



# Gwydir refuge pool flow 2020 – Update 1, 27 October

## Helping fish recover from the drought

**Objectives:** Native fish survival by providing access to refuge habitat and food, increasing connectivity and improving water quality in pools

**Dates:** Late Spring to Summer 2020-21

**Volume:** 12 – 14 GL has been allocated

**Other flows:** Where possible, deliveries will be coordinated with releases from Copeton Dam for other purposes

**Target areas:** Large refuge pools in the Gwydir between Copeton Dam and Tyreel Weir. Mehi between Tarelaroi and Combadello Weir and Carole Creek to near Garah.

## What happened last year

The 2019-20 water year in the Gwydir system began very dry and finished quite wet. Very low falls occurred between July and December 2019. The 2019 calendar year was the driest recorded since 1965. Above average rainfall occurred in January to April 2020, which saw several flows through the full length of the river system. Very heavy rainfall resulted in localised inundation in areas west of Moree in February and March 2020.

Monitoring of refuge pools during spring and summer 2019-20 showed that during no flow periods, water quality and depth within pools declined significantly. Maintaining water quality and depth is important within larger refuge pools to provide native fish species with the best chance of survival. This was the focus of our watering last year.

Results from monitoring undertaken along the Gwydir River between May to July 2020 showed most native fish species had spawned and recruited in the past year. Whilst the overall numbers of native fish were modest, most individuals sampled appeared in good health.

Native fish were found in the upper Mehi River, a channel that experienced poor water quality during spring and early summer of 2019-20. This is a positive sign that the fish community in this part of the system is recovering.

## How is the system looking now?

Since April 2020, flows along the Gwydir River have decreased and some channels within the lower Gwydir have stopped flowing. One area of concern is the Mehi River upstream of Combadello Weir, which is about 20 km southwest of Moree. Parts of this river have not flowed since August 2020.

Recent monitoring has shown that deep pools along the upper Mehi River provide important refuge habitat for native fish during extended dry periods.



*Natural refuge pools along the Mehi River between Moree and Combadello Weir (10 January 2020). Photo: UNE*



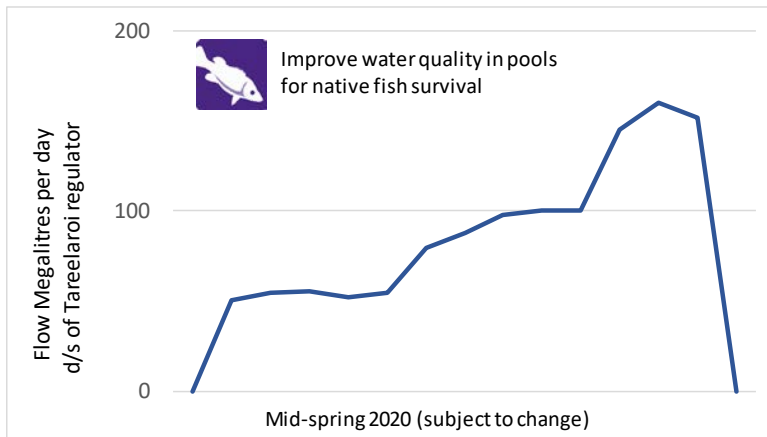
*Mehi River upstream of Edward Street River Pool / downstream of Moree Town Weir (19 October 2020). Photo: CEWO*

## Pool refuge flows

If flows from upstream systems do not provide water into the Mehi River soon, Commonwealth and NSW water for the environment may be used to replenish pools along the Mehi River through Moree and downstream to Combadello Weir. The last time water for the environment was delivered here from storage was January 2020.

To fit in with local farmers' winter crops, water for the environment will not be used for watercourse-wetland areas along the lower Gwydir and Gingham until after winter crop harvests have been completed. Natural flows may still occur in this area at any time.

An indication of the shape of first pool refuge flow is shown below. The flow will stay within the river channel.



Indicative pattern for first pool refuge flow environmental water deliver – downstream of Tareelaroï Regulator. Source: CEWO

## Will more water for the environment be provided later?

The Bureau of Meteorology outlook is for above median rainfall across the Gwydir system between November 2020 and January 2021. Rain over the coming summer may result in flows from tributaries to top up refuge pools, and further water for the environment may not be required.

If conditions become much wetter in the Gwydir Valley, Commonwealth and NSW water for the environment may be used in combination with unregulated flows to help restore the health of important waterbird breeding habitat.



Yellow belly. Artwork: created by Lakkari Pitt for the Flow-MER Program. Copyright belongs to Lakkari Pitt

## Monitoring

The CEWO has funded a large amount of monitoring in the Gwydir catchment over the last six years. For this pool refuge flow, environmental water managers will work with WaterNSW, DPI Fisheries, the local community and landholders to assess potential risks to water quality prior to any delivery of water. Coordinated monitoring of refuge pools will be undertaken to detect changes in water quality the flow moves along the Mehi River.

## Community support

Environmental water managers have sought input from the local NSW Gwydir Environmental Water Advisory Group for planning the 2020-21 water year. The group provided advice that topping up refuge pools during dry periods and improving the condition of water bird breeding habitat were high priorities.

Community involvement, feedback and support in delivering water for the environment is always appreciated and welcome. Please feel free to contact us.

## Local Engagement

### Officers

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For further information on environmental water in the Gwydir:

<https://www.environment.gov.au/water/cewo/catchment/gwydir>

<https://www.environment.nsw.gov.au/topics/water/water-for-the-environment>

<https://www.industry.nsw.gov.au/water/environmental-water-hub/management>

*Managing water for the environment is a collective and 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 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.*