Neoromicia nana – Banana Bat

Raphael Colombo

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

This tiny species is so named because of its characteristic affiliation with banana plants where they will roost by day in the rolled-up, sprouting terminal leaves (Skinner & Chimimba 2005). As the leaves are smooth and slippery, the Banana Bat has uniquely adapted large pads on the thumb of the wing and soles of the feet to assist them in climbing up the steep side of the leaf (Skinner & Chimimba 2005).

Taxonomy

Neoromicia nana (Peters 1852)

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - VESPERTILIONIDAE - *Neoromicia* - *nana*

Synonyms: *Vespertilio nanus* Peters, 1852, *Vesperugo pusillulus* Peters 1870, *Vesperugo stampflii, Vesperugo pagenstecheri*, *Vesperus pusillus*, *Pipistrellus minusculus*, *Pipistrellus culex*, *Pipistrellus nanus* (Peters, 1852), *Pipistrellus nanus australis*, *Pipistrellus abaensis*, *Pipistrellus fouriei* Thomas 1926, *Pipistrellus africanus meesteri* Kock 2001, *Neoromicia nanus*

Common names: Banana Bat, Banana Pipistrelle Bat, Banana Pipistrelle, Pipistrelle Naine (English), Piesangvlermuis (Afrikaans)

Taxonomic level: Species

Taxonomic note: Kearney et al. (2002) states that *nana* belongs to the genus *Neoromicia* but *nana* also shares characteristics with *Hypsugo* and *Pipistrellus* (Monadjem et al. 2010b). As such, Helbig et al. (2010) suggest that *nana* needs to be transferred to a new genus entirely. Further research is needed to fix its generic assignment. While seven subspecies are postulated, their validity remains in question (ACR 2015). Some authorities consider *africana* as the oldest name for this species. However, in Decision 2120, the International Commission on Zoological Nomenclature (ICZN) ruled that the name *Pipistrellus nanus* (currently *Neoromicia nana*) should be given precedence over *africana*, whenever the two are considered to be synonyms. There is a need for further molecular and taxonomic work to clarify the systematic status of specimens currently allocated to *Neoromicia nana* throughout much of the current range.

Assessment Rationale

Listed as Least Concern in view of its wide distribution in the assessment region, its occurrence in multiple protected areas (including Great Limpopo Transfrontier Park and Greater Mapungubwe Transfrontier Conservation Area), its tolerance of disturbed habitats, its relative abundance compared to other species, and because there are no major identified threats that could cause widespread population decline. Further taxonomic resolution is required through molecular research.

Regional population effects: Their range is continuous with Mozambique and Zimbabwe through the Great Limpopo and Greater Mapungubwe Transfrontier Conservation Areas. However, it has low wing loading (Schoeman & Jacobs 2008), so rescue effects are uncertain.

Distribution

The Banana Bat is widely distributed throughout most of sub-Saharan Africa. It ranges from Senegal in the west, through West and Central Africa, to Eritrea, Ethiopia and Somalia in the east; from here its range spreads southwards to southeastern South Africa. The two records reported from the Kirindy Centre de Formation Professionelle Forestière Forest and from Zombitse in Madagascar (Goodman & Langrand 1994) are believed to be misidentifications (Goodman et al. 2015). It appears to be absent, or largely absent, from northern Kenya, Namibia, southern Botswana, western Zimbabwe, northern Mozambique, Lesotho and much of South Africa, but it is possible that it occurs more widely in these areas than is currently known, and further field studies are needed to investigate its distribution (ACR 2015). Within the assessment region, it occurs widely in the wetter eastern and northern parts of the region, but is absent from the arid southwest (Monadjem et al. 2010b), where it has been recorded from Port St Johns in the Eastern Cape, north through KwaZulu-Natal, Swaziland, southern Mozambique and the lowveld of South Africa where it occurs in the Greater Mapungubwe and Great Limpopo Transfrontier Conservation Areas.

