

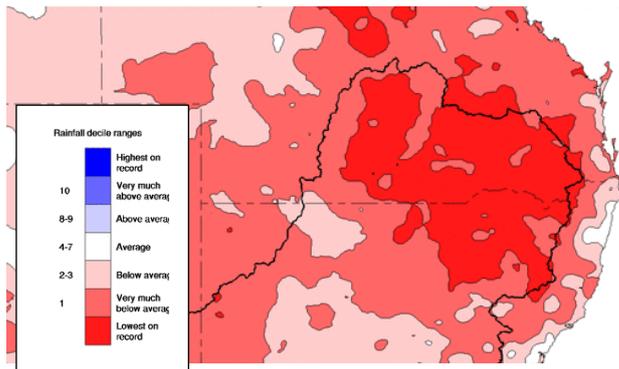


Northern Waterhole Top-up – Flow Update 1

Objectives:	To help native fish survive by improving water quality in drying waterholes
Volume:	Up to 8 GL
Dates:	December 2020 – January 2021
Target areas:	Gil Gil Creek, Macintyre River, upper Barwon River: Mungindi to Walgett
Other flows:	Releases of water for the environment will be coordinated with releases of water for other purposes

Current conditions

The last four years have been the driest on record across much of the northern Murray-Darling Basin, despite rain earlier in 2020, and the current La Nina. Parts of the Barwon River have not flowed for over 60 days, and the river is drying back to waterholes. During November 2020, Mungindi experienced 18 consecutive days where the maximum temperature was above 35°C, with seven days over 40 °C.



Northern Murray-Darling rainfall from December 2016 – November 2020. Source: BOM

Through summer, if the waterholes remain stagnant, the native fish living in them (including Murray cod) may struggle to survive.



Releasing a tagged Murray cod. Photo: NSW DPI Fisheries

About the ‘Northern Waterhole Top-up’

Because the Barwon River has stopped flowing for two months already, Commonwealth and NSW water for the environment will be delivered to 200+ km of the river system to help our native fish survive through the summer.

The water will be released from Pindari and Copeton dams and will flow down the Macintyre River and Gil Gil Creek in the Gwydir catchment. To get the most benefits out of water for the environment, the releases will piggyback on the back of releases for other purposes.

Further downstream, water for the environment has already been flowing along the Macquarie River and into the Barwon, with flows reaching beyond Brewarrina until recently. A block release is also occurring in the Namoi River to Walgett. The river system will be well primed for any unregulated flows from rainfall in coming weeks!

If the storms of the last week provide enough water to re-start the upper Barwon, then we will re-consider our plans, and may scale down our contribution. Any unregulated flows that come from rainfall would push the water released from storage further downstream, extending the benefits for fish further down the river system.

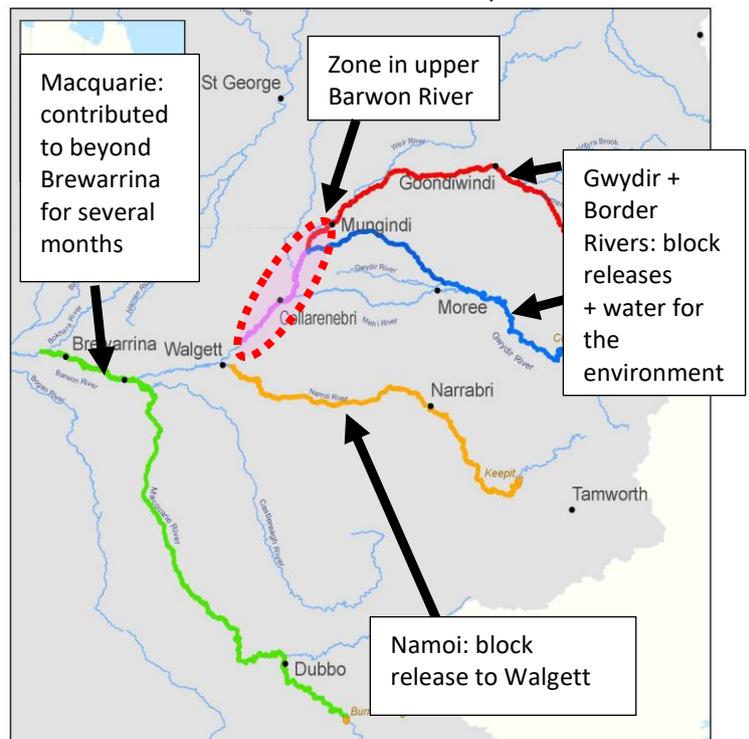


Illustration of how the flows from this Northern Waterhole Top-up together with other flows are priming up the tributaries to the Barwon River. Source: CEWO

Providing flows for fish

When rivers stop flowing, they become a series of disconnected waterholes. These waterholes provide important refuge for native fish. Over summer as waterholes dry back, water and habitat quality can decline and put native fish at risk.

Whilst our monitoring has shown that dissolved oxygen in waterholes is currently at reasonable levels, it is declining and can change quickly. Our aim is to add a little extra water to the waterholes so they are more prepared for the coming very hot weather.



Calmundi weir pool (December 2020). Photo: University of New England

Most of the water will be delivered to the Barwon River through Gil Gil Creek in the Gwydir system. Monitoring in recent years has found Gil Gil Creek is home to many native fish species. This includes juvenile spangled perch and bony herring that were found in 2018.

This flow will also help Murray cod by allowing rivers to flow for longer, as cod prefer flowing water.

And we haven't forgotten the mussels!

As rivers dried up over the last few years, many mussels were observed on the riverbed. Many in the community were concerned about them.

A CEWO funded study by Griffith and Charles Sturt universities found that, sadly, river mussels had died at 65 % of sites surveyed where they were found.

Mussel survival was greater in reaches containing waterholes that did not dry out during the drought. River mussels prefer flowing water and are unable to withstand extended periods of drying. Many did, however, hang on in waterholes.

Recently, when flows returned to part of the Gwydir system, mussels were seen to be re-emerging as the water arrived. With the release of the Northern Waterhole Top-up, we hope to see more mussels emerging from the bed of the Barwon River in coming weeks!



A mussel found in the Mehi River, Gwydir catchment (8 November 2020). Photo: A. Barnes, NSW DPI Fisheries

Monitoring the flows

The CEWO has funded a large amount of monitoring in the Gwydir catchment over the last six years. Coordinated monitoring of waterholes will be undertaken to detect changes in water quality, including at depth.

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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 Gwydir catchment and acknowledges their continuing connection to land, sea and community. We pay our respects to them and their cultures and to their elders both past and present.