Nycticeinops schlieffeni – Schlieffen's Twilight Bat

Brock Fenton

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	Edge of range

In accordance with its common name, this species typically emerges from its roosting site before dusk.

Taxonomy

Nycticeinops schlieffeni (Peters 1859)

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - VESPERTILIONIDAE - *Nycticeinops* - *schlieffeni*

Synonyms: *adovanus*, *africanus*, *albiventer, australis, bedouin, cinnamomeus, fitzsimonsi, minimus*

Common names: Schlieffen's Twilight Bat, Schlieffen's Bat (English), Schlieffen se Vlermuis, Schlieffen-vlermuis Klein Dakvlermuis (Afrikaans)

Taxonomic status: Species

Taxonomic notes: This species was previously listed under the genus *Nycticeius* (Monadjem et al. 2010). The validity of the subspecies *Nycticeinops schlieffeni australis* (Thomas & Wroughton 1908) and *N. s. fitzsimonsi* (Roberts 1932) is currently considered uncertain (Monadjem et al. 2010; Happold 2013). The northern Namibian population appears isolated and hence might represent a unique evolutionary lineage but further molecular studies are needed to resolve this (Monadjem et al. 2010).

Assessment Rationale

The species is listed as Least Concern in view of its wide distribution in Africa, as well as in the assessment region, where the estimated extent of occurrence is 191,166 km^2. This species is common, occurs in numerous protected areas, including transfrontier conservation areas, and there are no major identified threats that could cause widespread decline. It occurs in a variety of well protected habitats within the assessment region.

Regional population effects: The resident *N. schlieffeni* population appears to be continuous with those of Mozambique and Zimbabwe through the Great Limpopo Transfrontier Park and the Greater Mapungubwe Transfrontier Conservation Area. However, it has low wing loading (Norberg & Rayner 1987) so rescue effects are uncertain.

Distribution

This species has a widespread but disjunct distribution (Happold 2013). Its distribution is split into two major groups: one range in West Africa, including north Senegal, south Mauritania, Burkina Faso, Togo, Benin, Nigeria and south Angola (ACR 2015), with an additional isolated population in northern Namibia (Monadjem et al. 2010); and one covering much of eastern and southern Africa (as far south as northeastern Swaziland, in the Mlawula Nature Reserve, and northern KwaZulu-Natal). It is absent from much of the Horn of Africa, northeastern Ethiopia, eastern Tanzania, and northeastern Mozambique. In southern Africa, it occurs widely in the eastern and northern parts of the region, but is absent from the arid west and from the tropical forests of the extreme north (Monadjem et al. 2010). Within the assessment region, the species is restricted to the northeastern regions, recorded from Limpopo, Mpumalanga and KwaZulu-Natal provinces of South Africa, as well as in Swaziland. The estimated extent of occurrence is 191,166 km^2. Its range is continuous with Zimbabwe, Zambia, Mozambique, Malawi and southern Democratic Republic of the Congo (Monadjem et al. 2010).

Population

This gregarious species is considered common within its range in northeastern South Africa and Swaziland; and individuals are known to roost together in large numbers (Rosevear 1965; Rautenbach 1982). Similarly, they are often very numerous in mopane woodland in northern Zimbabwe (F. P. D. Cotterill unpubl. data). They are well represented in museums, with over 300 specimens examined in Monadjem et al. (2010).

