King Parrot Creek
Fish survey results 2023

GOULBURN BROKEN CATCHMENT MANAGEMENT AUTHORITY

Survey sites

Annual surveys have been undertaken at five long-term monitoring sites between Flowerdale and Kerrisdale since 2002. (Figure 1). Data from this 16-year-long monitoring program records one of the healthiest populations of Macquarie perch (*Macquaria australasica*) in the catchment.

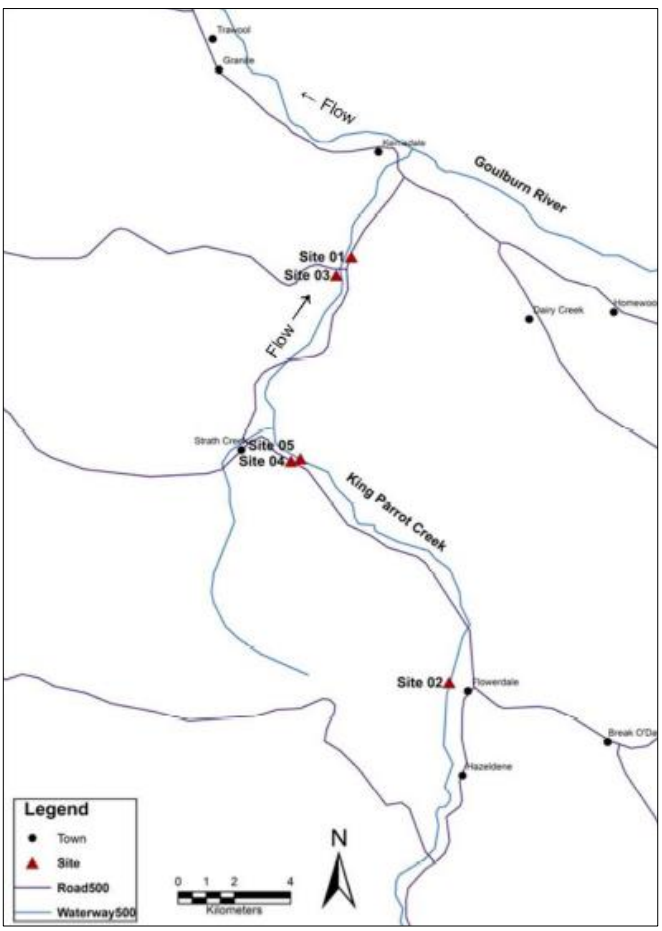

Figure 1. Map of survey sites in King Parrot Creek

Nevertheless, the population has undergone major fluctuations in recruitment strength and overall abundance due in large, to extreme climatic events such as drought and floods, including most recently the largest flood event recorded in October 2022.

Highlights

- A total of 301 fish were captured from King Parrot Creek, which included six native (33% of total fish catch) and three introduced fish species (67% of total fish catch). Spiny Freshwater Crayfish, Common Yabby, Eastern Long-neck Turtle and Platypus were also recorded.
- Recorded at all five survey sites, Macquarie Perch (n=57) was again the most abundant native species captured.
- Length frequency data indicates multiple age classes were present, with age 1+-year-old being the most dominant size class, representing approximately 45% of the Macquarie perch total catch. Cohorts from the previous two breeding seasons were also well represented, indicating ongoing successful recruitment and survival.
- Post flood stress of both the Macquarie perch and River blackfish populations was evident; a thick secretion of mucus was observed from most of these fish (Image 1).
- This slimy excretion appeared to be effective in protecting fish from the parasitic anchor worm, Lernaea, as most of the fish in the King Parrot Creek were found to be free from the infection.

Image 1 (left): Post flood stress slimy excretion

2023 results

River blackfish (*Gadopsis marmoratus*) and southern pygmy perch (*Nannoperca australis*) numbers are the lowest recorded since 2012 and 2014, respectively. This is likely an indicator of the negative impact the extreme rainfall and subsequent flood events had on both species.

