Dendromus melanotis – Grey African Climbing Mouse


Cliff & Suretha Dorse

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

*Watch-list Data

This species is the only grey species within the genus, but like the other species, it has a long prehensile tail used for balance and climbing grass stalks in search of seed (Skinner & Chimimba 2005).

Taxonomy

Dendromus melanotis (A. Smith 1834)

ANIMALIA - CHORDATA - MAMMALIA - RODENTIA - NESOMYIDAE - *Dendromus* - *melanotis*

Synonyms: *Dendromus leucostomus* Monard 1933 (for full list, see Monadjem 2013)

Common names: Grey African Climbing Mouse, Grey Climbing Mouse, Grey Pygmy Tree Mouse (English), Grys Klimmuis, Grys Boommuis (Afrikaans)

Taxonomic status: Species complex

Taxonomic notes: The taxonomic status of this species is uncertain as evidenced by its karyotypic variability and many synonyms (Monadjem 2013). Analysis of chromosomal and molecular variation has revealed the presence of four putative cryptic species within the *D. melanotis* clade in South Africa (Solano et al. 2014; Monadjem et al. 2015), but further work is needed to clarify their taxonomic relationships.

Assessment Rationale

Listed as Least Concern as it has an expansive range within the assessment region, occurs commonly across a range of habitats, including many protected areas (such as Tswalu Kalahari Reserve, Telperion Nature Reserve, Rooipoort Nature Reserve, and Kruger National Park), and has been recorded from both intact and degraded areas. Currently there are no major threats expected to cause extensive population decline. However, continued habitat loss as a result of mining, urban expansion, intensive agriculture and forestry is suspected to be causing local declines or extinctions and should be monitored carefully. Population numbers also tend to fluctuate, with higher numbers recorded in autumn and winter on the Highveld. Finally, taxonomic resolution is required as four cryptic species may occur in South Africa, which may necessitate reassessment of this species.

Regional population effects: This species is expected to disperse from Mozambique, Zimbabwe, Botswana and Namibia into South Africa. As a generalist in its habitat preference, this species would allow for easy dispersal through modified habitats. Its range is largely contiguous except for isolated populations in northern Namibia and central Africa.

Distribution

This species is distributed widely in southern and East Africa (Monadjem et al. 2015), including parts of Namibia, Botswana, and Zimbabwe, the central and southern parts of Mozambique, and all provinces in South Africa (Skinner & Chimimba 2005). It also occurs in both Swaziland and Lesotho (Lynch 1994; Monadjem 1998). In Gauteng and Mpumalanga this species was recorded in high numbers in all habitats on Ezemvelo Nature Reserve and Telperion Nature Reserve (MacFadyen 2014). This species was also recorded in low numbers at Tswalu Kalahari Reserve and Rooipoort Nature Reserve in the Northern Cape (D. MacFadyen unpubl. data), and has been recorded in Tussen-die-Riviere Nature Reserve in the Free State (Ferreira & Avenant 2003). There have been no documented range expansions for the species (for example, Power 2014), and it is expected that its range has not decreased (MacFadyen 2014). However, the records from the interior of the country (Figure 1) require investigation as they have not yet been confirmed (see Monadjem et al. 2015).

Population

It is the most abundant of all climbing mouse species within the assessment region. For example, it was the third most common small mammal species in different high-altitude grassland habitats in KwaZulu-Natal (Rowe-Rowe & Meester 1982). However, it is difficult to trap, and thus population assessments are difficult. Population fluctuations occur seasonally and between different vegetation communities. MacFadyen (2014) recorded local movements within a subpopulation in the Highveld

