852), *Nyctinomus gambianus* (de Winton 1901), *Nyctinomus hindei* (Thomas 1904), *Chaerephon leucogaster* (Grandidier 1870), *Chaerephon pumila* (Cretzschmar 1826), *Chaerephon pusillus* (Miller 1902), *Tadarida leucogaster* (Grandidier 1869), *Tadarida pumila* (Cretzschmar 1826), *Tadarida pusilla* (Miller 1902)

Common names: Little Free-tailed Bat, White-bellied Free-tailed Bat, Lesser Free-tailed Bat, Little Wrinkle-lipped Bat (English), Klein Losstertvlermuis (Afrikaans)

Taxonomic status: Species

Taxonomic notes: Although previously included under the genus *Tadarida*, this species has been reclassified under the genus *Chaerephon* (ACR 2015). Taxonomic revision of this genus is required. For example, the relationship between *C. pumilus* and *C. leucogaster*, and their associated subspecies, await revision (Monadjem et al. 2010). The existence of cryptic mtDNA lineages occurring sympatrically in KwaZulu-Natal are suggestive of a species-complex (Taylor 1999).

Assessment Rationale

Listed as Least Concern in view of its wide distribution (estimated extent of occurrence in the assessment region alone is 958,459 km^2), its tolerance of a broad range of habitats, presumed large population, its occurrence in several protected areas and because it is unlikely to be declining fast enough to qualify for listing in a threatened category. Savannah habitats are well protected within the assessment region and no direct interventions are necessary.

Regional population effects: This species has a continuous distribution through the northeastern parts of South Africa into Mozambique and Zimbabwe and has a high wing-loading (Norberg & Rayner 1987; Schoeman & Jacobs 2008); thus dispersal is likely and rescue effects are possible.

Distribution

This species of Free-tailed Bat is one of the most common and widespread species in the region (Monadjem et al. 2010). In the west of its range it is found in Senegal, eastwards to Yemen and southwestern Saudi Arabia, and as far south as South Africa. It has been recorded from the island of Bioko and the Annobon Islands (Equatorial Guinea), Pemba and Zanzibar (Tanzania), the Comoros Islands, Mayotte (Goodman 2007), and Madagascar (Bouchard 1998) and on the Aldabra Atoll of the Seychelles (Hutson 2004). Habitat models suggest that suitable conditions occur over much of southern Mozambique (Monadjem et al. 2010). Within the assessment region, it occurs widely in the northeastern areas, from the far-eastern Eastern Cape along the coast in KwaZulu-Natal and through Swaziland, to Mpumalanga and Limpopo provinces.

Population

This is a widespread and abundant species (Monadjem et al. 2010), occurring in colonies ranging from about 5–20 to thousands of individuals (Taylor 1998; Mickleburgh et al. 2008). For example, colonies of up to 2,000 have been estimated to occur in the roof of a sugar mill in KwaZulu-Natal (Monadjem et al. 2010). Rautenbach (1997) suggests that this species may be one of the most common within its range in southern Africa, as it has benefited substantially from urban expansion. It is very well represented in museums, with over 1,000 specimens examined in Monadjem et al. (2010).

Current population trend: Stable

Continuing decline in mature individuals: No

Number of mature individuals in population: Unknown

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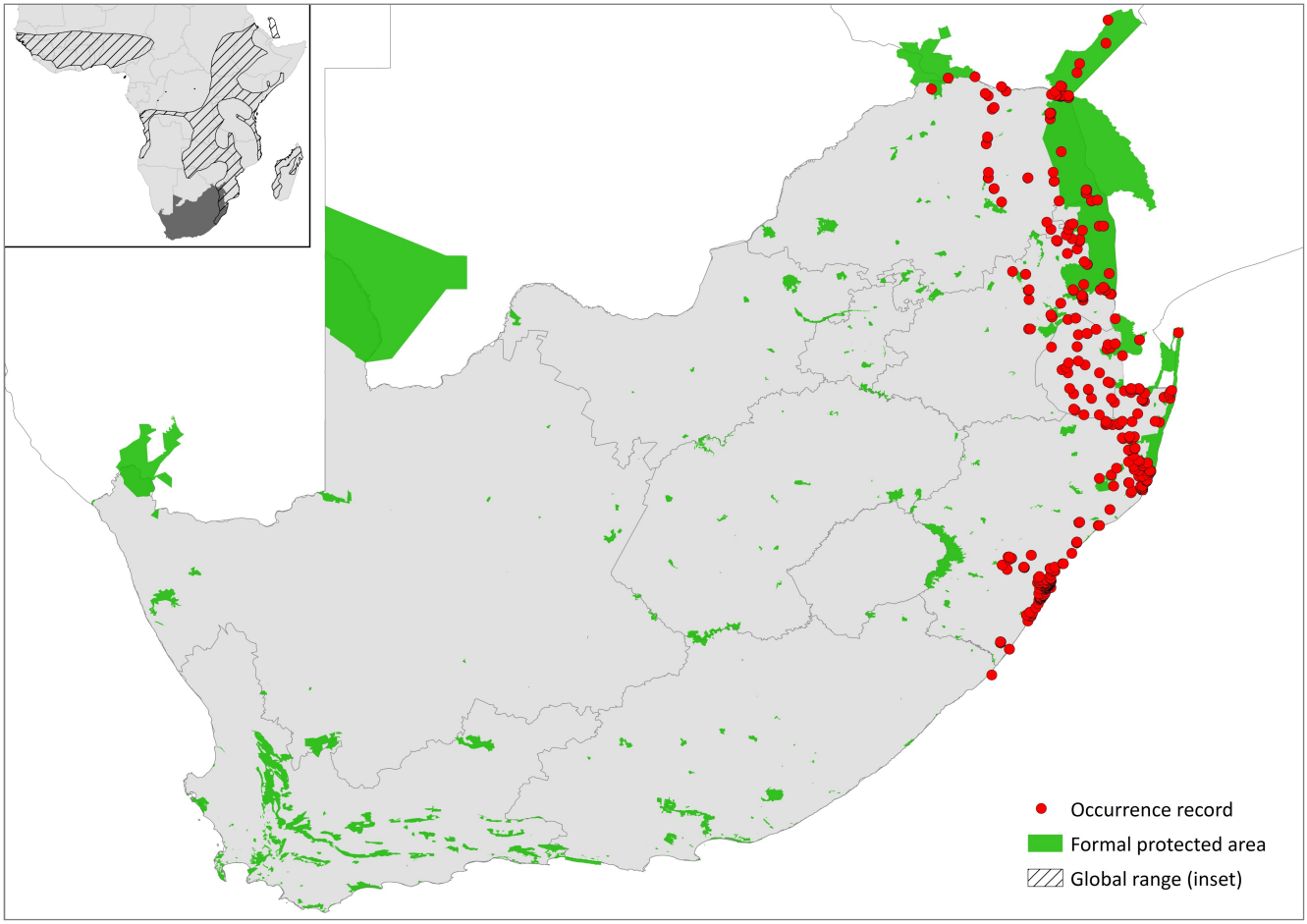

