Scotophilus viridis – Green House Bat


Wendy White

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 Green House Bat is the smallest yellow house bat to occur within the subregion (Skinner & Chimimba 2005).

Taxonomy

Scotophilus viridis (Peters 1852)

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - VESPERTILIONIDAE - *Scotophilus* - *viridis*

Common names: Green House Bat, Greenish Yellow Bat, Lesser Yellow House Bat (English), Klein Geel Dakvlermuis (Afrikaans)

Taxonomic status: Species

Taxonomic notes: This genus is in urgent need of taxonomic revision (Monadjem et al. 2010b), particularly the relationship between *Scotophilus leucogaster* and *S. viridis*. There is evidence that *S. viridis* is a species complex, at least in East and West Africa (Trujillo et al. 2009; Vallo et al. 2013). However, the situation in southern Africa is unclear. Currently, we recognise *S. viridis* as a valid species following Robbins et al. (1985), Simmons (2005) and Jacobs et al. (2006). Meester et al. (1986) recognised two subspecies in the subregion: *S. b. damarensis* (Thomas 1906), which was found from northeastern Namibia and *S. b. viridis* (Peters 1852) from the remainder of the species' range.

Assessment Rationale

Listed as Least Concern in view of its wide distribution (estimated extent of occurrence is 461,101 km^2) within the assessment region, its presumed large population due to it being a common species, its occurrence in several protected areas (including Kruger National Park), its ability to utilise artificial habitats, and because there are no major identified threats that could cause widespread population decline. The conservation and protection of large trees used for roosting sites, such as Leadwood (*Combretum imberbe*) and Mopane (*Colophospermum mopane*) trees, is a recommended management practice for sustaining this species.

Regional population effects: Habitat between regions is contiguous and its range is likely more extensive in neighbouring countries that currently documented. Thus we infer rescue effects are possible.

Distribution

This species is widespread in sub-Saharan Africa, ranging from Senegal and The Gambia in West Africa, to northern Cameroon and Central African Republic, from there into Sudan and Ethiopia, and then south through much of East Africa and southeastern Africa, occurring as far south as eastern South Africa and Swaziland (Skinner & Chimimba 2005). Within the assessment region, they are restricted to eastern South Africa and Swaziland, extending from KwaZulu-Natal through Kruger National Park and into Mozambique. It is under-sampled and will probably be shown to be more widespread in the subtropical eastern and northern parts of the region (Monadjem et al. 2010b). The estimated extent of occurrence within the assessment region is 461,101 km^2.

Population

This is a common species (ACR 2015), although its population has not been studied in detail. It is not well represented in museums, with only 41 records examined in Monadjem et al. (2010b). Where it does occur, it is often more abundant than *S. dinganii*; for example, in Swaziland and Mozambique (A. Monadjem unpubl. data).

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

Number of subpopulations: Unknown

Severely fragmented: No

Habitats and Ecology

The Green House Bat is considered a savannah woodland species and has been recorded from both dry and moist wooded and bushveld habitats, typically in areas with a

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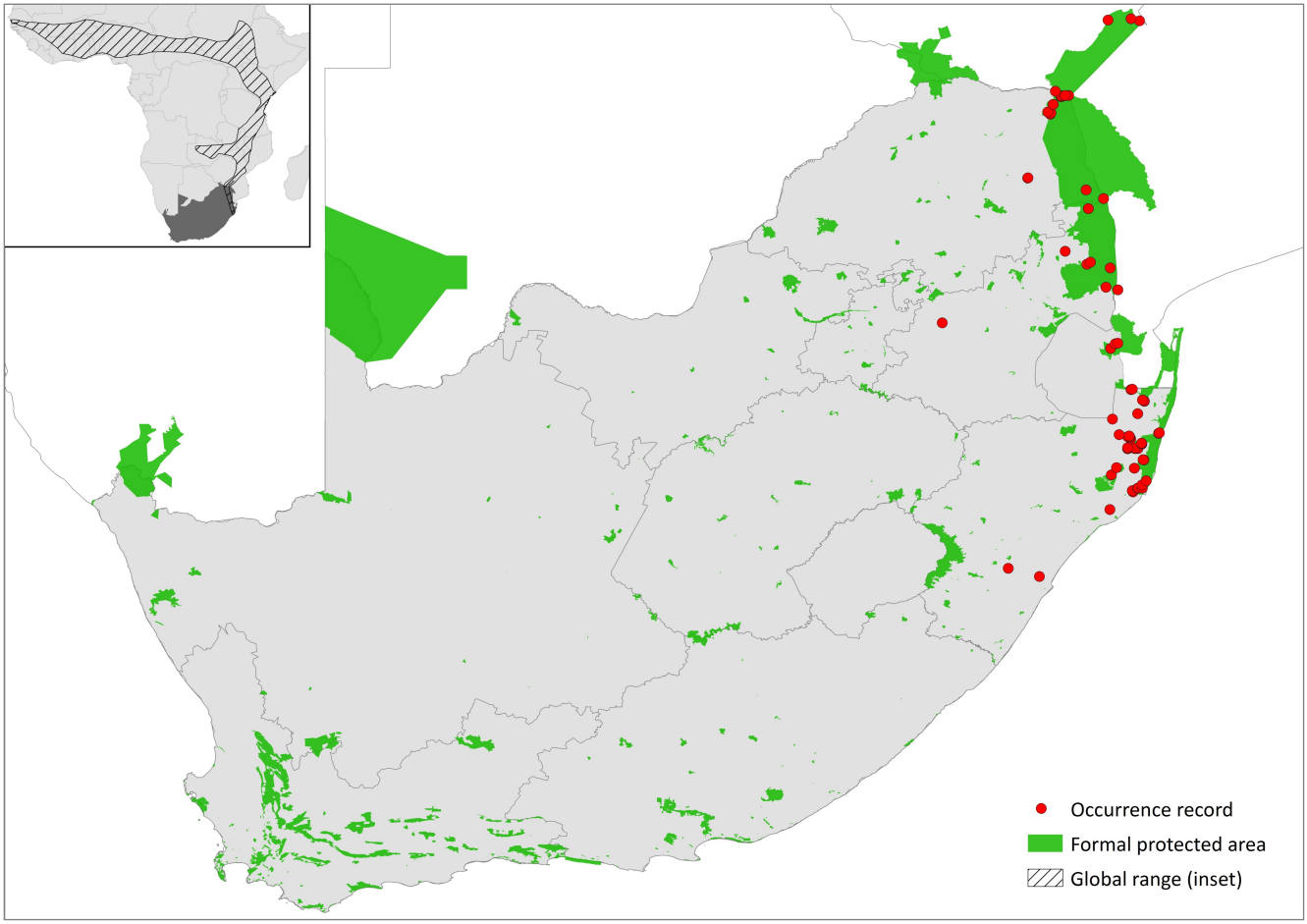