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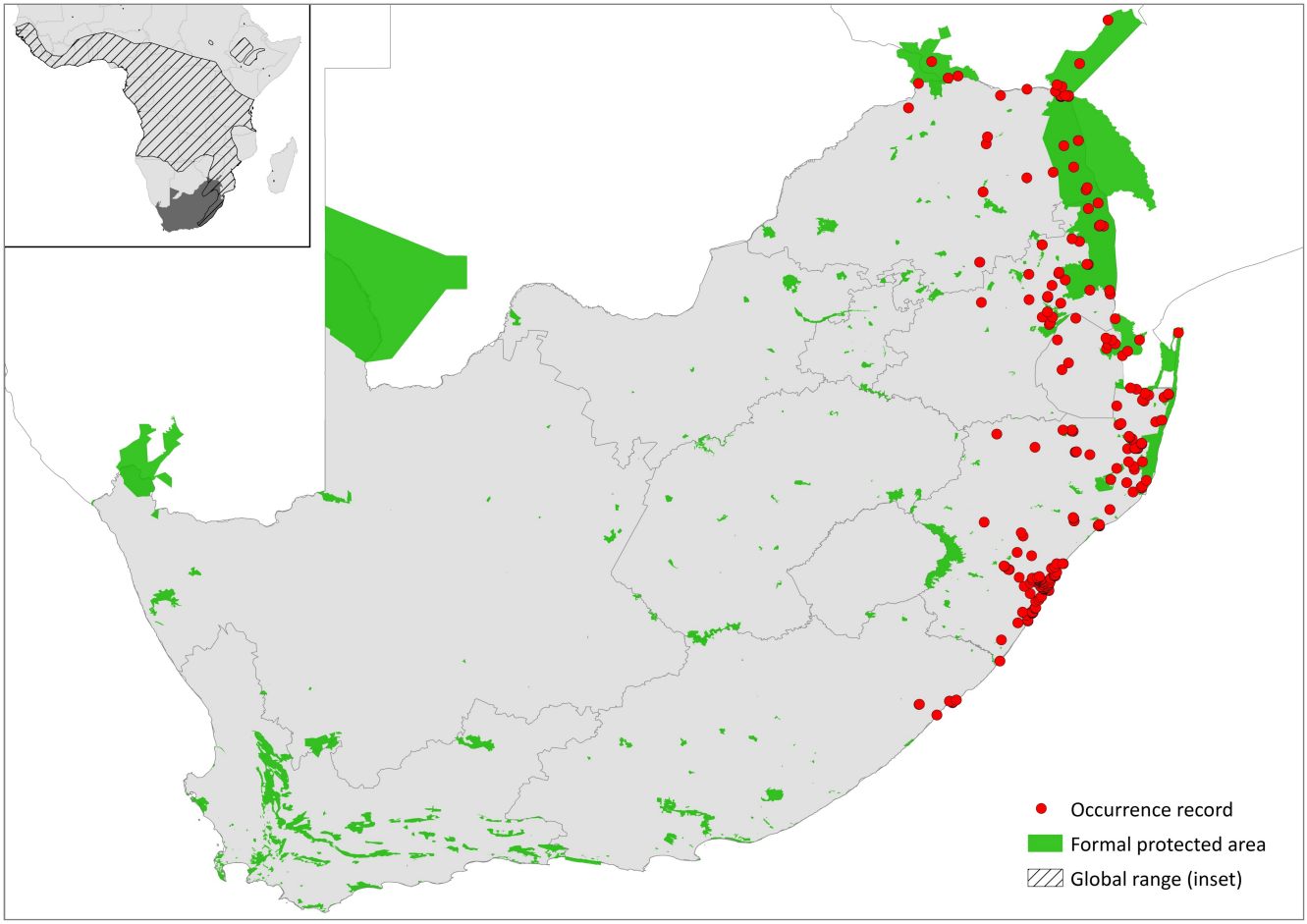

Figure 1. Distribution records for Banana Bat (*Neoromicia nana*) within the assessment region

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

Population

In suitable habitats, this species is considered common (Happold 1987). They are well-represented in museums, with more than 500 individuals examined in Monadjem et al. (2010b). In a recent study in the Durban region, this species was the most commonly recorded of 16 species along the Umbilo River (Naidoo et al. 2011). In the non-breeding season, males roost singly but form harem groups during the breeding season (Monadjem et al. 2010b). Lactating females roost in maternity groups or alone with their young (Monadjem et al. 2010b).

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

It is associated with well-wooded habitats such as riparian vegetation and forest patches, especially in the proximity of water (Monadjem & Reside 2008). It has also been recorded from lowland and montane tropical moist forest, dry and moist savannah, and similar wooded areas. They also occur in disturbed habitats, such as logged forests (Monadjem et al. 2010a) and a polluted riverscape in the Durban region (Naidoo et al. 2011). They appear to be particularly common in localities with banana or *Strelitzia* plants (Skinner & Chimimba 2005). The rolled-up, terminal leaves of these plants are frequently used as roosting sites, although the species has also been recorded in the leaves of other plants and roofs (especially those made of thatch or palm leaves) (Taylor 2000; Skinner & Chimimba 2005; Monadjem et al. 2010b). They usually roost singly or as small colonies of two to six individuals (Skinner & Chimimba 2005). Group composition varies considerably over the annual cycle and is linked to reproductive status (van der Merwe & Stirnemann 2009).

