

This report card summarises the **2021** Native Fish Report Card (NFRC) survey in the Thomson and Macalister rivers.

SITES: 9

ELECTROFISHING

Fish found in the Thomson and Macalister rivers for NFRC

▶ Target Species

✓ recorded in 2021



✓ **Australian Bass**

Percalates novemaculeata



✓ **Australian Grayling**

Prototroctes maraena

▶ Non-target species

✓ recorded since 2017*

Large-bodied native species

- ✓ Golden Perch
- ✓ Long-finned Eel
- ✓ 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
- ✓ Flinders Pygmy Perch

Exotic species

- ✓ Brown Trout
- ✓ Eastern Gambusia
- ✓ Common Carp
- ✓ Goldfish
- ✓ Rainbow Trout
- ✓ Redfin

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

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 in March each year, 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 site at Denison on the Thomson River 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 surveys use boat electrofishing. The equipment and habitats surveyed are focused on these species, which are measured to determine population structures. Other fish species that are incidentally captured are recorded, but not measured to determine their population structures.

Summary of key health indicators for target species in 2021

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. The detection of Australian Grayling in four of the five years indicates that management measures such as environmental flows are benefiting the population.

Non-target species

The non-target fish species that have been incidentally recorded in the Thomson and Macalister rivers during NFRC surveys since 2017 are:

Large-bodied native species Surveys have recorded Black Bream, Estuary Perch, Golden Perch, Long-

finned Eel, 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 and Tupong are diadromous found throughout coastal Victoria. Golden Perch, a translocated species in the these rivers, has been detected in the lower Thomson River in three of the five years.

Small-bodied native species Australian Smelt and Flatheaded Gudgeon are common species distributed across the State. The Common Galaxias is diadromous and found across coastal Victoria. Flinders 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 are only expected to be detected at the lowest site/s (i.e. closest to the estuary).

Exotic fish species Six exotic species have been recorded: Brown Trout, Rainbow Trout, Eastern Gambusia, Common Carp, Goldfish and Redfin. Common Carp and Redfin have been detected in all sampling years and are widespread in these rivers. Brown Trout and Rainbow Trout are restricted to the upper sites in the Macalister River. Goldfish are present in both rivers, in low abundances. Eastern Gambusia, often found in slower flowing water, were detected in Rainbow Creek in 2021.

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. No Climbing, Mountain and Spotted Galaxias, Pouched and Short-headed Lampreys or River Blackfish have been detected. The Climbing and Spotted Galaxias, Pouched and Short-headed Lampreys 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 two lamprey species 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, 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 in all five sampling seasons, 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](#), DELWP 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	53
Fish per 1km of waterway	9.57
Largest fish by length (cm)	41.1
Largest fish by weight (kg)	1
% of the catch that is legal size	35.8

THOMSON + MACALISTER R

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 2017, 2018 and 2021, with recruits absent in 2019 and 2020 (Figure 4). The 2017 and 2021 population abundances appear to be higher, but this is due to the increase of recruits detected, which are likely from stockings. The absence of recruits in 2019 and 2020 is possibly due to stocking occurring away from NFRC sites, rather than the recruits not surviving. Despite abundances being dominated by recruits in 2021, there was a wide range of sizes detected including large adult fish (Figure 5).

Stocking

Nine thousand Australian Bass were stocked in late 2016; 28,500 fish in late 2017; 10,000 in 2018 and 2019; and 25,000 in 2020.

