

Steatomys pratensis – Fat Mouse



Richard Yarnell

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

Fat Mice accumulate layers of fat under their skin and in their tissues during summer, when forage resources are bountiful, to aid survival during harsh, food-restricted winters (Skinner & Chimimba 2005).

Taxonomy

Steatomys pratensis (Peters 1846)

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

Synonyms: *S. edulis*, *leucorhynchus*, *maunensis*, *natalensis*, *nyasae*

Common names: Fat Mouse (English), Vetmuis (Afrikaans), Thilivhe (Tshivenda), Thanyani (Xitsonga), Igundane (Zulu)

Taxonomic status: Species complex

Taxonomic notes: Similar to *Steatomys krebsii*, this species requires urgent taxonomic revision. Currently its range is thought to extend from its southern limit in KwaZulu-Natal northwards to Kenya, although Monadjem et al. (2015) suggests that this northernmost specimen may in fact, represent the discrete species, *S. parvus*. Additionally, a record from Ethiopia, identified by Musser & Carleton (1993) as *S. pratensis* from an owl pellet, warrants further examination (Happold 2013). Although there is some overlap in size, this species is generally larger than *S. krebsii*, and has 10–14 nipples, compared to eight in *S. krebsii* (Monadjem et al. 2015). However, such

taxonomic issues are unlikely to affect the South African species. Chromosome number: $2n = 68$ (Robbins & Baker 1978).

Assessment Rationale

Based on its wide distribution within the assessment region, presence within various protected areas, the fact that it is fairly regularly trapped, and the lack of major threats to this species, we list *S. pratensis* as Least Concern. There appears to be no population decline of this species. It is able to survive successfully in human-modified habitats, for example fallow fields, and frequently inhabits agricultural lands.

Regional population effects: Rescue effects are possible across Botswana, Zimbabwe and Mozambique. The population is not isolated, and its range is continuous throughout the savannah regions of southern Africa. Dispersal is possible both through agricultural lands and transfrontier reserves.

Distribution

Although the extent of its distribution remains under scrutiny, the range of the Fat Mouse is currently considered to stretch widely across the savannahs of southern Africa, and marginally into East Africa. The records from Kenya and Ethiopia may, however, represent misidentified specimens of *S. parvus* (Happold 2013; Monadjem et al. 2015). In southern Africa, this species has been recorded across northern Namibia and Botswana, throughout Zimbabwe, into parts of Mozambique, extensively into northeastern South Africa, and across Swaziland but not Lesotho (Lynch 1994). In South Africa, it has a relatively wide distribution across the Limpopo, Gauteng, North West, Mpumalanga and KwaZulu-Natal provinces (Figure 1; Skinner & Chimimba 2005). In the North West Province, this species is restricted to the northeastern bushveld regions (Power 2011), and its distribution probably does not extend further west than Plianesberg National Park (Rautenbach 1982; Power 2014), although Monadjem et al. (2015) show a record more westerly on the border with Botswana.

Population

Although no population estimates are available for this species, the Fat Mouse is considered common within its range, occurring across a range of habitats. For example, Rautenbach et al. (2014) caught this species in a variety of habitats in Phinda Private Game Reserve, KwaZulu-Natal, as well as on surrounding pineapple and cattle farms (Rautenbach 2013). Delcros et al. (2015) caught this species in *Acacia* woodlands at uMkhuze Game Reserve, KwaZulu-Natal. Power (2011) recorded this species as relatively abundant in Borokalalo National Park. Additionally, it appears to benefit from agricultural land use and can be the dominant species in areas of subsistence agriculture (P. Taylor unpubl. data). While it does not display population explosions, it is regularly

