

# Native Fish Report Card

## Ovens River 2023

North East Region



SITES: 12

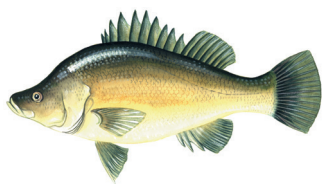
ELECTROFISHING

### Fish found in the Ovens River in our 2023 surveys



#### Target Species

✓ recorded in 2023



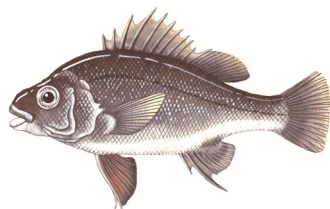
✓ **Golden Perch**

*Macquaria ambigua*



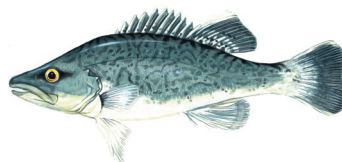
✓ **Murray Cod**

*Maccullochella peelii*



✓ **Macquarie Perch**

*Macquaria australasica*



✓ **Trout Cod**

*Maccullochella macquariensis*



#### Non-target species

✓ recorded since 2017\*

##### Large-bodied native species

- ✓ River Blackfish
- ✓ Two-spined Blackfish

##### Small-bodied native species

- ✓ Australian Smelt
- ✓ Carp Gudgeon
- ✓ Flatheaded Gudgeon
- ✓ Unspecked Hardyhead
- ✓ Obscure Galaxias

##### Exotic species

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

\* 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 Ovens River, the target species are Golden Perch, Macquarie Perch, Murray Cod and Trout Cod. Surveys occur in March/April each year, at 12 sites from just downstream of Porepunkah to the junction with Lake Mulwala (Boorhaman North). 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
Golden Perch	No	Yes	Yes
Macquarie Perch	Yes	Yes	Yes
Murray Cod	Yes	Yes	Yes
Trout Cod	No	Yes	Yes

### Recent recruitment means young-of-year fish

Both Macquarie Perch and Trout Cod were historically abundant in the lower and mid Ovens River, but experienced dramatic declines until they were considered locally extinct. The status of both species has now improved in recent times. Overall, the Ovens River appears to be maintaining healthy Murray Cod and Trout Cod populations. Golden Perch are historically rare upstream of Wangaratta, while low numbers of adults are consistently found downstream. An integrated program for the recovery of Macquarie Perch is showing encouraging results. As the section surveyed is downstream of the cooler trout waters, large abundances of trout species are not expected in the NFRC surveys.

### Non-target species

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

### Large-bodied native species

Other large-bodied species recorded are River Blackfish and Two-spined Blackfish. Two-spined Blackfish are only

found at the top few sites monitored in the Ovens River. Across its range, the species occurs >200 m altitude, with few records down to 180 m altitude (this correlates to around Whorouly in the Ovens system). River Blackfish are a lowland species, generally found at altitudes < 200 metres. This species has suffered a decline in distribution and abundance across Victoria<sup>1</sup>. It has been recorded in all years in the Ovens system, being more frequently recorded upstream of Wangaratta.

### Small-bodied native species

Some of the small-bodied species recorded within the Ovens River, including Australian Smelt and Flatheaded Gudgeon, are common and widespread throughout this river and more broadly within the Murray-Darling Basin. The Unspecked Hardyhead is a lowland species and only found in the lower regions of tributaries of the Murray River. This species is not expected to be found at the upper sites. Similarly, Carp Gudgeon are a lowland species and are not expected to be recorded > 200 m altitude. These are more common in slower flowing habitats, especially downstream of Wangaratta. The Obscure Galaxias is normally found in lowland areas up to 260 m altitude.

### Exotic fish species

Common Carp and Goldfish are widely distributed across sampling sites, with Eastern Gambusia more common in the slower flowing waters. Redfin are also distributed throughout, but in lower abundances. Oriental Weatherloach are increasing in distribution and abundance and are found in slower flowing areas, often in silt substrate. This species often disperses during floods. Brown and Rainbow Trout are cool water species and have only been detected upstream Wangaratta (Rainbow Trout in 2022 and Brown Trout in 2023). This is not unexpected after the cool and wet spring summers of 2021/2 and 2022/3.

### Other native fish species known from the Ovens River

Some fish species known to occur in the Ovens River have never been recorded during NFRC surveys and for some species this is likely due to the habitats they live in not being surveyed. For example, no Flatheaded Galaxias, Silver Perch or Southern Pygmy Perch have been recorded. Flatheaded Galaxias and Southern Pygmy Perch are often more common in offstream habitats (billabongs, wetlands, lagoons). Silver Perch have been recorded historically up to 140 m altitude and have declined across their range.

