Scotophilus nigrita – Giant Yellow House Bat

Mike Buchanan

Regional Red List status (2016)	**Near Threatened D2***
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	Edge of range

*Watch-list Data

This species was previously overlooked within the assessment region until the first records were obtained from bat houses in Komatipoort and Malelane, and subsequently in Hectorspruit.

Taxonomy

Scotophilus nigrita (Schreber 1774)

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

Synonyms: *alvenslebeni, gigas*

Common names: Giant Yellow House Bat, Giant House Bat, Schreber's Yellow Bat (English), Groot Geel Dakvlermuis (Afrikaans)

Taxonomic status: Species complex

Taxonomic notes: *Scotophilus nigrita* was previously known as *S. gigas*, owing to a mistaken double description of two different species, but *nigrita* is the senior synonym (Monadjem et al. 2010). Confusingly, *S. dinganii* was for a while referred to as *S. nigrita* (particularly prior to 1978) but its taxonomic status (being the largest *Scotophilus*) is not in dispute. Two subspecies of *S. nigrita* are recognised (Meester et al. 1986; Happold 2013), which have widely disjunct distributions and may eventually be shown to be separate phylogenetic lineages. Corroborating this, recent molecular DNA research provides evidence that suggests the southern African subspecies, *S. n. alvenslebeni*, could be elevated to specific status, which would yield a West African species that can be recognised as *S. nigrita* (owing to proximity to type locality – Senegal) and a southern African species *S. alvenslebeni* (Vallo et al. 2015). More analyses are needed to confirm this species divide.

Assessment Rationale

This species is widely but sparsely distributed throughout its range, but only known from three localities (Komatipoort, Malelane and Hectorspruit) in the northeast of the assessment region. These localities are on the outskirts of the Kruger National Park (KNP) alongside what is known as the Peripheral Development Zone, which may mean the localities are not subject to the same responsibility of environmental protection as the core area of KNP. However, all specimens have been collected from bat houses, which suggests the species may tolerate modified habitats and human habitation. It is uncertain whether the localities represent locations as the threats to this species are poorly understood. As such, we list the species as Near Threatened D2 (nearly qualifying for Vulnerable D2) and urge further field surveys to delimit distribution and population size within the assessment region more accurately and to quantify potential threats, as this species may qualify for a more threatened status. Additionally, molecular research may reveal this species to be endemic to southern Africa. Thus, reassessment is required once more comprehensive data are available.

Regional population effects: It is on the edge of the range but the population is discontinuously distributed between the assessment region and Mozambique/ Zimbabwe. While it is probably more evenly distributed than currently recorded (Monadjem et al. 2010), little is known about its dispersal capacity and thus we assume no rescue effects are possible.

Distribution

The Giant Yellow House Bat is sparsely, but widely, distributed in Africa, marginally entering southern Africa in the east. It is known from only a few scattered localities in Senegal, Côte d'Ivoire, Ghana, Togo and Nigeria in West Africa, from central Sudan, and from western Democratic Republic of the Congo, western Kenya and Tanzania, Mozambique, Malawi, eastern Zimbabwe and northeastern South Africa (Happold 2013; ACR 2015). This species is probably difficult to record and distribution gaps may be filled across most of its range (Happold 2013), but possibly not within the assessment region. A record from Botswana (Cotterill 1996; Taylor 2000) is erroneous (Happold 2013) as it actually refers to *S. dinganii*. This highlights a general problem where, since this species was once confused with *S. dinganii*, many references to *S. nigrita* in the literature constitute incorrect localities (for example, Hutton 1986). Robbins (1978)

