**Thomson and Macalister Rivers 2023**

***West Gippsland region***

**This report card summarises the 2023 Native Fish Report Card (NFRC) survey in the Thomson and Macalister rivers**

**Sites 9, WGCMA, Electrofishing**

**Fish found in Thomson and Macalister Rivers for NFRC**

**Target species**

Australian Bass

Australian Grayling

**Non-target species captured since 2017\***

**Large-bodied native species**

Golden Perch

Long-finned Eel

Pouched Lamprey

Short-finned Eel

Tupong

And a further five fish species which are estuarine (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

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

LOGOS – ARI, DEECA

**Thomson and Macalister Rivers 2023**

**Fish Community**

**NFRC target species**

**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 Rainbow Creek junction was shifted to the Rainbow Creek just upstream the Thomson River junction in 2021 due to access logistics. The original Denison site was fished in 2023, as flooding changed the instream channel, allowing the whole site to be fished. The Thomson and Macalister river 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 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. The detection of Australian Grayling in six of the seven 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**

Other large-bodied species recorded in surveys are 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 considered as estuarine species. Long-finned and Short-finned Eel, Pouched Lamprey and Tupong are diadromous species found throughout coastal Victoria. Golden Perch, a translocated species in these rivers, 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 species distributed across all of Victoria. The Common Galaxias is a diadromous species found across coastal Victoria. Flinders Pygmy Perch (listed as vulnerable in Victoria under the Flora and Fauna Guarantee Act 1988) are common in offstream habitats such as billabongs, wetlands and lagoons. Australian Anchovy are an estuarine species and are 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 fish species known from the Thomson and Macalister rivers**

Some fish species known to occur in the Thomson and Macalister rivers have never been recorded during NFRC surveys. For example, no Climbing Galaxias, Mountain Galaxias, Spotted Galaxias, Short-headed Lamprey or River Blackfish have been detected in the surveys. The Climbing Galaxias, Spotted Galaxias and Short-headed Lamprey are diadromous species in coastal Victoria. The Climbing Galaxias and Spotted Galaxias have patchy distributions and are found in lowland areas but are hard to detect using NFRC sampling methodology. The Short-headed Lamprey were considered widespread but in recent times adults are rarely seen and are usually nocturnal. The Mountain Galaxias is found both sides of the divide from Melbourne eastwards in Victoria. In the Thomson and Macalister rivers they were patchy and relatively uncommon in the lower areas but were more common in higher altitudes and are hard to detect using the NFRC sampling methodology. The River Blackfish are a lowland species, generally found at altitudes below 200 metres. This species has suffered a decline in distribution and abundance across the State and was historically considered relatively widespread throughout the Thomson basin1. This species is still present in the Thomson River, though upstream of NFRC sampling sites.

**Other notable species**

Surveys have also recorded Eastern Long Necked Turtle.

LOGOS – ARI, DEECA, NFRC

1. Lieschke, J.A., Dodd, L., Stoessel, D., Raadik, T.A., Steelcable A., Kitchingman, A. and Ramsey, D.

(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.

**Thomson and Macalister Rivers 2023**

**Environmental and Management Context**



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

**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](https://www.wgcma.vic.gov.au/our-region/rivers_and_estuaries/waterway-strategy). 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](https://www.ari.vic.gov.au/research/rivers-and-estuaries/assessing-benefits-of-water-for-the-environment)). The [West Gippsland Catchment Management Authority](https://www.wgcma.vic.gov.au/), DEECA and VFA support rehabilitation and management of the Thomson and Macalister rivers.

PHOTOS

LOGOS – ARI, DEECA, NFRC

**Australian Bass**

**Thomson and Macalister Rivers, West Gippsland region**

**Key Health Indicators**

Recent recruitment Yes

Multiple size classes Yes

Mature fish present Yes

**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)**

**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 2). 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 2). There was a wide range of sizes detected in 2023 from recruits to large adult fish (Figure 3).**

