

Macquarie Perch - *Macquaria australasica*

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Threatened Species Unit, Port Stephens Fisheries Institute



Figure 1: A Macquarie Perch (Photo: G. Schmida)

Introduction

Macquarie Perch are a medium-sized fish known by other common names including Silvereye, White-eye, Mountain Perch, Murray Perch, Grunter, Bream and Black Bream.

Recent research indicates that there may be at least two distinct forms of Macquarie Perch, one from the western rivers (Murray-Darling Basin form) and one from the eastern rivers (the Shoalhaven and Hawkesbury-Nepean systems) (the coastal form). The species has also been stocked or translocated into a number of reservoirs including Talbingo, Cataract and Khancoban reservoirs and translocated into streams including the Mongarlowe River.

There has been a significant decline in the distribution and abundance of Macquarie Perch in all river systems in NSW and therefore the species is listed as an **endangered species**.

There are heavy penalties for harming, possessing, buying or selling them, or for damaging their habitat (see 'Legal Implications').

Description

Macquarie Perch are an elongated, oval-shaped fish with a rounded tail. The eye is large and white and there are prominent pores on the snout and around the eyes. Their mouth is large and their jaws are generally equal in size.

Macquarie Perch can grow to 55 cm long and 3.5 kg in weight, but individuals larger than 40 cm long or 1 kg are uncommon. The coastal form is considered much smaller than the western form, generally not exceeding 18 cm in length.

The colour of Macquarie Perch within the Murray-Darling Basin varies from almost black to silver or bluish grey, to green-brown dorsally and lighter ventrally. Coastal drainage fish often have grey-brown and dark grey patches. Juveniles in both forms may be mottled and adults have large, distinct scales and prominent fins.

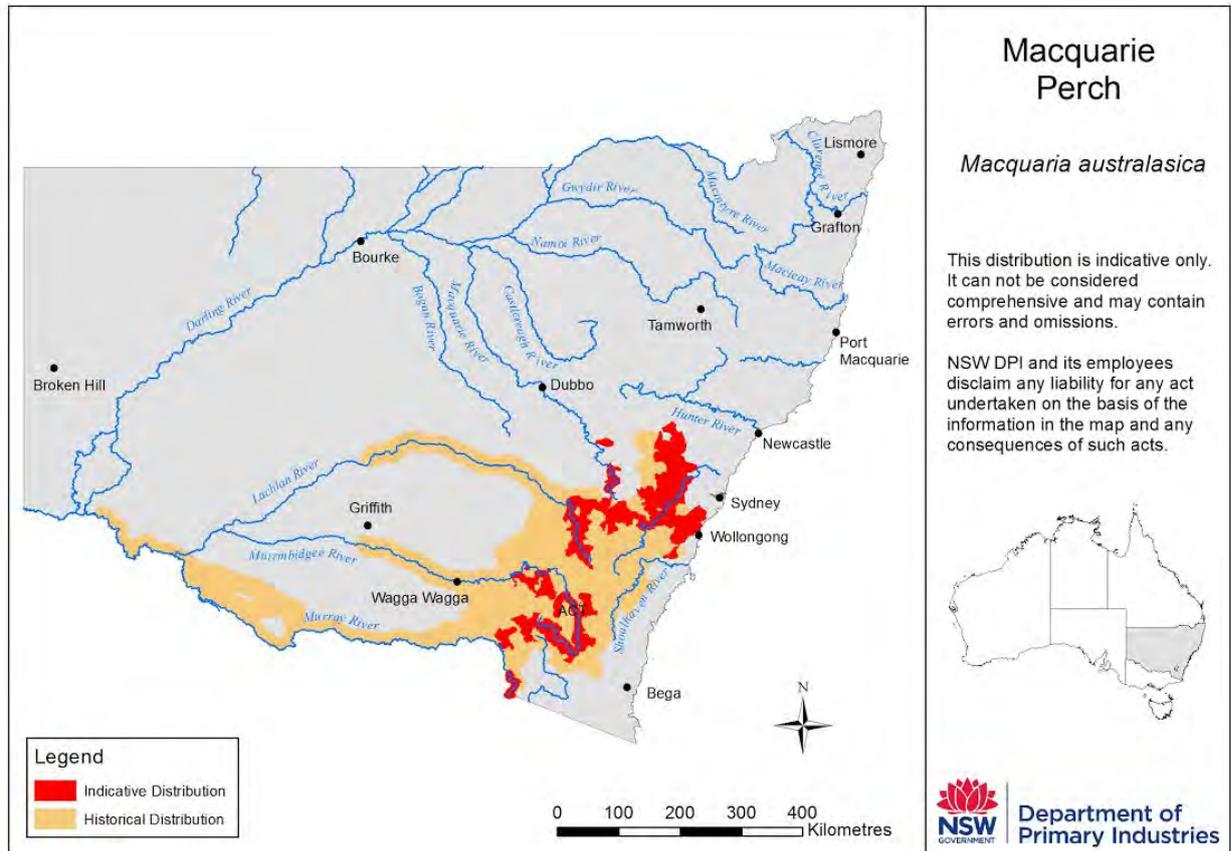


Figure 2: The historical and current indicative distribution of Macquarie Perch

Habitat and ecology

- Macquarie Perch are found in both river and lake habitats; especially the upper reaches of rivers and their tributaries.
- The species is relatively fecund, fast growing and early maturing.
- They are a relatively long-lived species with reports of fish from Victoria aged up to 17 years.
- Sexual maturity occurs at 15-20 cm or two years of age for males and 25 cm or three years for females however this varies between locations due to local conditions.
- Macquarie Perch spawn in spring or summer in flowing shallow upland streams and rivers.
- Females produce around 50,000-100,000 eggs which settle among stones and gravel of the stream or river bed.
- Hatching occurs after approximately 10 days and larvae are about 7 mm long.
- Adult fish feed on aquatic insects, crustaceans and molluscs.