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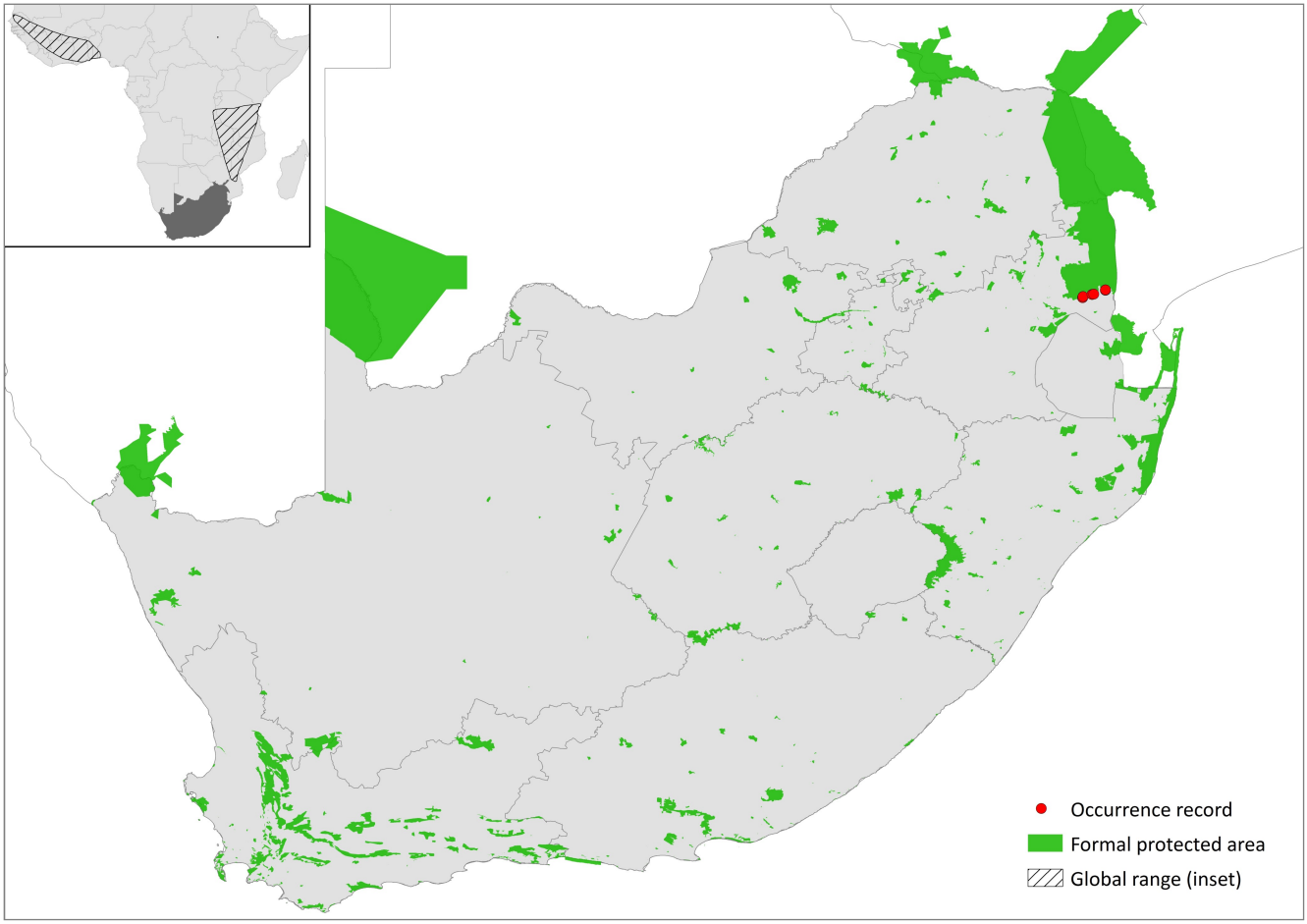

Figure 1. Distribution records for Giant Yellow House Bat (*Scotophilus nigrita*) within the assessment region

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	Absent	-
Zimbabwe	Extant	Native

suggested that most specimens called *nigrita* prior to 1978 should be called *dinganii*. Additionally, ongoing molecular research may raise the southern African and West African subspecies to specific status (Vallo et al. 2015).

While previously not assessed in South Africa due to it being considered a vagrant (Friedmann & Daly 2004), the first South African records of the rare *S. nigrita* were discovered in bat houses in Komatipoort and Malelane in 2004 (Monadjem et al. 2010), and have since also been recorded from bat houses in Hectorspruit. It may have been around for a long time and was simply overlooked in the past even in inhabited areas. It could be that it adapts easily to artificial roosting sites like *S. dinganii* or that habitat destruction forced it to inhabit built areas including bat houses. It is unknown whether it extends deeper into KNP or other areas of the assessment region. Further field surveys and monitoring of bat houses are necessary.

Population

Abundance is uncertain but it is considered rare (Happold 2013), and is also rarely recorded. For example, it is poorly represented in museums, with only six records examined in Monadjem et al. (2010). In South Africa, *c*. 16 individuals were observed in 2005 in bat houses of Malelane, Hectorspruit, and Komatipoort, which may indicate a stable population in the region (N. Fernsby unpubl. data). Further field surveys are needed to discover new subpopulations and to monitor population trends.

