

# Inland Fisheries Advisory Council

**AGENDA ITEM NO:**

**3.3**

**MEETING:** 28 November 2017

**SUBJECT:** Estuary Perch conservation status issues related to listing

**REPORT FROM:** Rob Freeman

**RESOLUTION:** For Noting

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## Summary:

The estuary perch, (*Percaletes colonorum*) within Tasmania is now almost certainly restricted to the Arthur River. A study of this population was undertaken by Bryan van Wyk (IMAS) during 2014-15. The results of this study suggests the population size is low (1, 594 ( $\pm$  775)) and recruitment is highly variable with the number of mature individuals at times, likely to be low. This variability appears to be a natural trait of the species, as suggested in other studies from south east mainland Australia.

The species is ecologically restricted to the estuarine environment and is rarely found upstream in freshwater areas. These factors mean the area occupied by the species within the Arthur River is small (approx. 250 Ha or 2.5 km<sup>2</sup>).

Presently, angling regulations permit fishing in the Arthur River, however, a zero bag limit regulation exists for estuary perch.

There are no threatening processes identified, although it is certain other predatory fish such as Australian salmon, brown trout, sandies and a range of estuarine species would be a factor impacting the population via predation (most likely larval and juvenile stages). However, the criteria for conservation listing under the *Tasmanian Threatened Species Protection Act 1995*, in this case, a small and restricted population or sub population, can be a determining factor in listing the species.

Listing of the conservation status of threatened species can occur under any or all of the following:

- *Tasmanian Threatened Species Protection Act 1995 (TSP Act)*,
- *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*, and
- the International Union for Conservation of Nature.

In consideration of the criteria for endangered, vulnerable or rare categories under the TSP Act, the species best fits the criteria of rare, although it may also fit the vulnerable category.

Alternatively, there is provision under section 131 of the *Inland Fisheries Act 1995* for a fish to be declared as a Protected Fish by Ministerial Order preventing the take of any protected fish, fine not exceeding 50 penalty units.

## Background

Estuary perch have been positively identified and reported from the Ansons and Arthur rivers, Tasmania. However, there has been no evidence since 1980 to suggest an extant population occurs in the Ansons River (McCarraher and McKenzie 1986). Their distribution is presently limited to the Arthur River only on the West Coast (DPIPWE, 2014). It is currently unknown whether the Arthur River stock is a reproductively active population capable of self-recruitment or a marginal satellite population of recruits spawned from a western Victorian estuary (Shaddick et al. 2011). Due to the restricted distribution and data deficiency for estuary perch in Tasmania, the species has never been considered for conservation listing. Presently, the only protection is afforded by a zero bag limit angling regulation that permits catch and release fishing.

The estuary perch population within the Arthur River displays evidence of highly variable recruitment. The reasons for this are unclear, but at times it is likely the number of mature individuals may be low. There are no clear processes or impacts affecting the population, but predation by aquatic species and stochastic abiotic factors are likely to have impacts on the population.

## Categories for Conservation Purposes

Under the Tasmanian Threatened Species Protection Act 1995, eligibility for listing under the various categories are as follows:

1. An extant taxon of native flora or fauna may be listed as ***endangered*** if it is in danger of extinction because long term survival is unlikely while the factors causing it to be endangered continue operating.
2. A taxon of native flora or fauna may be listed as ***vulnerable*** if it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
3. A taxon of native flora or fauna may be listed as ***rare*** if it has a small population in Tasmania that is not endangered or vulnerable but is at risk.

In addition to these categories, there is scope to gain listing under the following:

4. A taxon of native flora or fauna which is below the level of sub-species and which is narrowly defined owing to its taxonomic position, environmental conditions or geography may be listed only if, in addition to the requirements of this section, there is a special need to conserve it in Tasmania.

Given the above categories and consideration of listing criteria under the *Tasmanian Threatened Species and Protection Act 1995*, the species **may** fit the criteria for endangered under provisions C (2) (ii) and/or (b).

### **CRITERION (1) – ENDANGERED:**

An extant taxon of native flora or fauna may be listed as endangered if it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.

**Endangered:** C(2)(ii) or (b) that is:

(C) *Total population estimated to number fewer than 2,500 mature individuals and:*

2. a continuing decline, observed, projected, or inferred, in numbers of mature individuals and population structure in the form of either:

- ii. at least 90% of all mature individuals in a single subpopulation; or
- b. extreme fluctuations in number of mature individuals.

Consideration of listing criteria under the *Tasmanian Threatened Species and Protection Act 1995*, the species **may** fit the criteria for vulnerable under provisions B (1).

### **CRITERION (3) - VULNERABLE**

A taxon of native flora or fauna may be listed as vulnerable if it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.

**Vulnerable:** B (1) & (3d) that is:

(B) *Extent of occurrence estimated to be less than 20,000 km<sup>2</sup> or area of occupancy estimated to be less than 2,000 km<sup>2</sup> for mobile flora and fauna (or occurrence less than 2,000 km<sup>2</sup> or occupancy less than 0.5 km<sup>2</sup>, i.e. 50 hectares, for sessile taxa), and any TWO of the following apply:*

- 1. severely fragmented or known to exist at no more than ten locations.
- 3. extreme fluctuation in any one of the following:
  - (d) number of mature individuals

Consideration of listing criteria under the *Tasmanian Threatened Species and Protection Act 1995*, the species **does** fit the criteria for rare under provisions 4 (2).

### **CRITERION (4) - RARE**

A taxon of native flora or fauna may be listed as rare if it has a small population in Tasmania that is not endangered or vulnerable but is at risk.

Rare 4 (2) that is:

(B) Total population small or restricted and at risk in the form of EITHER of the following:

2. 90% of mature individuals occur in 15 or fewer subpopulations or locations and no more than 5 of these occur in an area that is free from sudden processes capable of causing largely irreversible loss of individuals or habitat.

*NB.* Subpopulations are defined as geographically or otherwise distinct groups in the population between which there is little demographic or genetic exchange (typically one successful migrant individual or gamete per year or less).

## Definition of 'take' under the Inland Fisheries Act 1995

**take** includes –

(a) fish for, remove, gather, catch, capture, kill, destroy, dredge for, raise, collect, carry away or obtain in another way from water, land under water or the foreshore; and

(b) land from a boat or bring ashore; and

(c) attempt, cause or permit anything mentioned in [paragraph \(a\)](#) or [\(b\)](#) ;

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