Native Fish Report Card

Mitchell River 2024

East Gippsland Region

This report card summarises the **2024** Native Fish Report Card (NFRC) survey in the Mitchell River

SITES: 11 ELECTROFISHING

Fish found in the Mitchell River in our 2024 surveys

Target Species

✓ *recorded in 2024*

✓ **Australian Bass**

Percalates novemaculeata

✓ **Australian Grayling**

Prototroctes maraena

Non-target species

✓ *recorded since 2017**

Large-bodied native species

- ✓ Cox's Gudgeon
- ✓ Long-finned Eel
- ✓ Pouched Lamprey
- ✓ Short-finned Eel
- ✓ Short-headed Lamprey
- ✓ Striped Gudgeon
- ✓ Tupong

+ 10 estuarine species (see following pages)

Small-bodied native species

- ✓ Australian Anchovy
- ✓ Australian Smelt
- ✓ Common Galaxias
- ✓ Dwarf Flatheaded Gudgeon
- ✓ Flatheaded Gudgeon
- ✓ Flinder's Pygmy Perch
- ✓ Port Jackson Glassfish
- ✓ Tamar River Goby

Exotic species

- ✓ Common Carp
- ✓ Goldfish

** 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 to monitor population dynamics of key iconic fish species that have high recreational and/or conservation values, in large rivers across Victoria. In the Mitchell River, the target species are Australian Bass and Australian Grayling. The equipment used and habitats surveyed target these species, which are measured to determine their population structures. Other fish species that are incidentally captured are counted, but not measured. Surveys occur in February each year, at 11 sites from Bairnsdale to Kingswell Bridge. One site on the upper Mitchell was unable to be fished in 2022 and 2024 due to higher flows restricting access. Surveys on the Mitchell River use Smith-Root boat electrofishing at most sites, with elevated salinities at the two bottom sites requiring Grassl boat electrofishing[1].

Summary of key health indicators for target species in 2024

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

Recent recruitment means young-of-year fish

** - cannot be determined due to low abundances*

Australian Bass are close to the edge of their natural range in the Mitchell River system. Historically they occurred no further west than Wilsons Promontory. Australian Bass are an important recreational species in the Mitchell River with the population aided by stockings. Australian Grayling was once widespread throughout coastal Victoria, including the Mitchell River system. Changes to flow regimes and addition of barriers have negatively affected the species. The detection of Australian Grayling in seven of the eight years indicates that conditions are favourable for the survival of the population.

Non-target species The non-target fish species that have been incidentally recorded in the Mitchell River during NFRC surveys since 2017 are:

Large-bodied native species Cox's Gudgeon, Long-finned Eel, Pouched Lamprey, Short-finned Eel, Short-headed Lamprey and Tupong were recorded in 2024. The Striped Gudgeon has also been recorded in previous NFRC surveys. Four large-bodied estuarine species (Black Bream, Estuary Perch, River Garfish and Sea Mullet) were also recorded in 2024. Other large-bodied estuarine species previously recorded in surveys are Eastern Australian Salmon, Flat-tail Mullet, Luderick, Sand Mullet, Tailor and Yellow-eye Mullet. All ten estuarine species are restricted to the lowest Mitchell River site (Bairnsdale) and Clifton Creek. Long-finned and Short-finned Eel, Pouched and Short-headed Lamprey and Tupong are diadromous species found throughout coastal Victoria. Cox's and Striped Gudgeon are only found in coastal areas of eastern Victoria. Cox's Gudgeon is listed as endangered under the *Flora and Fauna Guarantee Act* 1988 in Victoria. It was recorded in 2019 (the first record in the Mitchell catchment since 1982), 2021, 2022 and 2024.

Small-bodied native species Tamar River Goby, an estuarine species, was recorded in 2024 for the first time during NFRC surveys. Australian Smelt, Common Galaxias and Flatheaded Gudgeon were recorded in 2024, with Australian Smelt and Common Galaxias recorded in all eight NFRC surveys and Flatheaded Gudgeon in seven. Australian Smelt and Flatheaded Gudgeon are common species distributed across all of Victoria. The Common Galaxias is a diadromous species found in coastal Victoria. Other species recorded in previous NFRC surveys are Dwarf Flatheaded Gudgeon and Flinder's Pygmy Perch (listed as vulnerable in Victoria under the *Flora and Fauna Guarantee Act* 1988) which have a more restricted distribution and are rarer. Two small-bodied estuarine species have also been recorded in previous NFRC surveys; Australian Anchovy and Port Jackson Glassfish which are only expected to be detected at the lowest Mitchell River site (Bairnsdale) and Clifton Creek.

