

Native Fish Report Card

Thomson and Macalister rivers 2023

West Gippsland Region



SITES: 9

ELECTROFISHING

Fish found in the Thomson and Macalister rivers in our 2023 surveys



Target Species

✓ recorded in 2023



✓ **Australian Bass**

Perkalates novemaculeata



✓ **Australian Grayling**

Prototroctes maraena

** These non-target species were incidentally captured during NFRC surveys since 2017 but not measured as for target species.*



Non-target species

✓ recorded since 2017*

Large-bodied native species

- ✓ Golden Perch
- ✓ Long-finned Eel
- ✓ Pouched Lamprey
- ✓ Short-finned Eel
- ✓ Tupong

+ a further five estuarine fish species (see following pages)

Small-bodied native species

- ✓ Australian Anchovy
- ✓ Australian Smelt
- ✓ Common Galaxias
- ✓ Flatheaded Gudgeon
- ✓ Flinder's Pygmy Perch

Exotic species

- ✓ Brown Trout
- ✓ Eastern Gambusia
- ✓ Common Carp
- ✓ Goldfish
- ✓ Oriental Weatherloach
- ✓ Rainbow Trout
- ✓ Redfin
- ✓ Roach

Fish community

The NFRC Program began in 2017, with a focus on targeting the monitoring of population dynamics of key iconic fish species that have high recreational and/or conservation values, in large rivers across Victoria. In the Thomson and Macalister rivers, the target species are Australian Bass and Australian Grayling. Surveys occur every March, at nine sites from the junction with the Latrobe River to Lake Glenmaggie on the Macalister River, and to Denison on the Thomson River. The Denison site just downstream of Rainbow Creek junction was shifted to the Rainbow Creek just upstream of the Thomson River junction in 2021 due to access logistics. The original Denison site was fished in 2023. These surveys use boat electrofishing. The equipment and habitats surveyed are focused on these species, which are measured to determine population structures. Other fish species incidentally captured are recorded, but not measured to determine their population structures.

Summary of key health indicators for target species in 2023

Species	Key Health Indicators		
	Recent recruitment	Multiple size classes	Mature fish present
Australian Bass	Yes	Yes	Yes
Australian Grayling*	-	-	-

Recent recruitment means young-of-year fish

* - cannot be determined due to low abundances

Australian Bass in the Thomson and Macalister river systems are at the outermost extent of their natural range. Historically they occurred no further west than Wilsons Promontory. Australian Bass are an important recreational species. The population is aided by stockings. Australian Grayling were once widespread across coastal Victoria, including these rivers. Changes to flow regimes and barriers impact this species. Their detection in six of the seven years of surveys indicates that management measures such as environmental flows are benefiting the population.

Non-target species The non-target fish species incidentally recorded in NFRC surveys since 2017 are:

Large-bodied native species Surveys have recorded Black Bream, Estuary Perch, Golden Perch, Long-finned Eel, Pouched Lamprey, River Garfish, Sea Mullet, Short-finned Eel, Tupong and Yellow-eye Mullet. Five of these species (Black Bream, Estuary Perch, River Garfish, Sea Mullet and Yellow-eye Mullet) are estuarine. Long-finned and Short-finned Eel, Pouched Lamprey and Tupong are diadromous species found throughout coastal Victoria.

Golden Perch, a translocated species, has been detected in the lower Thomson River in three of the seven years.

Small-bodied native species Australian Smelt and Flatheaded Gudgeon are common, distributed across the State. The Common Galaxias is diadromous and found across coastal Victoria. Flinder's Pygmy Perch (listed as vulnerable in Victoria under the FFG Act 1988) are common in offstream habitats (e.g. billabongs, wetlands and lagoons). Australian Anchovy are estuarine and only expected to be detected at the lowest site/s (i.e. closest to the estuary).

