



Andrew Taylor

### Co-Chairs

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### Location/Affiliation

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### Number of members

34

### Social networks

Twitter: @Tweeting\_Tenrec

Website: [www.afrotheria.net](http://www.afrotheria.net)



### Mission statement

The IUCN SSC Afrotheria Specialist Group (ASG) facilitates the conservation of hyraxes, aardvarks, elephant-shrews or sengis, golden moles, tenrecs and their habitats by: (1) providing sound scientific advice and guidance to conservationists, governments, and other interested groups; (2) raising public awareness; and (3) developing research and conservation programmes.

### Projected impact for the 2017-2020 quadrennium

If the ASG achieved all its targets, it would be able to deliver more accurate, data-driven Red List assessments for more Afrotherian species and, therefore, be in a better position to move to conservation planning, especially for priority species.

### Targets for the 2017-2020 quadrennium

#### Assess

Red List: reassess Red List categories in species for which new information arises (e.g. Nimba Otter Shrew, *Micropotamogale lamottei*, for which we have new extent of occurrence (EOO) data) or for newly described species that may be described during the quadrennium (such as golden moles or sengis).

Research activities: (1) develop five standardised monitoring protocols for each group of Afrotherians to track trends over time and produce more data for Red List assessments; (2) complete 2–4 reassessments of taxonomy of golden moles in species where it is necessary

(e.g. *Amblysomus* and *Neamblysomus* species); (3) collect basic data for 3–4 golden mole species, including geographic distributions and natural history data; (4) conduct surveys to determine distribution and abundance of five hyrax species; (5) revise taxonomy of five hyrax species; (6) develop and assess field trials for standardised camera trapping methods to determine population estimates for giant sengis; (7) conduct surveys to assess distribution, abundance, threats and taxonomic status of the Data Deficient sengi species; (8) build on current research to determine the systematics of giant sengis, especially *Rhynchocyon* species; (9) survey Aardvark (*Orycteropus afer*) populations to determine abundance, distribution and trends; (10) conduct taxonomic studies to determine the systematics of Aardvarks, with a focus on contrasting Aardvarks from central African forests with southern African savannah Aardvarks; (11) integrate the monitoring of tenrecs in the management of key protected areas with threatened species in order to track their status and threats and identify key conservation concerns; (12) conduct genetic studies to clarify the taxonomy and species diversity within the genus *Microgale*.

#### Communicate

Communication: (1) update and maintain the [afrotheria.net](http://afrotheria.net) website; (2) produce one Afrotheria Specialist Group newsletter every year.



Somali Sengi, *Galegeeska revoilii*, at a new locality in the Ali Sabieh Region of Djibouti, near the Djalelo Wildlife Protected Area but outside of its boundaries. This new occurrence expands the documented range of *G. revoilii* within Djibouti  
 Photo: Houssein Rayaleh of Association Djibouti Nature

## Activities and results 2020

### Assess

#### Red List

**i.** We have not had any need to re-assess any species during 2020, although new taxonomic assessments in the sengis may require such soon. As a Specialist Group, we are waiting to find out whether IUCN will request a full set of reassessments during the next quadrennium. (KSR #1)

#### Research activities

**i.** Phylogenetic analysis and species delimitation was conducted for *Amblysomus*. This analysis was conducted using BPP software and genetic data from ND2 and GHR genes. The dataset will be expanded upon before publication. (KSR #43)

**ii.** Samantha Mynhardt, in collaboration with the Drylands Conservation Programme of the Endangered Wildlife Trust, is developing a method for mammalian environmental DNA (eDNA) extraction from soil, and subsequent species identification through barcode sequencing of small DNA fragments. We have conducted a pilot study to test our eDNA method, which has proven very successful

in obtaining eDNA from soil samples and obtaining DNA barcodes for species identification. We have completed sequence analysis and species identification for all samples and will be conducting another field trip to Port Nolloth in July 2021, in the hope of using our method to detect the Critically Endangered De Winton's Golden Mole (*Cryptochloris wintoni*). We captured one specimen of golden mole at Lambert's Bay, and conducted species identification (Grant's Golden Mole, *Eremitalpa granti*) using a cytb DNA barcode. We collected 30 eDNA samples from various sites in the Lambert's Bay area and obtained positive golden mole species identifications in all 30 samples. (KSR #12)

**iii.** An application for a National Geographic Society grant to conduct surveys to determine distribution and abundance of five hyrax species was re-submitted during 2020 but was rejected. (KSR #12)

**iv.** One project at Arabuko-Sokoke Forest in Kenya was initiated to camera survey Golden-rumped Sengi (*Rhynchocyon chrysopygus*) and other mammals. There is no news of updated methods or results yet. (KSR #12)

