

# *Brachiopsilus ziebelli*

## Ziebell's handfish

TASMANIAN THREATENED SPECIES LISTING STATEMENT



Image by Andrew Green

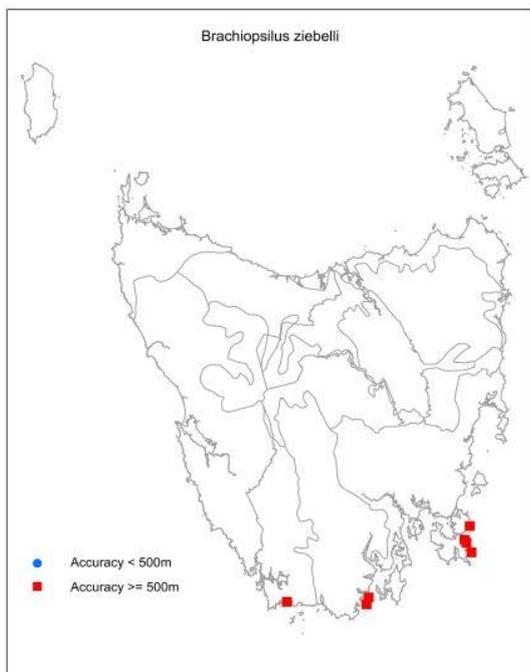
**Common name:** Ziebell's handfish

**Scientific name:** *Brachiopsilus ziebelli* (Last & Gledhill, 2009)

**Group:** Actinopterygii, Lophiiformes, Brachionichthyidae

**Status:** *Threatened Species Protection Act 1995:* **endangered**  
*Environment Protection and Biodiversity Conservation Act 1999:*  
**Vulnerable**

**Distribution:** Endemic status: **Endemic to Tasmania's east and south coast**  
Tasmanian NRM Regions: **South**



**Figure 1.** The historic known distribution of the Ziebell's handfish. The current distribution is unknown.



**Plate 1.** Ziebell's handfish. Image by Andrew Green.

**SUMMARY:**

The Ziebell's handfish (*Brachiopsilus ziebelli*) is a benthic fish endemic to Tasmania and is one of three listed threatened handfish species.

The last confirmed record of the species was in 2007 and there have been no known sightings since. It is possible the species has since become extinct, but it may be persisting in low numbers. Regular, systematic surveys of known and potential habitat are required to determine its status.

The threats to this species are currently unknown but based on knowledge of other related species, possible threats include lack of information regarding current population, small population size, degradation and loss of habitat, poaching, stochastic events, and possibly warming seas.

A Recovery Team oversees a collaborative research and management effort aimed at improving the status of Tasmania's threatened handfish species.

**IDENTIFICATION AND ECOLOGY**

*Brachiopsilus ziebelli* (known as the Ziebell's handfish) is a member of the fish family Brachionichthyidae, comprising 14 extant species, of which 11 occur in the marine environment around Tasmania. All handfish use their hand-like fins to "walk" along the seafloor, rather than swim (although most possess a limited capacity to swim over short distances).

The Ziebell's handfish is a cryptic species. It is the largest of the three listed Tasmanian handfish species, with adults growing to a maximum length of 15 cm (Bray 2019).

The Ziebell's handfish is pink to whitish, with purple to brownish irregular blotches on the upper surface and sides. It also sometimes has bright yellow fins and yellow colouration extending onto the body near the fins (Bray 2019).

There are also records of a colour morph with densely mottled, purple colouration (Loney's morph; Last and Gledhill 2009).

The diet of Ziebell's handfish is not confirmed but is expected to be similar to other handfish species, consisting of small invertebrates (Pogonoski *et al.* 2002) such as crustaceans and worms (Edgar *et al.* 1982).

The breeding strategy of the species is similar to that of the other Tasmanian threatened handfish species (Commonwealth of Australia 2015). Females lay their egg masses around sponges at a water depth of around 20 metres. Upon hatching the young settle directly on the seabed near the egg mass (Bray 2019).