Exotic fish species Eight exotic species have been recorded during NFRC surveys: Brown Trout, Rainbow Trout, Eastern Gambusia, Common Carp, Goldfish, Oriental Weatherloach, Redfin and Roach. Common Carp and Redfin have been detected in all sampling years and are widespread throughout the Thomson and Macalister rivers. Brown Trout and Rainbow Trout are restricted to the upper sites in the Macalister River. Goldfish are present in both rivers, albeit in low abundances. Eastern Gambusia were detected in Rainbow Creek in 2021 and the Macalister River in 2022 and are often found in slower flowing waters. One Roach and one Oriental Weatherloach were detected in the Macalister River for the first time in NFRC surveys in 2023. Roach prefer vegetated waters and are often a schooling species. Oriental Weatherloach is a habitat generalist but prefers muddy waters and can tolerate a wide range of conditions including oxygen depleted waters. This is the second confirmed Roach detection in the Thomson-Macalister system (first was in 2021). Previously Oriental Weatherloach have only been captured in the Thomson River with adults recorded in 2010, 2015 and 2016, indicating they are persisting in low abundances in the Thomson-Macalister system.

Other native fish species known from the Thomson and Macalister rivers

Some fish species known from these rivers have never been recorded during NFRC surveys (i.e. Climbing, Mountain and Spotted Galaxias, Short-headed Lamprey and River Blackfish). The Climbing and Spotted Galaxias and Short-headed Lamprey are diadromous species. The Climbing and Spotted Galaxias have patchy distributions and are found in lowland areas but are hard to detect using NFRC sampling methods. The Short-headed Lamprey were considered widespread but recently adults are rarely seen and usually nocturnal. The Mountain Galaxias is found both sides of the divide. In the Thomson and Macalister rivers the species was patchy and relatively uncommon in the lower areas but more common in higher altitudes. It is hard to detect using the NFRC sampling methods. The River Blackfish, a lowland species, is generally found at altitudes <200 metres. This species has declined in distribution and abundance across the State. It was once considered relatively widespread throughout the Thomson basin¹. It is still present in the Thomson River, though upstream of NFRC sampling sites.

Other notable species Surveys have also recorded Eastern Long-necked Turtles.

Environmental and Management Context

Environment

Low flow conditions were present from 2017-2023, albeit slightly higher in 2021.

River rehabilitation efforts in the Thomson and Macalister rivers

Many rehabilitation actions have occurred and are underway to improve the health of the Thomson and Macalister rivers. These are informed by the West Gippsland Waterway Strategy 2014-2022. Efforts include revegetation, weed control and fencing of riparian areas and floodplain wetlands, allocations and delivery of water for the environment and removal of migration barriers and erosion control. Some monitoring of the fish community occurs, including related to management efforts above. This includes the Victorian Environmental Flow Monitoring and Assessment Program (VEFMAP). The [West Gippsland Catchment Management Authority](#), DEECA and the [Victorian Fisheries Authority](#) support rehabilitation and management of the Thomson and Macalister rivers.

See the ARI website for further information on the [Native Fish Report Card program](#).

¹Lieschke et al. (2013). The status of fish populations in Victorian rivers 2004-2011 – Part A. Arthur Rylah Institute for Environmental Research Technical Report Series No. 246. Department of Environment and Primary Industries, Heidelberg, Victoria.

The NFRC program, and related monitoring initiatives, provide improved understanding of the structure of fish communities and how rivers can be best managed.



Figure 1. Map showing the section of Thomson and Macalister rivers where NFRC sampling occurs.



Figure 2. An Australian Grayling



Figure 3. An Australian Bass

Australian Bass

Percalates novemaculeata



Key Health Indicators

- ✓ Recent recruitment
- ✓ Multiple size classes
- ✓ Mature fish present

Monitoring Results

Total number of fish caught	88
Fish per 1km of waterway	15.6
Largest fish by length (cm)*	46.5
Largest fish by weight (kg)	1.48
% of the catch that is legal size	50

*Australian Bass total lengths were calculated from fork lengths in 2023 (using established formulae)

Thomson and Macalister River

Recreational Species

Australian Bass (*Percalates novemaculeata*) - formerly *Macquaria novemaculeata* - are a targeted recreational fishing species in the Thomson and Macalister rivers. Recruits, juveniles and adults have been collected in five of the seven years (2017-18, 2020-21 and 2023), with recruits absent in 2019 and 2020 (Figure 4). The absence of recruits in 2019 and 2020 is possibly due to stocking occurring away from NFRC sites, rather than the recruits not surviving. In 2020, age 1+ fish were detected. The number of adults has increased in 2023 (Figure 4). There was a wide range of sizes detected in 2023 from recruits to large adult fish (Figure 5).