Exotic fish species Common Carp was the only exotic species detected in 2024 (and in all eight NFRC surveys). It is widespread throughout the Mitchell River, with juveniles detected as far upstream as Kingswell Bridge in 2020 and 2023. Goldfish has been recorded in previous surveys, at Bairnsdale, the lowest site on the Mitchell River mainstem.

Other native fish species known from the Mitchell River Some fish species known to occur in the Mitchell River have never been recorded during NFRC surveys (e.g. Climbing Galaxias, Dwarf Galaxias, Mountain Galaxias, Spotted Galaxias, River Blackfish). The Climbing and Spotted Galaxias are diadromous species occurring in coastal Victoria. They have patchy distributions, in lowland areas, but are hard to detect using NFRC sampling methods. The Mountain Galaxias occurs on both sides of the Great Dividing Range from Melbourne eastwards in Victoria. In the Mitchell River it is widespread and patchy in the lower areas, but more common in higher altitudes and is hard to detect using the NFRC sampling methods. The Dwarf Galaxias (listed as vulnerable nationally under the *Environmental Protection and Biodiversity Conservation Act* 1992) is often found in offstream habitats. River Blackfish is a lowland species, generally found at altitudes below 200m. This species has declined in distribution and abundance across Victoria. It was historically considered to be widespread, but with a patchy distribution in the Mitchell River basin[2].

Other notable species Surveys have also recorded Platypus.

Environmental and Management Context

Environment

Summer base flows were recorded in 2017-20 and 2023, with slightly higher flows in 2021 and above summer base flows in 2022 and 2024. During 2020 and 2021 turbidity was elevated at sites due to increased sediment loads following the 2019/2020 fires. The elevated turbidity decreased electrofishing efficiency in those two years. Higher flows restricted access to one site, therefore only 10 sites were fished in 2022 and 2024.

Waterway and fisheries management efforts in the Mitchell River

Many rehabilitation actions have occurred, and are underway, to improve the health of the Mitchell River. These are informed in particular by the East Gippsland Waterway Strategy 2014-2022.

The East Gippsland Catchment Management Authority (EGCMA) continues to work closely with landholders, partner agencies and Traditional Owners to improve the health of the Mitchell River. This year the focus has been on controlling weeds, particularly willows, along waterways in the catchment. This work is of particular importance following bushfires. Other works in the Mitchell River have included planting native plants, constructing stock exclusion fencing along rivers, stabilising the banks and creating more habitat for fish by reintroducing large woody habitat. Some monitoring of the fish community has occurred including in relation to associated with rehabilitation efforts. In the upper Mitchell River catchment well above the NFRC area, there have been surveys of a suite of threatened galaxiid species as well as Forest Protection Survey Program (FPSP) surveys of fish and crayfish. The EGCMA, DEECA and the Victorian Fisheries Authority support rehabilitation and management of the Mitchell River and its fish community.

See the ARI website for more information about the Native Fish Report Card program.

[1]. Lieschke et al. (2019). Extending the effectiveness of electrofishing to estuarine habitats: Laboratory and field assessments. Transactions of the American Fisheries Society, 148:584–591.

[2]. Lieschke et al. (2013). The status of fish populations in Victorian rivers 2004–2011 – Part A. ARI 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 Mitchell River where NFRC sampling occurs

Figure 2. Range of size classes of Australian Bass

Figure 3. An Australian Grayling

Australian Bass

Percalates novemaculeata

Key Health Indicators

- Recent recruitment
- Multiple size classes
- Mature fish present

Monitoring Results	
Total number of fish caught	124
Fish per 1km of waterway	20.8
Largest fish by length (cm)	42.8
Largest fish by weight (kg)	1.26
% of the catch that is legal size	23.4

MITCHELL RIVER | RECREATIONAL SPECIES

Australian Bass (*Percalates novemaculeata*) - formerly *Macquaria novemaculeata* – have been collected in all eight NFRC surveys. Abundance of Australian Bass in 2024 was lower than the peak found in 2023. This is attributed to a reduction in the number of juveniles present without a corresponding rise in the number of adults (Figure 4).