It is an insectivorous clutter-edge forager, with a diet consisting predominantly of small Coleoptera, Lepidoptera and to a lesser extent Diptera (Fenton et al. 1977; Fenton & Thomas 1980; Schoeman 2006). They are most active after sunset for about 5 hours, while, after midnight, activity declines rapidly (Monadjem et al. 2010a). Studies in KwaZulu-Natal found that mating occurs in May and sperm is stored in the female until mid-August when

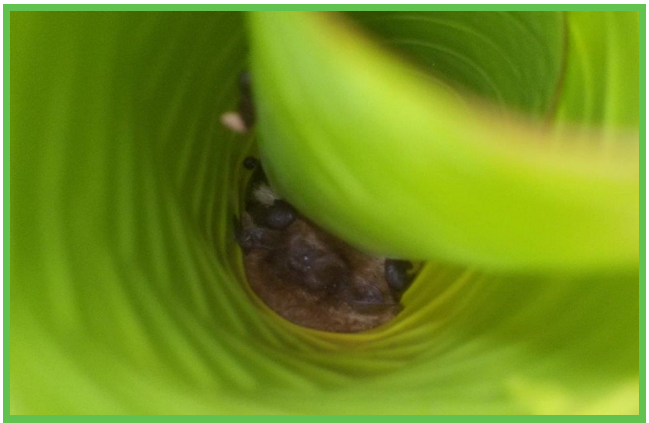

Photo 1. The Banana Bat (*Neoromicia nana*) gets its name from its adaptation of roosting in the rolled-up, sprouting terminal leaves of banana plants (Kate MacEwan & Wendy White)

ovulation takes place (LaVal & LaVal 1977). In southern and central Africa, this species is considered seasonally monoestrous (LaVal & LaVal 1977; Happold & Happold 1990, 1996; Bernard et al. 1997).

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

There appear to be no major threats to this widespread and seemingly adaptable species, which can persist in modified habitats. However, there is ongoing habitat loss from agricultural transformation, especially in KwaZulu-Natal (Jewitt et al. 2015), which may reduce the insect prey base for this species.

Current habitat trend: Stable**.** Savannah habitats are generally well protected within the assessment region (Driver et al. 2012). KwaZulu-Natal forests and moist woodlands are under pressure in some areas. An average of 1.2% natural habitat has been transformed per annum since 1994 in KwaZulu-Natal, primarily due to agriculture, timber plantations, human settlements and industry and mines (Jewitt et al. 2015).

Conservation

This species occurs in many protected areas within the assessment region including large reserves like Great Limpopo Transfrontier Park, Greater Mapungubwe Transfrontier Conservation Area, iSimangaliso Wetland Park, Ndumo Game Reserve, Tembe Elephant Park, Phinda Private Game Reserve, uMkhuze Nature Reserve and Hluhluwe-iMfolozi Game Reserve. No direct conservation interventions are necessary for the species at present. However, outside of protected areas, it would benefit from holistic land management that reduces pesticide use and conserves buffer strips of natural vegetation to sustain insect biomass.

Recommendations for land managers and practitioners:

- Reduce pesticide use in agricultural landscapes and maintain buffer strips of natural vegetation.

Research priorities:

- Taxonomic resolution is required to determine the relationship between populations in Ethiopia and southern Africa, as conspecificity may be unlikely, and whether this species should be placed in its own genus (Monadjem et al. 2010b).
- Quantifying the severity of local threats is necessary.
- Monitoring of known subpopulations should be performed to establish population size and trend.

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.

Table 2. Threats to the Banana Bat (*Neoromicia nana*) 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 Annual & Perennial Non-Timber Crops*: habitat loss from agro-industry expansion. Current stress *1.3 Indirect Ecosystem Effects*: loss of prey base.	Jewitt et al. 2015	Indirect (remote sensing)	Regional	Ongoing
2	*9.3.3 Agricultural & Forestry Effluents*: indirect poisoning. Current stress *1.3 Indirect Ecosystem Effects*: loss of prey base.	Jewitt et al. 2015	Anecdotal	Regional	Stable

Table 3. Conservation interventions for the Banana Bat (*Neoromicia nana*) 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	*2.3 Habitat & Natural Process Restoration*: reduction of pesticide use in agricultural landscapes and conservation of buffer strips of natural vegetation.	-	Anecdotal	-	-	-

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Banana Bat (*Neoromicia nana*) assessment

Data sources	Field study (unpublished), indirect information (literature, expert knowledge), museum records
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.*