Stocking

Nine thousand Australian Bass were stocked in 2016; 28,500 in 2017; 10,000 in 2018 and 2019; 25,000 in 2020, 26,000 in 2021 and 27,000 in December 2022.

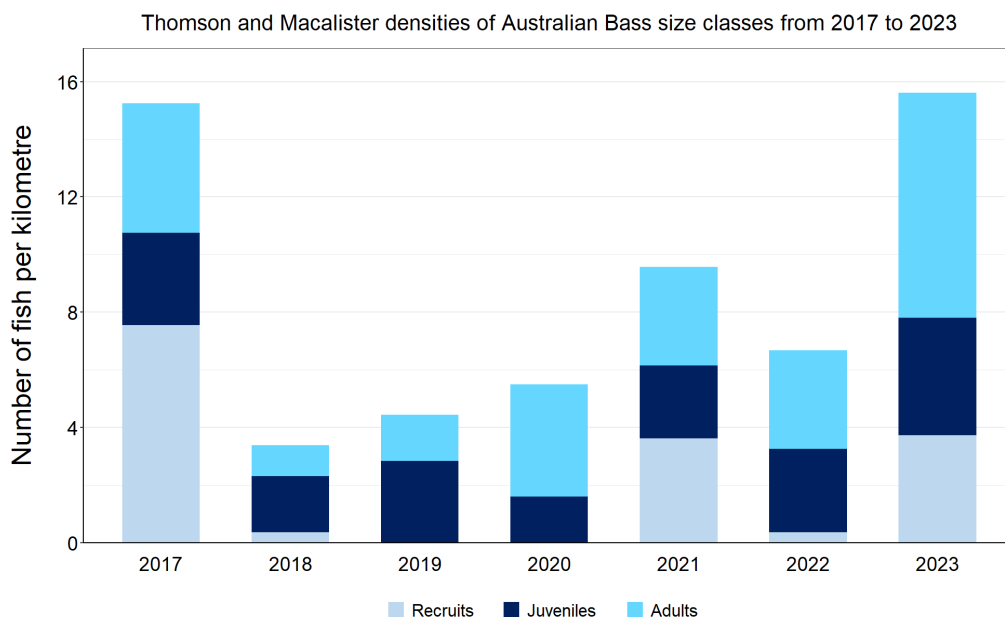


Figure 4. The densities of recruits, juveniles and adult Australian Bass for NFRC surveys in the Thomson and Macalister rivers from 2017 to 2023

