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## A new frog species (Myobatrachidae: *Uperoleia*) from the Northern Deserts region of Australia, with a redescription of *U. trachyderma*

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### Abstract

The frog genus *Uperoleia* (Myobatrachidae) is species rich, with the greatest diversity in the northern monsoonal region of Australia. Due in part to their small body size, conservative morphology and distribution in diverse habitats, the genus is likely to harbor cryptic species. A recent study (Catullo *et al.* 2013) assessed region-wide genetic, acoustic and phenotypic variation within four species in northern Australia. Catullo *et al.* (2013) presented multiple lines of evidence that the widespread *U. trachyderma* comprises distinct allopatric western and eastern lineages within the Northern Deserts bioregion of Australia. Here we formally describe the western lineage as *U. stridera* **sp. nov.** and redescribe the eastern (type) clade as *U. trachyderma*. The new species can be distinguished from *U. trachyderma* by fewer pulses per call, a faster pulse rate, and the lack of scattered orange to red flecks on the dorsum. The description of *U. stridera* **sp. nov.** brings the number of *Uperoleia* species to 28, by far the largest genus in the Myobatrachidae, and further highlights the Australian monsoonal tropics as a region of high endemism.

**Key words:** Australian Monsoonal Tropics, advertisement call, cryptic species, *Uperoleia stridera* **sp. nov.**, *Uperoleia trachyderma*

### Introduction

The frog genus *Uperoleia* (Myobatrachidae) is represented in Australia by 27 currently recognized species, with the majority of species discovery and description occurring in the last few decades. A significant review of *Uperoleia* by Tyler *et al.* (1981) described nine new species, followed by the description *U. aspera* Tyler, Davies & Martin 1981, *U. trachyderma* Tyler, Davies & Martin 1981b, and *U. glandulosa* Davies, Mahony, and Roberts 1985. Six more species were described in 1986 (Davies *et al.*; Davies & Littlejohn). Following almost two decades between the description of new species, the past few years have seen the description of a number of species from the poorly explored monsoonal tropics or arid regions of Australia, including *U. daviesae* Young, Tyler & Kent 2005 from the Top End, *U. micra* Doughty & Roberts 2008 from the north-west Kimberley, and *U. saxatilis* Catullo, Doughty, Roberts, & Keogh 2011 from the Pilbara. The northern monsoonal tropics region has 17 *Uperoleia* species, representing almost two-thirds of *Uperoleia* diversity. Another 10 species occur in the eastern mesic region and the arid zone. The monsoonal tropics are a geologically and climatically diverse region, characterized by a wet summer associated with cyclonic activity, and a dry winter season (Bowman *et al.* 2010). Due to a low population density, little infrastructure, and difficult access during the wet season, this region has been poorly explored.

Catullo *et al.* (2013) investigated genetic, phenotypic, and acoustic variation of the *U. lithomoda/U. trachyderma/U. minima/U. mimula* species complex from across monsoonal northern Australia. Frogs of this species complex represent a monophyletic group that also included five other species with a sharp “click” as a call (see also Catullo *et al.* 2011). This study concluded that multiple lines of evidence supported the existence of two distinct lineages that occur in the western and eastern Northern Deserts bioregion within currently described *U. trachyderma*. While there was some mitochondrial incongruence, the acoustic, nDNA, and morphological

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