# *Galagoides granti* – Mozambique Dwarf Galago


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| **Regional Red List status (2016)** | **Data Deficient** |
|---|---|
| National Red List status (2004) | Not Evaluated |
| Reasons for change | Newly recognised species within assessment region |
| Global Red List status (2008) | Least Concern |
| TOPS listing (NEMBA) (2007) | None |
| CITES listing (1977) | Appendix II |
| Endemic | Edge of range |

This species was only recently discovered within the assessment region, in the sand forest mosaic that characterises South Africa's extreme northeast.

## Taxonomy

*Galagoides granti* (Thomas & Wroughton 1907)

ANIMALIA - CHORDATA - MAMMALIA - PRIMATES - GALAGIDAE - *Galagoides* - *granti*

**Synonyms:** *Galago granti* (Thomas & Wroughton 1907), *Galago senegalensis granti* (Schwarz 1931), *Galago zanzibaricus granti* (Jenkins 1987), *Galagoides zanzibaricus granti* (Meester et al. 1986), *Paragalago granti* (Masters et al. in prep.), *mertensi* (Honess et al. 2013).

**Common names:** Mozambique Dwarf Galago, Grant's Bushbaby (English), Grant se Nagapie (Afrikaans)

**Taxonomic status:** Species. No subspecies are recognised in this species.

**Taxonomic notes:** Described as *Galago granti* by Thomas and Wroughton (1907), and named for Captain C.H.B. Grant who collected the first specimens at Coguno in Inhambane Province in southern Mozambique (Skinner & Chimimba 2005). Schwarz (1931) relegated *G. granti* to subspecies status within *G. senegalensis* along with *G. moholi* and *G. zanzibaricus*, a decision that was widely followed. Kingdon (1971) recognised *G. zanzibaricus* as a distinct species, a proposal supported by Groves (1974) who suggested that *G. granti* was likely to be the southern representative of the Zanzibar species. Olson (1979) subsumed all dwarf galagos under the genus *Galagoides*, and for more than twenty years, the Mozambique Dwarf Galago was classified as a subspecies of *Galagoides zanzibaricus* (Meester et al. 1986; Jenkins 1987; Groves 2005; Skinner & Chimimba 2005). Following recommendations by Bearder et al. (1996) and Honess and Bearder (1996), *Galagoides granti* was given full species status (Kingdon 1997; Honess et al. 2013). DNA sequence analysis (Pozzi et al. 2014, 2015) has consistently reconstructed the dwarf galago group as polyphyletic (composed of taxa derived from different evolutionary ancestors). On this basis, a proposal has been made to create a new genus to differentiate the eastern dwarf galagos (*G. cocos* from Kenya, *G. granti* from Mozambique and South Africa, *G. nyasae* from Malawi and G*. zanzibaricus* from Zanzibar and Tanzania) from the true dwarf galagos of western Africa (*G. demidoff* and *G. thomasi*) (Masters & Couette 2015). The name proposed for this new clade is *Paragalago*.

In northeastern KwaZulu-Natal Province, *Galagoides granti* was probably mistaken for the Southern Lesser Galago (*Galago moholi*) found in dry savannah woodland and broadleaf woodland. *Galagoides granti* is readily identified by its loud modulated incremental advertising call and buzzy alarm, very different from the low-pitched, more tonal and repetitive vocalisations of *Galago moholi* (Butynski et al. 2006). The dorsum and outer surfaces of the limbs are dark brown in colour, with black ears and a black bushy tail, dark eye-rings and a distinctive white to pale grey nasal stripe. The ventrum is cream-buff to yellow, as opposed to the bright white ventrum of *G. moholi.* Dwarf galagos are more quadrupedal than the lesser galagos; after leaping they land with their forelimbs first, as opposed to swinging the hindlimbs forward to land feet first as seen in *Galago moholi*. At close range, the Mozambique Dwarf Galago also has a diagnostic, concave profile, while *G. moholi* has a straight nasal profile.

