

Distribution of the Etendeka round-eared sengi (*Macroscelides micus*), a Namibian endemic mammal



by

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Keywords

Macroscelides, sengis, elephant-shrews, Namibia, distribution

Cover photo and Figure 1: *Free-ranging Etendeka round-eared Sengi, Macroscelides micus, at Klein Gai-as (-20.778497, 14.074986), at the southern end of the Awahab Outliers, about 5.6 km south-east of the most southern location in the Outliers shown in Fig. 2.*

Photo: Taken at night with camera flash by Sean Braine on 13 December 2013

Abstract

The distribution of the recently described Etendeka round-eared sengi (*Macroscelides micus*), based on new capture records, now includes most of the western portion of the Etendeka Plateau and eastern area of the Goboboseb Mountains, which are part of the Etendeka geological formation in north-western Namibia.

The recently described Etendeka round-eared sengi or elephant-shrew (*Macroscelides micus*; Fig. 1) from north-western Namibia has a distribution that is likely restricted to Etendeka igneous intrusions (Dumbacher et al. 2014). However, the documented locations for this species (Fig. 2) do not encompass the entire area covered by this unique volcanic flood event that occurred ca. 133 mya (Jerram et al. 1999). The main Etendeka formations include the Etendeka Plateau and nearby Awahab Outliers, and about 40 km south the Goboboseb Mountains (but not Messum Crater, Fig. 2). The substrates associated with the intrusions are rusty-coloured, but the area between and below them is mostly of sedimentary origin, and *M. micus* does not seem to occur on these substrates. The western portions of the Etendeka landscapes fall within Dorobos National Park and Skeleton Coast Park, which would provide maximum protection for *E. micus* and its habitats, if they occur within either national park.

During September and October 2013, we live-trapped the Etendeka region with three objectives: To determine 1. if *M. micus* occurs in the Goboboseb Mountains, 2. whether it occurs in Skeleton Coast Park, and 3. the extent of its distribution on the Etendeka Plateau.

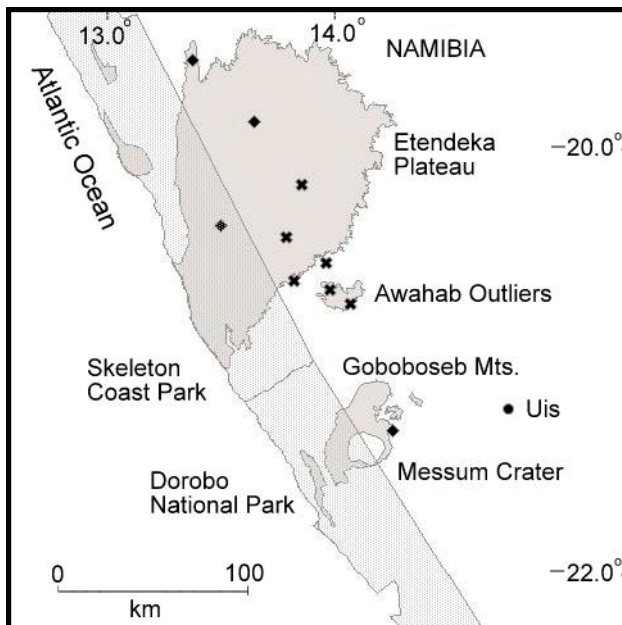


Figure 2: Known localities of the Etendeka round-eared sengi (*Macroscelides micus*) in north-western Namibia. The areas of Etendeka igneous intrusions are shaded darker than those of Skeleton Coast Park and Dorobo National Park. Solid "circle" is the town of Uis. The "X" symbols are capture locations ($N = 16$) from Dumbacher et al. (2014) and "diamonds" are new capture locations reported in this paper (Table 1). At the map scale, sengi locations that are close to each other appear as one.

Map: Topographical elements courtesy of the Digital Atlas of Namibia, Namibia Ministry of Environment and Tourism.

To accomplish our objectives, we focused trapping efforts to likely *M. micus* habitats in the Goboboseb Mountains and the western, northern and eastern areas of the Etendeka Plateau, beyond the perimeter of known *M. micus* locations. We used the same methods described in Dumbacher et al. (2014), and our effort each night at 16 different sites included a total of 2238 trap nights (one Sherman live-trap set during an entire night).

We captured only nine *M. micus* (Table 1, Fig. 2), which is a 0.4% trapping success. Because the region is not well known biologically, we have included in Table 1 data for *Macroscelides flavicaudatus* (Namib round-eared sengi) and *Elephantulus rupestris* (western rock sengi) that we captured. Voucher specimens are catalogued into the research collection of the California Academy of Sciences (Table 1), and some of these will be deposited in the collection at the National Museum of Namibia.

Table 1: Data for sengis or elephant-shrews captured in north-western Namibia during September and October 2013. The three species are the Etendeka short-eared sengi (*M. micus*), Namib short-eared sengi (*M. flavicaudatus*), and eastern rock sengi (*E. rupestris*). Catalogue numbers are those of the mammal collection at the California Academy of Sciences (MAM CAS XXXXX). Locations of *M. micus* are plotted in Figure 1.

