# *Laephotis namibensis* – Namibian Long-eared Bat

David Jacobs

| **Regional Red List status (2016)** | **Vulnerable D1*** |
|---|---|
| National Red List status (2004) | Not Evaluated |
| Reasons for change | Non-genuine |
| Global Red List status (2016) | Least Concern |
| TOPS listing (NEMBA) (2007) | None |
| CITES listing | None |
| Endemic | No |

*Watch-list Data

Although bats of the genus *Laephotis* can be distinguished from other vesper bats (family: Vespertilionidae) by their long ears and large triangular tragus, the species within this genus cannot be easily classified using external characteristics (Monadjem et al. 2010).

## Taxonomy

*Laephotis namibensis* Setzer 1971

ANIMALIA - CHORDATA - MAMMALIA - CHIROPTERA - VESPERTILIONIDAE - *Laephotis* - *namibensis*

**Common names:** Namibian Long-eared Bat, Namib Long-eared Bat (English), Namib-langoorvlermuis (Afrikaans)

**Taxonomic status:** Species

**Taxonomic notes:** Based on morphometric data (Kearney et al. 2002; Jacobs et al. 2005; Kearney & Seamark 2005), this species may be conspecific with *Laephotis wintoni* (Monadjem et al. 2010). No clear morphological distinction was found between the two species by Kearney and Seamark (2005), and *L. namibensis* might constitute the paler, western race of *L. wintoni* (Peterson 1973; Monadjem et al. 2010). It was not assessed in the previous Red List for this reason (Friedmann & Daly 2004). The lack of significant morphological differences emphasises the need for molecular studies to clarify the taxonomic relationships within this genus and the geographical boundaries between species (Monadjem et al. 2010).

## Assessment Rationale

This species is sparsely distributed in the arid habitats of Namibia and is also known from a single, isolated subpopulation found in the Cederberg Mountains of the Western Cape Province of South Africa. It roosts in inaccessible rock faces that are unlikely to be transformed, and thus the locality does not represent a location. Because no information is available on population size and it is not abundant from elsewhere in its range, we assume there are fewer than 1,000 mature individuals in the assessment region and hence list it as Vulnerable D1. Currently, there is still uncertainty whether *L. namibensis* and *L. wintoni* are distinct species or geographical races (molecular research is needed to resolve specific status). Here we assume *L. namibensis* is a distinct species. Further field studies are needed to identify additional subpopulations and to estimate population sizes and trends. Once such molecular and field data are available, both species should be reassessed.

**Regional population effects**: Although it has intermediate wing loading (Jacobs et al. 2005; Schoeman & Jacobs 2008), and thus is possibly capable of effective dispersal, the South African and Namibian populations have a disjunct distribution and thus we assume no rescue effects are possible.

## Distribution

Endemic to South Africa and Namibia, this species is restricted to the arid, western regions of the countries (Kearney & Seamark 2005). This little known species has been recorded from a few localities in the Namib Desert (Kuiseb River, Gobabeb, Zwartmodder, Klein Aus and Helmeringshausen), and a single area in the Western Cape, South Africa (Algeria in the Cederberg Mountains) (Skinner & Chimimba 2005; Monadjem et al. 2010), where it has been recorded regularly (for example, Jacobs et al. 2005; Sirami et al. 2013). Recent acoustic survey data suggest this species is more widely distributed across the Western Cape than current capture data suggests, with activity recorded in the Cederberg, Agulhas, Franschhoek, Malmesbury, Riviersonderend and Wellington areas (Sirami et al. 2013). However, these data need validation.