## Assessment Rationale

The species was only recently discovered within the boundaries of South Africa, where it is restricted to patches of sand forest in northern KwaZulu-Natal, at the

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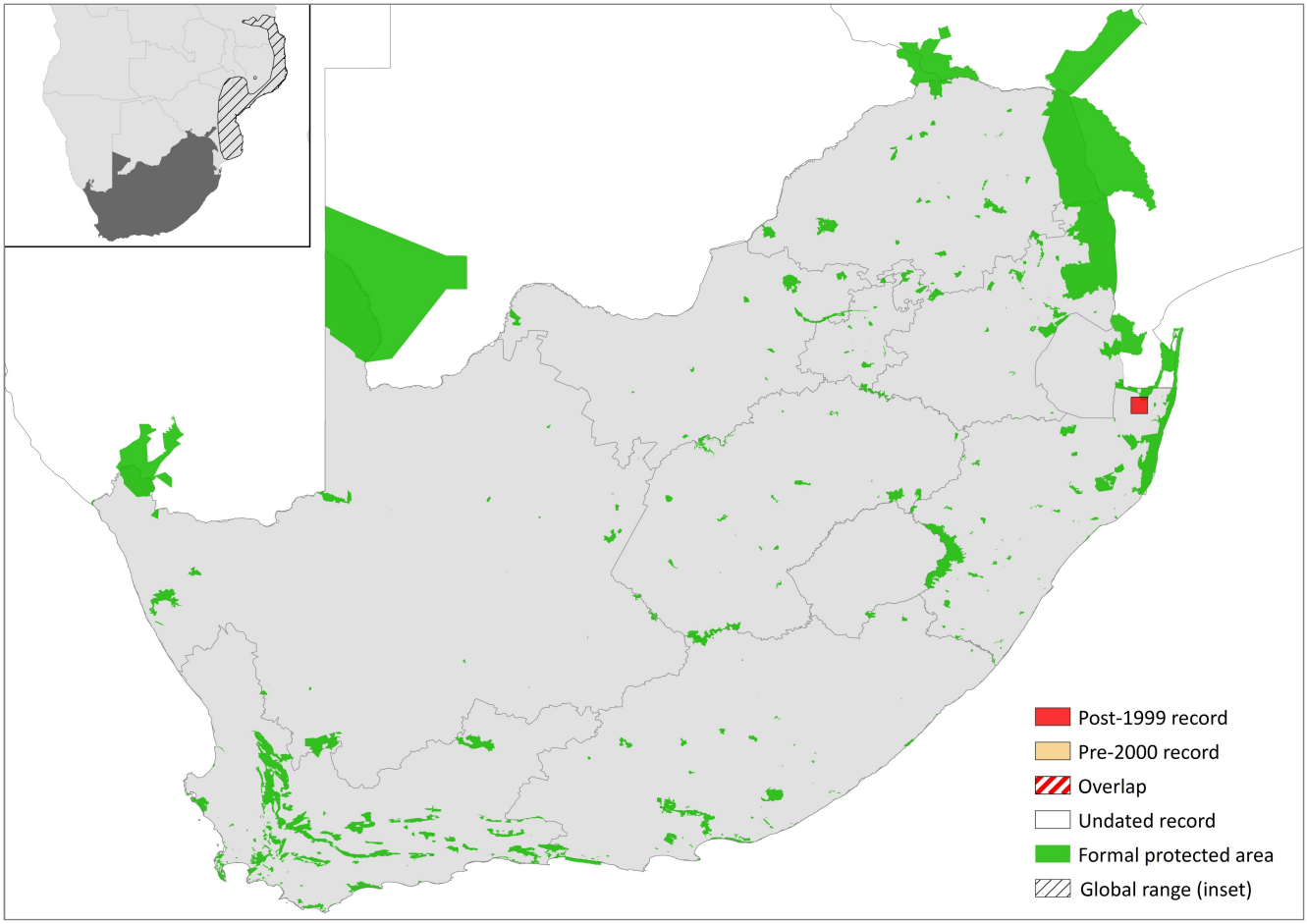



**Figure 1. Distribution records for Mozambique Dwarf Galago (*Galagoides granti*) within the assessment region**

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

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

southern limit of its distribution. This species is not considered a vagrant within the assessment region as there are at least two established subpopulations in the Tembe and Tshanini areas. Within its habitat, the species may not be rare, but its preferred habitat is rare enough in South Africa to mark it for conservation concern. A survey of potential areas, where *Galagoides granti* is likely to have been mistaken for the similar-sized Southern Lesser Galago, *Galago moholi*, is of primary importance for a reliable assessment of its conservation status. Until such surveys are complete, we list this species as Data Deficient due to its unknown extent of occurrence and area of occupancy. We caution, however, that habitat loss from deforestation and selective logging for firewood, combined with a potential loss in habitat quality owing to frequent fires, may already be threatening this species within the assessment region.