### Other notable species

Surveys have also recorded Murray Crayfish, Yabbies, Eastern Long-necked Turtles and Platypus.

<sup>1</sup> Hammer et al. (2014) A multigene molecular assessment of cryptic biodiversity in the iconic freshwater blackfishes (Teleostei: Percichthyidae: Gadopsis) of south-eastern Australia. *Biological Journal of the Linnean Society*.



## Environmental and Management Context

### Environment

In 2023, river flows were similar to 2020-22, but higher than 2017-19 sampling events. The higher flows impact on the sampling efficiency, especially for small species or small individuals of large-bodied species. The 2020-23 survey results are therefore likely lower than comparable sampling conditions in 2017-19.

### River rehabilitation efforts in the Ovens River

Many rehabilitation actions have occurred, and are underway, to improve the health of the Ovens River and its suite of large-bodied native fish species including Murray Cod, Trout Cod, Golden Perch and Macquarie Perch. These are informed by the North East Waterway Strategy 2014-22. In particular, since 2008, there has been a large scale coordinated effort by many government agencies and the community to protect and plant streamside vegetation, install instream woody habitat and fishways to improve fish passage, and remove Carp. These efforts include the Demonstration Reach program and targeted monitoring for Macquarie Perch and Trout Cod, as well as reintroduction and recovery efforts. The [North East Catchment Management Authority](#), DELWP and the [Victorian Fisheries Authority](#) support rehabilitation and management of the Ovens River and its fish community.

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

*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 Ovens River where NFRC sampling occurs.