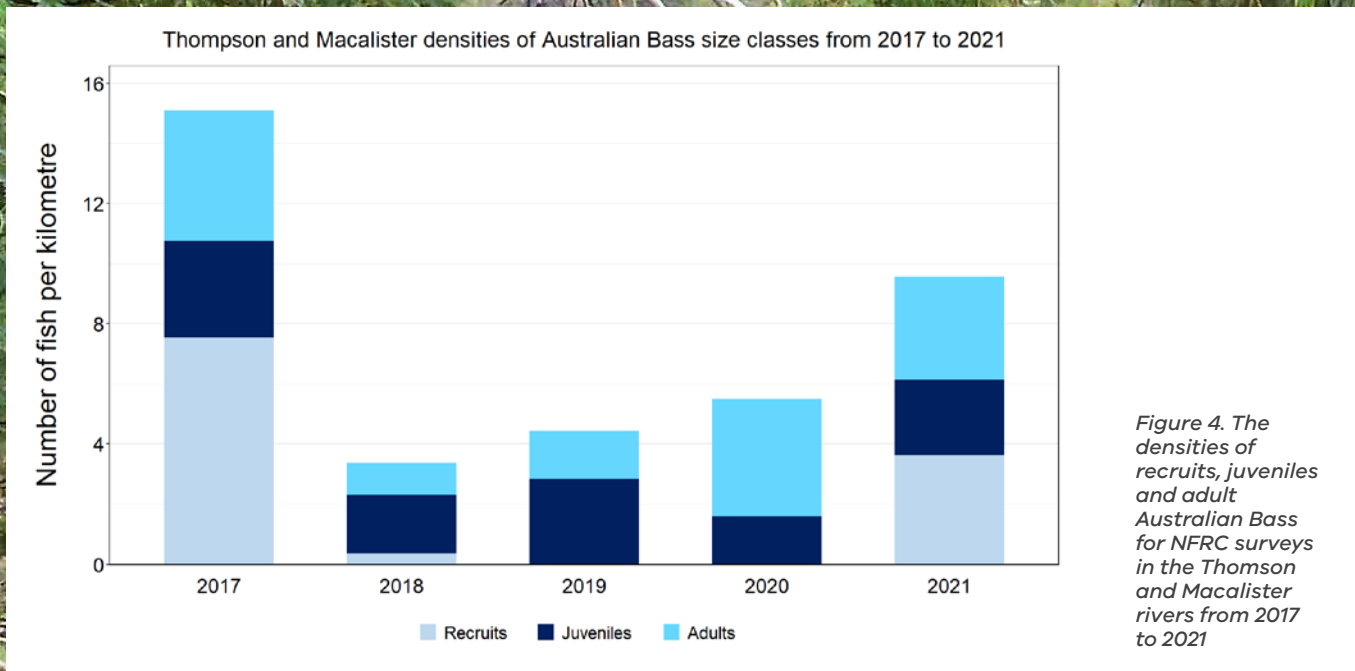


Figure 4. The densities of recruits, juveniles and adult Australian Bass for NFRC surveys in the Thomson and Macalister rivers from 2017 to 2021