**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.

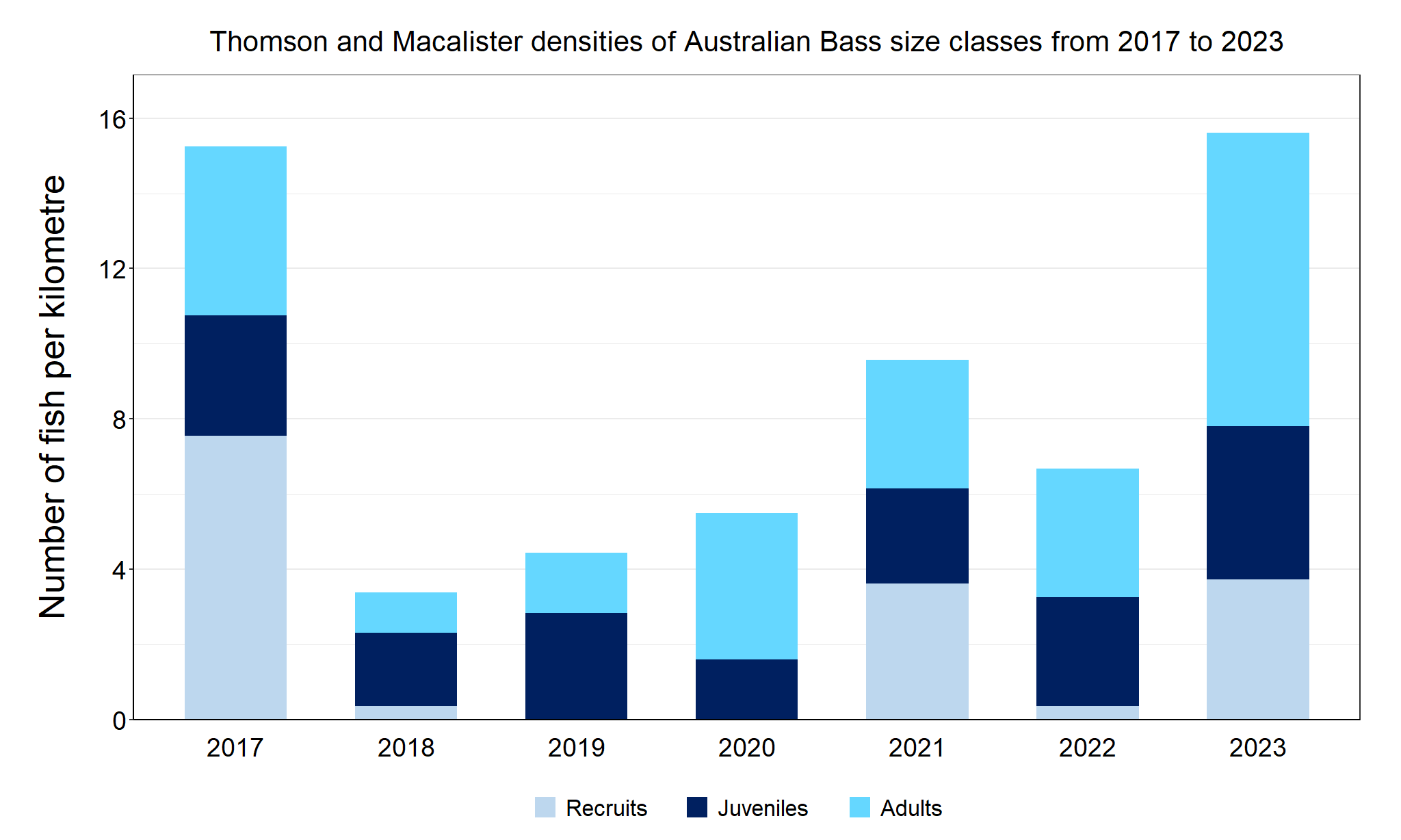


Figure 2. The densities of recruits, juveniles and adult Australian Bass in the Thomson and Macalister rivers from 2017 to 2023

A graph of a number of people

Description automatically generated

Figure 3. The size range percentage of Australian Bass in the Thomson and Macalister rivers in 2023

**Australian Grayling**

**Thomson and Macalister Rivers, West Gippsland region**

**Key Health Indicators**

Recent recruitment Cannot be determined

Multiple size classes Cannot be determined

Mature fish present 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**

**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 4). No Australian Grayling were detected in 2019 or 2022. The presence of juveniles in 2020 and 2021 (Figure 4) 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 5).**

**Stocking**

No stocking has occurred.