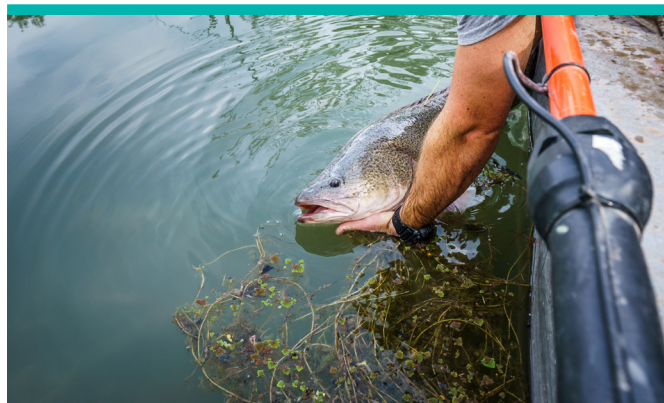


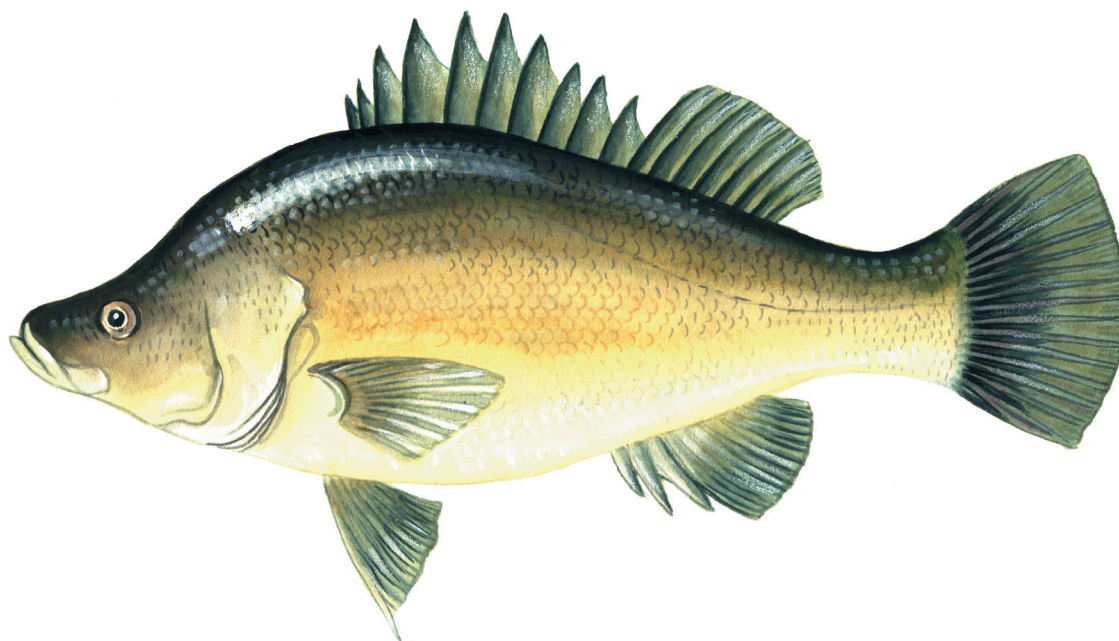
Figure 2. A Murray Cod



Figure 3. A Trout Cod

# Golden Perch

*Macquaria ambigua*



## Key Health Indicators

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

## Monitoring Results

Total number of fish caught	23
Fish per 1km of waterway	3.39
Largest fish by length (cm)	54
Largest fish by weight (kg)	2.83
% of the catch that is legal size	91.3

## OVENS RIVER

## RECREATIONAL SPECIES

Low abundances of Golden Perch (*Macquaria ambigua*) were detected in all years, although abundances in 2023 were over double the next highest year (2021) (Figure 4). The increase in abundances was primarily adults from Wangaratta and downstream. All individuals captured in 2017 and 2018 were adults and were captured downstream of Wangaratta. Juvenile Golden Perch have predominantly been captured upstream of Wangaratta (2019–21 and 2023), with only three juveniles detected downstream of Wangaratta (a single individual in 2020, 2021 and 2023). These are the first small Golden Perch detected in the Ovens River and are likely to be the result of Golden Perch being stocked into the Ovens River (first stockings in 2017). Recruits of this species are difficult to catch using this sampling methodology of electrofishing and none have been detected during the seven years of sampling (Figure 4; Figure 5). Adult Golden Perch were only collected upstream of Wangaratta in 2021–23. The large flooding of 2022 may have led to fish immigrating into and dispersing up the system from the Murray River and Lake Mulwala.

## Stocking

In 2016 no Golden Perch were stocked; 30,000 stocked in 2017; 50,293 in early 2018; 51,000 in 2019; 54,000 in 2020; 50,000 in February 2021 and 54,000 in 2022 and 50,000 in January 2023.



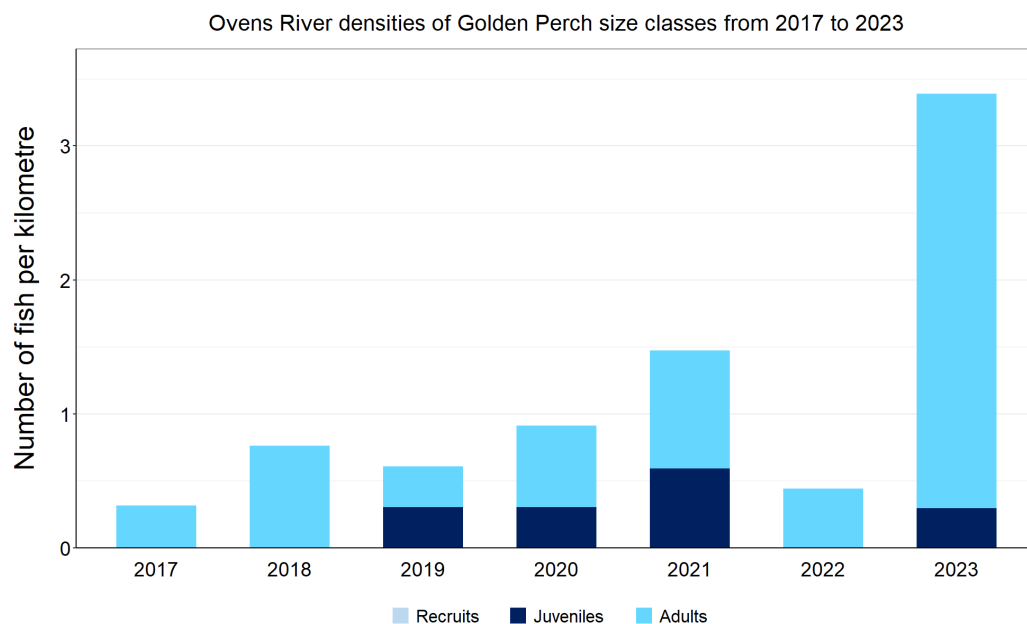


Figure 4. The densities of recruits, juveniles and adult Golden Perch for NFRC surveys in the Ovens River from 2017 to 2023

