

Recovery Plan for the following species of handfish:

Spotted handfish – *Brachionichthys hirsutus*

Red handfish – *Brachionichthys politus*

Ziebell's handfish – *Sympterichthys* sp. [CSIRO #T6.01]

Waterfall Bay handfish – *Sympterichthys* sp. [CSIRO #T1996.01]



Spotted handfish, photo by T. Carter



Red handfish, photo by T. Carter



Ziebell's handfish, photo by Peter Last



Natural Heritage Trust

Helping Communities Helping Australia

A Commonwealth Government Initiative



Australian Government

Department of the Environment and Heritage

Background

Handfish are small, colourful, relatively sedentary, benthic fish that more commonly 'walk' on their pectoral fins rather than swim. The pectoral fins are hand-like, hence their common name. Handfish belong to the Brachionichthyidae family and are endemic to southern Australia. Between eight and ten species of handfish have been identified. Little is known about the biology of handfish as they are only occasionally observed in the wild. Handfish are found in diverse habitats, from relatively shallow estuarine waters to deeper shelf waters. The four species of handfish species covered by this plan are all endemic to Tasmania, and total abundance is considered to be low.

The spotted handfish (*Brachionichthys hirsutus*), was listed as a threatened species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in July 2000. The conservation status of the spotted handfish is endangered. The spotted handfish is also listed as an endangered species in Tasmania under the *Threatened Species Protection Act 1995*. It is also listed as critically endangered on the World Conservation Union (IUCN) Red List of Threatened Species.

The red handfish (*Brachionichthys politus*), was listed as a threatened species under the EPBC Act in March 2004 on the basis of recommendations from the Threatened Species Scientific Committee (TSSC). The conservation status of the red handfish is vulnerable.

The Waterfall Bay handfish (*Sympterichthys* sp. [CSIRO #T1996.01]) and the Ziebell's handfish (*Sympterichthys* sp.), were listed as threatened species under the EPBC Act in July 2000. The conservation status of the Waterfall Bay handfish and the Ziebell's handfish is vulnerable.

Detailed background information on the biology, population status and threats to the four handfish species covered by this plan can be found at:

<http://www.deh.gov.au/biodiversity/threatened/publications/recovery/4-handfish/pubs/issues-paper.pdf>

The following sets out the Recovery Plan for these four species.

Objectives (270(2)(a))

To identify, protect and manage populations and habitats of the handfish species covered by this plan to ensure anthropogenic threats do not limit population growth of these species.

Threats (270(2)(ca))

The main threats to handfish covered by this plan are principally those which impact on their habitat. Threats to habitat come from a range of sources, including depletion of spawning substrate either from introduced marine species, such as the Northern Pacific seastar (*Asterias amurensis*), or pollution from industrial storm water and sewage. Siltation of key estuaries caused by land clearing and coastal developments, particularly those that involve dredging also threaten handfish habitat. The species covered by this plan are also targeted for personal collection and the aquaria trade.

Potential threats to these handfish species include: pollution (including heavy metal, sewage, pesticides and industrial discharge), climatic and oceanic change, stochastic events such as storms, future accidental introduction of alien species and fisheries related affects.

Populations under Particular Pressure of Survival and Protective Measures (270(2)(e))

All species covered by this plan have restricted distributions and small populations, which present real problems for their recovery and in turn create particular pressures on their survival in the wild. Spotted handfish populations in the Derwent Estuary appear to be under particular threat as a decline in their abundance coincided with the discovery of the Northern Pacific seastar in the Derwent Estuary.

All of the handfish species covered by this plan are protected in Commonwealth waters as listed threatened species under the EPBC Act. They are also protected under the Tasmanian *Living Marine Resources Management Act 1995*, which prohibits their collection in State waters without a permit.

Actions to Achieve the Objective/s (270(2)(c))

Actions identified for the recovery of the species covered by this plan are:

- monitor the populations and determine population size and rates of population change, by undertaking scientifically robust and repeatable population surveys.
- identify important habitat areas and assess their quality, and ensure they are adequately protected.
- encourage work to resolve the taxonomy of the Waterfall Bay and Ziebell's handfish.
- encourage the Tasmanian government to develop and implement management programs to control and/or eliminate alien species which pose a threat to handfish and their habitat.
- encourage the Tasmanian government, local governments and industry to take actions to minimise pollution from entering handfish habitat.
- where suitable spawning substrate for these species is lacking, encourage the introduction and maintenance of artificial spawning substrate and/or natural spawning substrate to increase reproductive success.
- promote community awareness of the value of handfish as part of Australia's unique biodiversity through appropriately targeted education.