**v.** A survey in the Horn of Africa has yielded new distributional data, abundance estimates and taxonomic assessment for Somali Sengi (*Elephantulus revoilii*). An updated Red List assessment for Somali Sengi has been started. A new taxonomic assessment has been generated for the unworked (thus Data Deficient) *Rhynchocyon* taxon from Boni Forest, Kenya. Work with the recent survey data for Dusky Sengi (*Elephantulus fuscus*) from Malawi is pending. (KSR #43)

**vi.** A systematic reassessment that includes a new subspecies of Golden-rumped Sengi (*Rhynchocyon chrysopygus*) was a focus for 2020 and published recently. More work is needed. (KSR #12)

**vii.** There has been no progress in relation to the project to survey Aardvark populations to determine abundance, distribution and trends. During 2020, the Aardvark section started discussions about how such a process might be conducted using photographic (camera trap) surveys and machine learning technology, but there has been no further progress. A new project being started in the Waterberg Region of South Africa, initiated by a private landowner and supported by the University of Witwatersrand, may lead to some progress with this work. (KSR #12)



Least Concern Taiva Shrew Tenrec,  
*Microgale taiva*, Parc Nacional de Midongy Sud,  
Madagascar  
Photo: L. E. Olson

**viii.** As noted for 2019, the genomic work on Aardvark was put on hold after the postdoc in charge of the project was not confirmed in her position. The project remains on hold until new funding and a new candidate can be found. One major obstacle will be to get access to fresh DNA samples from Congo (or adjacent countries) within the framework of the Nagoya Protocol. Political instability is also a problem. (KSR #43)

**ix.** At present, the biggest problem to integrating the monitoring of tenrecs in the management of key protected areas with threatened species is lack of a consistent approach to monitoring. 'Monitoring' means different things to different people, and for small-bodied tenrecs, particularly Shrew Tenrecs (*Microgale* and *Nesogale*), identification to species is almost impossible without collecting voucher specimens or genetic samples (although we are not yet at the point where a simple genetic test will allow a confident species determination). Also, there are very few longitudinal demographic studies, so we don't yet know if and to what extent some species fluctuate. So 'monitoring' is likely a premature concept for these species, and inventories are still needed. (Interestingly, this is an issue the US National Park Service has struggled with in its federally mandated Inventory & Monitoring Program – where does the former stop and the latter begin?). So the primary need in this case is agreement, or at least consensus, as to what 'monitoring' entails. For large-bodied species, especially Tailless Tenrec (*Tenrec ecaudatus*) and Greater Hedgehog Tenrec (*Setifer setosus*), population declines have become apparent in some areas, and these are also more directly threatened

by exploitation (e.g. bushmeat) and are likely being adversely affected by zoonotics. These species are easier to 'monitor' in that they can be confidently identified to species without having to inspect craniodental features that require specimen collection. But again, the primary need is for an actual strategy for monitoring. Expert taxonomic identifications and data analysis resulting from late-2020 inventories are pending. (KSR #32)

**x.** Two peer-reviewed publications were produced: Everson, K.M., et al. (2020). 'Montane regions shape patterns of diversification in small mammals and reptiles from Madagascar's moist evergreen forest'. *Journal of Biogeography* 47:2059–2072. <https://doi.org/10.1111/jbi.13945>; Everson, K.M., Goodman, S.M. and Olson, L.E. (2020). 'Speciation and gene flow in two sympatric small mammals from Madagascar, *Microgale fotsifotsy* and *M. soricoides* (Mammalia: Tenrecidae)'. *Molecular Ecology* 29:1717–1729. <https://doi.org/10.1111/mec.15433>. Several manuscripts are in review. (KSR #43)

## Communicate

### Communication

**i.** The Afrotheria website continues to be maintained every year and we obtained funding from IUCN to pay for website maintenance during 2020. We have also started updating the web pages for aardvarks and tenrecs, but this is an ongoing process. (KSR #28)

**ii.** We successfully produced our annual newsletter in September 2020. (KSR #28)

## Acknowledgements

We are grateful to IUCN and Global Wildlife Conservation for the grant provided to maintain and update the Afrotheria.net website. We thank our Afrotheria Specialist Group members, all of whom are volunteers, who contributed towards ongoing work on our species and to those who contributed towards the annual newsletter. In particular, we are grateful to our section coordinators, Samantha Mynardt, Lee Koren, Thomas Lehmann, Voahangy Soarimalala, Link Olson and Steven Heritage, as well as our newsletter editor, P.J. Stephenson. We also thank Avian Designs for supporting our website at discounted rates.

## Summary of activities 2020

Components of Species Conservation Cycle: 2/5

Assess **11** 

Communicate **2** 

Main KSRs addressed: 1, 12, 28, 32, 43

KSR: Key Species Result