Recruits, juveniles and adults have been collected in all eight years of surveys. The population in 2024 was dominated by recruits (which are likely from stockings), but the spread of fish sizes detected (Figure 5) indicates that stocked fish are surviving and reaching maturity.

Stocking

Ten thousand Australian Bass were stocked in 2016; 150,000 in 2017; 30,000 in 2018; 44,000 in 2019; 66,000 in 2020; 100,000 in 2021; 67,000 in 2022 and 101,000 in 2023.

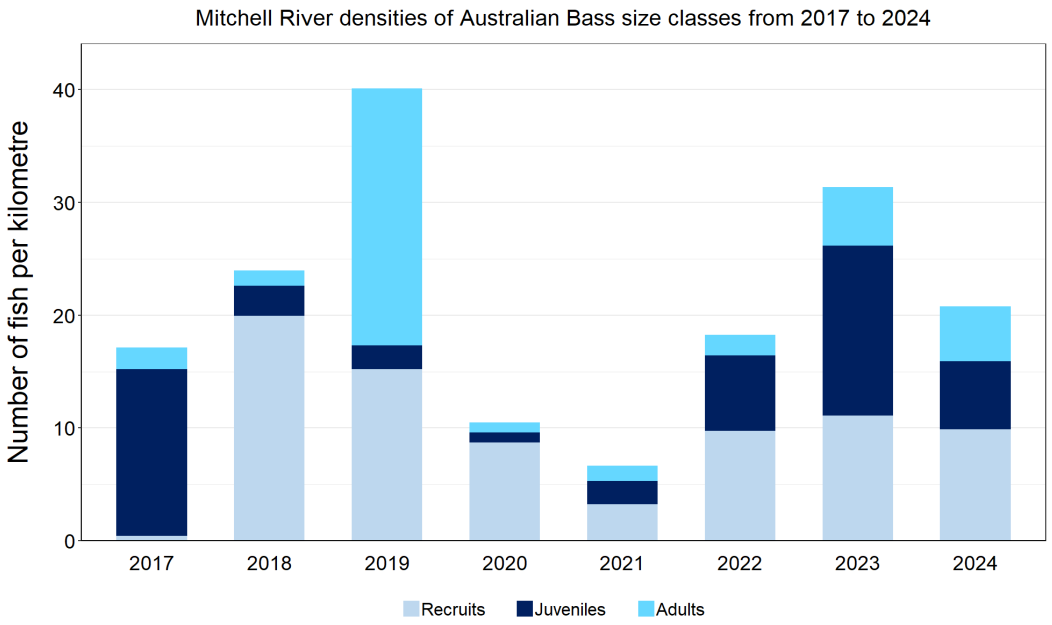


Figure 4. The densities of recruits, juveniles and adult Australian Bass for NFRC surveys in the Mitchell River from 2017 to 2024