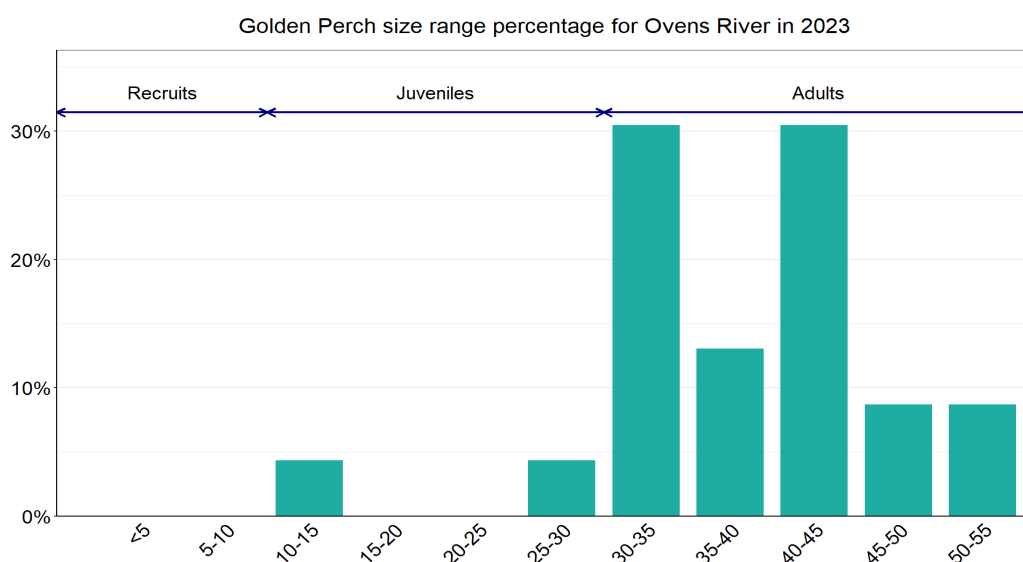


Figure 5. The size range percentage of Golden Perch measured from the Ovens River during NFRC surveys in 2023

# Macquarie Perch

*Macquaria australasica*



## Key Health Indicators

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

## Monitoring Results

Total number of fish caught	92
Fish per 1km of waterway	13.55
Largest fish by length (cm)	37.2
Largest fish by weight (kg)	0.79
% of the catch that is legal size	NA

**Stocking** Stocking of fingerlings began in the Ovens River in 2011; translocations from Lake Dartmouth started in 2014. Stockings relevant to NFRC survey areas include: 6400 fingerlings and 62 adult fish (ex-broodfish) into the Ovens River in 2016; 8300 fingerlings and 675 translocated fish in 2017; 15,000 fingerlings, 10 adult broodfish and 474 translocated fish in 2018 (following NFRC surveys); 7500 fingerlings in 2019; 700 fingerlings in 2020; 32,000 fingerlings in 2021, 40,000 fingerlings in 2022 and 10,500 in February 2023. In addition, 15,300 fish have been stocked into the King River in 2022 and 4950 in February 2023. All translocations involved a range of sizes from young-of-year to adults.

## OVENS RIVER

## THREATENED SPECIES

Most Macquarie Perch (*Macquaria australasica*) collected in all seven years of sampling were juveniles (Figure 6; 7), with recruitment recorded in all years except 2021. A large increase of adult fish was detected in 2023, indicating fish are surviving to maturity. From 2013-2018 there was a concerted effort to translocate fish of different sizes and ages from Lake Dartmouth, rather than only stock fingerlings. Sixty-two ex-broodstock fish from the Yarra River and Lake Dartmouth were also released in 2016. Genetic analysis indicated that the Macquarie Perch caught in 2018 were a mix of fish that were stocked, translocated, and the result of natural breeding in the Ovens River, with recruits detected from parents from both the Yarra River and Lake Dartmouth translocated fish<sup>2</sup>. The fish that resulted from natural breeding within the Ovens River had ancestors that were translocated fish from the Yarra River and Lake Dartmouth; there was much greater representation (thereby survival and recruitment) of fish with a mixed ancestry or ancestry from the Yarra River only. In 2023, the first detections of Macquarie Perch (two juveniles and one recruit) from three separate sites were recorded downstream of Wangaratta. Previously all Macquarie Perch were captured upstream of Wangaratta. This finding, coupled with records of fish extending >20km upstream of the stocked sites in the Ovens and lower Buffalo rivers, as well as in the King River near Edi (more recently), indicates they are spreading throughout the system. The most recent genetic evaluation since the intensive 2018 assessment indicated 94.1% of fish of the 2020-2022 Ovens/King River sample, were locally hatched, with stocked fish comprising 5.9%<sup>3</sup>. This supports success of past management actions in establishing a population with natural recruitment continuing. Given the species is long-lived and has undergone population crashes shortly after establishment in other areas, continued monitoring is critical to track the success of the establishment of this species in the Ovens system.



