



Australian Government
Commonwealth Environmental Water Office



Northern Fish Flow - Update 5

The Northern Fish Flow has now travelled 1,200 km of river, has filled up Walgett and Brewarrina weir pools, and is continuing downstream. In coming weeks, the flow will end somewhere near the junction of the Barwon and Culgoa rivers. In mid-June, the Hon Sussan Ley, Minister for the Environment, met with communities at Bourke, Brewarrina and Moree and observed the Northern Fish Flow.

WHAT ARE WE TRYING TO ACHIEVE?



Help native fish and animals survive the drought.



Improve water quality, connect the rivers, and improve habitat for native fish and animals. Improve social, cultural and economic outcomes for river communities.

VISIT FROM THE COMMONWEALTH MINISTER FOR THE ENVIRONMENT

Shortly after her appointment, the new Commonwealth Minister for the Environment, the Hon Sussan Ley, headed to the northern Basin in early June to meet with people in Bourke, Brewarrina and Moree. The discussions focussed on the health of the rivers, the wellbeing of communities, and the Northern Fish Flow. Following the trip, Minister Ley reflected on how *'terribly terribly dry the country is'* and on the *'vital connectivity between the northern and southern basin'*.

(Right) Minister Ley and the Commonwealth Environmental Water Holder (Jody Swirepik) with the Mayor of Moree, Katrina Humphries at her fish and chip shop. (Below) The Minister and Jody met with representatives of the Moree Aboriginal community (Gomeroi Nation).



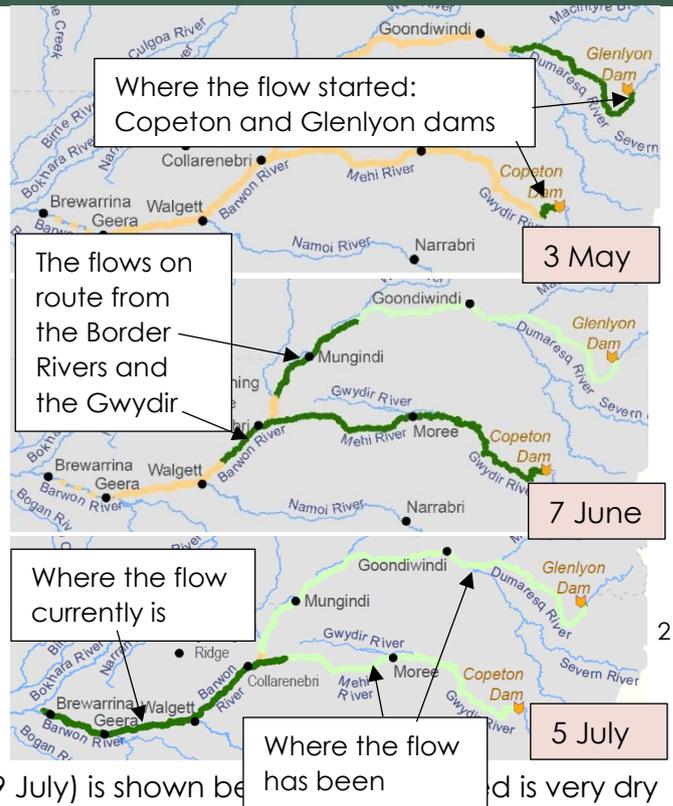
THE NORTHERN FISH FLOW HAS REACHED BREWARRINA, AND WILL PUSH BEYOND

The Northern Fish Flow commenced in late April. 36 GL of water was released from Glenlyon and Copeton dams over several weeks. At the start, the flow was expected to reach the junction of the Macquarie and Barwon rivers. We hoped that it would go further and fill the Brewarrina weir pool, which is an important refuge habitat for native fish and animals.

The Northern Fish Flow has now filled the Brewarrina weir pool and is continuing downstream. The flow is expected to finish somewhere upstream of the junction of the Barwon and Culgoa rivers.

Dam releases for the Northern Fish Flow have ceased. Flows in the Macintyre and Mehi rivers and in the Barwon River upstream of Collarenebri are now receding.