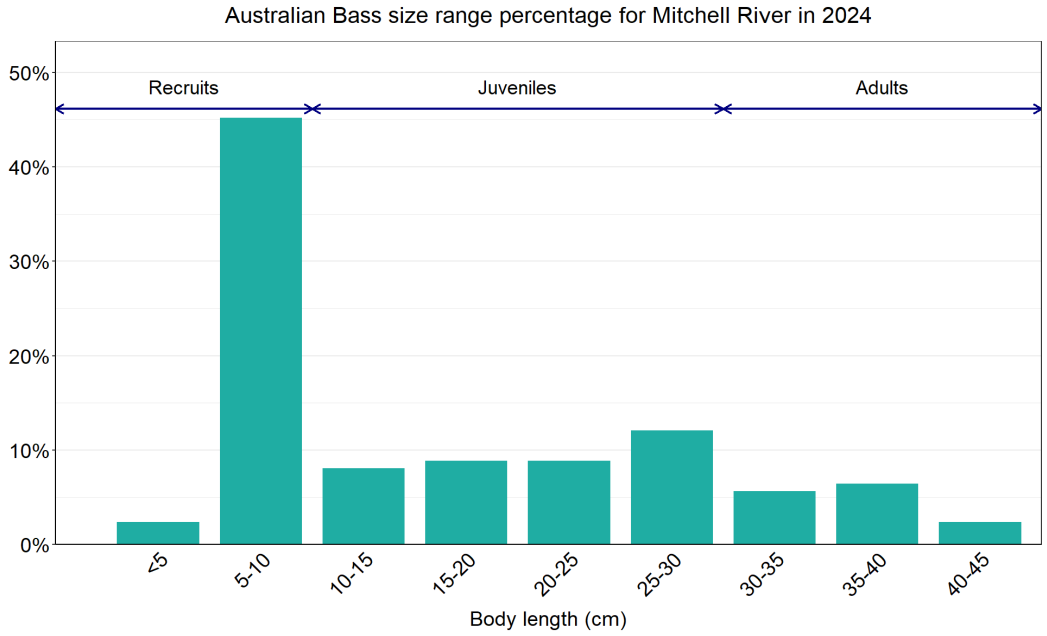
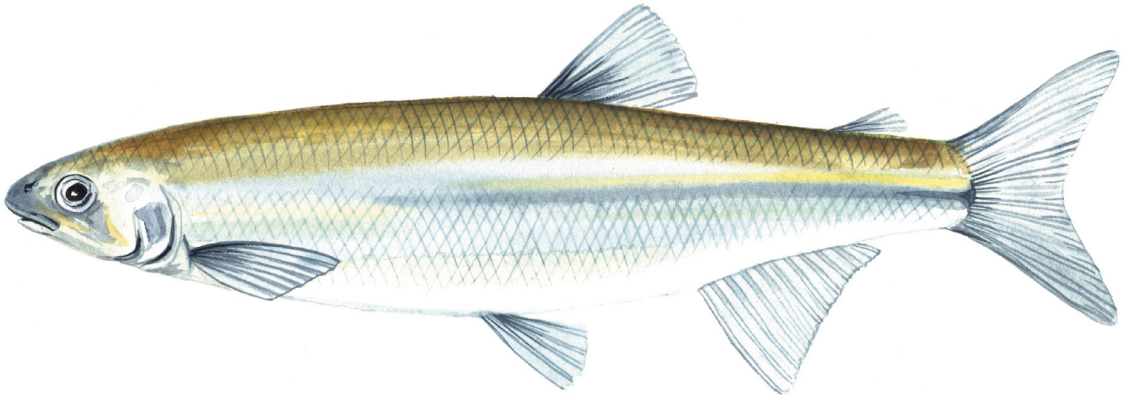


Figure 5. The size range percentage of Australian Bass measured from the Mitchell River during NFRC surveys in 2024

Australian Grayling

Prototroctes maraena



Key Health Indicators

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

Monitoring Results	
Total number of fish caught	8
Fish per 1km of waterway	1.34
Largest fish by length (cm)*	23.8
Largest fish by weight (kg)	0.12
% of the catch that is legal size	NA#

This species is a Protected Freshwater Species and taking or possessing is prohibited (Victorian Recreational Fishing Guide 2023-24).

MITCHELL RIVER **THREATENED SPECIES**

Australian Grayling (*Prototroctes maraena*) is a diadromous species which 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 (*Environmental Protection and Biodiversity Act* 1999). 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.

Adults have been captured in six of the eight years of NFRC surveys (2017, 2019–21 and 2023-24) (Figure 6). The continued presence of adult Australian Grayling indicates conditions continue to be favourable for the survival of this species in the Mitchell River.

Only adults and juveniles were detected in 2024 (Figure 6; Figure 7), however, all the fish classified as juveniles were at the bottom range (100-105mm) of the metric used to classify juveniles (100-150mm). This would suggest stream conditions were suitable for recruits to be attracted into the system in spring 2023 and is the first time in several years (since the springs of 2019 and 2020) that recruits have been detected in the Mitchell River.

Stocking

No stocking has occurred.

