

# Steatomys krebsii – Krebs’s Fat Mouse

Photograph  
wanted

<b>Regional Red List status (2016)</b>	<b>Least Concern*</b>
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

#### \*Watch-list Data

There is a substantial degree of colour variation in this species based on its geographic distribution, ranging from an orange colouration in the Northern Cape to a duller grey in northern Botswana (Skinner & Chimimba 2005).

## Taxonomy

*Steatomys krebsii* (Peters 1852)

ANIMALIA - CHORDATA - MAMMALIA - RODENTIA - NESOMYIDAE - *Steatomys* - *krebsii*

**Synonyms:** *Steatomys leucorhynchus* (Hill & Carter 1937), *S. angolensis*, *bensoni*, *bradleyi*, *chiversi*, *mariae*, *orangiae*, *tongensis*, *transvaalensis*

**Common names:** Krebs’s Fat Mouse (English), Krebs se Vetmuis (Afrikaans)

**Taxonomic status:** Species complex

**Taxonomic notes:** The taxonomic status of the *Steatomys* genus requires urgent revision, as the phylogenetic relationships between the various species and subspecies are currently unknown (Monadjem et al. 2015). *Steatomys krebsii* possibly represents a complex of several similar species and further studies are needed to clarify the taxonomic status of disjunct populations currently allocated to this species (Monadjem & Schlitter 2008). *Steatomys* species are recognised by their small to medium size, small hind feet, and short tails, which are

usually 35–60% of their head and body length (Monadjem et al. 2015). In parts of its range, *S. krebsii* overlaps with *S. pratensis* and these species are not easily distinguished, although *S. krebsii* has eight nipples, while *S. pratensis* has 10–14 (Monadjem et al. 2015).

## Assessment Rationale

This species is currently listed as Least Concern due to its wide distribution within the assessment region and its potential ability to survive in modified landscapes, such as fallow fields. However, it is naturally rare and trap-shy and thus population size may be fairly small. Further taxonomic resolution is required as this species, due to its disjunct distribution within the assessment region, may represent several endemic species, some of which may potentially be threatened. For example, *S. krebsii* was not recorded during a recent survey in North West Province. Reassessment should follow once molecular and additional field data are available. Density and occupancy should also be calculated to facilitate more accurate future revision. It is uncertain whether there are any threats to this species but presumably habitat loss is causing local and regional declines.

**Regional population effects:** This species has a scattered, disjunct distribution through southern Africa. Limited dispersal may be possible between South Africa and Botswana across the Molopo River, although the species was not recorded in North West Province during a recent survey (Power 2014).

## Distribution

Krebs’s Fat Mouse has a wide, yet disjunct, distribution across southern Africa, occurring in the southwestern region of South Africa, parts of central South Africa, Lesotho, northern Botswana, the Caprivi Strip and northern regions of Namibia, Angola and Zambia. This species appears to avoid the subtropical eastern regions of southern Africa (Monadjem et al. 2015).

Within the assessment region, it has been identified from the Northern Cape, North West, Gauteng, the Free State, KwaZulu-Natal, as well as the Western Cape and Eastern Cape provinces (Figure 1). Barn Owl (*Tyto alba*) pellet analysis reveals a wider distribution in the Western Cape Province than previously recorded (Avery et al. 2005). Lynch (1994) recorded the species in Lesotho. Worryingly, the last record from North West Province is from the Molopo Nature Reserve in 1996 (Newbery 1996), but it was not recorded there between 2010 and 2013 despite similar sampling effort (J. Power pers. comm. 2016), and was not recorded elsewhere in North West Province (Power 2014).

## Population

Although the geographic extent of this species is wide, it appears to occur in low densities, and may be trap shy; thus no accurate population estimate or trend is available.

**Recommended citation:** Schoeman C, Relton C, Harvey J, Monadjem A. 2016. A conservation assessment of *Steatomys krebsii*. 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.