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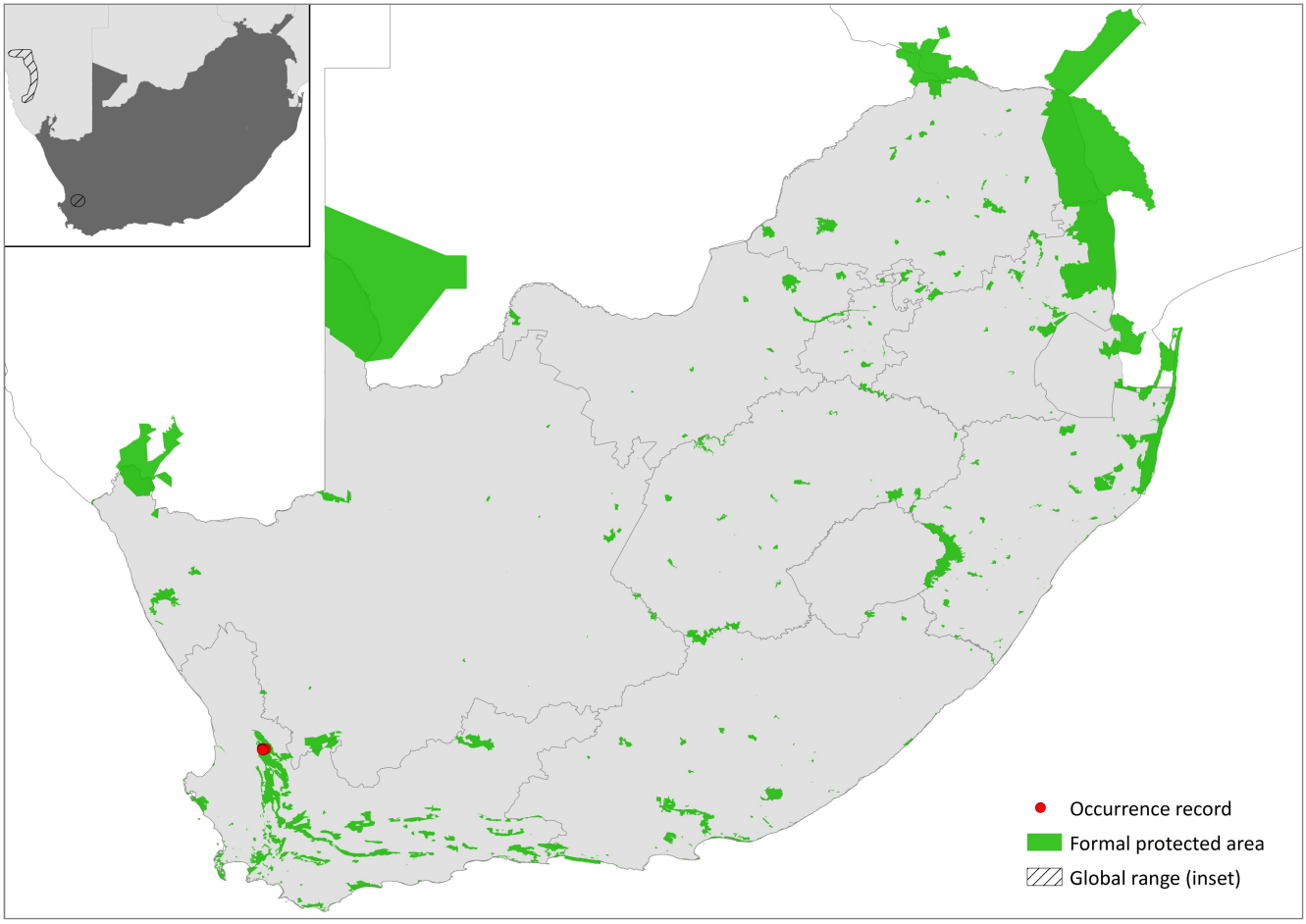


**Figure 1. Distribution records for Namibian Long-eared Bat (*Laephotis namibensis*) within the assessment region**

**Table 1. Countries of occurrence within southern Africa**

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

# Population

Although the species appears to be naturally rare in the Namib Desert, it is commonly sampled in mist-nets set around water tanks outside of the Namib (ACR 2015). Its abundance within the assessment region is unknown, but is regularly caught in mist nets over water in the Cederberg (for example, Jacobs et al. 2005; Sirami et al. 2013).

**Current population trend:** 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**: One

**Severely fragmented:** Yes, this species is known from only one locality in the assessment region and is seemingly isolated from those populations from the Namib Desert.

