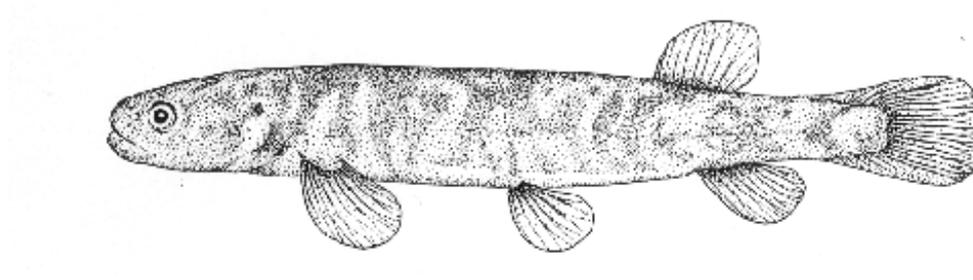


Clarence galaxias - *Galaxias johnstoni*

By Jean Jackson and David Crook

Threatened Fish Profile – In Newsletter 32_1, July 2002



Drawing by David Crook.

Common name: Clarence galaxias

Conservation status: Critically Endangered - ASFB (2001).

Identification: Small scaleless salmoniform fish, maximum size: 125 mm TL, 20 g. Colouration: dark brown dorsal surface, irregular dark brown bars and bands extending down sides, ventral surface yellow-cream in colour.

Distribution: Endemic to the upper Derwent River catchment in Tasmania (including Clarence, Nive and Little River sub-catchments). The species now occurs only in trout-free waters, with the exception of Clarence Lagoon where brook char (*Salvelinus fontinalis*) occur. Does not co-occur with any other *Galaxias* species, although *G. brevipinnis* and *G. truttaceus* occur in some of the same catchments. All known sites are outside the area covered with ice during the last (Pleistocene) glaciation. Currently, only seven breeding populations are known.

Abundance: The species is absent in areas within the Clarence River catchment that have been colonised by brown trout (*Salmo trutta*). However, it remains quite common within its current range, including the Clarence Lagoon population which exists in sympatry with brook char.

Habitat and ecology: Generally benthic and inhabits the margins of streams, swamps and shallow lakes. The adult diet consists primarily of benthic crustacea and the juvenile diet is composed mainly of planktonic crustacea and terrestrial insects.

Reproduction: Gonadal development begins in the autumn of the second year and spawning takes place in spring. Females produce approximately 300-2000 eggs of 1.2 - 1.6 mm diameter. The eggs are adhesive and are laid in masses beneath rocks. Large numbers of eggs have been found in these masses, suggesting that more than one female may contribute to each egg mass.

Larvae hatch after about 4 weeks at approximately 8 mm TL and live in open water until about 30 mm TL when they take on the benthic habits of the adults.

Threats: The main threat is predation by introduced brown and rainbow trout, including spread of trout by illegal introductions. Distribution has become reduced and fragmented since the spread of trout in the upper Derwent catchment.

Conservation action: Regular surveys are currently being conducted to assess the isolation and security of populations from introduced fish particularly brown and rainbow trout. Surveys since 1997 have discovered 4 additional populations, all outside the previously known range of the Clarence catchment. Trout eradication is currently in progress to remove illegally introduced rainbow trout from a large Clarence galaxias population. Informative signage has been placed at the sites most at risk from illegal trout introductions. A temporary barrier to trout has been built below one site. The habitats containing the three largest populations are well reserved for nature conservation. No sites suitable for translocation have been found (sites surveyed already contain established trout or *G. brevipinnis* populations, are physically unsuitable or are well outside the species range). An updated recovery plan including the species is in preparation.

Conservation recommendations: Monitoring of all populations should continue and action be taken as necessary to ensure they remain trout-free. Surveys for new populations should continue. Security of some populations from trout invasion should be increased by barrier construction if feasible. To reduce the risk of illegal introductions, management of trout availability for dam stocking should be reviewed and public awareness of impacts increased. The genetic structure within the species (distinctiveness of populations) should be determined to inform decisions on population management, captive breeding and translocation.

Further reading:

Andrews, A.P. 1976. A revision of the family Galaxiidae (Pisces) in Tasmania. *Aust. J. Mar. Freshwater Res.* 27: 297-349.

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Scott, E.O.G. 1936. Observations of fishes of the family Galaxiidae. Part 1. *Papers and Proceedings of the Royal Society of Tasmania*