

Genetic Relationships of Long-nosed Potoroos *Potorous tridactylus* (Kerr, 1792) from the Bass Strait Islands, with Notes on the Subspecies *Potorous tridactylus benormi* Courtney, 1963

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ABSTRACT. Bass Strait is an important biogeographic barrier for Australian mammals, often resulting in significant genetic differentiation between populations on the mainland and Tasmania for species with a *trans*-Bassian distribution. King and Flinders Islands, in Bass Strait, are the largest remnants of the land bridge that once linked Tasmania with mainland Australia. Due to their remote locality and habitat loss on the islands since European settlement, little is known about the evolutionary movements of species across the former land bridge. Here we present genetic data, generated from museum skins, on the King and Flinders Island populations of Long-nosed Potoroo, *Potorous tridactylus* (Kerr, 1792) to investigate their affinities with other populations of this species. We also assessed the validity of the subspecies *Potorous tridactylus benormi* Courtney, 1963 described from King Island. Analysis of two partial mitochondrial DNA genes (*COI*, *ND2*) indicate that potoroos on King and Flinders Islands are more closely related to Tasmanian rather than mainland potoroo populations. Molecular and morphological data from the holotype and paratype of *Potorous tridactylus benormi* does not support separate taxonomic status and places it within the Tasmanian subspecies *Potorous tridactylus apicalis* (Gould, 1851).

Introduction

Bass Strait is a 240 km expanse of ocean that separates Victoria on mainland Australia and the island of Tasmania. It is relatively shallow, mostly less than 100 m deep, and during glacial cycles, sea level drops have resulted in the exposure of a land bridge—“the Bassian Plain”—facilitating the dispersal of species between mainland Australia and Tasmania. This land bridge was most recently exposed from

around 43,000 years ago until around 14,000 years ago, including the period of the Last Glacial Maxima (Lambeck & Chappell, 2001) and since its most recent breakdown, has formed a biogeographic barrier for many species with a *trans*-Bassian distribution (Firestone, 1998; Symula *et al.*, 2008; Schultz *et al.*, 2007; Toon *et al.*, 2010).

Today, all that remains of this land bridge are over 50 islands in Bass Strait (Fig. 1). Along the western edge of the former Bassian Plain lies King Island (c. 1100 sq km) located

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