# Habitats and Ecology

In general, this species has been recorded from temperate desert, dry savannah and arid fynbos areas, with individuals most often found in close proximity to water in arid, mountainous areas (Monadjem et al. 2010; Kearney 2013). Individuals from Algeria Forest were mist-netted as they flew along a water course, close to the water surface (ACR 2015). Similarly, they were found to be active near trees and orchards surrounding wetlands as well as over wetlands (Sirami et al. 2013). In the assessment region, the species is recorded from the Northwest Fynbos bioregion.

Radio tracking data from the Western Cape shows that *L. namibensis* makes use of narrow crevices in vertical rock faces as diurnal roosting sites (Jacobs et al. 2005). A specimen has also been taken from a roost under exfoliating rock (Skinner & Chimimba 2005). This small, insectivorous species has intermediate wing loading and is considered a slow manoeuvrable flyer, that often flies low over water surfaces or the ground, and close to vegetation (Jacobs et al. 2005; Monadjem et al. 2010). It is a clutter-edge forager, with Lepidoptera and Coleoptera constituting large portions of its diet (Jacobs et al. 2005; Schoeman 2006).

Within the assessment region, a pregnant female was caught in November 2002, and three lactating females

**Table 2. Threats to the Namibian Long-eared Bat (*Laephotis namibensis*) 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*: agricultural expansion causing habitat loss. Current stress *1.3 Indirect Ecosystem Effects*: loss of insect prey base. | Pence 2014 | Indirect (land cover change from remote sensing) | Regional | Ongoing |
| 2 | *9.3.3 Agricultural & Forestry Effluents*: loss of prey base from pesticide use. | - | Anecdotal | Regional | Ongoing |
| 3 | *11.1 Habitat Shifting & Alteration*: decline in food availability and variation in reproductive timing due to global climate change. | Sherwin et al. 2013 | Review | International | Unknown |

**Table 3. Conservation interventions for the Namibian Long-eared Bat (*Laephotis namibensis*) 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 | - | - | - |
| 2 | *2.3 Habitat & Natural Process Restoration*: reduction of pesticide use in agricultural landscapes and conservation of buffer strips of natural vegetation. | - | Anecdotal | - | - | - |

were caught in November 2004 (Jacobs et al. 2005). A post-lactating female was collected towards the end of January (Seamark & Brand 2005).

**Ecosystem and cultural services:** None known.

# Use and Trade

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

# Threats

Across its full range, no major threats have been identified for this poorly known species (ACR 2015). However, agricultural expansion in the Western Cape may be reducing the prey base of this species by removing natural vegetation and through the use of pesticides. Additionally, climate change has been identified as an increasing global threat to other bat species (Sherwin et al. 2013), and may similarly impact *L. namibensis*. The Fynbos biome is projected to experience a loss of area of between 51% and 65% by 2050 (depending on the climate change scenario) (Midgley et al. 2002).

**Current habitat trend:** Declining. In the Western Cape, Pence (2014) calculated that between 2006 and 2011, 536 km$^2$ of land was converted to agriculture (107 km$^2$ per year, which equates to 0.08% of the surface area of the province per year). Climate change may also undermine habitat suitability.

# Conservation

Much of the range of this species is protected within the Namib-Naukluft National Park, Namibia. Similarly, in the assessment region, the species is recorded from the protected Cederberg Wilderness Area. No specific interventions can be implemented until further studies into the distribution and general natural history of this species are completed. This species would benefit from the long-term protection of additional key roost sites when identified, as well as holistic land management that reduces pesticide use and conserves buffer strips of natural vegetation.

**Recommendations for land managers and practitioners:**

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

**Research priorities:**

- Taxonomic revision of the species and its relationship with *L. wintoni* to determine whether they may constitute different races of the same species.
- Surveys to determine geographical distribution and identify key roost sites.
- Systematic monitoring to measure population size and trends.

**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.

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# Data Sources and Quality

**Table 4. Information and interpretation qualifiers for the Namibian Long-eared Bat (*Laephotis namibensis*) 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 | Precautionary |

# Assessors and Reviewers

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Details of the methods used to make this assessment can be found in *Mammal Red List 2016: Introduction and Methodology.*