

Understanding fish communities of the Barossa 2026

To effectively manage the natural resources of the Barossa it is important to understand its current condition. This assessment provides current knowledge of the Barossa fish populations to help inform water resource management.



The Barossa Valley has a rich vine and wine history and is situated in the northeastern part of the Adelaide Mount Lofty Ranges.

To sustainably manage the area's natural resources, the Northern and Yorke Landscape Board, in partnership with the Department for Environment and Water, undertakes planning work.

This includes the management of water resources of the Barossa Prescribed Water Resources Area (PWRA) through a Water Allocation Plan.

This provides the water needs of economic, social, cultural and environmental users. To make sure that decisions are made on the most current environmental information, a selection of sites along Jacob and Tanunda Creeks in the Barossa PWRA were sampled for fish communities in 2026.

Fish are important indicators of watercourse health and environmental change. Monitoring patterns in the number and extent of the different species provides valuable information on changing conditions.

Status of fish communities of the Barossa region

In 2026, 6 sites along Jacob Creek (3) and Tanunda Creek (3) in the Barossa PWRA were sampled to provide an update on the status of the fish community.

All fish species encountered were identified, measured and counted.

Data was also recorded for water quality (flow, salinity, pH, temperature and dissolved oxygen), habitat and other animal species opportunistically encountered.

How are fish faring?

Comprehensive fish sampling undertaken in 2023-2025 across the Barossa PWRA, by staff from Nature Glenelg Trust and coordinated by the Northern and Yorke Landscape Board, showed that the fish communities across the region are generally in a poor state (Table 1). The area was dominated by alien species of fish during the 3 sampling periods, especially the declared noxious species Eastern Gambusia (*Gambusia holbrooki*) and to a lesser extent Redfin Perch (*Perca fluviatilis*).

Table 1: Fish catch across the Barossa PWRA.
Green = native species, orange = alien species.

Fish	2023	2024	2025
Mountain Galaxias	162	152	154
Common Galaxias	14	0	1
Flathead Gudgeon	1843	2142	2377
Carp Gudgeon	2749	7	8
Western Bluespot Goby	3	158	10
Eastern Gambusia	29395	8347	5392
Redfin Perch	7	37	152
Goldfish	2	0	1
Total	34,175	10,843	8,095

The most common native species was Flathead Gudgeon (*Philypnodon grandiceps*) in most years. Carp Gudgeon (*Hypseleotris* spp.) was the most dominant native species in 2023, but populations were not sustained during sampling in 2024 and 2025. There was also a strong population of the locally threatened and more sensitive Mountain Galaxias (*Galaxias olidus*), though localised to Jacob Creek and Tanunda Creek due to sections of permanent flow and better water quality.



Alien Eastern Gambusia and freshwater shrimps



Mountain Galaxias

How will the information be used?

The outcomes of the fish sampling will be used to inform the ecological assessments for the water allocation plan for the Barossa PWRA.

Knowledge of where the different species of fish are present throughout the catchment allows for water planners to account for their needs in the planning process. Mountain Galaxias, for example, require longer flowing periods and better water quality than other native species of fish.

This knowledge allows for a more targeted approach to water planning in the Barossa PWRA.

It also increases our understanding of how the watercourses of the Barossa PWRA function and allows for more scientifically informed management of water resources for the benefit of all users.

Jacob Creek and Tanunda Creek

Jacob Creek and Tanunda Creek are perennially flowing streams that merge into the North Para River in the downstream section of the Barossa PWRA. During 2026, 3 sites were sampled in Jacob Creek and 3 sites in Tanunda Creek. At Jacob Creek, the middle site was fresher (e.g. lower salinity) ($1739 \mu\text{Scm}^{-1}$) compared to the upper and lower sites (2406 and $2347 \mu\text{Scm}^{-1}$, respectively). At Tanunda Creek the lower site was fresher ($889 \mu\text{Scm}^{-1}$) than the upper and middle sites (6775 and $1383 \mu\text{Scm}^{-1}$, respectively).

Dissolved oxygen varied from 1.2 mgL^{-1} at lower Jacob Creek to 4.6 mgL^{-1} at mid creek. At Tanunda Creek it varied from 1 mgL^{-1} in the lower creek to 4.6 mgL^{-1} at mid creek. A dissolved oxygen level below 4.5 mgL^{-1} is stressful for fish and may even kill them if it gets below 2.5 mgL^{-1} (Table 2, orange and red respectively). Four out of the six sites all had dissolved oxygen levels that were below 4.5 mgL^{-1} . All sites had no or low flow during the 2026 sampling period.

Fish catch

Numbers of Mountain Galaxias, a native freshwater fish species, are higher in 2026 (377) compared to 2025 (154). In both years they were found at the same two sites, e.g. mid Jacob Creek (224) and mid Tanunda Creek (153). Mountain Galaxias were caught in Tanunda Creek in 2024 for the first time. Numbers of Mountain Galaxias sampled in previous surveys declined from 2018 when 304 fish were caught to 2024 when 152 were caught at Jacob Creek. The Mountain Galaxias population sampled in 2026 consisted of fish ranging in size from 35 to 99 mm, with most fish (89%) being recent recruits (i.e. <65 mm). Populations comprising primarily recruits, is suggestive of possibly limited survivorship over multiple years. Some sections of Jacob Creek and Tanunda Creek maintain perennial flows that provides the necessary conditions for the native species. However in 2026 the flow at both sites where Mountain Galaxias were present were observed to be low or none. Lower sections of both creeks have dry to small pools over summer and autumn, which limits habitat suitability for the species. It is critical that adequate flow regimes are maintained in both creeks to support the sustainability of Mountain Galaxias populations. The Flathead Gudgeon (2468 fish) was the dominant native fish species sampled in the

Barossa survey in 2025. This species was not recorded in the targeted survey in 2026. Similarly, the other native species previously sampled, the Western Bluespot Goby (*Pseudogobius olorum*) and the Carp Gudgeon (scientific name), were also not recorded in the 2026 survey.

The alien Eastern Gambusia (511 fish) was once again the dominant species at all sites where it was sampled. Mid Tanunda Creek was the single site where fish were sampled in that system and included only Mountain Galaxias (153 fish) and did not include Eastern Gambusia in 2026. No fish were recorded at the upper or lower Tanunda Creek sites.

Eastern long-necked turtle, common yabby and freshwater shrimp were sampled opportunistically. The shell length of the Eastern long-necked turtles sampled varied from 116 to 197 mm indicating that both juveniles and adults were present.



Table 2: Summary of pool condition, flow and water quality parameters for sites sampled in the Jacob and Tanunda Creeks. Orange = DO level <4.5 mgL⁻¹ is harmful for fish. Red = level <2.5 mgL⁻¹ is lethal for fish.

Waterway	Pool Condition (water level)	Flow	Salinity (μS cm ⁻¹)	pH	Dissolved oxygen (mg L ⁻¹)
Jacob Creek	Upper Low level (1.2m)	Low	2406	7.08	3.9
	Mid Low level (1.2m)	None	1739	7.56	4.6
	Lower Concentrated (0.5m)	None	2347	7.27	1.2
Tanunda Creek	Upper Concentrated (0.5m)	None	6775	6.87	1.7
	Mid Concentrated (0.8m)	Low	1383	7.66	5.6
	Lower Concentrated (1.5m)	None	889	6.85	1

More information



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This work was coordinated and funded by the Northern and Yorke Landscape Board.

