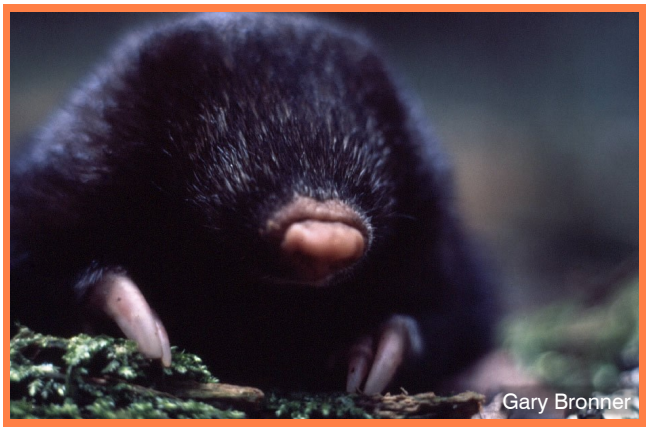
Chrysospalax trevelyani – Giant Golden Mole



Regional Red List status (2016)	Endangered B2ab (i,ii,iii,iv,v)*
National Red List status (2004)	Vulnerable B2ab(ii,ii,iv)
Reasons for change	Genuine change
Global Red List status (2015)	Endangered B2ab(i,ii,iii,iv,v)
TOPS listing (NEMBA)	Endangered
CITES listing	None
Endemic	Yes

*Watch-list Threat

As their name suggests, Giant Golden Moles are the largest Chrysochlorids and spend relatively more time foraging above ground than other species of Golden Moles.

Taxonomy

Chrysospalax trevelyani (Günther 1875)

ANIMALIA - CHORDATA - MAMMALIA - AFROSORICIDA - CHRYSOCHLORIDAE - *Chrysospalax - trevelyani*

Synonyms: *Bematiscus* (Cope 1892)

Common names: Giant Golden Mole (English), Reuse-Gouemol, Reuse-Kruipmol (Afrikaans), Intuku-yehlathi (Xhosa)

Taxonomic status: Species

Taxonomic notes: Originally, Chrysospalax was created as a subgenus, with *Chrysochloris trevelyani* as type species (Poduschka 1980). Presently, no subspecies have been described.

Assessment Rationale

Although recorded from 17 localities in the Eastern Cape, this species is now possibly locally extinct at many sites, and appears to survive only in larger patches of indigenous Afromontane forest on the eastern slopes of the Amathole Mountains. Although the historical extent of occurrence is > 20,000 km^2, it has very specific habitat requirements and its total area of occupancy is estimated to be 272 km^2, and is severely fragmented (even if historical records are included, as many of these were from small and isolated indigenous forest patches). The species does not occur in commercial forestry plantations which abut, or have replaced, many of the remaining patches of natural habitat. Some of the larger indigenous forests are officially "protected", but management and conservation actions on the ground are often poor. Many of these "protected forests" fall under the jurisdiction of local tribal chiefs, and even in some state-managed forests cattle are allowed to range freely, and trample or degrade the habitat of this species. Recreational hunting by young herdsmen and pack-hunting by domestic and feral dogs pose a threat at some locations, whereas bark-stripping of trees for traditional medicines, collection of firewood and burning of unprotected forest patches degrade their preferred habitats. Ongoing urbanisation in the vicinity of East London, and coastal tourism developments, have disturbed many of the coastal forests in which this species may have occurred historically. Climate change may also represent an emerging threat. Given the restricted and decreased area of occupancy, probable reduction in number of locations to < 10, and the varied and probably increasing threats to this species (including ongoing urbanisation along the Eastern Cape coast, and anthropogenic disturbances); it is now listed as Endangered.

Regional population effects: All known populations are endemic to South Africa. Range is highly fragmented and restricted to patches of Afromontane and Transkei Coastal Scarp forests, many of which are small and isolated by unsuitable or transformed habitats that probably prevent migration and gene flow among demes of this lowly vagile species.

Distribution

This species is endemic to South Africa and has been recorded from indigenous Afro-Montane and Transkei Coastal Scarp forests in Eastern Cape from East London northwards along coast to Port St Johns, and inland to Amathole and Kologha Mountains near King Williams Town and Stutterheim (Figure 1).

Population

The Giant Golden Mole is locally common, but with a clumped dispersion.

Current population trend: Unknown, but expected to be declining due to ongoing loss of habitat.

Continuing decline in mature individuals: Yes, suspected.