**Regional population effects**: Because vast areas covered with patches of sand forest exist in southern Mozambique, the South African population of *Galagoides granti* was probably not isolated until recently, but the extent and consequences of the current isolation, and subsequent rescue effect, are unknown.

# Distribution

*Galagoides granti* has been identified in Tembe Elephant Park and Tshanini Community Reserve (Génin et al. 2016), but the true extent of its distribution in South Africa is unknown. The species was formerly mistaken for *Galago moholi*, erroneously (we believe) extending the range of the latter species into northern KwaZulu-Natal. In South Africa the two small galagos are unlikely to have overlapping ranges because, while *Galago moholi* prefers dry savannah woodlands, *Galagoides granti* is apparently confined to dry sand forest. Satellite imagery indicates that the sand forest found in this region extends into southern Mozambique. *Galagoides granti* occurs in Mozambique, eastern Zimbabwe, southern Tanzania, and also possibly Malawi, although it may have been mistaken for another species provisionally named *Galagoides nyasae* (S. Bearder pers. comm. 2015).

# Population

In Tshanini (KwaZulu-Natal), subpopulation density was estimated at 1.4 individuals / km on a linear transect (Génin et al. 2016), a very low encounter rate commensurate with the rarity of its preferred habitat (creeper-rich woodland and sand forest). For example,

encounter rates in other parts of its distribution range from 1.2 to 4.9 individuals / km (Honess et al. 2013). More detailed surveys are needed to estimate the size of the population within the assessment region. Because the species uses a mosaic habitat, extrapolations are difficult.

**Current population trend:** Unknown

**Continuing decline in mature individuals:** Unknown

**Number of mature individuals in population:** Unknown

**Number of mature individuals in largest subpopulation:** Unknown

**Number of subpopulations:** Two (known)

**Severely fragmented:** Yes. The sand forest is naturally fragmented and *Galagoides granti* is adapted to mosaic habitats. However, dispersal between patches of suitable habitat has probably become more difficult owing to severe degradation of surrounding woodland and riverine forest.

# Habitats and Ecology

Mozambique Dwarf Galagos generally occur in natural, lowland evergreen and semi-evergreen forest, dry coastal forest, thicket and scrub (Honess et al. 2013). They appear to be dependent on dry sand forest in South Africa, which is where they spend their daylight hours sleeping in tree holes. Populations in Tanzania often build round, leafy nests for sleeping, and as many as five animals may share a sleeping site (Lumsden & Masters 2001; Honess et al. 2013). During the nocturnal activity period, however, they forage along the forest edges, in mature woodland with abundant lianas and creepers, and in dense thicket. The preferred habitat of the species, therefore, is a mosaic that probably antedates anthropogenic transformations of the landscape. The sand forest mosaic has a restricted distribution within the assessment region, sometimes occurring in protected areas (for example, Mkuze, Ndumo and Tembe-Tshanini), and is home to a number of rare species found at the southern limit of their distributions, including the Four-toed Elephant Shrew (*Petrodromus tetradactylus*) and the Suni (*Neotragus moschatus*). Several types of sand forest are observed from north of St Lucia to the Pongola River, including riverine sand forest (Mkuze) and dry sand forest (Tembe-Tshanini). The Mozambique Dwarf Galago was only observed in Tembe Elephant Park and the Tshanini Community Reserve, in the dry sand forest dominated by large endemic sandveld Newtonia (*Newtonia hildebrandtii*). This naturally fragmented habitat is limited to ancient dunes. Also confined to this habitat is another rare species, the Blue-throated Sunbird (*Anthreptes reichenowi*). The large game present in Tembe and Tshanini do not have a significant effect on the preferred habitat of this species. Large browsers may in fact favour the species by creating forest edges preferred by the galagos. Stocking wildlife may therefore afford protection to the sand forest mosaic habitat, particularly by limiting the harvesting of old trees, and retaining tree holes as sleeping sites.

