



Hughes Creek Fish survey results 2019



Survey sites

Surveys have been undertaken at 26 sites between Avenel and Tarcombe during February 2019, including 19 long-term monitoring sites and seven habitat restoration sites. Survey methods included single-pass backpack electrofishing and fyke netting.

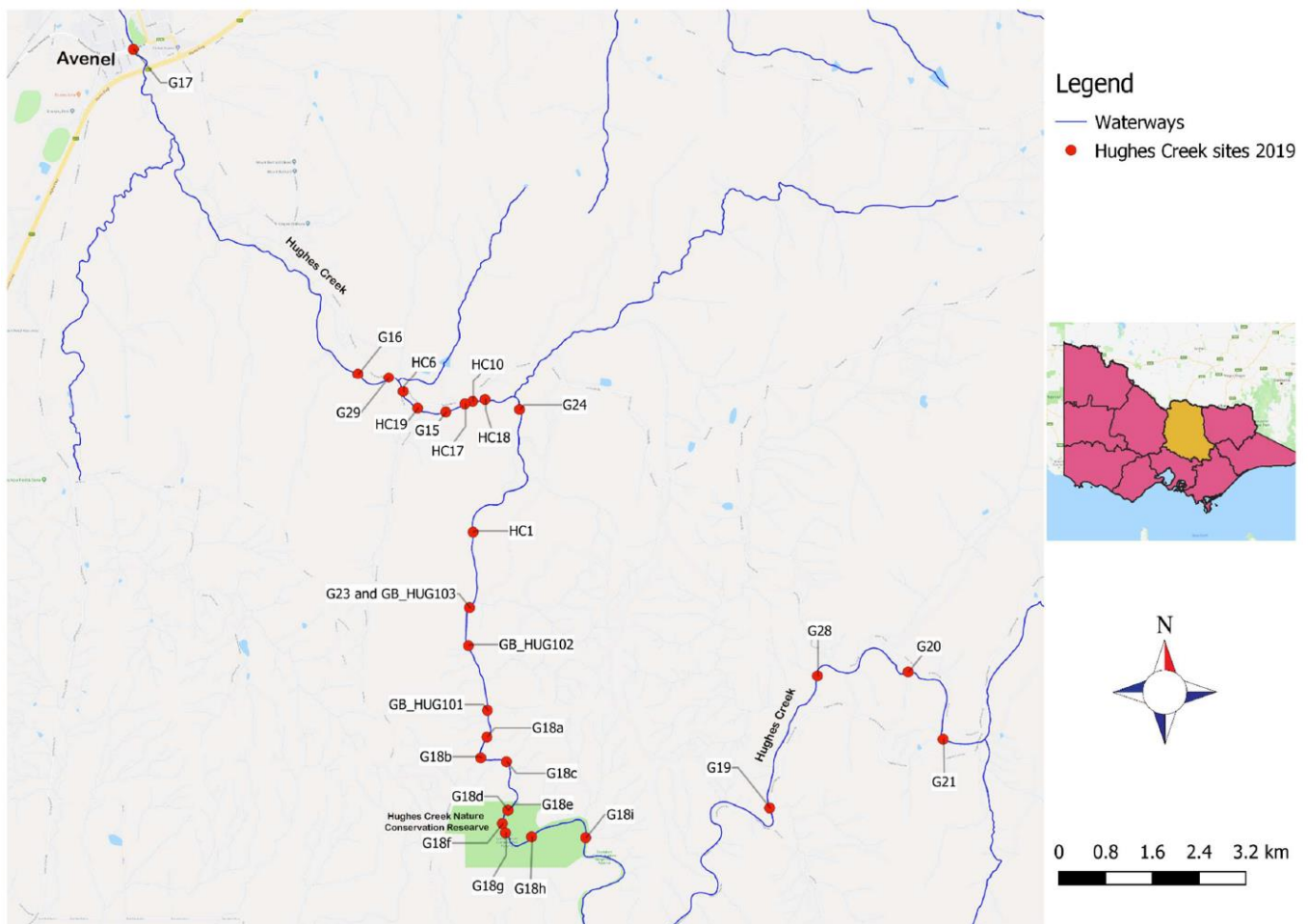


Figure 1. Map of survey sites in Hughes Creek during February 2019.

