

Lower Darling / Baaka flow and Great Darling Anabranch update 2– for 2021-22

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A good start to 2021-22

Target

areas:



Objectives: To boost river flows (if required) and help native fish feed, breed and move into the southern river system.



Lower Darling / Baaka River and Greater Darling Anabranch

Since the start of 2021 the <u>Barwon-Darling (Baawan-Baaka)</u> has been flowing consistently, with large flows in autumn, follow up flows in winter and much higher flows in late spring. This has generated flooding for several of the Baawan-Baaka tributaries resulting in some of the biggest flows into Menindee Lakes in almost a decade. With the Bureau of Meteorology recently declaring La Niña, further inflows are expected to continue into summer, providing opportunities that have not been possible for many years!



Menindee Lakes System, Filling and spilling September 2021. Source: Home Landings Media

Menindee Lake system is not just full of water but also golden perch (aka 'yellowbelly' or 'callop') that were spawned in the northern Basin during high flows in early 2020 and again in early 2021.

The CEWO acknowledges the Traditional Owners of the Murray-Darling Basin. We pay our respects to them and their elders past, present and emerging. This presents environmental water managers with a rare opportunity to release water for the environment alongside operational water to target fish outcomes in the lower Darling / Baaka River and the Great Darling Anabranch.

Great Darling Anabranch Flow

In late September 2021, Menindee Lakes reached capacity and operational water was released ("spilled") into the Great Darling Anabranch — its first drink in almost five years.

This flow will help golden perch migrate down to the River Murray and is also expected to provide benefits for vegetation and create additional feeding grounds for waterbirds.



Map showing the location of the Great Darling Anabranch

From late October and into November 2021, water for the environment followed the operational 'spill' to ensure the flows continue their journey to the Murray. Following high rainfall and flows to the Menindee Lakes, the releases have now switched back to operational surplus flows – a great example of managing the water

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Monitoring the fish response to the flow will start soon. In the meantime, DPI Fisheries have already caught native fish, including golden perch, in nets at Wyndham Station near Dam 183 in late November. These fish most likely spawned in the northern Basin during high flow events, then drifted downstream to the Menindee Lakes where they fattened up before continuing their journey through to the southern Basin - a lifecycle spanning thousands of kilometres! DPI Fisheries report that water quality was good and frogs were calling, including the painted burrowing frog (or Mallee spadefoot toad)!



Mallee Spadefoot Toad Credit: Matt Clancy



Kelly and Angus Whyte of Wyndham Station with juvenile golden perch captured in the Great Darling Anabranch flow. Credit: DPI Fisheries

The flow reached the River Murray on 5 December, just over 10 weeks from the flow commencing!

"So awesome to see the river come to life! We haven't even had the water here for a week and the fish are loving it! Really exciting to see the juveniles follow the food down the river" (Angus Whyte, Wyndham Station)

Lower Darling / Baaka spring flow

During spring 2021, flow releases to the lower Darling / Baaka River targeted a flow rate of around 2,500 ML/day at Weir 32. These flows aimed to:

- provide higher and relatively stable flows that inundate habitat (benches and snags) used by Murray cod to breed.
- provide more food for the juvenile fish when they hatch, along with shallow slack (slow-moving) water habitats where juvenile Murray cod can hide from predators.
- encourage dispersal of juvenile Golden perch, currently feeding and growing in the Menindee Lakes 'fish nursery', via the lower Darling / Baaka and ultimately into the Murray.

This flow has been a unique combination of operational releases, to manage water levels in the Menindee Lakes in response to inflows from the north, combined with water for the environment managed by the Commonwealth and The Living Murray. By combining operational and environmental flows, more environmental outcomes can be achieved with less environmental water.

Fisheries scientists are monitoring fish outcomes in real time, so that we can adjust flows in response to their findings where possible and learn for future flow events.

- Since mid-October, small numbers of Murray cod larvae have been detected, suggesting that the cod were still nesting.
- Golden perch larvae were detected at low levels.
- Juvenile golden perch were picked-up dispersing from the Menindee Lakes to the lower Darling/Baaka.
- Juvenile Murray cod and golden perch have also been detected throughout the lower Darling/Baaka, which is a great sign that the young fish that spawned in recent seasons are continuing to thrive.

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What's next?

From late November, water for the environment releases ceased from Menindee Lakes, both down the Great Darling Anabranch and the lower Darling / Baaka. Instead, a 'pulse' of water is being released to manage water levels in Menindee Lakes. This pulse has been carefully planned to meet operational and ecological requirements, with input and support from the local community. These releases are expected to have several benefits:

- Golden Perch spawning: Perch don't spawn every year and generally require a faster flowing flow pulse to cue their spawning. It has been several years since Golden perch have had good opportunities to spawn in the lower Darling / Baaka.
- Continued dispersal of Perch from the northern basin and Menindee Lakes to the lower Darling / Baaka and River Murray.
- Connection with up to ~70% of the wetlands and billabongs of the lower Darling / Baaka, providing significant benefits for vegetation, waterbirds and frogs.
- Providing a boost of food for juvenile fish.



Murray Cod captured in lower Darling / Baaka, November 2021. Source: DPI Fisheries

Over summer, agencies will be working together to manage flow releases, with particular focus on responding to inflows from the northern Murray-Darling Basin and coordinating with operational releases made from the Menindee lakes for consumptive needs downstream. There are opportunities to shape these operational releases in order achieve environmental outcomes, with water for the environment provided to boost or extend operational flows where needed.

Fisheries scientists will be monitoring fish response in both the lower Darling / Baaka River and Great Darling Anabranch in coming months. The results will be shared with community, including in future flow updates.

Our next flow update will report on the lower Darling / Baaka flow pulse, continued releases to the Anabranch, and monitoring results from both systems as they come in from the field. Have a safe and happy festive season!

Who is involved?

The 2021 lower Darling / Baaka and Great Darling Anabranch spring flows are being delivered with careful planning and collaboration with NSW government agencies, the Murray-Darling Basin Authority, river operators, fish ecologists and the local community.

How can I keep track of the flows?

Water NSW Operations updates

NSW Real-time Water data

CEWO Lower Darling / Baaka flow updates

CEWO Facebook

<u>River Murray Weekly Report</u> – river operations, inflows, river gauge heights, rainfall and salinity

<u>Whose water is in the river</u>—monthly update of water for the environment and other water users.

Local Engagement Officer:

Richard Mintern

- 0437 218 649
- @ richard.mintern@environment.gov.au