

**A Reassessment of *Saltuarius swaini*
(Lacertilia: Diplodactylidae)
in Southeastern Queensland and New South Wales;
Two New Taxa, Phylogeny, Biogeography and Conservation**

PATRICK J. COUPER,^{1*} ROSS A. SADLIER,²
GLENN M. SHEA,³ AND JESSICA WORTHINGTON WILMER¹

¹ Queensland Museum, PO Box 3300, South Bank, Brisbane Qld 4101, Australia

² Australian Museum, 6 College Street, Sydney 2010 NSW, Australia

³ Faculty of Veterinary Science B01, University of Sydney 2006 NSW, Australia
patrick.couper@qm.qld.gov.au

ABSTRACT. The *Saltuarius swaini* lineage comprises four species: *S. swaini* (Wells & Wellington, 1985), *S. wyberba* (Couper *et al.*, 1997), *S. moritzi* n.sp. and *S. kateae* n.sp. These are diagnosed by scalation and colour pattern differences; high levels of discrimination between these species were obtained in genetic and multivariate morphological analyses. Two species, *Saltuarius swaini* and *S. wyberba*, occur in both southeastern Queensland and northeastern N.S.W. The former is a rainforest obligate, the latter saxicolous. *Saltuarius moritzi* and *S. kateae* n.spp. are restricted to northeastern N.S.W. The former is widespread and the least specific in geological and substrate associations. The latter is restricted to the Mt Marsh area. The genus has a rainforest ancestry. Divergence within the “*S. swaini*” lineage may date to the latest Eocene–Early Miocene. We hypothesize that populations of ancestral leaf-tailed geckos would have been severely fragmented since the Mid Tertiary forcing retreat to rainforest refugia and driving allopatric speciation. Some populations shifted from trees to rocks. All four taxa are well-represented in existing reserves. *Saltuarius swaini*, a species with a continuous rainforest history and low levels of genetic variation, may be disadvantaged by ecological stasis in the face of global warming.

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Leaf-tailed geckos are a distinctive, easily recognized element of the Australian fauna and one species, *Phyllurus platurus*, has occupied the homes and gardens of Sydney residents since the time of first European settlement (Bauer, 1990; Greer, 1989). Yet, until the early 1990s, the diversity within this group was largely unassessed. Aaron Bauer, in

his landmark work on the phylogenetic systematics and biogeography of the Carphodactylini (1990) recognized only four species: *P. platurus* (Shaw, in White 1790), *P. cornutus* (Ogilby, 1892), *P. caudiannulatus* (Covacevich, 1975) and *P. salebrosus* (Covacevich, 1975). These constitute less than one third of the taxa known today.

* author for correspondence