The flow over Brewarrina Weir as of yesterday (9 July) is shown below and is very dry downstream.



It took the Northern Fish Flow two months to reach Brewarrina over the dry river bed. Flow travels much slower when the river bed is so dry than when it is wet. For example, in the same time period of two months, a similar sized flow of water for the environment from the same dams in 2018 (the Northern Connectivity Event) had made it past Wilcannia, over an additional thousand river km downstream of Brewarrina. Additionally, the seepage into the river bed is much higher when it is dry: initial calculations of the 'losses' between Collarenebri and Walgett show that they are about five times greater for the current Northern Fish Flow than the 2018 Northern Connectivity Event.



EARLIER, WHEN THE NORTHERN FISH FLOW PASSED WALGETT.....

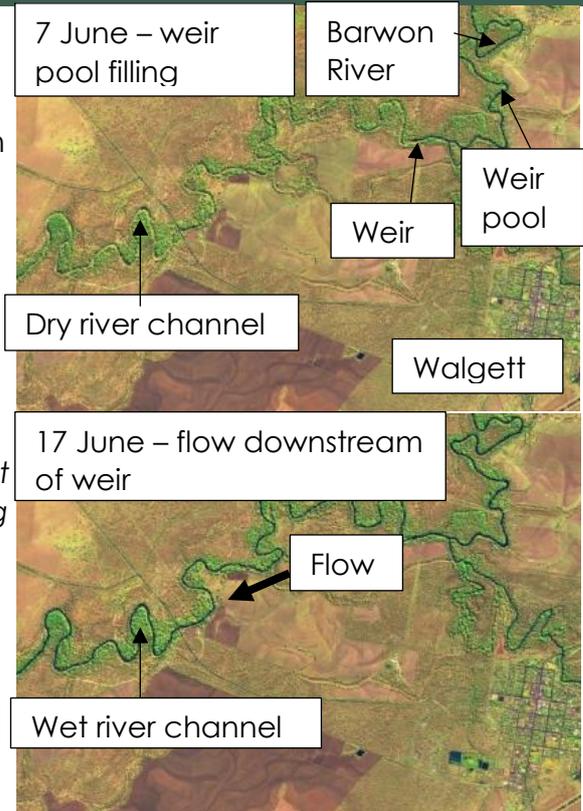
Upstream of Brewarrina, there was considerable excitement at Walgett in mid-June when the Barwon River started to flow downstream of the weir for the first time in 330 days. The Northern Fish Flow filled the weir on the Barwon River near Walgett on 12 June. These satellite images show the river downstream before and after the weir pool filled.

Vanessa Hickey, a Traditional Owner from Walgett, expressed her connection with the river this way: *'these waters, the rivers, to me and my people, it's our lifeline. It's our past, we have a lot of stories, my old aunties and uncles used to bring us out this way fishin' when I was a little girl. I've tried to pass it on to my kids.....Even just coming down to the river, getting out of town when we feel a bit stressed out, listening to the wildlife, that's what these rivers mean to us, we're connected..... When we had no water in the rivers, for myself I felt dead, I felt sad.'* Many people feel deeply connected with the rivers out west, and have been pleased to see the flow.