Dwarf galagos use all the vegetation strata, and preliminary observations conducted at Tembe and Tshanini indicated a mixed diet of fruit, gum and small prey hunted in the litter, much as described for populations in Tanzania (Lumsden & Masters 2001) and Zimbabwe (Smithers 1983). Birth occurs at the commencement of the rainy season, in November–December, and twinning appears to be common (F. Génin pers. obs. 2014). Because their habitats overlap, dwarf galagos often encounter Thick-tailed Greater Bushbabies (*Otolemur crassicaudatus*) but individuals of the two species ignore each other and do not appear to compete. The main predators of *Galagoides granti* are likely to be large owls like the Spotted Eagle-Owl (*Bubo africanus*); they do not react defensively to the presence of smaller owl species, like the African Wood-owl (*Strix woodfordi*) and the Pearl-spotted Owlet (*Glaucidium perlatum*).

**Ecosystem and cultural services:** Mozambique Dwarf Galagos may be involved in pollination and seed dispersal, but their diet has not been studied in detail. They have been observed eating nectar, marula gum and insects, indicating a role in the control of insect populations. They also take vertebrates, having been seen chewing the heads of birds captured in mist nets in Zimbabwe (Smithers 1983).

The presence of Mozambique Dwarf Galagos in Tembe and Tshanini may enhance the reserves' attractiveness to wildlife enthusiasts. The animals' small size and nocturnal lifestyle makes them rather cryptic, but they are easily detected by their calls.

# Use and Trade

Although there is no documented use, it is possible that the species is hunted for bushmeat.

# Threats

The number of threats and their severity for this species is unknown. They are potentially threatened by habitat

**Table 2. Use and trade summary for the Mozambique Dwarf Galago (*Galagoides granti*)**

| Category | Applicable? | Rationale | Proportion of total harvest | Trend |
|---|---|---|---|---|
| Subsistence use | Possible | Opportunistic bushmeat poaching or capture for pet trade. | Unknown | Unknown but possibly increasing with settlement expansion. |
| Commercial use | Possible | Opportunistic bushmeat poaching or capture for pet trade. | Unknown | Unknown but possibly increasing with settlement expansion. |
| Harvest from wild population | Possible | As above | Unknown | Unknown but possibly increasing with settlement expansion. |
| Harvest from ranched population | No | - | - | - |
| Harvest from captive population | No | - | - | - |

**Table 3. Threats to the Mozambique Dwarf Galago (*Galagoides granti*) 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*: human settlement expansion leading to habitat loss and degradation. Current stress *2.1 Species Mortality.* | GeoTerraImage 2015 | Indirect (remote sensing) | National | Ongoing: Urban and rural expansion of 5.6 and 1.1% respectively between 2000 and 2013. |
| | | Jewitt et al. 2015 | Indirect (remote sensing) | Regional | Ongoing: Average loss of natural habitat 1.2% per annum between 1994 and 2008 |
| 2 | *5.3 Logging & Wood Harvesting:* tree felling in the sand forest may decrease habitat quality. | - | Anecdotal | - | Potentially increasing in parallel with human settlement expansion. |
| 3 | *7.1.1 Increase in Fire Frequency/Intensity:* frequent fires threaten the mature woodland with lianas and creepers, where the species forages. | - | Anecdotal | - | Potentially increasing in parallel with human settlement expansion. |

destruction usually associated with human settlements. Grazing by domestic cattle has little effect on the sand forest. The Mozambique Dwarf Galago has only been found in the dry sand forest, which is located far from sources of water and sparsely populated, resulting in moderate degradation. However, ongoing forest loss from human settlement expansion, or logging of trees for firewood, may be a threat to the species. The increased frequency of fires in the area, as a result of agricultural practices or otherwise, may also decrease habitat quality.

