



MAFRI Research & Education

Evaluating Australia's largest natural population of Macquarie perch

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The Macquarie perch is one of Australia's rarer freshwater fish and is considered threatened. The preferred habitat of Macquarie perch is the cooler, upper reaches of the tributaries of the Murray-Darling river system. The survival of this species has been put at risk by the degradation of its natural stream habitats.

The largest natural population of Macquarie perch in Australia now resides in Lake Dartmouth, a man-made impoundment on the Mitta Mitta River in Victoria. The continued viability of this population is considered to be crucial to the survival of this species in the Murray-Darling system.

Fisheries Victoria commissioned the Marine and Freshwater Resources Institute (MAFRI) to undertake an assessment of the Macquarie perch population and fishery in Lake Dartmouth. The investigation indicates all is not well for this population.

The results of the study show that while the numbers of perch fisherman has not changed markedly since the mid-1980's, with approximately 1% of anglers specifically targeting Macquarie perch, the number of Macquarie perch taken by anglers has declined dramatically. In 1984/85 approximately 3,900 Macquarie perch were harvested compared with 130 in 2000. Catch rates have fallen from 0.03 fish per angler hour in the mid-1980s to 0.0018 fish per angler hour in 2000.

"The study found that mortality attributed to angling is

negligible, and this is supported by the low numbers of Macquarie perch estimated to be taken by recreational fishers," says John Douglas, MAFRI's Project Leader. "therefore current angling levels are unlikely to be the principal threat to the Macquarie perch in Lake Dartmouth."

The size of Macquarie perch has declined and fish are now smaller for their age than was reported in the mid-1980s, when a 3 year old fish measured 350 mm in length. A fish of this size today is likely to be 4 to 6 years old. This is probably a function of natural decreases in carrying capacity of Lake Dartmouth, as the productivity of man-made impoundments decrease with age.

Macquarie perch only spawn in running water. The only known successful spawning ground for Macquarie perch of Lake Dartmouth, is in the Mitta Mitta River upstream of the lake. While adult perch have been observed at the mouths of several other in-flowing rivers and streams, baby perch have only been collected from the Mitta Mitta arm. The amount and quality of spawning habitat in the Mitta Mitta River may influence the ability of the Macquarie perch population to breed successfully and highlights how critical the Mitta Mitta River is to the Lake Dartmouth Macquarie perch population.

"A combination of declining lake productivity, and variable spawning success is thought to be the most likely cause of the decline in Lake Dartmouth's Macquarie perch populations", John said.

John says, "Maintaining the Mitta Mitta arm and its natural flows and habitat will be crucial for the long term future of Lake Dartmouth's Macquarie perch population. There is also an urgent need to determine whether the Macquarie perch population is limited by lack of spawning habitat and to investigate ways of preserving the population."

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Fisheries managers are currently examining future management options for Dartmouth's Macquarie perch fishery to prevent further decline.'

For more information about this project, please contact John Douglas at MAFRI on (03) 57742208.