



A new handfish, *Brachionichthys australis* sp. nov. (Lophiiformes: Brachionichthyidae), with a redescription of the critically endangered spotted handfish, *B. hirsutus* (Lacepède)

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Abstract

The micro-endemic Spotted Handfish, *Brachionichthys hirsutus* (Lacepède), which was discovered off Tasmania by the French explorer François Péron in the early 19th century, is now endangered. A second spotted handfish of the genus *Brachionichthys* was first identified in the early 1980's and is formally described based on material from southern Australia. *Brachionichthys australis* sp. nov. differs from its close congener *B. hirsutus*, in having a larger eye, longer illicium with a smaller esca, longer first dorsal-fin ray, fewer second dorsal-fin rays, shorter second dorsal-fin base, and a more subtle colour pattern. It also has a sparse covering of long, thin streaks and stripes (rather than small spots or short streaks), and the caudal fin is sparsely spotted (densely covered with fine spots that usually form a dark submarginal bar in *B. hirsutus*). They can also be distinguished using molecular analysis. *Brachionichthys australis*, which has a much wider geographic distribution and depth range than *B. hirsutus*, occurs mainly on the continental shelf of southern Australia from Bermagui (New South Wales) to the western sector of the Great Australian Bight (Western Australia), including eastern Tasmania south to the D'Entrecasteaux Channel, at depths of 18–210 m (and possibly to 277 m). *Brachionichthys hirsutus*, which is endemic to southeastern Tasmania where it was once common in bays and estuaries at depths of 1–60 m, is now considered by the IUCN to be critically endangered. These species, known in the vernacular as the spotted handfishes, are otherwise similar in appearance and may have been confused in the past.

Key words: *Brachionichthys australis*, *Brachionichthys hirsutus*, Lophiiformes, Antennarioidei, Brachionichthyidae, handfishes, new species, southern Australia

Introduction

Members of the Australian endemic fish family Brachionichthyidae, or handfishes, are considered to be the most primitive group of the lophiiform suborder Antennarioidei (Pietsch, 1981; Pietsch & Grobecker, 1987). The group presently consists of two extant genera, *Brachionichthys* Bleeker, 1855 and *Sympterichthys* Gill, 1878, and 4 valid nominal taxa, *B. hirsutus* (Lacepède, 1804), and *S. politus* (Richardson, 1844), *S. unipennis* (Cuvier, 1817) and *S. verrucosus* McCulloch & Waite, 1918 (Paxton *et al.*, 2006). However, recent studies by the authors, have found that the family contains at least 8 undescribed species and additional genus-level taxa. Three of these new species were discovered during the preparation of a monograph on Tasmanian fishes (Last *et al.*, 1983) and two of them were discussed in a guide to the coastal fishes of Tasmania and Bass Strait (Edgar *et al.*, 1982).

Handfishes were amongst the first Australian fishes named (Last & Bruce, 1997). The French zoologist François Péron collected *B. hirsutus* from Tasmania (then known as Van Diemens Land) in the early 19th century on the Baudin expedition (1800–04), and these were subsequently described by Lacepède and Cuvier.