Highlights

- A total of 626 fish were collected from Hughes Creek, which included six native (51% of total catch) and four introduced fish species (49% of total catch). Common Long-neck Turtle, Common Yabby, and Platypus were also recorded.
- The most abundant native species caught was River Blackfish (*Gadopsis marmoratus*, n = 235), while the most abundant introduced species was Common Carp (*Cyprinus carpio* n = 154).
- 46 Macquarie Perch (*Macquaria australasica*) individuals were captured from 20 out of 26 sites surveyed, with four tagged recatches from the 2018 surveys caught from their initial capture sites.
- Despite the current drought conditions, the continued minimal flows throughout the summer period showed Macquarie Perch captures were overall in good condition with no signs of stress (i.e. *Lernaea* parasite or pale body colour).
- Exotic species removal was undertaken during our surveys, which targeted the removal of 43 Redfin (5.4kg biomass) and 154 Carp (267kg biomass) across the 25km reach of Hughes Creek. Low biomass for Redfin perch is due to few large fish collected.

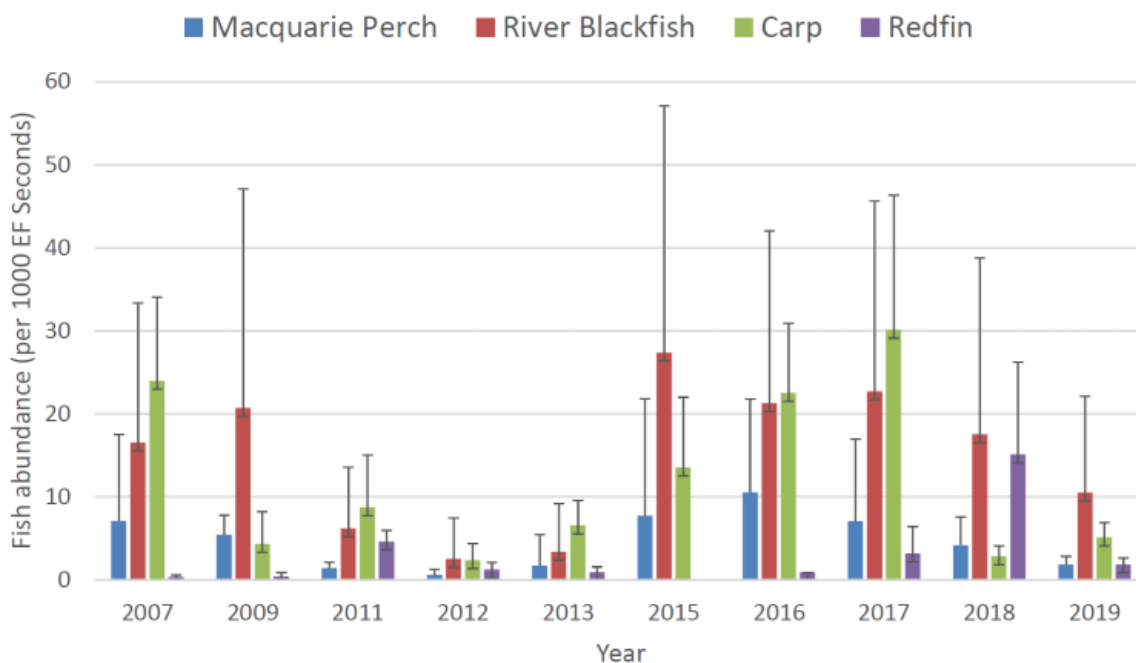


Figure 2. The standardized abundance of Macquarie Perch, River Blackfish, Common Carp and Redfin in Hughes Creek between 2007 and 2019 (Long-term monitoring sites only). Black lines represent standard error (SE).

