NATIVE FISH RECOVERY STRATEGY

Native Fish Status Assessment 2023 at a glance

This assessment was the first comprehensive examination of key native fish, crayfish and mussel species across the whole of the Murray–Darling Basin. It is a key part of Australia's plan for recovering native fish populations in the Basin. Fisheries and waterway managers are dedicated to recovering native fish for future generations.

The assessment looked at:

- the number of species and where in the Murray–Darling Basin they are found
- each species' conservation status – whether it is extinct, endangered or threatened
- population dynamics, such as recruitment and migration.

As well as adding to our understanding of the Murray–Darling Basin's fish, the assessment provides a basis for future evaluation of the success of the Native Fish Recovery Strategy and other plans and strategies. The assessment, authored by leading Australian aquatic ecologists, is designed to be repeated every 5 years.

Species in the Murray–Darling Basin

The Murray–Darling Basin (the Basin) has:

- 51 freshwater fish species and 18 marine and estuarine fish species
- 13 freshwater spiny crayfish species
- 5 freshwater mussel species
- 15 alien (non-native) fish species, introduced from overseas or other parts of Australia.

One freshwater fish species has been lost from the Basin, the Yarra pygmy perch. Reintroductions are underway to restore this species to the wild.

European settlement, extraction and regulation of the Basin's rivers and catchments has impacted native species

Since European settlement in the mid-1800s, water has been extracted from the Basin's rivers for farming, industry and the environment, and extensive changes have been made to how water moves through the system. These changes and pressures left most of the Basin's rivers and catchments in poor ecological condition, with a devastating effect on the Basin's native fish. By 2020, it was estimated that the number of native fish in the Basin was less than 10% of pre-settlement levels. Native species continue to be affected by many threats, including barriers to fish movement, introduced fish species, poor water quality and habitat degradation. New threats such as climate change, competing water demands, increased pollution and microplastics will also have an impact into the future.

Most of the Basin's freshwater fish are rare or threatened, but a few species are improving after recovery efforts

Overall, native fish populations in the Basin have continued to decline since 2010. Most (82%) freshwater fish species have been listed as rare or threatened, or are of potential conservation concern after the devastating Black Summer bushfires of 2019-20. There are also concerns for the Basin's freshwater spiny crayfish species – five of the Basin's 13 species are listed as threatened at the state and territory level and nine are currently undergoing assessment for national listing.

Many native fish species populations have remained stable since 2010. And in a promising sign that recovery efforts can make a difference, some species are becoming more abundant and widespread.

Key species trends include:

- extinction – Yarra pygmy perch are now extinct in the Basin, and silver perch are believed to be functionally extinct (low abundance and low recruitment) in the Northern Basin; Murray cod and freshwater catfish have been lost from the Paroo River
- decline – mountain galaxias and Murray crayfish are declining across the Basin, and Northern river blackfish and river mussels are declining in the Northern Basin
- recovery – trout cod are on the way to recovery and golden perch, Murray-Darling rainbowfish and spangled perch have become more abundant and widespread

Studies published since the 2023 assessment have shown improvements in Murray cod, Trout cod, Macquarie perch and other species at local and State scales.

There is much that can be done to recover native species

Recovery of native fish to secure sustainable levels in the Basin requires decades of sustained, collaborative conservation management. Many efforts are being made at the local, regional, State and Basin scales to recover native fish through environmental flows, habitat improvements and other complementary actions. There is a significant pool of research, monitoring and knowledge that managers can share and draw from to inform their recovery actions.

The assessment recommends a coordinated approach encompassing various changes and actions:

- interventions to improve species populations within their natural habitats – these include restoring habitats (including flows and connectivity), removing alien fish, and adding fish raised artificially (conservation stocking) or from another areas (translocation)
- interventions outside a species' natural habitat – these are especially important during extreme events such as bushfire or drought, and include captive breeding programs and the creation of artificial refuge habitats such as farm dams or constructed wetlands
- managing the threat from alien species - controlling alien species that are already present in the Basin and preventing new alien species from becoming established
- improving our understanding - more comprehensive monitoring is needed across the Basin. Deeper analysis is also needed to understand dynamic processes such as migration.
- sharing knowledge about what works - bringing information together about conservation interventions across the MDB, and sharing it across networks helps researchers and managers to analyse and improve their approaches.