Figure 1. Distribution records for Green House Bat (*Scotophilus viridis*) within the assessment region

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

mean annual rainfall of > 500 mm (Skinner & Chimimba 2005). It is restricted to low-lying, hot savannahs and avoids open habitats such as grasslands (Monadjem et al. 2010b), possibly due to the absence of roosting sites. In the assessment region, the species is recorded from the Upper Karoo, Dry Highveld Grassland, Central Bushveld, Mopane Bioregion, Lowveld, Indian Ocean Coastal Belt, Drakensberg Grassland, Sub-Escarpment Savanna and Sub-Escarpment Grassland.

This is not a well-studied species, with very little known about their habits. It roosts in small colonies in a variety of shelters (Monadjem et al. 2010a, 2010b), such as buildings and hollow trees (Cotterill & Giddings 1987). Roofs of houses are often selected as roosting sites (Jacobs et al. 2007; Jacobs & Barclay 2009). In Kruger National Park, it was found to favour hollow Mopane Trees found along the sides and tops of ridges (Fenton et al. 1985). In Swaziland, they were recorded roosting predominantly in Leadwood and Knob Thorn (*Acacia nigrescens*) trees (Monadjem et al. 2010a). Like other house bats, the Green House Bat is insectivorous (Skinner & Chimimba 2005), existing on a diet of mainly Coleptera, Lepidoptera and Hemiptera (Monadjem et al. 2010b).

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 which destroy crops (Boyles et al. 2011; Kunz et al. 2011), and thus sustaining a healthy population of insectivorous bats can decrease the need for pesticides.

Use and Trade

There is no evidence to suggest that the species is traded or utilised in any form.

Threats

There are no major threats to this species. However, the loss of large trees used for roosting from fuelwood harvesting and agricultural expansion may result in local declines. Key roosting trees, such as *C. imberbe*, are slow-growing and vulnerable to be over-utilised for fuelwood (*sensu* Wessels et al. 2013).

Current habitat trend: Stable. The Savannah Biome is well protected within the assessment region (Driver et al. 2012). However, recent land-cover analysis reveals that natural habitat in KwaZulu-Natal is being lost at a rate of 1.2% per annum since 1994 primarily due to agricultural expansion (Jewitt et al. 2015); and 20% of forest and

Table 2. Threats to the Green House Bat (*Scotophilus viridis*) 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	*2.1.1 Annual & Perennial Non-timber Crops:* loss of natural habitats. Current stress *1.3 Indirect Ecosystem Effects*: loss of insect prey base from insecticide use.	Jewitt et al. 2015	Indirect (land-cover change from remote sensing)	Regional	Ongoing
2	*5.3.3 Logging & Wood Harvesting:* loss of large trees used for roosting.	Munyati & Kabanda 2009	Indirect	Local	Increasing

Table 3. Conservation interventions for the Green House Bat (*Scotophilus viridis*) 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	-	-	-

woodland cover was lost from 1990 to 2006 in Soutpansberg Mountain region due to logging, residential expansion and pine/eucalyptus plantations (Munyati & Kabanda 2009). Similar threats could be occurring within the range of the species.

Conservation

In the assessment region, the species is recorded from several protected areas, including Kruger National Park, Hans Merensky Nature Reserve, Ndumo Game Reserve, Tembe Elephant Park, iSimangaliso Wetland Park, Pongolapoort Nature Reserve, Hluhluwe-iMfolozi Park and Mlawula Nature Reserve in Swaziland. No direct conservation interventions are necessary for this species, but it will benefit from protection of key roost sites, particularly large trees such as *Combretum imberbe*, *Colophospermum mopane* and *Acacia nigrescens* (Fenton et al. 1985; Monadjem et al. 2010a). The conservation of such roosting trees may be critical to the continued persistence of cavity-nesting insectivorous bats in African savannahs (Monadjem et al. 2010a).

Recommendations for land managers and practitioners:

- The conservation and protection of large trees used for roosting sites is a recommended management practice for this species.
- Reduce pesticide use in agricultural landscapes.

Research priorities:

- Surveys to determine population size, trend and distribution of additional colonies.
- Taxonomic resolutions through sampling from a broader geographical area (including southern, eastern, central and West Africa) using both molecular and morphological datasets (Monadjem et al. 2010b).

Encouraged citizen actions:

- Limit disturbance to roost sites.
- 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 Green House Bat (*Scotophilus viridis*) 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.*