2019 results

Length frequency data indicates multiple age classes were present, with age 2+ and 3+ being the most dominant size class, representing approximately 72% of the Macquarie perch total catch and successful recruitment during 2015 and 2016. Low recruitment success over the past year could be due to low flow conditions impacting ability for adults to access spawning habitats, or food resources for the survival of young fish.

Over the past year, there has been a 55% reduction in Macquarie Perch abundance across the long-term monitoring sites, including an 80% reduction within the Gorge which is known to be the species stronghold. 2019 captures are comparative to 2012 surveys post drought and flood events and is consistent with other Macquarie Perch populations within the catchment.

Similarly, River Blackfish abundance has also declined over the past year showing a 58% decrease within the Gorge. Several sizes of young of year fish were captured reflecting recruitment success and suggests that spawning events may have occurred over the spring/summer period or due to variable resource ability. (Fig 3).

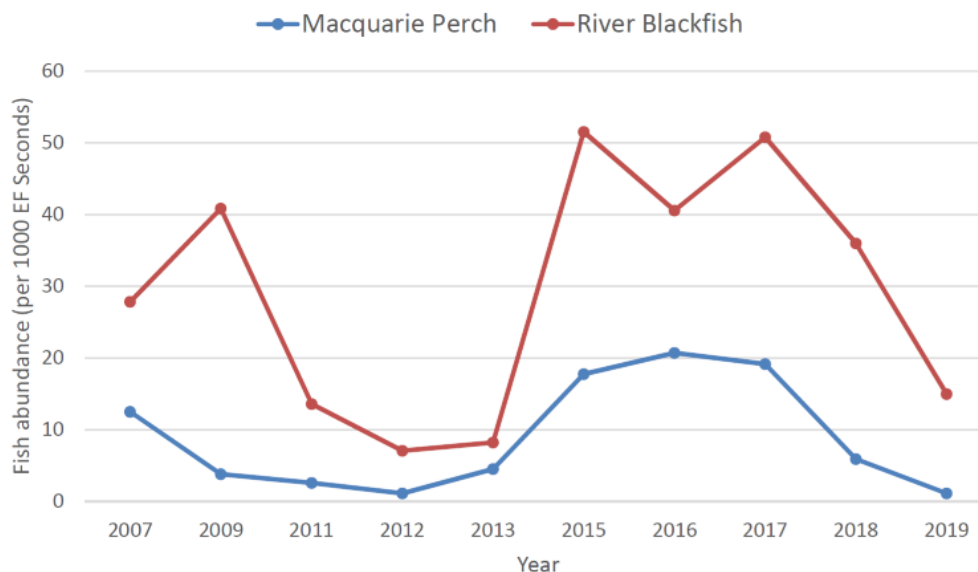


Figure 3. The standardized abundance of Macquarie Perch and River Blackfish within Site 18 (The Gorge) in Hughes Creek between 2007 and 2019.

Due to low flows and lack of fringing vegetation in the creek, there has been a 69% reduction in Southern Pygmy perch (*Nannoperca australis*) captures across long-term monitoring sites in comparison to 2018.

The rehabilitated sites continue to provide habitat and refuge for native species throughout Hughes Creek, with four new sites restored in Autumn 2018 being utilised by Macquarie Perch and/or River Blackfish.

There has been a significant reduction in Redfin (*Perca fluviatilis*) over the past year with only 43 individuals captured compared to 366 individuals in 2018. This decrease in numbers could be due to the successful targeted exotic species reduction undertaken throughout 2018.

Recommendations

- Continue to monitor flows and water quality in Hughes Creek, particularly during the spring/summer low flow periods. This could also include a review of current water extraction policies.
- Continue monitoring fish and key habitat attributes across both sentinel (control) and rehabilitation sites to track outcomes of the significant investment in restoration within Hughes Creek.



Image 1 (left): A range of sizes of River Blackfish

Image 2 (right): Macquarie Perch captured from site HC18 (new works site)



Follow [this link](#) to the interactive story map of the Hughes Creek to explore fish surveys from 2006.

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