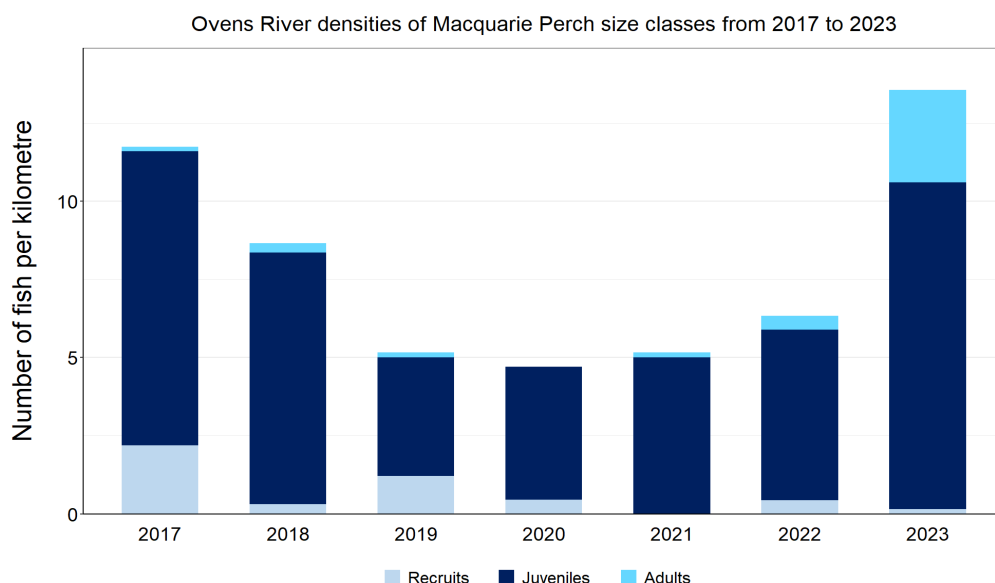


Figure 6. The densities of recruits, juveniles and adult Macquarie Perch for NFRC surveys in the Ovens River from 2017 to 2023