Figure 1. Distribution records for Little Free-tailed Bat (*Chaerephon pumilus*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: Unknown

Severely fragmented: No

Habitats and Ecology

The Little Free-tailed Bat occurs across a variety of habitats from semi-arid savannah in the north of its range to forested regions further south (Happold 1987). In Zimbabwe it occurs within dry mopane woodland habitats below 1,000 m asl (Skinner & Chimimba 2005). Brickwork under roofs, corrugated roofs or other crevices in buildings provide suitable roosting sites for Little Free-tailed Bats within built-up areas, but natural roost sites include cracks and crevices in rocks and trees (Skinner & Chimimba 2005; Mickleburgh et al. 2008; Monadjem et al. 2010).

The species is considered an open-air forager, feeding on Coleoptera, Hemiptera, Lepidoptera, Hymenoptera and Diptera (Aldridge & Rautenbach 1987). The Little Free-tailed Bat typically exhibits summer seasonal breeding. For example, females in the Kruger National Park experienced synchronised breeding with three peaks in parturition: early November, late January and early April (van der Merwe et al. 1986). This was similar in Swaziland, with peaks in parturition estimated to occur in November, January and March (Monadjem 1998). Individuals in Malawi experienced a fourth peak in parturition in about May, but Monadjem (1998) suggests that this is likely to

Photo 1. The small size of *Chaerephon pumilus* (forearm length < 40mm) mostly prevents confusion with other species (Wendy White)

Table 2. Threats to the Little Free-tailed Bat (*Chaerephon pumilus*) 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	*3.3. Renewable Energy*: mortality by barotrauma or direct collision with turbine blades at wind turbines.	Cryan & Barclay 2009	Indirect	Global	Increasing with expansion of wind energy farms.
		Baerwald et al. 2008	Indirect	Regional	
		Rydell et al. 2010	Indirect	Regional	

Table 3. Conservation interventions for the Little Free-tailed Bat (*Chaerephon pumilus*) 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.	-	Anecdotal	-	-	-

be limited to low latitude regions and more tropical climates. The Little Free-tailed Bat experiences a gestation period of approximately 60 days, and a single young of about 3.2 g is produced (Skinner & Chimimba 2005). Sexual maturity in females is reached at an age of between 5 and 12 months (Skinner & Chimimba 2005).

Ecosystem and cultural services: As this species is insectivorous, it may contribute to controlling insect populations (Boyles et al. 2011; Kunz et al. 2011). Bats often prey on the insect species that destroy crops (Boyles et al. 2011; Kunz et al. 2011). Ensuring a healthy population of insectivorous bats can thus result in a decrease in the use of pesticides.

Use and Trade

There is no evidence to suggest that this species is traded or harvested within the assessment region.

Threats

Currently, there are no major threats to the species. However, with wind energy potential moving into parts of KwaZulu-Natal, this could pose a serious threat to this species, due to its open-air foraging behaviour (Baerwald et al. 2008; Cryan & Barclay 2009). Cryan and Barclay (2009) recognised that most bat species affected by wind turbines tend to be those that roost in trees, which is an attribute of this species. In some parts of its range, it is threatened from persecution as a pest, especially since it roosts in buildings (ACR 2015).

Current habitat trend: Stable. Savannah habitats are well protected in the assessment region (Driver et al. 2012).

Conservation

In the assessment region, the species is recorded from the protected areas of Kruger National Park, Baobab Tree Reserve, Hans Meresky Nature Reserve, Ndumo Game Reserve, Tembe Elephant Park, iSimangaliso Wetland Park, Pongolapoort Nature Reserve, Pongola Nature Reserve, Hluhluwe-iMfolozi Game Reserve, Dlinza Forest Nature Park, Harold Johnson Nature Reserve and Oribi Gorge Nature Reserve. Although no specific conservation efforts are necessary, this species would benefit from the protection of key roost sites.

Recommendations for land managers and practitioners:

- Reduce pesticide use in agricultural landscapes.

Research priorities:

- Studies into the impact of wind farms on this species.

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.

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Little Free-tailed Bat (*Chaerephon pumilus*) assessment

Data sources	Field study (unpublished), indirect information (literature, expert knowledge), museum records
Data quality (max)	Estimated
Data quality (min)	Inferred
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.*