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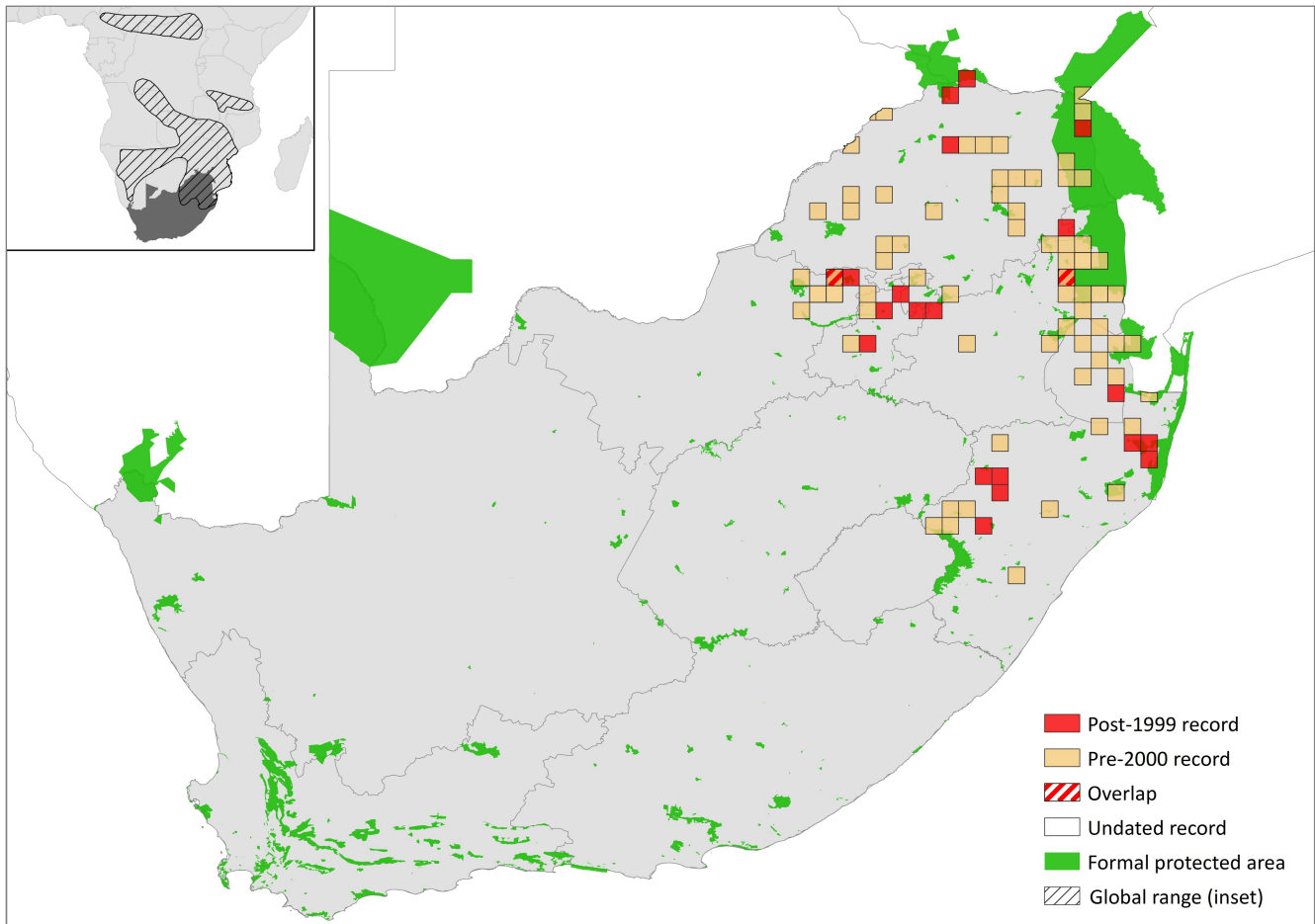


Figure 1. Distribution records for Fat Mouse (*Steatomys pratensis*) within the assessment region

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

sampled and subpopulations are considered stable (Monadjem & Perrin 2003; Massawe et al. 2011).