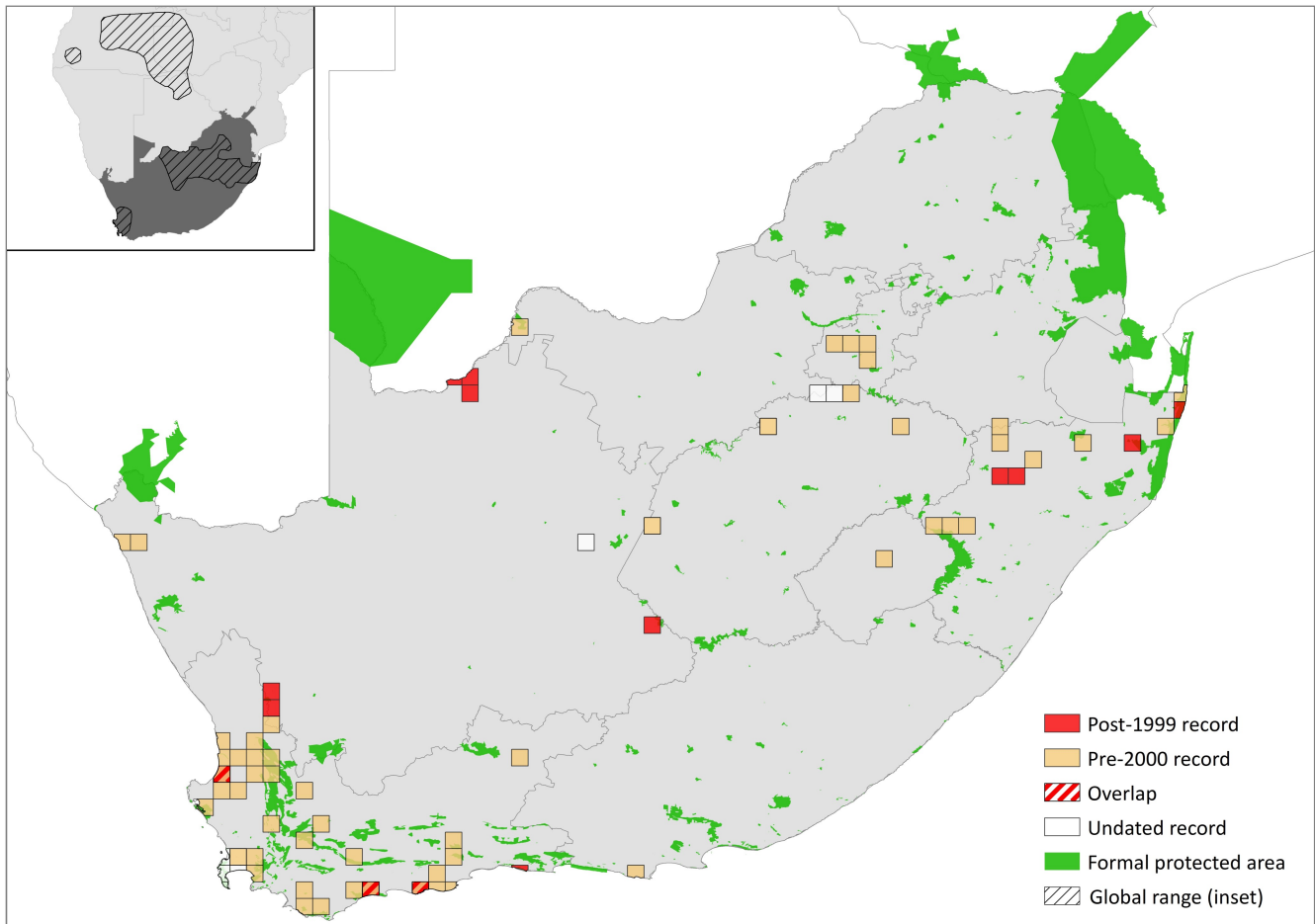


Figure 1. Distribution records for Krebs's Fat Mouse (*Steatomys krebsii*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

For example, of 13 localities sampled in Lesotho, it was only recorded from two by Lynch (1994).