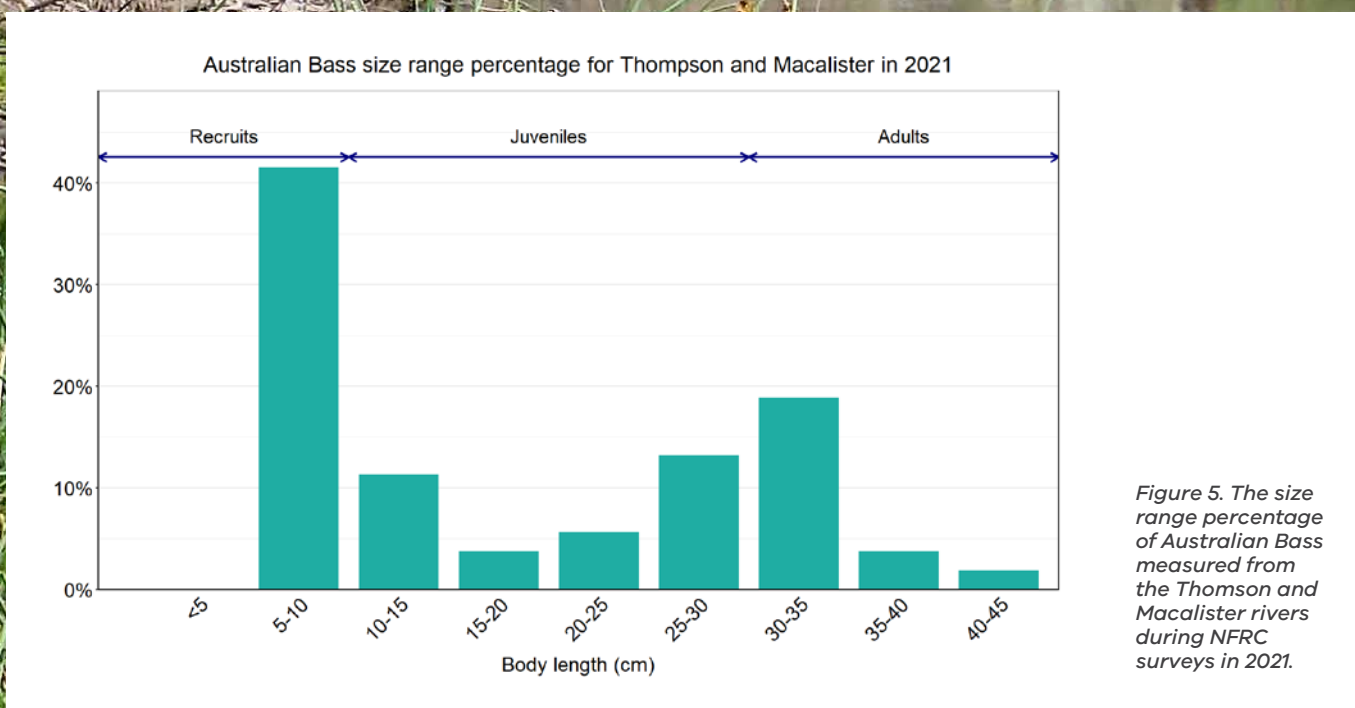
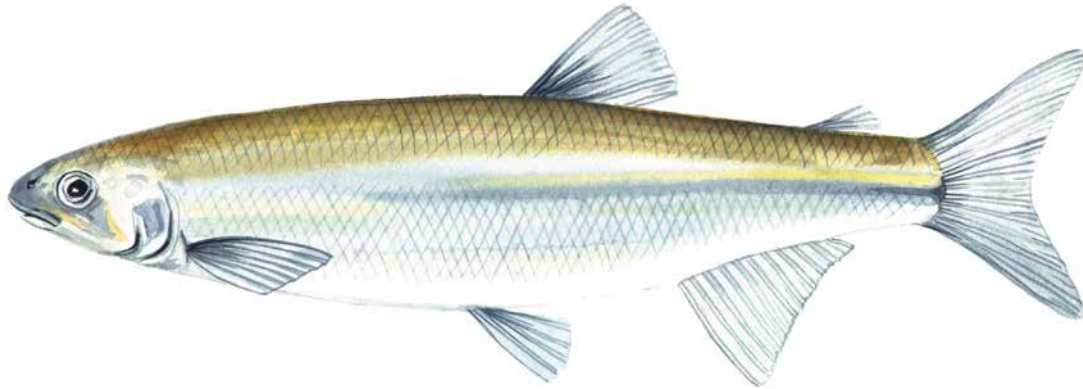


Figure 5. The size range percentage of Australian Bass measured from the Thomson and Macalister rivers during NFRC surveys in 2021.

Australian Grayling

Prototroctes maraena



Key Health Indicators

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

Monitoring Results

Total number of fish caught	1
Fish per 1km of waterway	0.18
Largest fish by length (cm)	13.7
Largest fish by weight (kg)	0.03
% of the catch that is legal size	NA

THOMSON + MACALISTER R

THREATENED SPECIES

Australian Grayling (*Prototroctes maraena*) are a diadromous species that has undergone declines in distribution and abundance across its range. Australian Grayling are 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, 2018 and 2020 with juveniles also detected in 2020 and 2021 (Figure 6). No Australian Grayling were detected in 2019. The presence of juveniles in 2020 and 2021 (Figure 6, Figure 7) points towards successful recent recruitment. This indicates stream conditions were suitable for recruits to be attracted into the system in 2019 and 2020.

Stocking

No stocking has occurred.