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: No

Habitats and Ecology

Occurring across a variety of habitat types, Fat Mice are generally associated with open grasslands and savannahs (Monadjem et al. 2015), and are generally absent from

forests and montane grasslands. They have been recorded along the edges of rivers and swamplands in arid regions, within grassland habitats ranging from sparse to densely-vegetated cover, and are also often associated with cultivated lands (Skinner & Chimimba 2005; Rautenbach 2013). Their affiliation with agricultural areas may be attributed to the soft sandy soils and abundant food supply (Skinner & Chimimba 2005). The species appears to favour recently burnt areas with new grass cover (Monadjem 1999). This species typically occurs at elevations lower than 1,500 m asl (Monadjem et al. 2015).

Fat Mice are nocturnal, live either singly or in pairs (Skinner & Chimimba 2005), and are exclusively terrestrial (Monadjem et al. 2015). Deep burrows with several tunnels are constructed into loose, sandy soils, sloping downwards into a chamber (De Graaf & Nel 1992), where they enter daily torpor during the coolest periods of the year (Richardson & Perrin 1992). The diet of Fat Mice in Kruger National Park in summer comprised 82% seeds, 13% insects and 4% herbage (Watson 1987), which indicates that this species is omnivorous and granivorous. An average of 3.2 young are born seasonally during warm summer months between October and April (Smithers 1971; Kern 1977; Smithers & Wilson 1979; Rautenbach 1982).

Ecosystem and cultural services: This species is a valuable prey resource for nocturnal avian predators (Monadjem et al. 2015), and may contribute to seed dispersal (Linzey & Washok 2000). Fat Mice are hunted locally for bushmeat in certain communities.

Table 2. Threats to the Fat Mouse (*Steatomys pratensis*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Rank	Threat description	Evidence in the	Data quality	Scale of	Current
1	3.2 Mining & Quarrying: habitat loss from a mining expansion.	MTPA 2014 Jewitt et al. 2015	Indirect (mining applications) Indirect (remote sensing)	Regional	Increasing

Use and Trade

Due to their high fat content, Fat Mice are utilised as bushmeat by people in some areas. Usually, they are skewered on a stick, and held over an open flame to burn off their fur. Their meat is considered a delicacy (Skinner & Chimimba 2005). However, this practice has not been reported from the assessment region and is unlikely to affect the population if it does occur locally.

Threats

There are no major threats identified for this species. It can survive on agricultural and grazed landscapes. Intensive overgrazing may be a minor threat, however, if ground cover is removed. Anecdotal reports suggest it can also survive in degraded grassland (D. MacFadyen unpubl. data), although more research is necessary. The expansion of mining will also reduce habitat for this species.

Current habitat trend: There is no substantial decline in habitat quality or quantity, as the Savannah Biome is well protected in South Africa (Driver et al. 2012), although mining may cause local declines (MTPA 2014; Jewitt et al. 2015).

Conservation

This species occurs within a number of protected areas within the assessment region, such as Kruger National Park, Borokalalo National Park, Phinda Private Game Reserve, uMkhuze Game Reserve, Nylsvlei Nature Reserve and the Greater Mapungubwe Transfrontier Conservation Area. This species is likely to benefit from protected area expansion to incorporate additional grassland habitats. Additionally, grassland restoration projects and post-mining rehabilitation programmes, which should be the responsibility of mining industries, and enforced by local authorities, would also benefit this species.

Recommendations for land managers and practitioners:

- The species would benefit from suitable land management: land owners should leave corridors of

grassland between grazed areas and decrease stocking rates.

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

Research priorities:

- Taxonomic resolution of the *Steatomys* genus.
- Quantification of potential threats.
- 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 krebsii* is common. See taxonomic note for distinguishing characteristics.

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Fat Mouse (*Steatomys pratensis*) assessment

Data sources	Museum records, field survey (literature, unpublished)
Data quality (max)	Estimated
Data quality (min)	Suspected
Uncertainty resolution	Best estimate
Risk tolerance	Evidentiary

References

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Table 3. Conservation interventions for the Fat Mouse (*Steatomys pratensis*) 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	1.1 Site/Area Protection: protected area expansion to connect grassland patches (corridors).	-	Anecdotal	-	-	-
2	2.3 Habitat & Natural Process Restoration: restoration of grasslands following mining practices.	-	Anecdotal	-	-	-

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