**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:** Unknown

**Severely fragmented:** Yes, disjunct distribution, and localities widely separated.

## Habitats and Ecology

Inhabiting a wide range of habitat types, this species favours sandy substrates, and is often associated with dry grassland habitats on sandy alluvium (Skinner & Chimimba 2005). In the southwestern limits of its range, this species occurs within shrubby vegetation of the Fynbos biome, while further north it is found within high altitude shrub- and grasslands. In Lesotho, specimens were collected from grasslands dominated by *Cymbopogon plurinodis*, *Trichoneura grandiglumis*, *Enneapogon scoparius*, and *Aristida* spp. in regions of low rainfall and arid vegetation (Lynch 1994). In KwaZulu-Natal Province, this species was recorded in *Acacia* woodlands (Delcros et al. 2015), and red, loam soils of old agricultural plots (Rautenbach et al. 1981). This species may be more moisture-tolerant than *S. pratensis* (Coetzee 1977).

The diet and reproductive characteristics of this species are largely unknown, although like other *Steatomys* species, it is likely that this species feeds on both insects and seeds (Rautenbach & Nel 1980; Skinner & Chimimba 2005).

**Ecosystem and cultural services:** No specific ecosystem services have been identified for this species, however, it is likely that it contributes somewhat towards seed dispersal, and may be utilised as a prey item for aerial predators, including the Barn Owl (*Tyto alba*).

## Use and Trade

This species does not appear to be utilised or traded in any form.

**Table 2. Threats to the Krieb's Fat Mouse (*Steatomys krebsii*) 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 <i>Agro-industry Farming</i> : habitat loss from agricultural expansion.	NW READ 2014; Desmet & Schaller 2015; Jewitt et al. 2015	Indirect (land cover change from remote sensing)	Regional	Ongoing
2	3.2 <i>Mining &amp; Quarrying</i> : habitat loss from mining.	NW READ 2014; Desmet & Schaller 2015; Jewitt et al. 2015	Indirect (remote sensing and mining applications)	Regional	Increasing (based on application numbers)

## Threats

No major threats have been identified for this species. However, habitat loss from agricultural transformation and mining may potentially be causing local declines, especially in North West and KwaZulu-Natal provinces. More research is needed to determine the degree to which it can exist in agricultural landscapes or fallow fields.

**Current habitat trend:** Declining in certain regions. In North West Province, from 1994 to 2010, approximately 12% of remaining natural vegetation was lost (NW READ 2014; Desmet & Schaller 2015); and, in KwaZulu-Natal Province, natural habitat is being lost at a rate of 1.2% per annum, amounting to a 20% loss between 1994 and 2011, primarily due to agriculture (Jewitt et al. 2015).

## Conservation

This species is present within a number of protected areas, such as the Cape Peninsula National Park, De Hoop Nature Reserve, Outeniqua Nature Reserve, iSimangaliso Wetland Park and possibly Molopo Nature Reserve (but see Power 2014). No specific conservation initiatives have been identified for this species. More research on its taxonomy, ecology and threat status is necessary.

### Recommendations for land managers and practitioners:

- Systematic surveys needed to gather information on population size and trends.

### Research priorities:

- Taxonomic resolution of the *Steatomys* genus. It is likely that this species complex represents two to three endemic species.
- Assessing potential threats to this species.

- Population size, distribution and trend estimates.
- Diet, reproduction and general biology.

### Encouraged citizen actions:

- Report sightings on virtual museum platforms (for example, iSpot and MammalMAP), especially outside protected areas. However, due to their morphological similarities, misidentification of this species with *Steatomys pratensis* is common. See taxonomic note for distinguishing characteristics.

## References

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## Data Sources and Quality

**Table 4. Information and interpretation qualifiers for the Krieb's Fat Mouse (*Steatomys krebsii*) assessment**

Data sources	Museum records, field survey (unpublished), indirect information (expert knowledge)
Data quality (max)	Inferred
Data quality (min)	Suspected
Uncertainty resolution	Expert consensus
Risk tolerance	Evidentiary

Skinner JD, Chimimba CT. 2005. *The Mammals of the Southern African subregion*. Third edition. Cambridge University Press, Cambridge, UK.

## 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*.