**Survey techniques**

Surveying for Ziebell's handfish should be systematic, where practicable and safe to do so. Diver-based surveys by suitably experienced personnel are recommended but may be supplemented with Remote Operating Vehicle surveys to expand the area and depth coverage.

In the absence of new information, the current main focus areas are on the eastern side of the Tasman Peninsula, from The Sisters Rocks (off Sisters Bay), south to Tasman Island and within 2 km of the Actaeon Islands southwest of Bruny Island (off Recherche Bay), although other areas of potential habitat should also be considered.

**Confusing species**

The Ziebell's handfish is not easily confused with other handfish species due to its size and distinctive colour and patterning.

## DISTRIBUTION AND HABITAT

The Ziebell's handfish is endemic to the east and south coasts of Tasmania. There are historical records from sites in the southern parts of the D'Entrecasteaux Channel, Cox Bight, and Forestier and Tasman Peninsulas (Bray 2019). However, the species has not been recorded for more than ten years and its current distribution is not known.

The species has been associated with reefs at depths of 10 to 20 m (Bray 2019) although the depth distribution is noted as between 3 to 20 m (Commonwealth of Australia 2015) to between 3 to 40 m, and it may occur on deeper reefs than are feasible to visually survey. It also tends to be recorded in deeper, more exposed habitats than the other threatened handfish species. To date, it has largely been found on solid, rocky substrate covered in sessile invertebrates (e.g. sponges) or macroalgae. The most frequent recent sightings were from rock ledges with rich growth of sponges, ascidians and bryozoans (K. Gowlett-Holmes, pers comm).

Any areas within which Ziebell's handfish occurs or has been found (and around these areas) are considered vital habitat for the species survival. In the absence of new information, these areas include rocky reefs within the species depth range (3 to 40 m) in the area from The Sisters Rocks (off Sisters Bay) to Tasman Island and within 2 km of the Actaeon Island southwest of Bruny Island (off Recherche Bay), unless any confirmed sightings or regular, systematic surveying of these areas indicates otherwise.

## POPULATION PARAMETERS

At time of preparation of this listing statement, there have been no confirmed sightings of Ziebell's handfish for more than ten years, although this may be due to their cryptic nature, the associated difficulty in finding individuals if present, along with their presumably very small population size. It is assumed that the species persists, albeit in such low numbers that finding individuals is extraordinarily difficult.

Ziebell's handfish was once recorded in a number of disjunct populations in eastern and southern Tasmanian coastal areas. It has been recorded at the Forestier Peninsula, Tasman Peninsula, Actaeon Islands and Cox Bight at depths of 10 to 20 m (Last and Gledhill 2009).

## RESERVATION STATUS

It is currently unknown if the species occurs in any marine reserves as there have not been any confirmed sightings of this species for more than ten years.

## CONSERVATION STATUS

The Ziebell's handfish was added to Schedule 3 (endangered species) of the *Threatened Species Protection Act 1995* in 2017. Eligibility for this listing was based on Criterion B (extent of occurrence and/or area of occupancy), specifically B1 (severely fragmented or known to exist at no more than five locations), B2c, d and e (continuing decline in: area, extent and/or quality of habitat; number of locations or subpopulations, and number of mature individuals).

Ziebell's handfish is also listed as Vulnerable under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999*.

## THREATS, LIMITING FACTORS & MANAGEMENT ISSUES

Threats, limiting factors and management issues for Ziebell's handfish include:

**Lack of information:** Without more information about the species and its requirements, it is difficult to determine the most urgent and effective conservation management actions that may support recovery of the species. Current information gaps include population size and locations, basic biology, habitat requirements and threats (Commonwealth of Australia 2015).

**Illegal collection:** Due to their charismatic appearance Ziebell's handfish are likely to be highly sought after by collectors. Due to the extremely small population size, any illegal collection for the purposes of personal aquaria or the aquarium trade is a significant threat to this species.