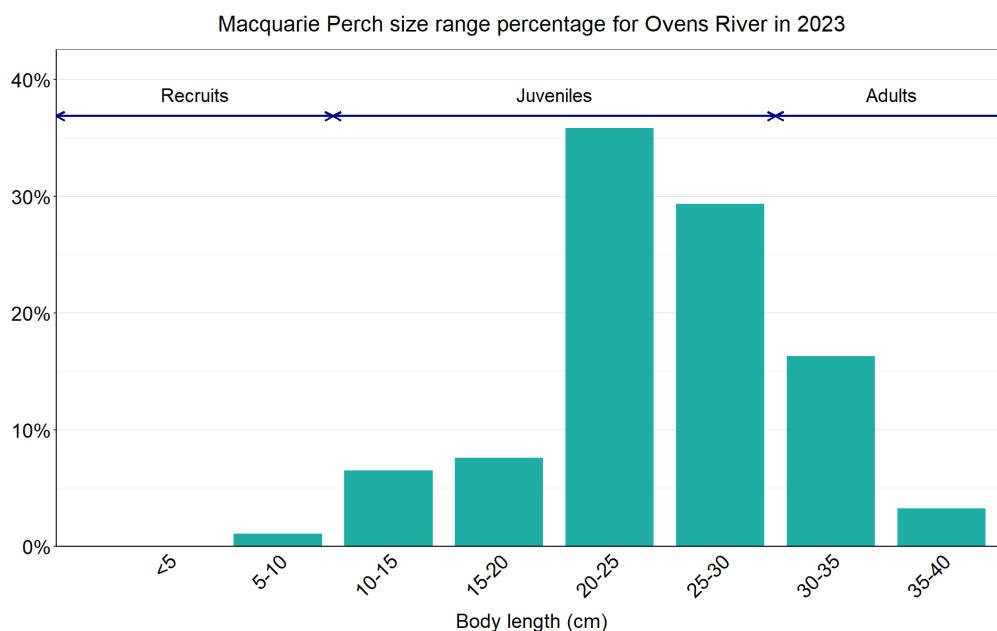


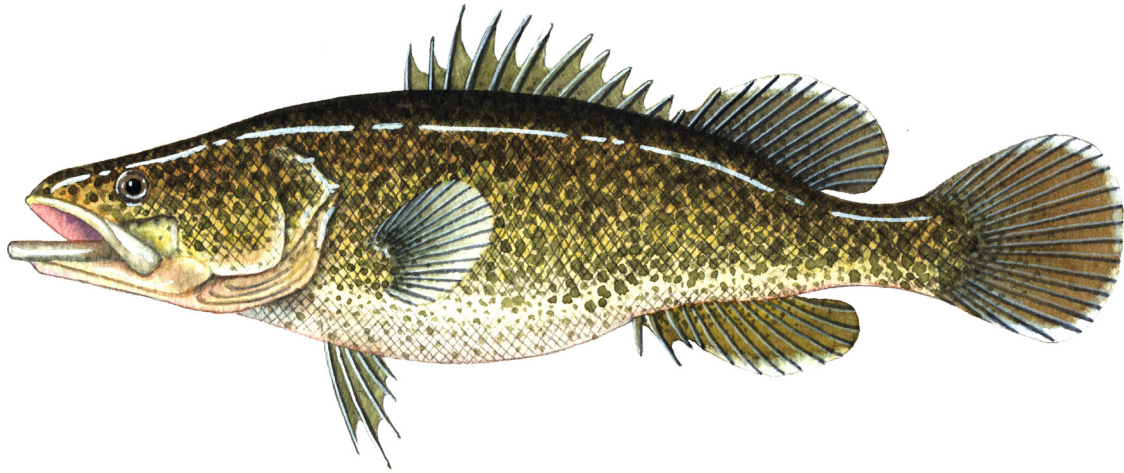
Figure 7. The size range percentage of Macquarie Perch in the Ovens River during NFRC surveys in 2023

<sup>2</sup> Lutz et al. 2021. Using multiple sources during reintroduction of a locally extinct population benefits survival and reproduction of an endangered freshwater fish. *Evolutionary Applications* 14, 950-964.

<sup>3</sup> Sunnucks, P., Pavlova, A., 2022. Macquarie Perch recovery: Genetic management of the Upper Buffalo and Ovens Rivers. Unpublished internal report to DELWP Bushfire Biodiversity Response and Recovery program.

# Murray Cod

*Maccullochella peelii*



## Key Health Indicators

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

## Monitoring Results

Total number of fish caught	176
Fish per 1km of waterway	25.92
Largest fish by length (cm)	79
Largest fish by weight (kg)	8.95
% of the catch that is legal size	34.1

## OVENS RIVER

## RECREATIONAL SPECIES

Multiple size classes of Murray Cod (*Maccullochella peelii*), including mature and young-of-year fish were caught in all seven years (Figure 8). In 2023, the surveys captured a range of sizes from 5-10 cm to oversize (> 75 cm), however, the abundances of fish less than 25 cm were low (Figure 9). Murray Cod were detected at every site surveyed. As no Murray Cod stocking occurs in the Ovens River, it is likely that a large proportion of Murray Cod are from natural recruitment. The abundances of Murray Cod, evidence of annual recruitment, and wide range of size classes including large adult fish indicate that the Murray Cod population is healthy in the system. This is supported by the fact that the Ovens River had the highest number of fish per kilometre surveyed compared to the other NFRC rivers that targeted Murray Cod (Goulburn, Gunbower and Lindsay-Mullaroo).

## Stocking

No recent stocking has occurred in the area surveyed.