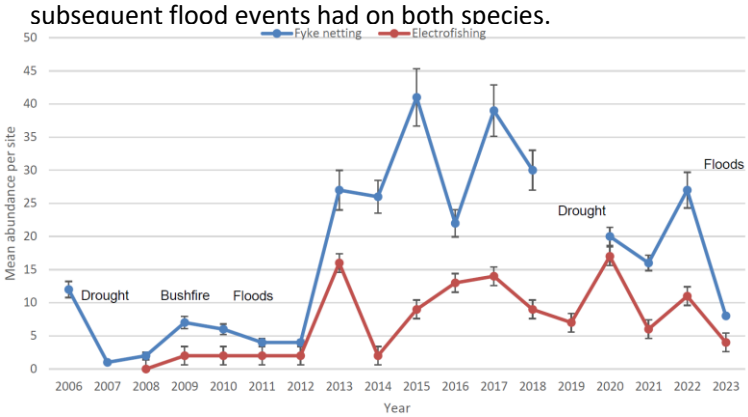

Figure 2. Mean (± SE) abundance of River blackfish per site during surveys of the King Parrot Creek between 2006 and 2023.

Note: Electrofishing not conducted in 2006 and 2007 and fyke netting not conducted in 2019 due to low water-level.

Two-spined blackfish, *Gadopsis bispinosis* were not detected during this year's survey for the second consecutive year; following the declining trend that has emerged since 2019.

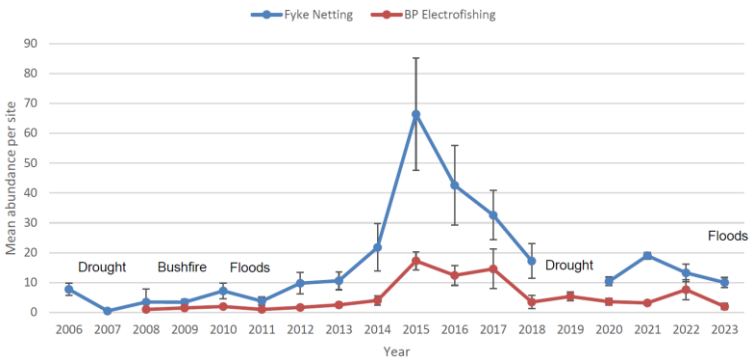

Figure 3. Mean (± SE) abundance of River blackfish per site during surveys of the King Parrot Creek between 2006 and 2023.

Note: Electrofishing not conducted in 2006 and 2007 and fyke netting not conducted in 2019 due to low water-level.

Like previous years, the number of introduced redfin perch, *Perca fluviatilis* captured in the survey was low. No common carp, *Cyprinus carpio,* were recorded from this reach of the creek in 2023.

The number of brown trout, *Salmo trutta* captured in the 2023 survey (n=141) was comparable to recent years (2022=110 and 2021=128); with 45% of the total brown trout catch estimated to be 1+ years old (100-140 mm TL).

Image 2 (left): Southern pygmy perch from site KP02, Moores Road.

Image 3 (right): River blackfish

Ten individuals from Hughes Creek and seven individuals from Seven Creeks were fin clipped for genetic analysis, PITT tagged for recapture identification (for future surveys) and translocated via a fish transporter for release into the King Parrot Creek, nearby Burslems Bridge.

Recommendations

- Raise community awareness of the importance of maintaining connectivity between habitat pools along the King Parrot Creek, particularly with the valued population of threatened Macquarie perch present. A number of illegal weirs that have been barriers to fish passage for many years during low flow periods were dismantled last year. Many of these have been rebuilt.

- Continue long-term fish monitoring in King Parrot Creek in 2024.
- Continue to monitor water quality and flows over summer periods, in years when there is low rainfall. This knowledge will enable triggers for action to occur if conditions become unfavourable.
- Repeat translocations of Macquarie perch, making sure to collect fin tissue from new recruits in future years to determine if these fish are contributing to the population and indeed, enhancing genetic diversity.
- Conduct post-flood recovery bank stabilisation works to reduce bank erosion and reduce sediment entering the creek, particularly within site KP01 Draytons Bridge.
- Conduct additional assessments for the Two-spined blackfish above the current upstream monitoring site (Moores Road) to further investigate population decline.

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.