**Climate change:** An increase in water temperatures is recognised as a potential threat to the species (Gledhill and Green, unpublished report). Warmer water temperatures may impact upon handfish survival and/or reproductive capacity, directly and/or indirectly. Climate change may also lead to increased severe weather events which may dislodge spawning substrate and degrade habitat (K. Gowlett-Holmes, pers comm).

## MANAGEMENT STRATEGY

### Management objectives

The objective of the most recent Recovery Plan for the Ziebell's handfish is to increase the understanding of the species biology and ecology in order to conserve and contribute to the future recovery of the species (Commonwealth of Australia 2015).

### What has been done?

Due to the lack of information on the current distribution, population size and abundance of the species, as well as the preferred depth profile of the species, little has been achieved to date in relation to the management and conservation of this species, other than:

**Ongoing systematic surveys:** The Reef Life Survey program ([www.reeflifesurvey.com](http://www.reeflifesurvey.com)) regularly undertakes monitoring of reef habitats at locations known to be historically important for the reef-dwelling handfish species. These surveys continue at sites known to be important for Ziebell's handfish when resources allow but have not been successful in finding any individuals to date.

**Community awareness:** In 2018, the Handfish Conservation Project was established to raise awareness and funds to further handfish research and conservation management efforts (<https://handfish.org.au>).

### What is needed?

- The highest priority is to locate live specimens in the wild;
- Improve knowledge of the distribution, abundance population trends, and habitat condition;
- Undertake regular surveys of known and potential habitat;
- Identify threats;
- Consider options for the active conservation and management of the species and its habitat;
- Implement, monitor, review and adapt conservation and management actions based on the best information available;
- Ensure regulators of developments that may impact on areas of known or potential habitat consider the needs of the species during assessment processes.

## BIBLIOGRAPHY

Bray D (2019). *Brachiopsilus ziebelli* in Fishes of Australia. Accessed 17 Oct 2019, <http://fishesofaustralia.net.au/home/species/2678>

Commonwealth of Australia (2015). Recovery Plan for Three Handfish Species.

Edgar GJ, Last PR and Wells MW (1982). Coastal Fishes of Tasmania and Bass Strait. Tasmanian Underwater Photographic Society, Hobart, Australia.

Gledhill DC and Green MA (unpublished report). Issues Paper: Populations Status of, and Threats to, Three Handfish Species Listed as Threatened under the *Environment Protection and Biodiversity Conservation Act 1999*. CSIRO report to the Department of the Environment, Water, Heritage and the Arts, Canberra.

K. Gowlett-Holmes (26/8/14), personal communication by email. In: Commonwealth of Australia (2015). Recovery Plan for Three Handfish Species and via Recovery Team (3/2/20).

Last PR and Gledhill DC (2009). A revision of the Australian handfishes (Lophiiformes: Brachionichthyidae), with descriptions of three new genera and nine new species. *Zootaxa*. 2252: 1-77.

Pogonoski JJ, Pollard DA and Paxton JR (2002). Conservation Overview and Action Plan for Australian Threatened and Potentially Threatened Marine and Estuarine Fishes. Environment Australia, Canberra.

**Prepared:** January 2020 by the Threatened Species and Private Land Conservation Section under the provisions of the *Tasmanian Threatened Species Protection Act 1995*. Published in 2020.

**Cite as:** Threatened Species Section (2020). *Listing Statement for Brachiopsilus ziebelli* (Ziebell's handfish). Department of Primary Industries, Parks, Water and Environment, Tasmania.

## View:

<https://dppwe.tas.gov.au/conservation/threatened-species-and-communities/lists-of-threatened-species>

**Contact details:** Threatened Species and Private Land Conservation Section, Department of Primary Industries, Parks, Water and Environment, GPO Box 44, Hobart, Tasmania, Australia, 7001. Ph: 1300 368 550. [ThreatenedSpecies.Enquiries@dppwe.tas.gov.au](mailto:ThreatenedSpecies.Enquiries@dppwe.tas.gov.au)

**Permit:** A permit is required under the *Tasmanian Threatened Species Protection Act 1995* to knowingly “take” (which includes kill, injure, catch, damage, destroy and collect), keep, trade in or process any specimen of a listed species.