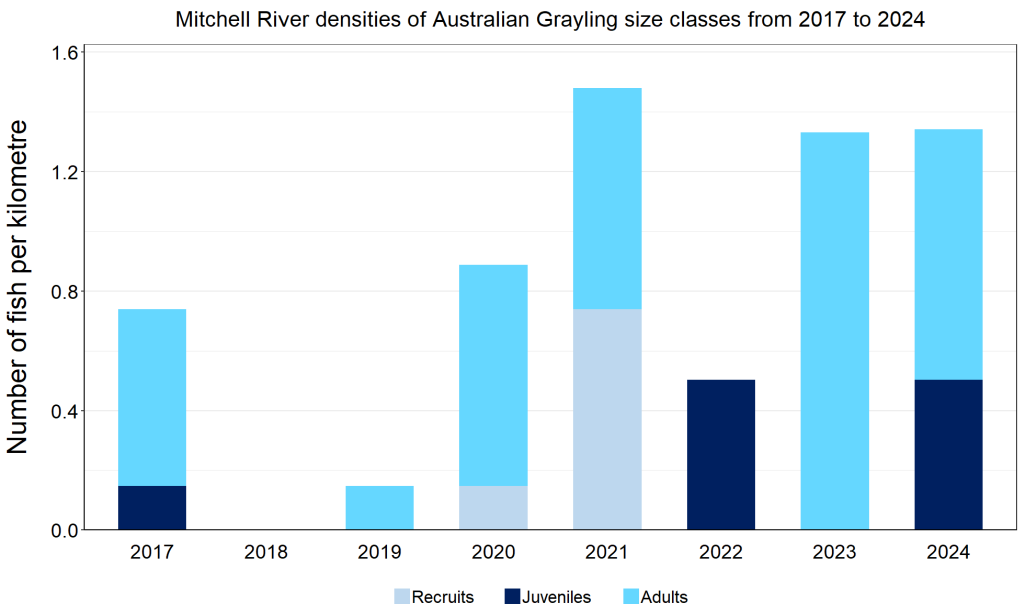


Figure 6. The densities of recruits, juveniles and adult Australian Grayling for NFRC surveys in the Mitchell River from 2017 to 2024

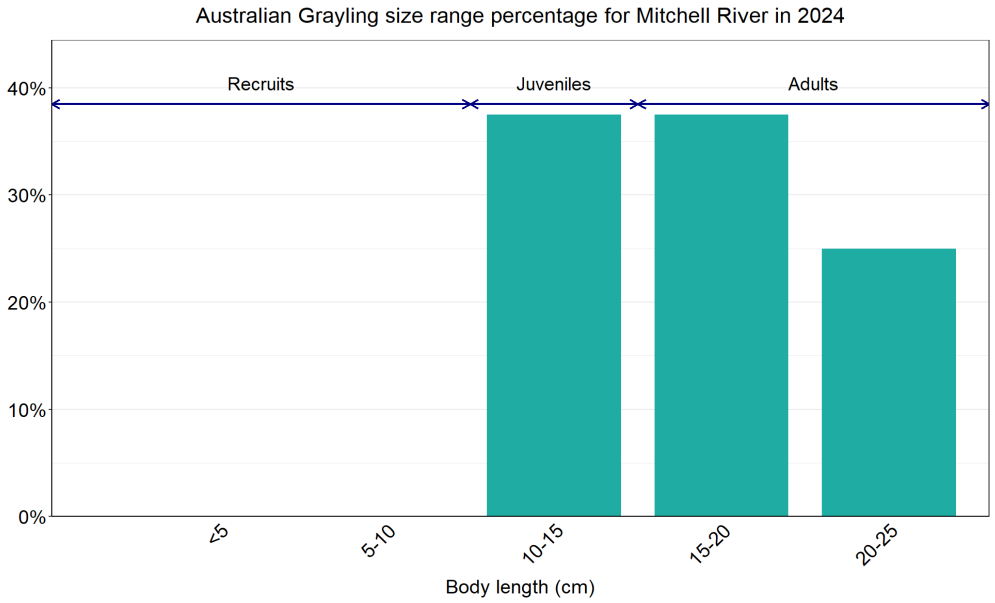


Figure 7. The size range percentage of Australian Grayling measured from the Mitchell River during NFRC surveys in 2024

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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