

# Fisheries Scientific Committee

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## PROPOSED DETERMINATION

### *Galaxias rostratus* – flathead galaxias

The Fisheries Scientific Committee, established under Part 7A of the *Fisheries Management Act 1994* (the Act), is proposing to insert *Galaxias rostratus* – flathead galaxias into Part 1 of Schedule 4A Critically Endangered Species of the Act. The amendment of the threatened species lists is provided for by Part 7A, Division 2 of the Act.

The Fisheries Scientific Committee, with reference to the criteria relevant to this species, prescribed by Part 11B of the *Fisheries Management (General) Regulation 2002* (the Regulation) has found that:

### Background

1. Flathead galaxias – *Galaxias rostratus* (Klunzinger, 1872) is a valid, recognised taxon and is a species as defined in the Act.
2. *Galaxias rostratus* is a member of the family Galaxiidae, and is known by the common names flathead galaxias, Murray jollytail and flathead jollytail.
3. *Galaxias rostratus* is endemic to the southern tributaries of the Murray-Darling River System; the Murray, Murrumbidgee and Lachlan rivers and their tributaries. It has also previously been reported from the upper Macquarie River.
4. *Galaxias rostratus* is a small shoaling fish that grows to 150 mm and 22.5 g, but is seldom over 100 mm. It is often seen mid-water, and is found in still and gently flowing waters in small streams, lakes, lagoons, billabongs and backwaters. Its habitats consist of rock or sand bottoms, and aquatic vegetation. It is a long slender fish with flattened head; greenish brown on back and sides with irregular darker grey-green blotches, and bright silvery below lateral line; eyes silvery; fins colourless. *Galaxias rostratus* spawns in spring, and lays slightly adhesive demersal eggs; there may be high post-spawning mortalities of adults.
5. *Galaxias rostratus* has the following conservation status:
  - i. IUCN 2000: Vulnerable;
  - ii. Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*: not listed;
  - iii. *Victoria Flora and Fauna Guarantee Act 1988*: not listed;
  - iv. ASFB: Vulnerable.

### Criteria – reduction in abundance, geographic distribution or genetic diversity (Regulation clause 340F)

1. Historical records show that *Galaxias rostratus* was widespread in the southern tributaries of the Murray-Darling River System. Its distribution was characteristically intermittent, but often locally abundant in suitable habitats.

2. There have been very significant declines in the distribution and abundance of *Galaxias rostratus* in all river systems in NSW. Extensive scientific sampling over the last 15 years has recorded extremely few specimens. The last record in the Murrumbidgee River was in 1971, and the species has not been recorded from the lower Murray River over this period. *Galaxias rostratus* may be locally extinct from the lower Murray, Murrumbidgee, Macquarie and Lachlan rivers. In addition, only very small numbers of specimens have been sampled from the upper Murray River near Tintaldra (n = 6 in 1991; 2 – 1992) and Albury (7 – 2003).
3. In light of the above, the Fisheries Scientific Committee has found that the species has undergone a very large reduction in abundance and a very large reduction in geographic distribution within a time frame appropriate to the life cycle and habitat characteristics of the taxon; this meets the criteria of Critically Endangered.

### **Criteria – threatening processes (Regulation clause 340G)**

1. The causes of the decline of *Galaxias rostratus* are uncertain, but probably include: loss or altered connectivity between rivers and floodplains; loss or degradation of habitats in lakes, wetlands and billabongs; spawning and/or recruitment failure due to river regulation and cold-water pollution from impoundments; predation by, and competition with, introduced species such as carp (*Cyprinus carpio*), redfin perch (*Perca fluviatilis*) and gambusia (*Gambusia holbrooki*); loss of aquatic vegetation such as ribbonweed (*Vallisneria gigantea*); habitat changes due to agricultural practices such as loss of riparian vegetation and siltation; construction of barriers to migration and recolonisation such as weirs and dams without fishways; and pollution from domestic, agricultural and industrial sources.
2. In light of the above, the Fisheries Scientific Committee has found that these threatening processes continue to operate throughout most of the geographic distribution of this species, and that the existing reserve systems or other forms of refuge do not protect the species.

### **Conclusion pursuant to section 220F(3) of the Act**

In the opinion of the Fisheries Scientific Committee:

- a. *Galaxias rostratus* is facing an extremely high risk of extinction in New South Wales in the near future, as determined in accordance with the criteria prescribed by the Regulation as discussed.

The species is eligible to be listed as a **CRITICALLY ENDANGERED SPECIES**.

## Sources and Links

- Gilligan, D. (2005). *Fish Communities of the Murrumbidgee Catchment: Status and Trends*. NSW Department of Primary Industries – Final Report Series No. 75.
- Gilligan, D. (2005). *Fish Communities of the Lower Murray-Darling catchment: Status and trends*. NSW Department of Primary Industries – Final Report Series No. 83.
- Gilligan, D. (2008). *In Lit*. Status Report to the Fisheries Scientific Committee. January 2008.
- Harris, J.H. and Gehrke, P.C. (1997). *Fish and Rivers in Stress: the NSW Rivers Survey*. NSW Fisheries, Cronulla.
- Klunzinger, C. B. (1872) Zur Fischfauna von Süd-Australien. Arch. Naturgeschichte v. 38 (no. 1): 17-47, Pl. 2.
- Lake, J.S. (1967). *Freshwater Fish of the Murray-Darling River System*. New South Wales State Fisheries Research Bulletin Number 7.
- Llewellyn, L.C. (1983). The Distribution of fish in New South Wales. Australian Society for Limnology Special Publication No. 7. NSW Fisheries, Sydney.
- Llewellyn, L.C. (2005). Breeding biology, egg and larval development of *Galaxias rostratus* Klunzinger, the Murray jollytail from inland New South Wales. *Australian Zoologist* 33, 141 – 165.
- McDowall, R.M. and Fulton, W. (1996). Family Galaxiidae Galaxiids. In, *Freshwater Fishes of South-eastern Australia*. (Ed. R.M. McDowall), pp. 52 – 77. Reed, Sydney.
- Morris, S.A., Pollard, D.A., Gehrke, P.C. and Pogonoski, J.J. (2001). *Threatened and Potentially Threatened Freshwater Fishes of Coastal New South Wales and the Murray-Darling Basin*. NSW Fisheries Final Report Series No. 33.
- Murray-Darling Basin Commission (2004). Fish Theme Pilot Audit Technical Report – Sustainable Rivers Audit. MDBC Publication 06/04. Murray-Darling Basin Commission, Canberra.
- Schiller, C.B., Bruce, A.M. and Gehrke, P.C. (1997). Distribution and abundance of native fish in New South Wales Rivers. In, *Fish and Rivers in Stress: the NSW Rivers Survey*. NSW Fisheries Office of Conservation and the Co-operative Research Centre for Freshwater Ecology, Cronulla.

Assoc Prof Ron West  
Chair  
Fisheries Scientific Committee