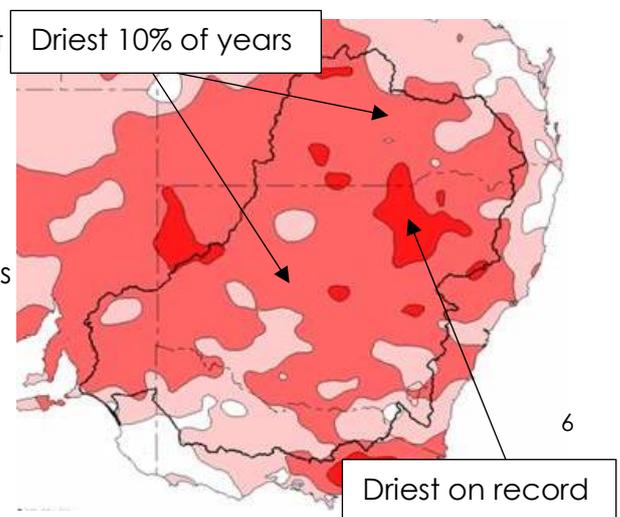
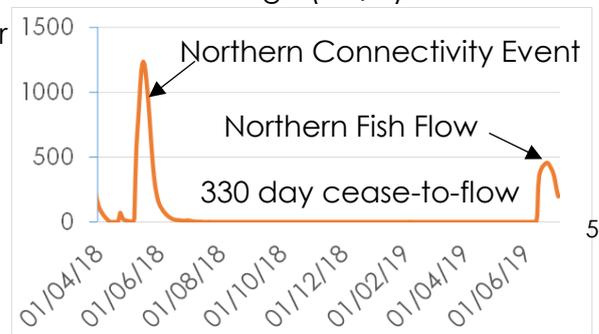
Importantly, the only two flows in the Barwon River downstream of Walgett (at Dangar Bridge) in the last fourteen months have been water for the environment released from dams in the Gwydir and Border Rivers catchments. The first of these was the Northern Connectivity Event in 2018. The second is the current flow.

It has been very dry across the Murray-Darling Basin. The Bureau of Meteorology will release a Special Climate Statement on worsening drought conditions in coming weeks. The last 30 month period has been the driest on record across the Basin. The map to the right shows that the rainfall generally has been in the lowest 10% of that recorded. In some areas (like in the red patch between Mungindi, Walgett and Wee Waa) it has been the driest 30 month period on record.

Even in these acutely dry times, water recovered under the Basin Plan, supplemented with NSW water for the environment, has done much to sustain the native fish community in rivers of the northern Basin.



Flow in the Barwon River at Dangar Bridge (ML/d)



Apart from the Northern Fish Flow, there have been other flows in the northern Basin in recent months. Water from the Warrego River has flowed down the Darling River past Wilcannia since early June. Some of this water is Commonwealth environmental water from licences from Toorale station, and from further up the Warrego. In aggregate, much of the Barwon-Darling from Mungindi to Wilcannia as well as the Warrego, Mehi and Macintyre rivers have received some water for the environment in 2019 – a total river distance of over 2,000 km. Additionally, there was a flow from the Nebine Creek and the Culgoa River that reached Bourke, bringing some relief.

BENEFITS OF THE NORTHERN FISH FLOW

Monitoring of native fish over recent years had shown the Barwon and Macintyre rivers are a stronghold for native fish, and home to five threatened fish species. Fish in the isolated waterholes in the Barwon were showing signs of stress due to reduced food sources, overcrowding, and poor water quality. These signs included a relatively high incidence of lesions and parasites on native fish. Some fish were underweight. In March 2019, the deaths of about 200 fish on the Barwon River near Calmundi Weir confirmed the water quality in some pools had become very poor. In response, the Northern Fish Flow was designed to help native fish and animals survive the drought. The flow was timed to reduce the risk of fish kills due to low oxygen, and also considered the chance of summer rainfall at the start of the year.



Monitoring in the Gwydir River near the Munro State Forest (downstream of Copeton Dam).

7

Monitoring during the Northern Fish Flow has shown an improvement in dissolved oxygen in the Barwon River. Based on past monitoring, food sources would have improved. Past monitoring also suggests that native fish would have taken the opportunity to move along rivers during these types of flow events as they are very opportunistic. After the Northern Fish Flow is complete, fish movement data will be downloaded from acoustic arrays along the Mehi and Barwon rivers as part of broader fish movement projects.

The water in the waterholes from the Northern Fish Flow is expected to provide good conditions for fish and native animals for several months prior to the heat of summer, due to lower winter evaporation rates compared to summer, and good dissolved oxygen. Communities and landholders along the rivers also appreciate more water in the river.