Ovens River densities of Murray Cod size classes from 2017 to 2023

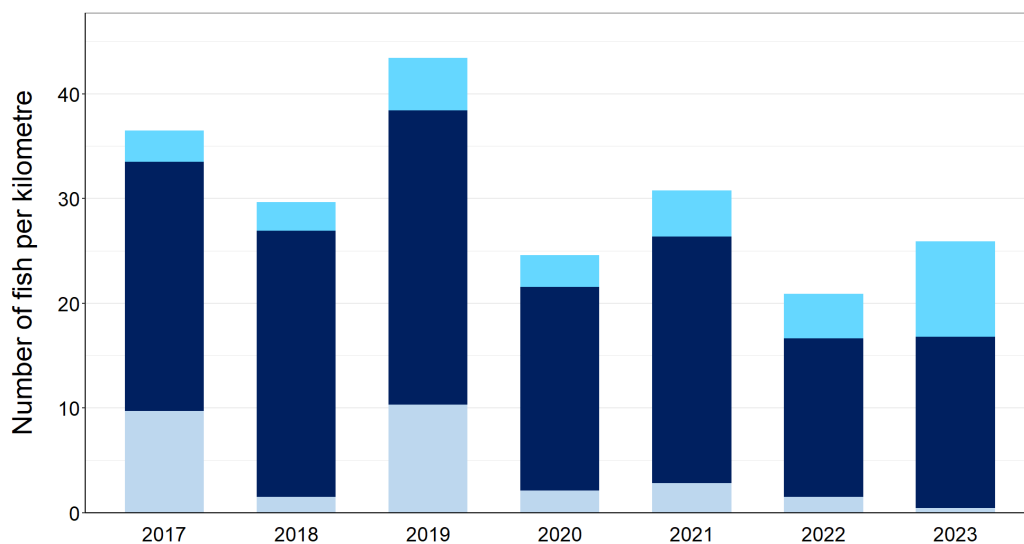


Figure 8. The densities of recruits, juveniles and adult Murray Cod for NFRC surveys in the Ovens River from 2017 to 2023

Murray Cod size range percentage for Ovens River in 2023

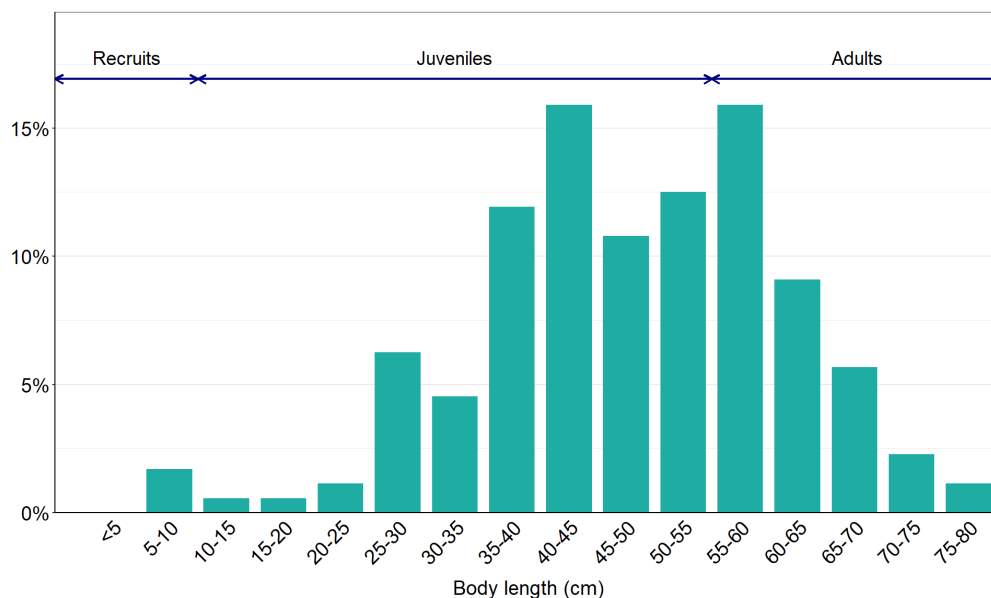


Figure 9. The size range percentage of Murray Cod in the Ovens River during NFRC surveys in 2023

# Trout Cod

*Maccullochella macquariensis*



## Key Health Indicators

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

## Monitoring Results

Total number of fish caught	58
Fish per 1km of waterway	8.54
Largest fish by length (cm)	55.4
Largest fish by weight (kg)	2.72
% of the catch that is legal size	NA

## OVENS RIVER

## THREATENED SPECIES

Abundances of Trout Cod (*Maccullochella macquariensis*) across NFRC surveys have generally remained high (Figure 10). The lower abundance detected in 2020 correlates with higher flows and associated high turbidity which would have reduced the likelihood of capturing fish. The higher flows post 2020 may explain the lack of recruits, which are harder to detect, in 2021 and 2023. Multiple size classes including mature and young-of-year fish were captured in five of the seven years. No recruits were detected in 2021 (Figure 10) and 2023 (Figure 11). Even though no recruits were detected in 2023, a wide size range of fish was present (Figure 11). The wide size range and detection of recruits, juveniles and adults in most years indicates that conditions in the Ovens River are supporting the recruitment and survival of this species throughout its lifecycle.

## Stocking

No Trout Cod stocking has occurred in the Ovens River system since January 2006.