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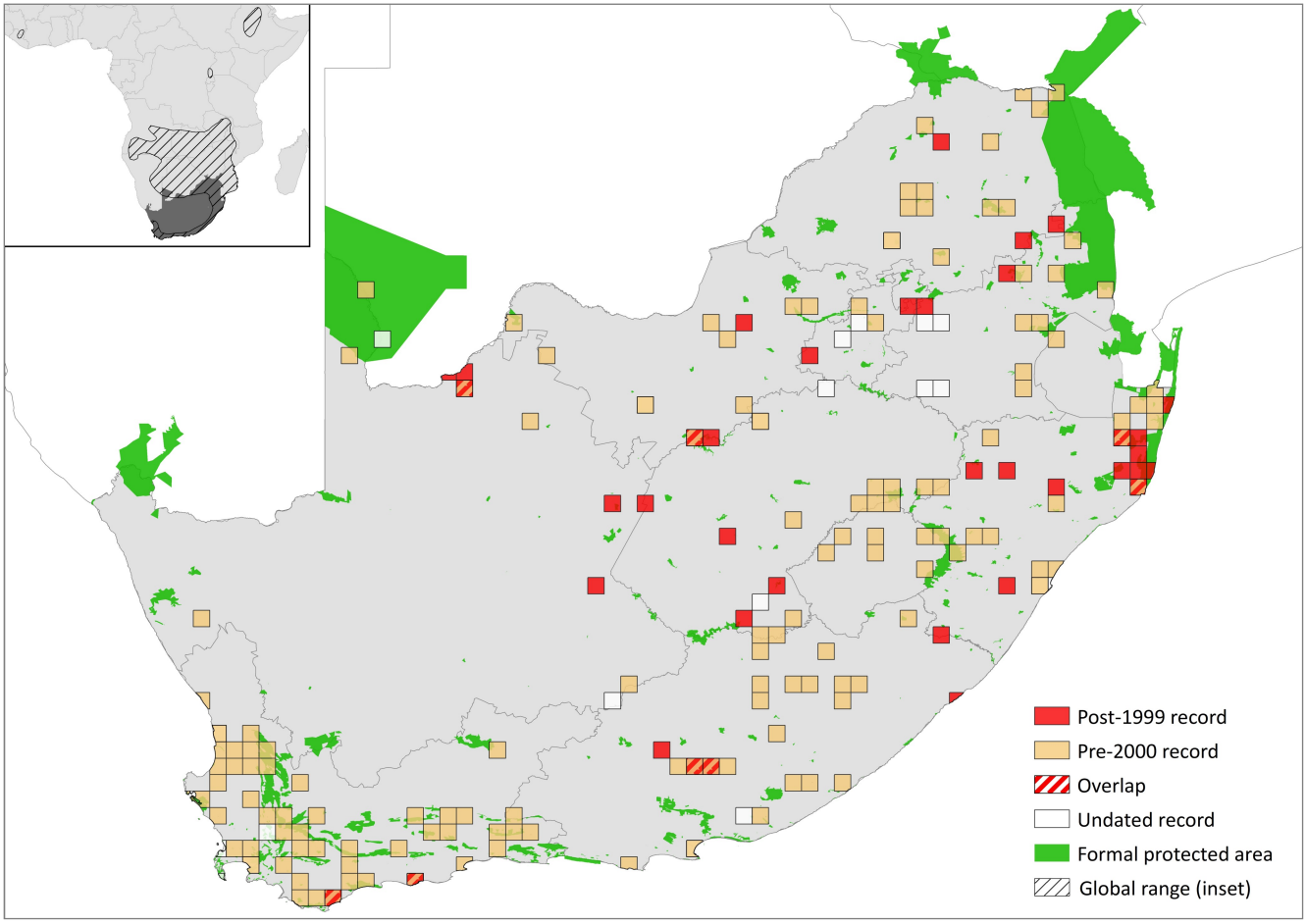

Figure 1. Distribution records for Grey African Climbing Mouse (*Dendromus melanotis*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Grasslands of Gauteng and Mpumalanga in autumn and winter, revealing higher population numbers during these seasons. MacFadyen (2014) estimated density in Rocky Highveld Grassland at 5 animals / ha, with a higher density of 12 animals / ha recorded in degraded grassland. This result is an indication that this species is able to inhabit a spectrum of habitats, from undisturbed to modified environments.

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

The Grey African Climbing Mouse typically inhabits grassland and savannah regions, and is associated with a wide variety of habitats, including areas with a relatively low biomass, areas with stands of tall grass such as *Hyparrhenia* (Lynch 1994) and *Merxmuellera* spp., short montane grassland (Rowe-Rowe & Meester 1982; Taylor 1998) and shrubs of the Savannah Biome (such as dry Kalahari scrub, river fringes and flood plains), as well as other areas where vegetation has encroached. It can recolonise burnt grasslands within one month (Monadjem 2013). It was recorded on Telperion Nature Reserve habitats ranging from densely grassed areas to rocky areas with sparse grass cover (MacFadyen 2014). In winter months, MacFadyen (2014) recorded this species in large numbers within *Seriphum plumosum*. Rautenbach et al. (2014) trapped this species at Phinda Private Game Reserve, KwaZulu-Natal, predominantly within *Vachellia nilotica*/*Hyphaene coricea* and *Terminalia sericea* woodlands, and one specimen was caught in the *Drypetes arguta* sandforest. Although considered to be a species preferring riverine conditions, it has been recorded in dry grassland, often some distance from water. This species is a habitat generalist, and has been recorded in both intact and degraded/disturbed areas, but is absent from overgrazed areas with very low biomass. It occurs from sea level right up to altitudes of approximately 2,700 m in the Drakensberg.