Current population trend: Stable

Continuing decline in mature individuals: No

Number of mature individuals in population: Unknown

Number of mature individuals in largest subpopulation: Unknown

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

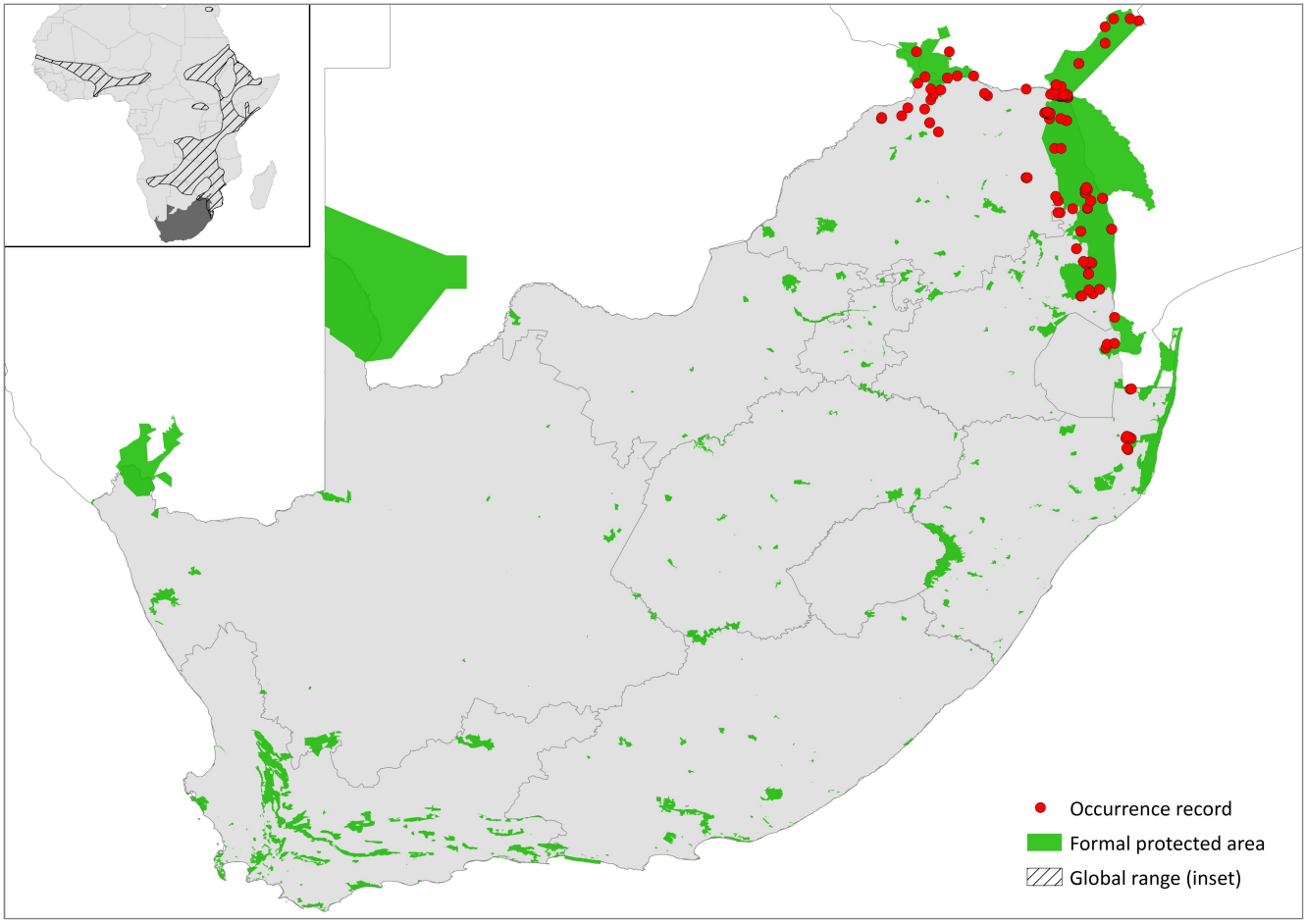

Figure 1. Distribution records for Schlieffen's Twilight Bat (*Nycticeinops schlieffeni*) within the assessment region

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

Number of subpopulations: Unknown

Severely fragmented: No

Habitats and Ecology

The species occurs across a range of habitats, including dry and moist savannah (miombo and mopane woodlands), semi-desert grassland and shrubland, riparian forest (but avoids true forests), *Acacia–Commiphora* bushveld, some coastal woodlands and forests, but avoids most arid habitats (Happold 2013). It appears to be closely associated with low-lying savannahs, where it may be abundant in well-wooded places such as riparian vegetation along rivers and drainage lines (Monadjem & Reside 2008). It roosts by day in hollow branches, crevices in hollow trees, rock crevices, roofs and cellars (Skinner & Chimimba 2005; Monadjem et al. 2010; Happold 2013). They were also recorded from under the bark of a dead *Senegalia* (previously *Acacia*) *nigrescens* tree in mopane savannah in Zinave National Park (Smithers & Lobao-Tello 1976). In the assessment region, the species is recorded from the Mopane, Lowveld and Central Bushveld bioregions. Considered a clutter-edge forager, this insectivorous species feeds predominantly on aerial insects such as Coleoptera, Diptera, Lepidoptera, Trichoptera and Hymenoptera (Fenton et al. 1977, 1998; Fenton & Thomas 1980; Aldridge & Rautenbach 1987). Vegetative matter may also constitute a proportion of their diet (Seamark & Bogdanowicz 2002).

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

No major threats have been identified for this species within the assessment region. However, roost disturbance and removal through logging of large trees for fuelwood and charcoal production may lead to local declines. For example, recent land-cover analysis reveals that 20% of forest and woodland cover was lost from 1990 to 2006 in

Table 2. Threats to the Schlieffen's Twilight Bat (*Nycticeinops schlieffeni*) 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	*5.3.3 Logging & Wood Harvesting*: roost loss from fuelwood harvesting.	Munyati & Kabanda 2009	Indirect	Local	Increasing

Table 3. Conservation interventions for the Schlieffen's Twilight Bat (*Nycticeinops schlieffeni*) 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, specifically large trees.	-	Anecdotal	-	-	-

the Soutpansberg Mountain region due to logging, residential expansion and pine/eucalyptus plantations (Munyati & Kabanda 2009).

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

Conservation

This species occurs within a number of protected areas within the assessment region, including Great Limpopo Transfrontier Park, Mlawula Nature Reserve (Swaziland), Hans Merensky Nature Reserve, Baobab Tree Reserve, Ndumo Game Reserve and iSimangaliso Wetland Park. No specific conservation measures are deemed necessary at present. However, the protection of large trees required for roosting will benefit this species.

Recommendations for land managers and practitioners:

- Reduce pesticide use in agricultural landscapes.
- Protect and preserve large trees, which provide valuable roosting sites for this species.

Research priorities:

- Taxonomic revision, particularly with regards to the validity of proposed subspecies (Monadjem et al. 2010).
- Studies investigating the severity of potential threats on local subpopulations.

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 Schlieffen's Twilight Bat (*Nycticeinops schlieffeni*) assessment

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

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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

Claire Relton[1], Matthew F. Child[1], Domitilla Raimondo[2]

[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.*