

## Northern Waterhole Top-up – Flow Update 3

<b>Objectives:</b>	Help native fish survive by improving water quality in drying waterholes
<b>Volume:</b>	8 gegalitres
<b>Dates:</b>	December 2020 – January 2021
<b>Target areas:</b>	Gil Gil Creek, Macintyre River, upper Barwon River (Mungindi to Walgett)
<b>Other flows:</b>	Releases of water for the environment are coordinated with releases of water for other purposes

### Things are looking up

In mid-December, isolated storms resulted in small flows into some northern rivers and parts of the Barwon-Darling.

The Northern Waterhole Top-up has provided 8 additional gegalitres of Commonwealth and NSW water for the environment.

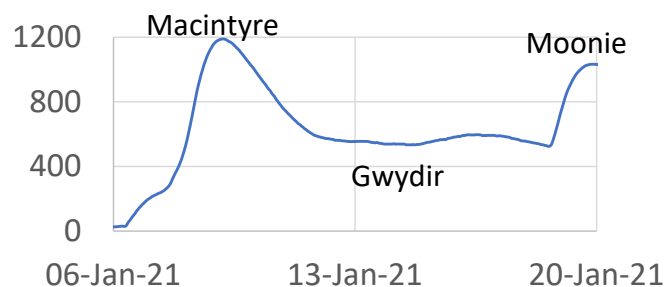
Original plans for this delivery targeted about 230 km of the Barwon River from Mungindi to Walgett. Thankfully, December storms wet the Barwon River channel which has meant this environmental flow has now reached Brewarrina.

Some of this water will make it as far downstream as Bourke by the end of January. As a result, the Northern Waterhole Top-up will benefit around three times the distance of river we originally expected. The Commonwealth holds licences in the Barwon-Darling and the Moonie, which are also contributing to this event, helping flows reach further.



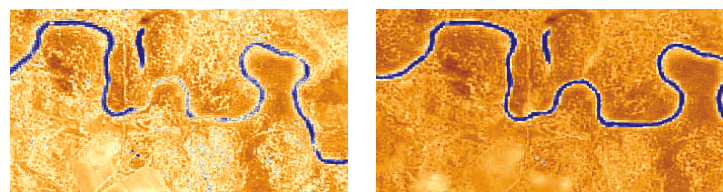
Map showing flows from the Northern Waterhole Top-up linking together. The red line shows water for the environment from the Macintyre River and the dark blue shows Gil Gil Creek. The light blue line shows flows connecting along the Barwon to Bourke (the broken line shows the mixing of top-up flows with unregulated flows).

Water entered the Barwon River between Mungindi and Collarenebri from the Macintyre and Moonie rivers and the Gwydir river system. Each river contributed in different ways at different times. The graph below shows the Macintyre and Moonie contributing the 'peaks' to the flow, while the Gwydir provided the 'body' of the flow.



Flows at Mogil Mogil Weir, between Mungindi and Collarenebri

When the flow arrived (see satellite images below), it reconnected waterholes, providing better drought refuges for native fish and animals.



Before (left) and during (right) the flow near Calmundi Weir between Collarenebri and Walgett. Satellite images sourced by the MDBA.



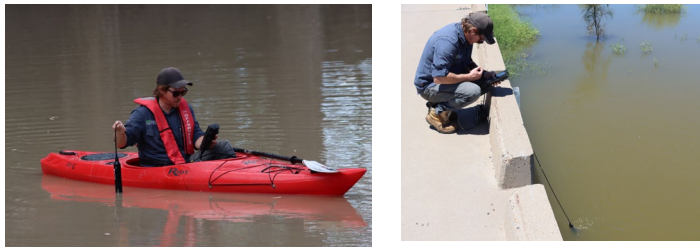
Before (top) and during (below) the flow at Mogil Mogil Weir. Photos: CEWO.



## Oxygen in the water is on the rise too!

The December storms created shallow flows over hot riverbeds covered in leaf litter. This caused oxygen levels in the rivers to drop. We kept a close eye on oxygen levels as low dissolved oxygen in rivers can cause stress to native fish. Thankfully, we have not heard of any fish in danger in recent weeks.

Monitoring of dissolved oxygen has been undertaken by the University of New England (UNE) prior to and during the Northern Waterhole Top-up – the most recent sampling was last week.



Sampling dissolved oxygen at Collarenebri (left) and in Gil Gil Creek (right). January 2021. Photo: UNE

Monitoring has shown that dissolved oxygen levels have improved as water levels have risen. This is due to the Northern Waterhole Top-up delivery of water. In particular, this flow is helping to mix the water in weir pools and improve water quality overall.

## Local observations

Collarenebri Councillor Kelly Smith recently observed that the “river system is in a far better state at present compared to a month ago.”



Prior to the Top-up. Kelly Smith discusses the Barwon River with Jane Humphries (CEWO) Photo: CEWO

## And there's been some fishing...

As anglers know, a rise in the river results in fish going 'on the bite'...



Local kids on the Barwon River tried their luck during recent weeks – with some success. Photo: CEWO.



This Nankeen Night Heron was fishing at Collarenebri as the waterhole top-up went through. Photo: University of New England

## Further information - contact our local engagement officers

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*Managing water for the environment is a collaborative effort, working in partnership with communities, Traditional Owners, scientists and government agencies - these contributions are gratefully acknowledged.*

*The CEWO also acknowledges the Traditional Owners of the northern catchments and acknowledges their continuing connection to land, sea and community. We pay our respects to them and their elders both past and present.*