Species	Catalog #	General Location Description	Latitude	Longitude
<i>M. micus</i>	30336	N fork, Uniab River, Palmwag	-19.868	13.677
<i>M. micus</i>	30337	NE Messum Crater	-21.322	14.324
<i>M. micus</i>	30338	Skeleton Coast Park, road C39	-20.360	13.515
<i>M. micus</i>	30343	Skeleton Coast Park, road C39	-20.359	13.516
<i>M. micus</i>	30344	N fork, Uniab River, Palmwag	-19.865	13.678
<i>M. micus</i>	30345	Hunkab River, Palmwag	-19.582	13.386
<i>M. micus</i>	30346	NE Messum Crater	-21.324	14.324
<i>M. micus</i>	30347	N. fork, Uniab River, Palmwag	-19.859	13.678
<i>M. micus</i>	30348	Hunkab River, Palmwag	-19.576	13.387
<i>M. flavicaudatus</i>	30152	Cape Cross, road D2303	-21.440	13.896
<i>M. flavicaudatus</i>	30335	Wlotzkasbaken	-22.376	14.481
<i>M. flavicaudatus</i>	30368	NE Messum Crater	-21.323	14.326
<i>M. flavicaudatus</i>	30369	Cape Cross, road D2303	-21.440	13.897
<i>M. flavicaudatus</i>	30370	Cape Cross, road D2303	-21.440	13.897
<i>E. rupestris</i>	30153	VanZyle's Hut, Palmwag	-19.900	13.841
<i>E. rupestris</i>	30371	VanZyle's Hut, Palmwag	-19.899	13.839
<i>E. rupestris</i>	30372	VanZyle's Hut, Palmwag	-19.900	13.841
<i>E. rupestris</i>	30373	Khovarib River Camp, Palmwag	-19.545	13.828
<i>E. rupestris</i>	30374	Etendeka Mt Camp, Palmwag	-19.793	13.924
<i>E. rupestris</i>	30375	VanZyle's Hut, Palmwag	-19.903	13.829

We accomplished all three of our objectives: we found *M. micus* in the eastern Goboboseb Mountains, in Skeleton Coast Park, and at the far north-western edge of the Etendeka Plateau (Table 1, Fig. 2). We did not find *M. micus* in the higher elevations of the Goboboseb Mountains, nor the higher eastern area of the Etendeka Plateau. We only captured *M. micus* below 860 m on low-gradient gravel plains that have eroded down from higher areas of the Etendeka intrusions. The new species appears to be a habitat specialist that occurs at low densities, which agrees with the findings of Dumbacher et al. (2014).

We greatly appreciate permission from the Namibia Ministry of Environment and Tourism to conduct our research, which included trapping within Skeleton Coast Park (permit #1812/2013). Park Ranger Michael Katjau provided helpful guidance in the field. We thank Fritz Schenk of Palmwag Lodge for access to the Palmwag Concession, without which we could not have met our objectives. Roger Fussel and Lindy van den Bosch of Big Sky Lodges continued their unwavering support of our research, including accommodation in Windhoek, fellowship in the field, and access to Etendeka Mountain Camp, where Dennis Liebenberg advised us on suitable trapping areas in that concession area. Ludwig and Magdalena Gonases of Save the Rhino Trust allowed us access to the Mbakondja River Camp area. Russel Vinjevold and his staff from Wereldsend Farm provided useful advice. Laurel Osborne and Taylor Osterberg assisted in the field. Eugene Marais of the National Museum of Namibia kindly loaned us live traps. Sean Braine of Batis Birding Safaris in Swakopmund kindly provided the image and associated data in Figure 1. At the California Academy of Sciences, Jack Dumbacher assisted with the preparation of Figure 1, and Maureen Flannery and Laura Wilkinson curated specimens.

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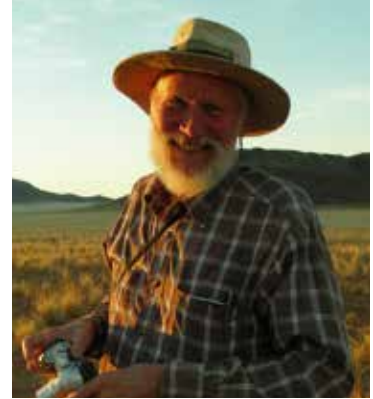
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About the authors

Galen Rathbun is a Fellow and Research Associate of the California Academy of Sciences, and has spent much of his career studying the behavioural ecology of small mammals, including sengis, in eastern and southern Africa.



Tim Osborne has worked in Africa and Alaska since 1967 on various species of birds and mammals. He has published papers on Red-necked Falcons, Kori Bustards, Zambian floodplain mammals, California seabirds, and Alaskan moose. Currently retired from Alaska Dept of Fish and Game, living in Namibia since 1997 he is still researching Namibian wildlife.

After initially training as a Safari Guide in South Africa I returned to the UK to gain my BA in Biological Science from Oxford University. I have undertaken biological expeditions and have worked with and trained anti-poaching units and rangers in Africa and the Neotropics. Following time teaching as a college lecturer in zoology at St Hilda's College (Oxford University) I am currently carrying out my PhD at Nottingham University (UK) investigating the effects of Bedouin grazing upon flora and fauna in the desert region surrounding Egypt's Mount Sinai. I am a Member of the Society of Biology and a Fellow of the Royal Geographic Society.



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