# Trout Cod

*Maccullochella macquariensis*

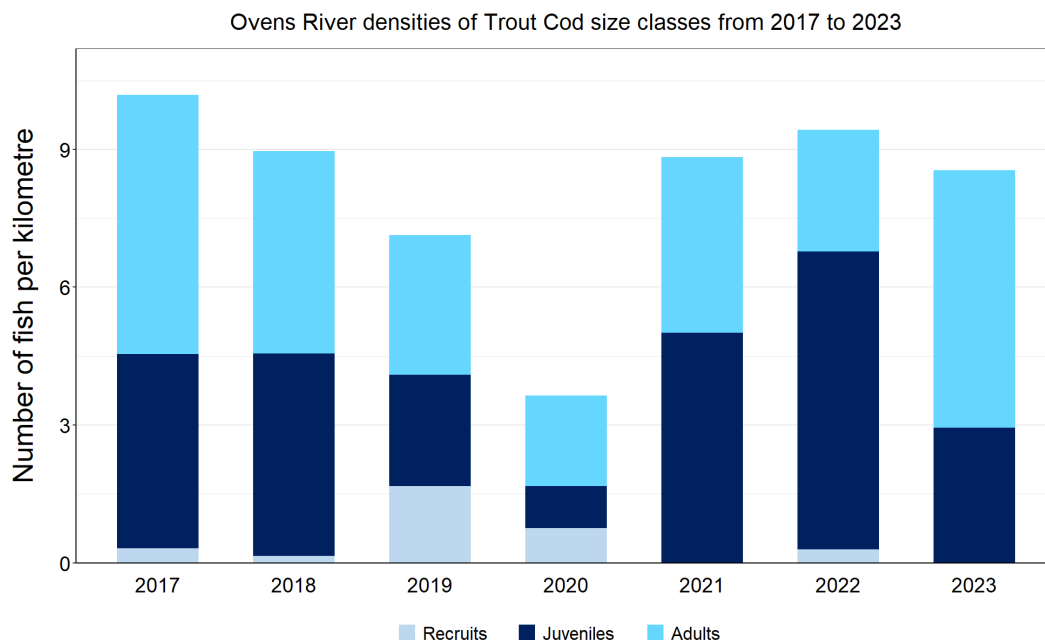


Figure 10. The densities of recruits, juveniles and adult Trout Cod for NFRC surveys in the Ovens River from 2017 to 2023

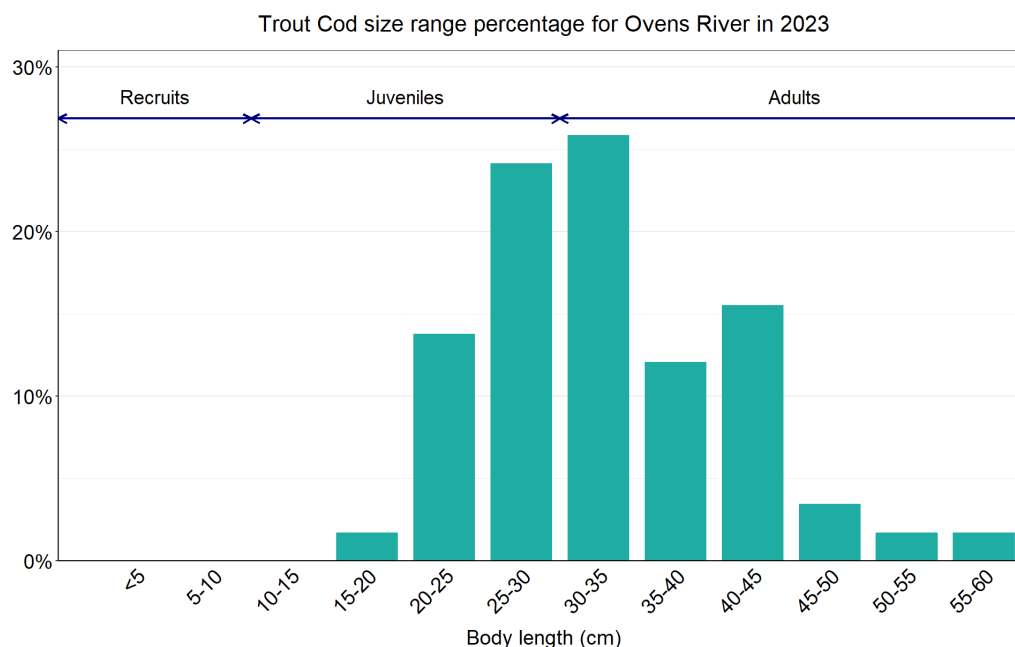


Figure 11. The size range percentage of Trout Cod in the Ovens River during NFRC surveys in 2023





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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