

Seven Creeks Fish Survey 2016



Key points

- The stronghold for the trout cod and Macquarie perch populations is the 3km reach below Gooram Falls.
- Low and ceased to flow events below Gooram Falls resulted in fish deaths and other fish in poor condition.
- Instream habitat is essential for drought refuge.

Survey methods and sites

During March 2016, 37 sites below Gooram Falls and 2 sites above Gooram Falls were surveyed using single pass backpack electrofishing. (Figure 1) All fish were released at the site of capture after being measured for total length (mm) and weight (g).

Water quality, electrofishing effort (total seconds fished) and distance fished were recorded for each site, along with an assessment of key habitat attributes.

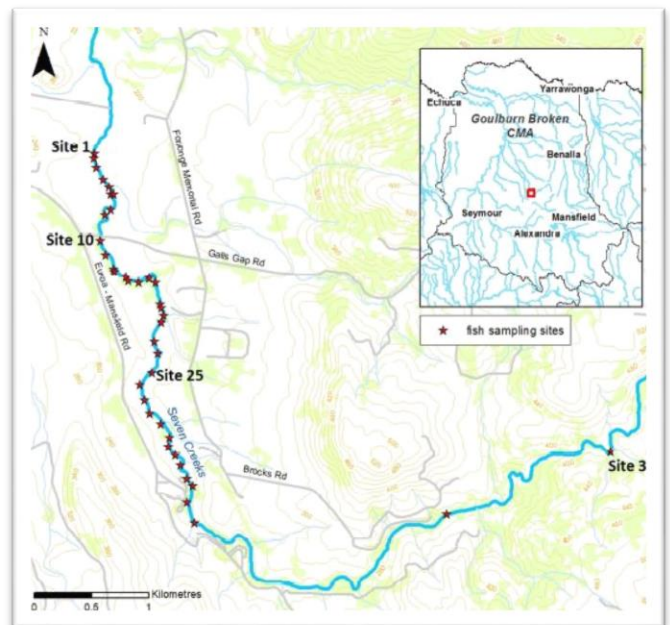


Figure 1. Map of survey sites in Seven Creeks during March 2016

Results

A total of 652 fish, representing three native and four introduced species, were captured during surveys of the Sevens Creek (Table 1). The most abundant species were the native Macquarie perch (310) and trout cod (189). Other notable captures were river blackfish and southern pygmy perch. Trout cod and Macquarie perch were also the most wide spread species recorded at 92% and 95 % of sites respectively.

Common Name	Below Gooram Falls (37 sites)	Above Gooram Falls (2 sites)	Total
Trout cod	161	28	189
Macquarie perch	304	6	310
River blackfish	16	6	22
Golden perch	2		2
Mountain galaxid	50		50
Carp gudgeon	1		1
Southern pygmy perch	1		1
Eastern gambusia*	4		4
Brown trout*		1	1
Carp*	70		70
Redfin*		2	2
Total	609	43	652
*exotic species			

Table 1. Fish abundance both above and below Gooram Falls. 37sites surveyed below Gooram Falls, 2 sites above Gooram Falls

The Seven Creeks system has experienced extremely low flows during Spring/Summer 2015/2016. Of particular concern has been “cease-to-flow levels” downstream of Galls Gap Rd since late November 2015. Fortunately stream levels immediately downstream of Polly McQuinn Weir have remained connected for several km over this period. Observations at the time of surveys have reflected these conditions. Dissolved Oxygen levels declined from 7.9 mg L⁻¹ at the most upstream site (site 39), to 4.85, 1.87 and 1.23 mg L⁻¹ at sites 32, 27 and 4 respectively. The condition of fish reflected this situation, with those occupying the most downstream sites often in extremely poor condition (particularly adult fish), as well as fish deaths.



Examples of poor fish condition (top images Macquarie perch) and; evidence of fish kills (bottom images of trout cod) observed on the Seven Creek as a result of sustained low flows and dissolved oxygen levels.

The size range of Macquarie perch was 46 – 393 mm, with juvenile fish < 150 mm the dominant size class. This is indicative of strong recruitment in the 2013, 2014 and 2015 spring spawning periods. This recruitment pattern follows the results of other populations throughout the catchment, including the King Parrot Creek and Hughes Creek.

The size range of trout cod was 46 – 620 mm, with juvenile fish < 200 mm the dominant size class. Like Macquarie perch, this is indicative of strong recruitment success in recent years.

Observations during surveys highlighted the importance of instream structural habitat, particularly wood and large rocks. Many of the large boulders and wood placed in the river during past works programs have created constriction flows to enhance scour pools that provided drought refuge. A habitat assessment of the reach highlighted that areas the highest density of instream wood had more water and pools.

It is recommend that similar works be undertaken to create additional refuge pools (and critical microhabitat). Installing structures at sites where the Creek had ceased flowing would be of greatest benefit.



Past reinstated structures in Seven Creeks downstream of Galls Gap Road

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