Like other species of climbing mice, this nocturnal and largely terrestrial species accesses seeds and invertebrates in low bushes and grass stalks, using its slender digits to grip and climb and its prehensile tail for

Table 2. Threats to the Grey African Climbing Mouse (*Dendromus melanotis*) 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	*2.3.2 Small-holder Grazing, Ranching or Farming*: habitat degradation from overgrazing. Current stress *1.2 Ecosystem Degradation*.	-	Anecdotal	-	Stable

Table 3. Conservation interventions for the Grey African Climbing Mouse (*Dendromus melanotis*) 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*: conservation and restoration of overgrazed habitats.	-	-	Anecdotal	-	-

balance. Thus, it is adapted to being semi-arboreal (Monadjem 2013). It weaves a grass nest with a single entrance usually attached to grass stems or shrubs up to 1 m above the ground (Monadjem 2013). It will feed on seeds, but also feeds on a wide range of invertebrates, including termites, crickets and moths. This species is solitary, or lives in pairs or small family groups; it breeds seasonally, with females usually producing litters of between two and four. This species is the only member of the genus *Dendromus* that has a grey body; the other species within the genus have a brown or chestnut colouration.

Ecosystem and cultural services: There are no recognized cultural uses for this species. Similar to other small mammals, this species plays a role in regulating invertebrate numbers, seed predation, nutrient cycling, and is an important prey species for predators (Monadjem 2013).

Use and Trade

There is no known subsistence or commercial use of this species.

Threats

There are no major threats to the species. However, habitat loss from mining, forestry, intensive agricultural expansion and urban expansion, combined with habitat degradation through overgrazing may lead to local declines or even extinctions. The impact of these threats on the population remains to be quantified. Following taxonomic resolution, the severity of regional threats facing any cryptic species should be established. Although they are able to survive in degraded areas, excessively overgrazed areas and areas transformed into habitats with little or no biomass would negatively impact this species.

Current habitat trend: No specific decline in habitat quantity or quality. However, areas that have been severely overgrazed are expected to impact the species.

Conservation

This species occurs in numerous protected areas across the assessment region, including Telperion Nature Reserve (Mpumalanga), Ezemvelo Nature Reserve and Rietvlei Nature Reserve (Gauteng), Tswalu Kalahari Reserve and Rooipoort Nature Reserve (Northern Cape), Venetia Limpopo Nature Reserve (Limpopo), many protected areas in KwaZulu-Natal, and the Kruger National Park. No specific conservation interventions are necessary but the species would benefit from correct land management practices that restore degraded grassland areas and reduce overgrazing.

Recommendations for land managers and practitioners:

- No specific management plan is necessary. However, this species would benefit from correctly managed agricultural lands, which restricts overgrazing as much as possible.

Research priorities:

- This is a species complex that requires taxonomic resolution.
- Population size and trend estimates, including population boundaries and overlaps within the species complex, as well as investigation into the reproductive rate and breeding success of this species.
- Quantification of the impacts of habitat loss across the species' range.
- Understanding the local movements and dispersal mechanisms exhibited by this species.
- Research into the contribution made by this species to overall ecosystem functioning.

Encouraged citizen actions:

- Report sightings on virtual museum platforms (for example, iSpot and MammalMAP), especially outside protected areas.
- Report illegal mining practice and contribute to public pressure on post mining rehabilitation and restoration.
- Plant indigenous species in gardens and thus create suitable habitats.
- Create corridors to offset the impacts of urbanisation and ensure movement and gene flow between populations.

- Encourage organic agriculture and reduce the use of insecticides and herbicides as much as possible.

References

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Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Grey African Climbing Mouse (*Dendromus melanotis*) assessment

Data sources	Field survey (literature, unpublished), indirect information (expert knowledge), museum records
Data quality (max)	Inferred
Data quality (min)	Inferred
Uncertainty resolution	Best estimate
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.*