

Hughes Creek Fish Survey Results 2017



Highlights

- Good Macquarie perch spawning from spring 2016
- Southern pygmy perch numbers steadily increasing
- The gorge continues to be a stronghold for Macquarie perch and river blackfish
- Native fish are making good use of habitat restoration sites

Survey Methods and Sites

In March 2017, 19 sites in Hughes Creek between Avenel and Tarcombe were surveyed for Macquarie perch (Figure 1).

Survey sites included nine long-term monitoring sites as well as current and future habitat restoration sites. Surveys at long-term monitoring sites consisted of single pass backpack electrofishing and single wing fyke netting.

Macquarie perch longer than 250 mm were tagged and a small fin clip was taken from 30 Macquarie perch of various sizes for future genetic analysis. All fish were released after being measured and weighed.

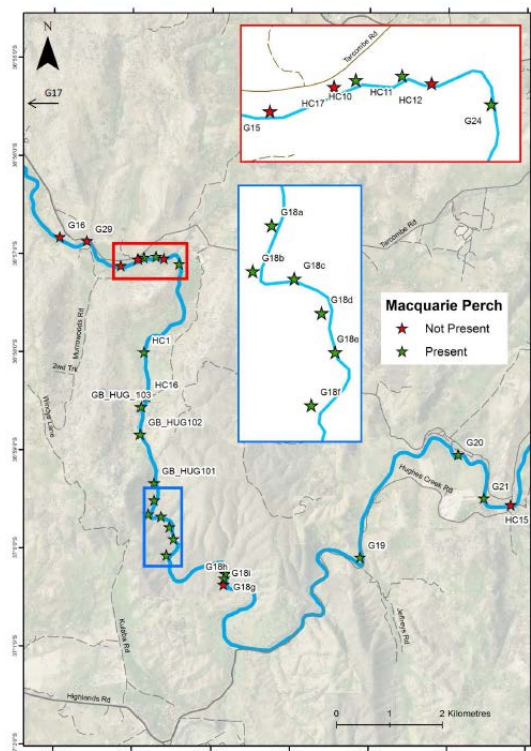


Figure 1. Map of survey sites in Hughes Creek during March 2017. Note: Site G18 is shown here as a series of nine sub-sites (G18a – G18i)

Results

A total of 1,831 fish, representing nine native and five introduced species, were recorded during the survey. Native fish accounted for 54% of the total catch. Other fauna recorded included common long-neck turtles, a Murray River turtle and yabbies.

The most abundant species captured was the introduced common carp (*Cyprinus carpio* N = 645) followed by the native river blackfish (*Gadopsis marmoratus* N = 624). Macquarie perch (N = 152) were collected from 12 of the 19 sites, across a distribution range of approximately 25km. Their numbers decreased with distance downstream of the gorge.

The size of Macquarie perch ranged from 58 -327 mm. Young of year individuals accounted for 71% of the total catch, which indicates spawning success from spring 2016. Only 3% of Macquarie perch individuals were between 100 and 160 mm (1+ year old), which supports the findings from last year's surveys which reported poor recruitment during spring 2015. This was most likely a result of flash flooding in January 2016 which may have contributed to high juvenile mortality.

Figure 2. Juvenile Macquarie perch captured from site G18 (the gorge) during March 2017



Increasing Native Fish Numbers

The gorge continues to be a stronghold for adult Macquarie perch (>220 mm) and an important spawning location, with 58% of all young of year collected from this site (Figure 2). Only one Macquarie perch was recaptured from previous surveys, and was found within the gorge and in fact within 150m of where it was initially tagged.

The gorge also contains important habitats for river blackfish, with their abundance substantially increasing since 2013 aided by strong recruitment during two of the past three years (Figure 3).

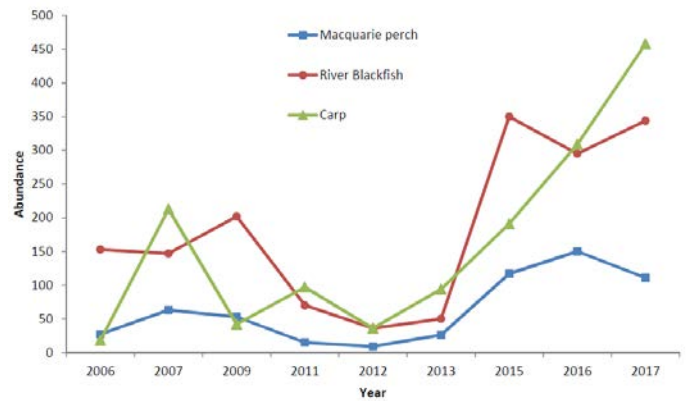


Figure 3. Total abundance of Macquarie perch, River blackfish and Carp in Hughes Creek 2006-17 (long-term monitoring sites only)

The abundance of southern pygmy perch (*Nannoperca australis*) has been steadily increasing in recent years, from two individuals collected at one site in 2013 to 123 individuals collected from five sites in 2017, with the highest abundance recorded in the upper reaches. This result is encouraging given the widespread decline of this native species across much of its former range.

Habitat Trial Sites Surveyed

Macquarie perch were collected at all three habitat restoration works sites surveyed, which along with river blackfish, were found in much higher numbers across each site than the previous year, when they were only found at one site.

Approximately 70% of all Macquarie perch collected within the habitat work sites, were captured within reinstated structures, which is a fantastic result given the repairs were only completed one year ago, following the large rain event during summer 2016.

The greatest number of fish were recorded where large woody debris had been anchored into the bank. Many of these structures also had leaf litter and debris accumulation as well as good scour. A high proportion of Macquarie perch collected from the structures were juvenile fish.

Go to the [GBCMA Hughes Creek Project](#) for more information and to access an interactive story map displaying survey results for each year investigated.

This project is funded by the Victorian State Government. Arthur Rylah Institute (DELWP) are engaged to undertake these surveys on behalf of the Goulburn Broken CMA.