Number of mature individuals in population: Unknown

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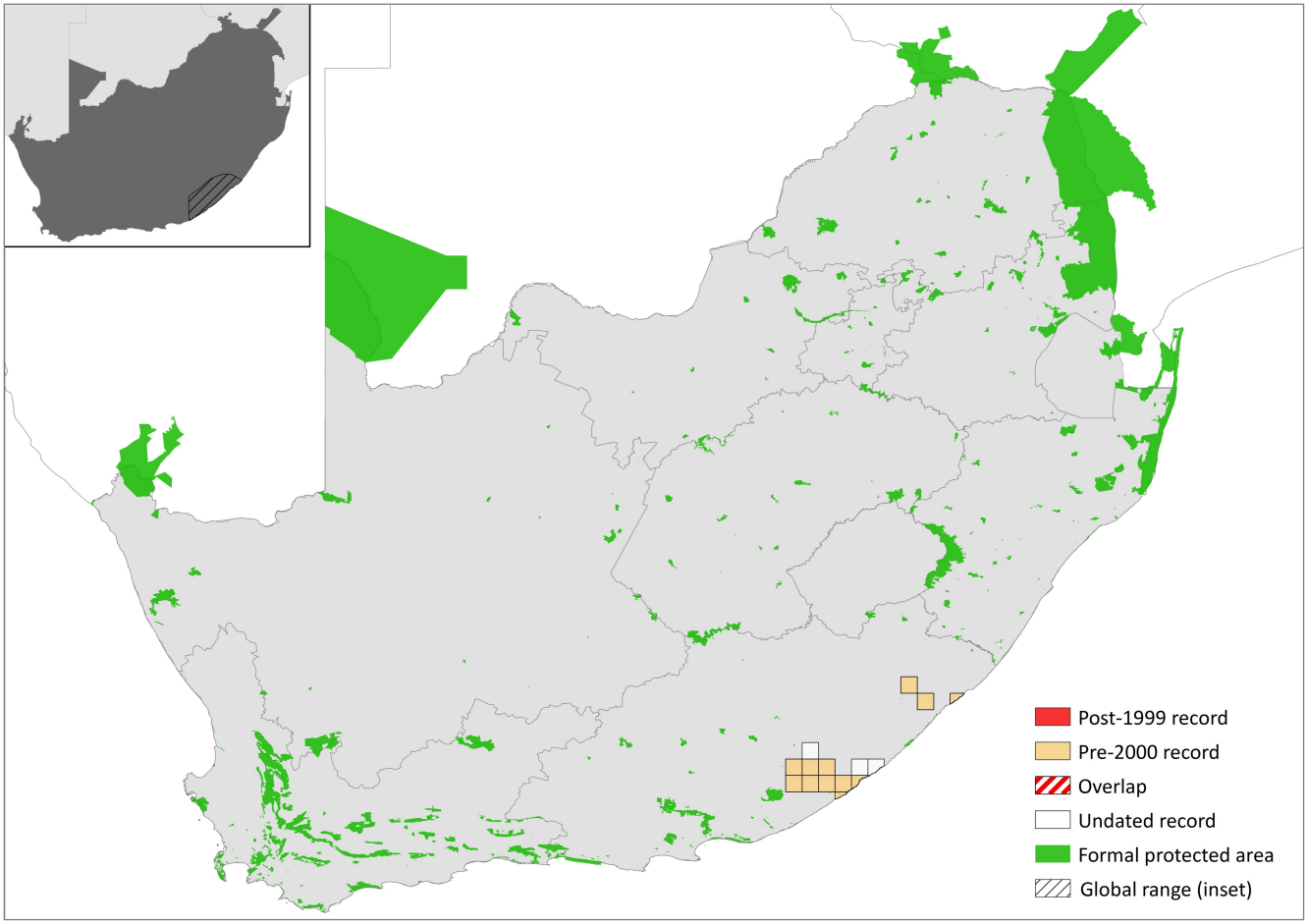

Figure 1. Distribution records for Giant Golden Mole (*Chrysospalax trevelyani*) within the assessment region

Table 1. Countries of occurrence within southern Africa

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

Number of mature individuals in largest subpopulation: Unknown

Number of subpopulations: Unknown

Severely fragmented: Yes, this species occurs in specific microhabitats within Afromontane forests and some Coastal Scarp forests of the Eastern Cape, which are highly fragmented owing to both historical and anthropogenic factors.

Habitats and Ecology

This species occurs predominantly in Transkei Coastal Scarp forests and Amathole Mistbelt forests, sometimes marginally into adjacent grassland habitats (Maddock 1986). They are not present in commercial forestry plantations which abut, or have replaced, many indigenous forest patches. They have specific habitat requirements, selecting areas in forest patches with soft soils, well-developed undergrowth, and deep leaf-litter layers, but avoid steep slopes and rocky terrain (Bronner 2013). Apparently restricted to larger forest patches (Castley et al. 2000). They make short tunnels (1–13 m long) amidst the roots of trees, and forage mainly above ground in leaf litter, rooting for small invertebrates (especially giant earthworms and omniscomorph millipedes) and may even consume small vertebrates they encounter (Bronner 2013). They are predominantly nocturnal, but Maddock and Hickman (1985) reported some minor diurnal activity in captive animals. Although having been observed to enter water and use its forefeet as paddles, Hickman (1986) found that due to their size and small body surface to mass ratio, buoyancy, endurance, manoeuvrability and speed is low, thus, in the wild, swimming is likely to be limited to short distances.

Use and Trade

This species does not appear to be utilised or traded in any form. There is no evidence of this species being used in traditional medicine or as bushmeat. They are hunted recreationally by some local youths, however they do not seem to have any cultural significance and many local communities seem to be unaware of their presence.