Australian Grayling

Prototroctes maraena

Thompson and Macalister densities of Australian Grayling size classes from 2017 to 2021

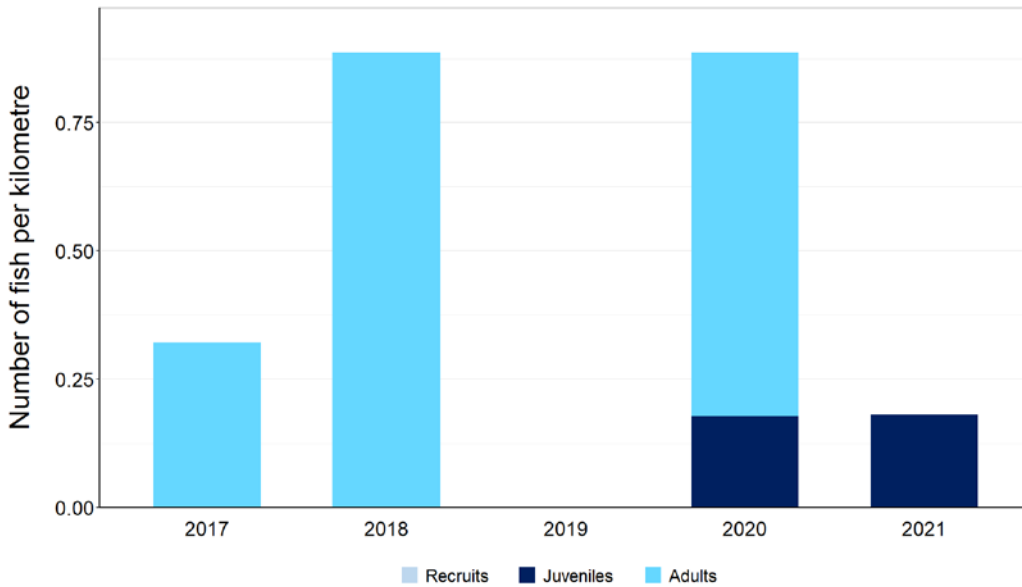


Figure 6. The densities of recruits, juveniles and adult Australian Grayling for NFRC surveys in the Thomson and Macalister rivers from 2017 to 2021

Australian Grayling size range percentage for Thompson and Macalister in 2021

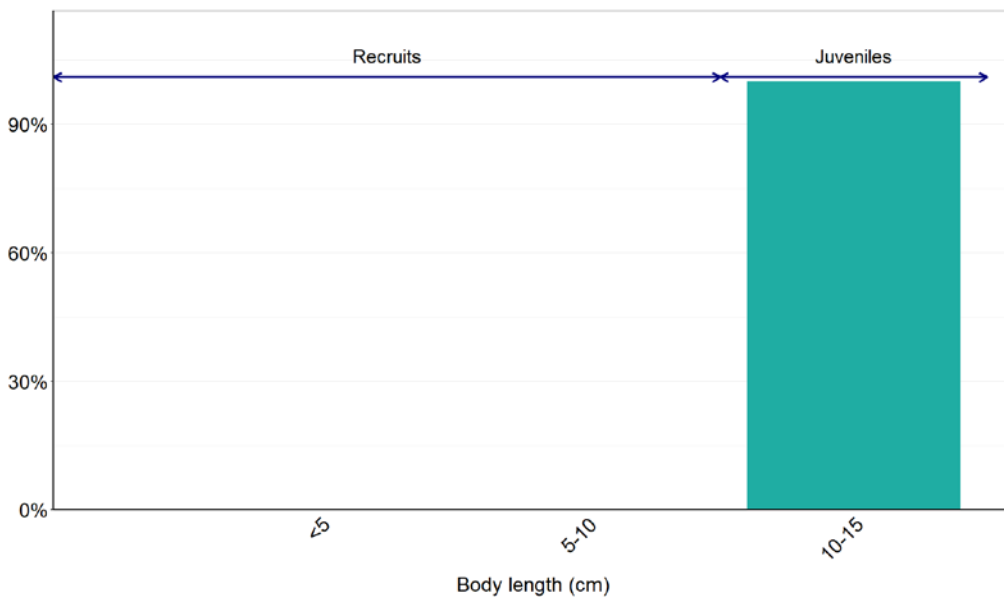


Figure 7. The size range percentage of Australian Grayling in the Thomson and Macalister rivers during NFRC surveys in 2021.