

Rose's mountain toadlet (*Capensibufo rosei*) is endemic to the Cape Peninsula of the Western Cape, South Africa, where only two breeding populations are known at present (Silvermine and Cape Point). Due to the loss of multiple breeding sites since the 1980s, *C. rosei* is under threat of extinction, and estimating its global population size is a conservation priority. However, this species is unusually difficult to detect, due to its lack of a breeding call, cryptic coloration, and small body size (< 30 mm). Some extant populations may therefore remain undetected on the peninsula. To estimate global population size, we therefore (a) determined with confidence the number of extant breeding populations, and (b) estimated the population size of each extant breeding population. Firstly, Species Distribution Models (SDMs) were used to predict suitable localities where unrecognised populations may occur. We then chose 45 sites of 300 m x 300 m that were subsequently surveyed for ground-validation of the model, and to uncover potential new breeding populations. To strengthen confidence in our SDM-based survey findings, factors which may influence the representative accuracy of survey results, such as model predictive performance and detection in the field, were then evaluated using more common amphibian species as proxies. Secondly, the size of each known population was estimated using closed-population capture-mark-recapture models. Animals were marked using visible implant

elastomer tags over a five-day period, by comprehensively sampling individuals from each population and using daily batch marks. Our results show that this species appears to be absent from most of its potential range as we did not find any new populations at sites predicted to be suitable by the models. However, a new site was discovered *ad hoc*, ca. 3 km from the existing site at Cape Point. The total global population size (from the three known sites) was estimated to be just over 3,000 adults (95% CI: 2,534-4,032). Due to the small number of known populations, the small range occupied by the species, and the relatively small global population size, this species may be under greater threat of extinction than previously thought.

BEHAVIOURAL AND BIOLOGICAL DEFENCE MECHANISMS OF SOUTHERN FOAM NEST FROGS AGAINST AMPHIBIAN CHYTRID FUNGUS

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Amphibian chytridiomycosis is an infectious disease responsible for major declines and extinctions in amphibian species worldwide. Different amphibian species, and indeed populations within the same species, exhibit variation in their susceptibility to amphibian

chytridiomycosis. A range of factors account for variation in susceptibility across species or populations include host genetics, immunogenetics, host behaviour and environmental factors. southern foam-nest frogs (*Chiromantis xerampelina*) exhibit two rare behaviours, namely basking and the construction of foam nests, offering an ideal opportunity to study the effect of behavioural and biological defence mechanisms against the amphibian chytrid fungus. This hypothesis will be tested by determining the relationship between infection and temperature in wild populations of

C. xerampelina and developing experimental trials to test the inhibitory effect of the foam nest on the amphibian chytrid fungus. We expect that infection is inhibited by the ability to elevate skin temperatures to the maximum thermal range of *Bd*, and that foam from the nests of *C. xerampelina* will possess antifungal properties able to inhibit the growth of *Bd* regardless of pathogen lineage.

NEW LACERTIDS FROM ANGOLA

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Southern Africa has a diverse lacertid fauna that includes 38 species in nine genera. Whilst only two new lacertid species have been described from the subcontinent in the last 50 years, numerous other species have been revived from synonymy or elevated to specific status. In contrast Angolan lacertids are relatively depauperate, with only 10 species in six genera, most representing wide-ranging forms. *Pedioplains* (12 species) and *Nucras* (8) are the most speciose lacertid genera in the subcontinent, but both contain only few Angolan representatives. Following cessation of the protracted civil war, recent biodiversity surveys in the country have resulted in the description (2010) of two new *Pedioplanis* species. Subsequent morphological and genetic studies based on ongoing collections have confirmed that lacertid diversity in the country is still underestimated. Using newly collected material of *Pedioplanis*, *Nucras*, and *Heliobolus*, we constructed molecular phylogenies that demonstrate multiple additional lacertid lineages within these genera in the semi-arid habitats of the Namibé and Benguela provinces of Angola. These genera are largely absent in the grassland and miombo habitats of central and southeast Angola, where *Ichnotropis* is prevalent and whose taxonomy is the subject of ongoing investigation.

A PHYLOGENY AND GENUS-LEVEL REVISION OF THE AFRICAN FILE SNAKES