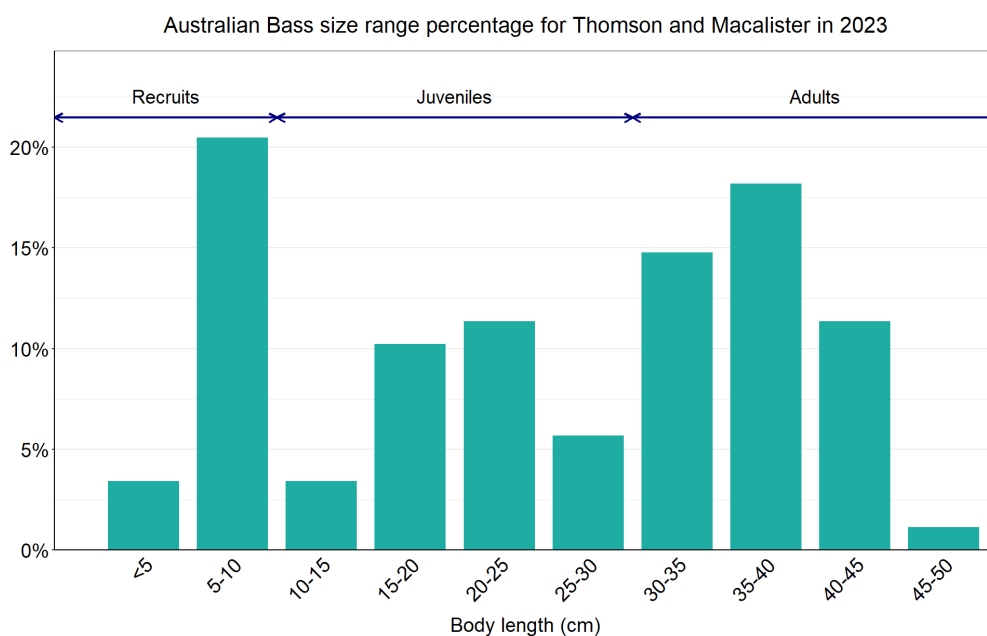
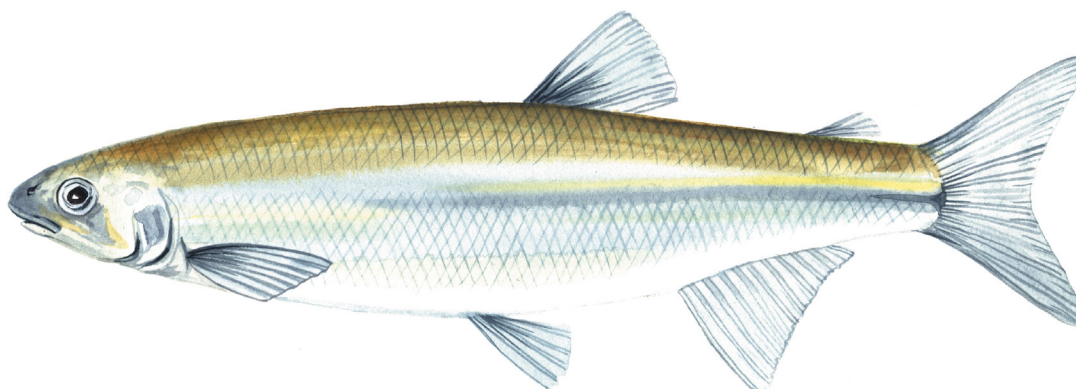


Figure 5. The size range percentage of Australian Bass measured from the Thomson and Macalister rivers during NFRC surveys in 2023

Australian Grayling

Prototroctes maraena



Key Health Indicators

- Cannot be determined
- Cannot be determined
- Cannot be determined

Monitoring Results

Total number of fish caught	2
Fish per 1km of waterway	0.35
Largest fish by length (cm)	24.3
Largest fish by weight (kg)	0.17
% of the catch that is legal size	NA

* Australian Grayling total lengths were calculated from fork lengths in 2023 (using established formulae)

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THREATENED SPECIES

Australian Grayling (*Prototroctes maraena*) is a diadromous species that has undergone declines in distribution and abundance across its range. The species is listed as endangered in Victoria (Flora and Fauna Guarantee Act 1988) and nationally (Environment Protection and Biodiversity Conservation Act 1992). While NFRC expects to only capture low numbers of this species, the monitoring can provide a greater understanding of the current status of the populations which is essential to inform management of these species. Due to the low abundances of Australian Grayling collected during NFRC the key health indicators cannot be determined. However, low abundances of adults have been captured in 2017-18, 2020 and 2023 with juveniles also detected in 2020 and 2021 (Figure 6). No Australian Grayling were detected in 2019 or 2022. The presence of juveniles in 2020 and 2021 (Figure 6) points towards successful recent recruitment. This indicates stream conditions were suitable for attractions of recruits into the system and their subsequent upstream dispersal and survival in 2019 and 2020. Only adult Australian Grayling were detected in 2023 (Figure 7).

Stocking

No stocking has occurred.