Future surveys should investigate whether the species occurs in other, more threatened, riverine habitats, such as the gallery forest of Ndumo and Mkuze. It would be of particular interest to determine whether the species occurs west of the Pongola River where its preferred habitat seems to disappear on account of the absence of dunes.

**Current habitat trend:** Continuing decline. Between 2000 and 2013, there has been a 5.6% and 1.1% rate of urban and rural expansion in KwaZulu-Natal Province, respectively (GeoTerraImage 2015). There was a 19.7% loss of natural habitat in KwaZulu-Natal Province from 1994 to 2008, with an average loss of 1.2% per annum (Jewitt et al. 2015).

# Conservation

Although the Mozambique Dwarf Galago has a relatively large distribution range, extending north to eastern Zimbabwe, Mozambique, Malawi and southern Tanzania, its presence is only known in a few localities within the assessment region and its distribution is likely to be patchy. Conservationists often conflict with local inhabitants in this region and conservation efforts should be focused on existing protected areas that include patches of sand forest, in particular the Tshanini Community Reserve. The absence of infrastructure for tourists and researchers makes fieldwork difficult in Tshanini, but the absence of dangerous animals, such as Lions (*Panthera leo*) and elephants (*Loxodonta africana*), means that it is the only known protected area where the species can be studied on foot. A major concern for the survival of this species in Tshanini is the frequent use of burning as a management tool by conservation managers. This practice jeopardises the mosaic woodland within which *Galagoides granti* is often observed foraging, and should be reconsidered.

**Recommendations for land managers and practitioners:**

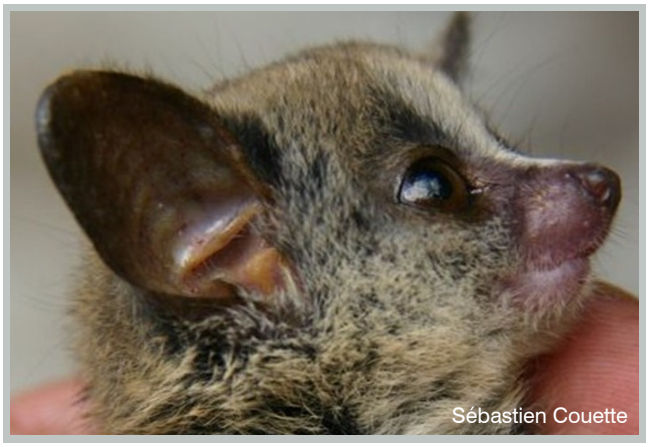
- Fires should spare transitional habitats used by the Mozambique Dwarf Galago, in particular patches of mature woodland rich in creepers and lianas.

**Research priorities:** The APIES Programme at the University of Fort Hare is currently involved in research on this species and other galagos. Research priorities include:

- A global survey is needed to assess the South African subpopulations of the Mozambique Dwarf Galago.

**Table 4. Conservation interventions for the Mozambique Dwarf Galago (*Galagoides granti*) 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 | *6.1 Linked Enterprises & Livelihood Alternatives*: integration of community projects like the Tshanini Community Reserve in conservation plans. | - | Anecdotal | - | - | The Tshanini Community Reserve is poorly developed and protection is limited. The reserve was created for the conservation of the Suni. |
| 2 | *2.1 Site/Area Management*: decrease fire frequency to sustain woodland mosaic. | - | Anecdotal | - | - | None |




- A finer scale study (at Tshanini – only site accessible by foot) is equally needed to understand the ecology of the species, as almost nothing is known about its social ecology.

**Encouraged citizen actions:**

- Some private properties include patches of sand forest. Owners should be encouraged to check for the presence of the species and make the areas accessible to research.
- Report sightings on virtual museum/social media platforms (for example, iSpot and MammalMAP), especially outside protected areas.

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# Data Sources and Quality

**Table 5. Information and interpretation qualifiers for the Mozambique Dwarf Galago (*Galagoides granti*) assessment**

| | |
|---|---|
| Data sources | Field study (literature) |
| Data quality (max) | Suspected |
| Data quality (min) | Suspected |
| Uncertainty resolution | Expert consensus |
| Risk tolerance | Evidentiary |

# 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.*