Current population trend: Unknown but possibly 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: Three known: Komatipoort, Hectorspruit and Malelane.

Severely fragmented: No

Habitats and Ecology

Recorded from relatively dry woodland savannah and miombo woodland often in the vicinity of rivers and riverine forests (Happold 2013). For example, the specimens from Zimbabwe and Mozambique were collected near major rivers within savannah woodland (Skinner & Chimimba 2005). Specimens have also been collected from houses, *Hyphaene* palms, banks of rivers (including dry rivers) near villages and even over pools

Table 2. Threats to the Giant Yellow House Bat (*Scotophilus nigrita*) 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	*9.3.3 Agriculture & Forestry Effluents*: reduction of prey base from pesticide use.	-	Anecdotal	-	Ongoing

Table 3. Conservation interventions for the Giant Yellow House Bat (*Scotophilus nigrita*) 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*: implement best land-use management practices and limit disturbance to roosting sites.	-	Anecdotal	-	-	-
2	*4.3 Awareness & Communications*: increase knowledge of ecosystem services and distribute best practice guidelines.	-	Anecdotal	-	-	-

(Happold 2013). Still little is known about its roosting behaviour and it is too sparsely distributed to determine habitat requirements (Monadjem et al. 2010). Specimens from South Africa were collected and observed from bat houses within human habitation (N. Fernsby pers. obs. 2004). The species readily occupied small Yellow House Bat houses and large (Angolan) Free-tailed Bat houses mounted on free-standing poles at about 4 to 5 meters above ground level (N. Fernsby unpubl. data).

It is a very large bat with a mass of over 50 g (Monadjem et al. 2010). It is predicted to forage high above the ground and is insectivorous, although some authors have suggested it is carnivorous (Happold 2013). A captive individual was observed feeding on very large Coleoptera but was disinterested in mantids and moths (N. Fernsby & P.J. Taylor unpubl. data).

Ecosystem and cultural services: Natural control of insect populations. Can feed upon agro-economically important stink bugs, fruit chafers, and twig wilters (N. Fernsby pers. obs. 2004).

Use and Trade

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

Threats

Globally, this species is threatened by the conversion of its habitat to agricultural use in parts of its range. Within the assessment region, it is unknown whether there are significant threats facing the population. While there is agricultural intensification around all three localities, and thus a possible impact of pesticides reducing its prey base, this species can exist in human modified habitats and forages close to large river systems where its preferred insect prey is abundant. Quantifying the impacts of specific threats is required.

Current habitat trend: Stable. This species occurs in the Savannah Biome, which is not threatened in the assessment region (Driver et al. 2012).

Conservation

Given the close proximity of the known subpopulations to KNP, this species may occur in at least one protected area (but this remains to be verified). No direct conservation interventions are recommended until more is known about the threats facing the population. However, as it occurs in the Peripheral Development Zone (PDZ) of KNP, which is not subject to the same responsibility of environmental protection and management, several basic interventions are recommended until more detailed information is available: limiting disturbance to known roost sites and decreasing pesticide use and/or retaining buffer strips of natural vegetation in surrounding landscapes to sustain the insect prey base. This can be achieved through an education campaign in local communities to highlight the importance of ecosystem services and distribute best practice guidelines. As this species was first recorded from bat boxes, the installation of bat boxes may become a future intervention if community willingness and responsibility is nurtured.

Recommendations for land managers and practitioners:

- Maintenance of bat houses currently occupied.
- Protect remaining natural habitat outside KNP.
- Minimise environmental pesticide/insecticide contamination (e.g. in agro-industry).

Research priorities:

- Field surveys to identify further colonies and identify specific threats.
- Investigating patterns of movement to establish level of demographic and genetic exchange between colonies and quantifying the effects on transformation/fragmentation on such processes.
- Taxonomic resolution through ongoing molecular research.

Encouraged citizen actions:

- Limit disturbance to roost sites.
- Avoid or limit the use of pesticides/insecticides for household purposes.

- Report any new sightings and deposit any dead specimens at your local conservation office.

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Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Giant Yellow House Bat (*Scotophilus nigrita*) assessment

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

Assessors and Reviewers

Nigel Fernsby[1], Lientjie Cohen[2], Leigh R. Richards[3], Peter J. Taylor[4], Matthew F. Child[5]

[1]Private, [2]Mpumlanga Tourism and Parks Agency, [3]Durban Natural Science Museum, [4]University of Venda, [5]Endangered Wildlife Trust

Contributors

Domitilla Raimondo[1]

[1]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.*