Australian Grayling

Prototroctes maraena

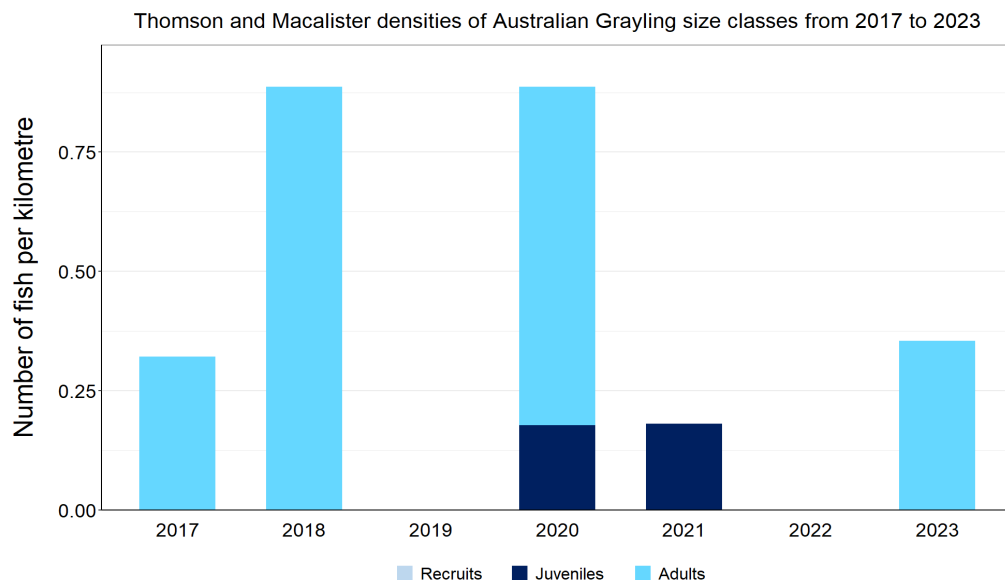


Figure 6. The densities of recruits, juveniles and adult Australian Grayling for NFRC surveys in the Thomson and Macalister rivers from 2017 to 2023

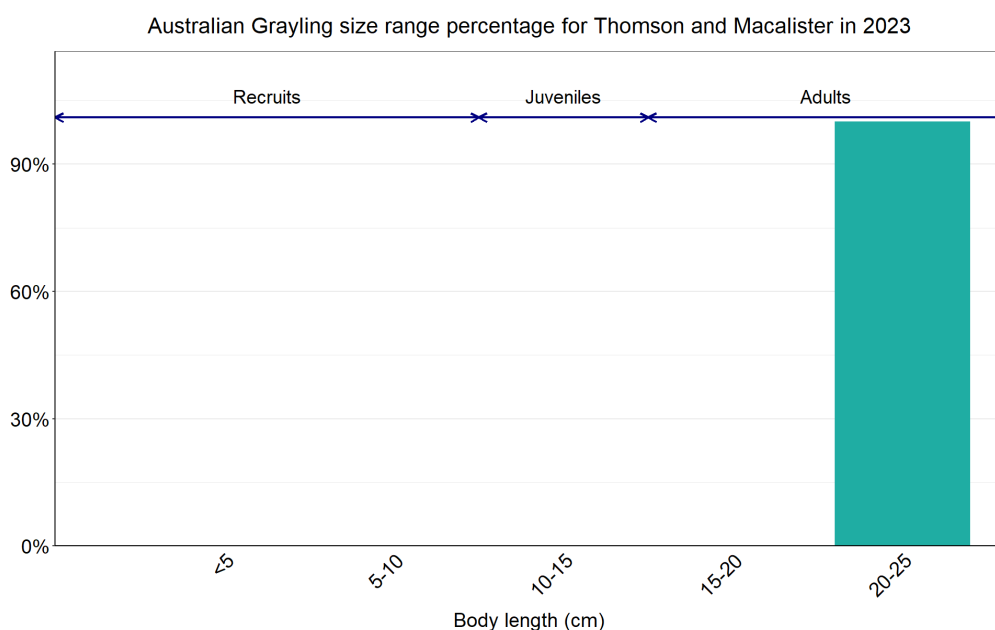


Figure 7. The size range percentage of Australian Grayling in the Thomson and Macalister rivers during NFRC surveys in 2023



We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

DEECA is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal community to progress their aspirations.



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