Management Practices (EPBC Reg. 7.11(2)(b))

Management practices and measures to address key threats, have been developed and are being implemented through, *inter alia*, State legislation, local government initiatives to reduce storm water pollution such as the installation of gross pollutant traps, joint Australian and Tasmanian Government initiatives to avoid further heavy metal contamination in the Derwent and to implement the National Control Plan for the Northern Pacific seastar.

The collection of the handfish species is an offence in Tasmania under the *Living Marine Resources Management Act 1995* without a permit. In addition, the EPBC Act protects handfish by requiring that actions which have, may have or are likely to have a significant impact on listed threatened species, including handfish be referred to the Australian Government Department of the Environment and Heritage for assessment.

Criteria to Measure Performance of the Plan against the Objective/s (270(2)(b))

The objectives of this plan will be attained when:

- habitat areas for all species are adequately managed and protected from threats;
- populations demonstrably increase, or show signs of stabilising; and
- effective management programs to control or minimise the impacts of alien species are in place for all sites where alien species threaten spawning substrate for the species.

Habitats Critical to the Survival of the Species and its Protection (270(2)(d))

For most of the species covered under this plan little is known about the specific locations of habitat critical to the species' survival. Available information suggests that important habitat for the four handfish species covered by this plan includes:

- the lower Derwent River estuary, Frederick Henry Bay, D'Entrecasteaux Channel and the northern regions of Storm Bay for the spotted handfish.
- Primrose Sands in Frederick Henry Bay, Port Arthur, Forestier Peninsula and the Actaeon Islands for the red handfish.
- the Tasman and Forestier Peninsula for the Waterfall Bay handfish.
- the east coast of Tasmania from Bicheno to the Actaeon Islands and Cox Bight for Ziebell's handfish.

Major Benefits to Other Native Species or Ecological Communities (270(2)(h))

Minimising threats to handfish included in this plan may benefit other marine species that share the same breeding and/or foraging habitat.

The Australian grayling (*Prototroctes marena*) is also listed as threatened under the EPBC Act and the Tasmanian *Threatened Species Protection Act 1995* and may occur within the range of handfish covered by this plan and may benefit from efforts to minimise threats to handfish.

Two species of starfish (*Marginaster littoralis* and *Smilasterias tasmaniae*) listed as threatened under the Tasmanian *Threatened Species Protection Act 1995* are found within the habitat range of the handfish covered by this recovery plan and may benefit from threat minimisation efforts.

Implementation of this plan is unlikely to have any negative impacts on any other native species or ecological communities, although research activities associated with monitoring handfish may disturb other threatened species and will therefore have to be conducted in a way that minimises disturbance to other species.

Duration and Cost of the Recovery Process (270(2)(f))

This plan should be reviewed no later than 5 years from when it was made. It should remain in place until all of the species covered by this plan have expanding breeding distributions and increasing populations and can be removed from the EPBC Act threatened species list.

The cost of this plan should be covered under the core business expenditure of the affected organisations.

Affected Interests (270(2)(g)(i))

Organisations likely to be affected by the actions proposed in this plan include the following: the Australian Government Department of the Environment and Heritage; the Tasmanian Parks and Wildlife Service; the Department of Primary Industries, Water and Environment, Tasmania; commercial fishers; proponents of coastal development in the vicinity of important habitat areas; conservation groups; wildlife interest groups; researchers, recreational divers and fish collectors.

Organisations/Persons Involved in Evaluating the Performance of the Plan (270(g)(ii))

The Department of the Environment and Heritage, in consultation with relevant experts, will evaluate the performance of this plan and report the results of their review to the Minister for the Environment and Heritage, through the Threatened Species Scientific Committee.

This recovery plan is obtainable from:

<http://www.deh.gov.au/biodiversity/threatened/publications/recovery/4-handfish/index.html>

Migratory and Marine Species Section
Marine Environment Branch
Department of the Environment and Heritage
GPO Box 787
Canberra ACT 2601