Why are Macquarie Perch threatened?

- Changes in water quality associated with agriculture and forestry. For example, siltation (as a result of clearing) can destroy the deep rock pools used by adults as well as smothering spawning areas.
- Modification of natural river flows and temperatures as a result of river regulation (construction of dams and weirs), leading to reduced opportunities for dispersal and reduced habitat quality.
- Spawning failures resulting from cold water releases from dams.
- Competition from introduced fish species such as Redfin Perch and Trout.
- Overfishing has probably contributed to past declines. Macquarie Perch are now totally protected in NSW, but illegal fishing (and possibly hooking injuries in accidentally caught fish) still poses a threat.
- The viral disease EHN (Epizootic Haematopoietic Necrosis), which is carried by the introduced species Redfin Perch.
- Pollution from domestic, agricultural and industrial sources.

Conservation and recovery actions

- Undertake work to identify, restore and protect known and potential Macquarie Perch habitats and address key threats such as habitat degradation and water quality decline from expanding development.
- Integrated management of introduced species in and adjacent to identified Macquarie Perch habitats and take action to prevent the spread of introduced species into these habitats.
- Maximise compliance activities at identified important sites.
- Continue to monitor stocked Macquarie Perch in the Retreat River refuge site including monitoring of Redfin Perch spread and impacts.
- Implement relevant State policies and programs in an effort to reduce water pollution impacts on Macquarie Perch habitats in NSW.
- Implement the NSW Freshwater Fish Stocking Fishery Management Strategy to prevent significant impacts from stocking on Macquarie Perch populations.
- Report any sightings of the species via the [NSW DPI online form](#).
- A full list of strategies that have been adopted for promoting the recovery of the Macquarie Perch is set out in the [NSW DPI Priorities Action Statement](#).

Conservation stocking program

Prior to the invasion of Redfin Perch in 2005/06, the Upper Lachlan and Abercrombie River Macquarie Perch populations were considered some of the most abundant and robust populations within NSW. Data collected to date identifies significant negative effects of Redfin Perch on Macquarie Perch in the upper Lachlan River, with no Macquarie Perch collected from any site in the upper Lachlan since 2008, 2-3 years after the invasion of Redfin Perch. Redfin Perch are known to impact Macquarie Perch by direct predation and are also a carrier of the epizootic haematopoietic necrosis virus (EHNV). Due to the potentially devastating threat of Redfin Perch to Macquarie Perch, DPI Fisheries collected a small population of Macquarie Perch from the wild to safely house at the Narrandera Fisheries Centre until a safe refuge site, isolated from the impacts of Redfin Perch could be found. A project was established to identify and assess streams within the Upper Lachlan and Abercrombie Catchments for their suitability as a refuge habitat for Macquarie Perch, including the

presence of an effective barrier to fish passage that would prevent invasion of the refuge site by Redfin Perch. The project was also an opportunity to test novel captive breeding techniques while the population was being held, as Macquarie Perch have historically proven difficult to breed in a hatchery environment.

To date, captive breeding trials have shown limited success, with 19,000 fingerlings being produced so far. These fingerlings have been released into the Retreat River refuge site and a number of these fish have since been re-captured or observed.



Figure 3: Macquarie Perch fingerling release into the Retreat River as part of the DPI conservation stocking program (Photo: L. Pearce)

Legal implications

It is illegal to catch and keep, buy, sell, possess or harm Macquarie Perch (or any other threatened species in NSW) without a specific permit, licence or other appropriate approval, and significant penalties apply. For endangered species, these penalties can include fines of up to \$220,000 and up to two years in prison.

There can also be significant penalties for causing damage to the habitat of a threatened species without approval, through actions such as dredging river beds, removing large woody debris and constructing barriers that block the free passage of fish.

Clearing that constitutes a routine agricultural management activity, and certain routine farming

practice activities (other than clearing) are permitted, provided the activities are to the minimum extent reasonably necessary and all other relevant statutory approvals or authorities have been obtained.

The impacts of developments or activities that require consent or approval in accordance with the *Environmental Planning and Assessment Act 1979* must be assessed and considered by consent or determining authorities. Where such actions are likely to result in significant impact on a threatened species or its habitat, a detailed species impact statement must be prepared.

Bibliography and further reading

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For further information

See the [NSW DPI website](#).

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Figure 4: Macquarie Perch habitat (Photo: DPI Fisheries)



Figure 5: A Macquarie Perch (Photo: L. Pearce)