Threats

The major threats to this species are habitat loss and degradation. Habitat loss, owing to fragmentation of forests, is ongoing in coastal forests, as a result of urbanisation (East London district) and ubiquitous coastal

Table 2. Threats to the Giant Golden Mole (*Chrysospalax trevelyani*) 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	*1.1 Housing & Urban Areas*: habitat loss from urban and recreational expansion.	Berliner & Desmet 2007	Indirect (land use change from remote sensing)	Regional	Increasing (projected)
2	*2.2 Wood & Pulp Plantations*: habitat loss from plantation expansion.	Berliner & Desmet 2007	Indirect (land use change from remote sensing)	Regional	Increasing (projected)
3	*2.3 Livestock Farming & Ranching*: habitat loss and degradation from livestock ranching.	Berliner & Desmet 2007	Indirect (land use change from remote sensing)	Regional	Increasing (projected)
4	*5.3 Logging & Wood Harvesting*: habitat degradation from firewood collection.	-	Anecdotal	-	-
5	*11.1 Habitat Shifting & Alteration*: forest cover reduction from climate change.	Erasmus et al. 2002	Simulation	Regional	Increasing (projected)

tourist resorts. Degradation of remaining forests is prolific, as a result of forest clearance, collection of firewood, bark stripping, cutting for construction, allegedly sustainable timber harvesting and livestock overgrazing or trampling. The species may now be locally extinct at many locations where it occurred formerly (even within the Amathole forests they have disappeared at sites where they were collected in the early 1990s). Erasmus et al. (2002) projected the extinction of this species due to a 2° C increase in temperature from climate change.

Current habitat trend: Declining. Based on the results of Berliner and Desmet (2007), it can be deduced that 2% of the natural area of the Eastern Cape was lost during the period 2007 and 2015 at the rate of 0.24% per year. Based on the analysis of the proposed mining applications and municipal spatial planning products, it is estimated that over 20,000 km^2 (12% of the total area) may be lost between 2015 and 2045.

Conservation

Giant Golden Moles are possibly present in a few small nature reserves within their range, and state-managed forest reserves, but conservation efficacy in such areas appears to be dubious. The indigenous forests in the Kologha Kabusi, Pirie and Isidenge region of the Amathole Mountains contain most of the remaining populations. Enhanced management and improved protection of these indigenous forests is necessary to prevent habitat degradation, especially by cattle. Additionally, field surveys are needed to establish the conservation status and threats faced by subpopulations at the 17 localities this species is known to have occurred at in the past.

Reserve expansion through land acquisition and stewardship are mechanisms that are employed to protect threatened ecosystems in the Eastern Cape and these mechanisms will be maximised in an effort to minimise habitat loss. To achieve this, plans are in place to double the protected area to over 1 million hectares over the next decade (K. Mangwale pers. comm. 2015). However, it is important to note that reserve expansion is only likely to benefit this species if the specific forests containing this species are expanded.

Recommendations for land managers and practitioners:

- Field surveys are needed to establish the conservation status and threats faced by populations at the 17 localities this species is known to have occurred at in the past.
- A systematic monitoring scheme should be established to determine changes in conservation status and habitat status of the preferred forest patches with soft soils, well-developed undergrowth, and deep leaf-litter layers.

Research priorities:

- Field surveys to determine population size, niche requirements, distribution and trends.
- Studies to quantify the threat levels to the species.
- Studies to generate evidence for the effectiveness of improving protected area security and connectivity.

Encouraged citizen actions:

- Look for distinctive signs of activity (surface runways through leaf litter leading to open burrow holes) and

Table 3. Conservation interventions for the Giant Golden Mole (*Chrysospalax trevelyani*) 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	*5.4 Compliance & Enforcement*: stricter law enforcement of existing protected areas.	-	Anecdotal	-	-	-
2	*1.1 Site/Area Protection*: protected area expansion and biodiversity stewardship schemes to expand suitable forest areas.	-	Anecdotal	-	-	-

Data Sources and Quality

Table 4. Information and interpretation qualifiers for the Giant Golden Mole (*Chrysospalax trevelyani*) assessment

Data sources	Museum records, indirect information (literature, unpublished)
Data quality (max)	Inferred
Data quality (min)	Suspected
Uncertainty resolution	Best estimate
Risk tolerance	Evidentiary

report these to local conservation authorities if found – particularly in the coastal scarp forests where rapid urbanization is degrading available habitat.

- Report sightings on virtual museum platforms (for example, iSpot and MammalMAP), especially outside protected areas.
- Deposit any dead specimens found in a state or provincial museum, together with information on the date and site where found.

References

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Assessors and Reviewers

Gary Bronner[1†], Robert Asher[2]

[1]University of Cape Town, [2]University of Cambridge

[†]IUCN SSC Afrotheria Specialist Group

Contributors

Andrew Taylor[1], Claire Relton[1], Matthew F. Child[1]

[1]Endangered Wildlife Trust

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