(Further detail on the background to the Northern Fish Flow is in update 1:

<http://www.environment.gov.au/water/cewo/publications/northern-fish-flow-update-1>)



COMMUNITY DROP-IN SESSIONS

Ten community drop-in sessions were held as part of the Northern Fish Flow, from Texas and Moree to Brewarrina. In total around 70 people 'dropped in', and we thank them for their interest, thoughts, knowledge, and time.

There was considerable excitement about the Northern Fish Flow. For some there was a sense of relief, as while northern rivers do stop flowing from time to time, the rivers had not flowed for a very long time in some places. Some people were excited about the possibility of fishing and camping along the river. In recent weeks, NSW Fisheries Officers have reported good numbers of people fishing along the rivers, with some decent catches, particularly of golden perch. On one day, Fisheries Officers reported up to 40 members of the local Aboriginal community fishing along the banks of the Barwon just downstream of the Namoi junction. Kids and adults were spread along the bank catching golden perch and a couple of big Murray cod, cooking jonny cakes (or damper) and enjoying the river. A number of communities along the Barwon to Brewarrina and along the Mehi have expressed excitement at having their weir pools topped by the Northern Fish Flow for the first time in many months.

Another topic of discussion at the community drop-in sessions was whether the Northern Fish Flow would have any impacts on other water users. Some asked whether the dam releases would make it harder to deliver water to towns in the future. The answer is that no system water was used to deliver the Northern Fish Flow, and therefore there is no less system water available for use with releases for any other purpose. Under these extremely dry circumstances, Queensland and NSW agreed to the release of water from dams on the basis that no 'system' water was used to deliver the Northern Fish Flow. The water use has been accounted at the dams, and any seepage and evaporation downstream was borne solely from the accounts of environmental water managers.

WORKING TOGETHER TO KEEP OUR RIVERS HEALTHY

The Northern Fish Flow has benefited river communities, contributed to town water and riparian basic stock and domestic water supplies, and provided recreation and possibly tourism benefits along the river systems. There are very small volumes of water that remain in environmental accounts in these dams after the Northern Fish Flow. There are also volumes of water that have been set aside by NSW and Queensland for essential supplies, including for future stock and domestic purposes. The water being used in the Northern Fish Flow is from carryover remaining in environmental accounts from dam inflows mainly in 2016 and 2017.

It is NAIDOC week. This is an important opportunity to acknowledge that Aboriginal communities have strong and enduring environmental, cultural and spiritual values associated with the river systems.

The Commonwealth Environmental Water Office is partnering with the NSW Department of Planning, Industry and Environment (which includes the former NSW Office of Environment and Heritage) to deliver the Northern Fish Flow. The Northern Fish Flow uses both NSW and Commonwealth water for the environment. Other agencies contributing include the NSW Department of Planning, Industry and Environment, WaterNSW, the NSW Natural Resources Access Regulator, the Queensland Department of Natural Resources and Energy, and the Murray-Darling Basin Authority. The Gwydir Environmental Water Advisory Group provided



important advice on the Northern Fish Flow. The Northern Fish Flow is an example of government agencies and community members working together to deliver outcomes under the Basin Plan.

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Minister Ley and Jason in Bourke

8

FURTHER INFORMATION

CEWO website

<https://www.environment.gov.au/water/cewo>, Follow us on Twitter @thecewh

<http://www.environment.gov.au/water/cewo/catchment/northern-fish-flow-2019>

MDBA website on remote sensing

<https://www.mdba.gov.au/basin-plan-roll-out/monitoring-evaluation/remote-sensing-our-use-satellite-imagery>

Credits for images:

1,3,8 – Commonwealth Environmental Water Office; 2 – Department of the Environment and Energy. 4 - Murray-Darling Basin Authority, using data from the NSW hydrographic network; 3 – Sentinel 2 satellite images, which have resolution of 10 m² and cover the whole Murray-Darling Basin every few days. Images extracted by the Murray-Darling Basin Authority; 5 – Commonwealth Environmental Water Office, using data from the NSW hydrographic network; 6 – Bureau of Meteorology; 7 – Eco Logical Australia