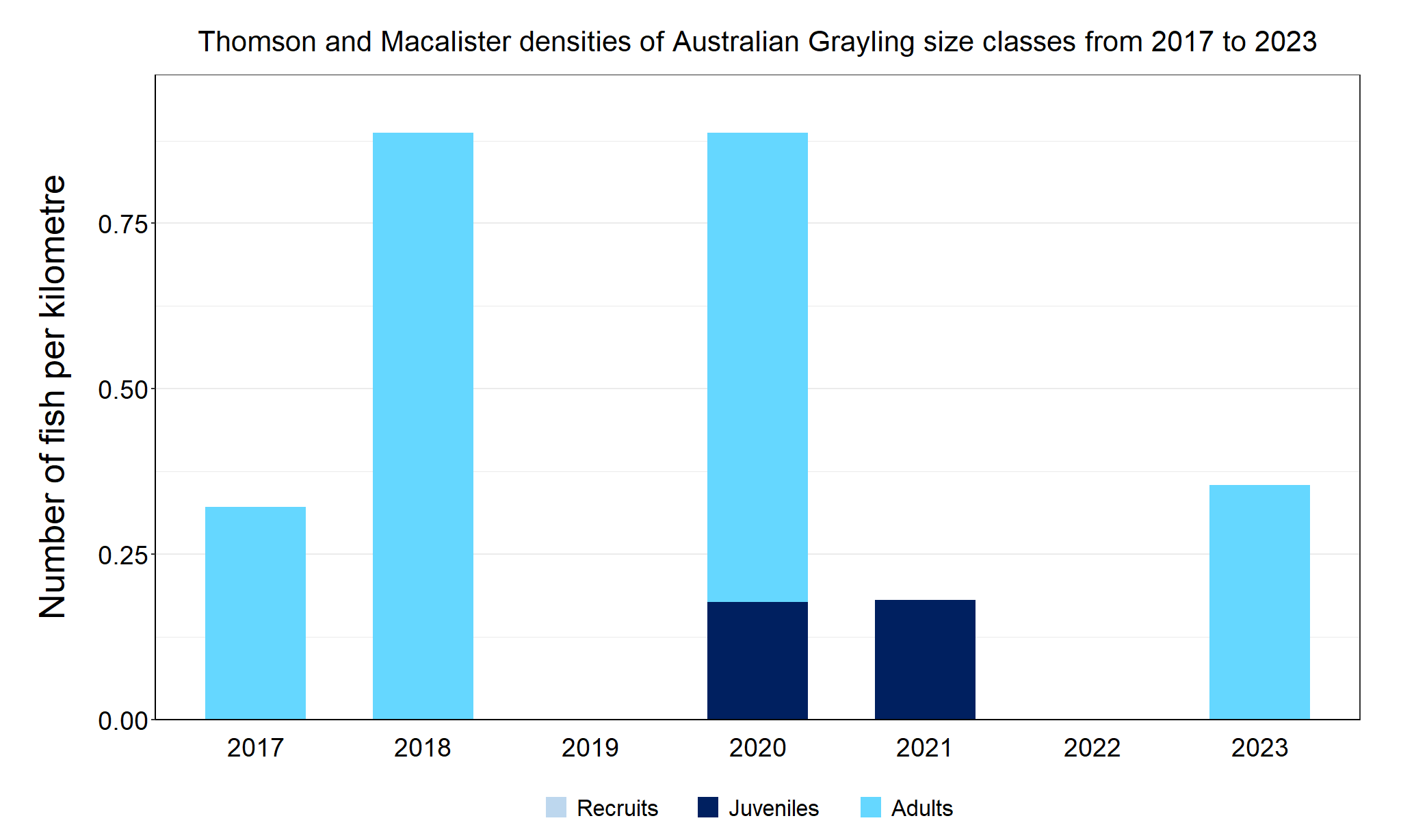


Figure 4. The densities of recruits, juveniles and adult Australian Grayling in the Thomson and Macalister rivers from 2017 to 2023

A graph with numbers and lines

Description automatically generated

Figure 5. The size range percentage of Australian Grayling in the Thomson and Macalister rivers 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.

Logo© The State of Victoria Department of Energy, Environment and Climate Action 2023. This work is licensed under a Creative Commons Attribution 4.0 International licence. To view a copy of this licence, visit creativecommons.org/licenses/by/4.0/

ISSN 2981-9083 Online (pdf/word)