

Northern NSW Rainfall Event March 2021

3 May 2021

Significant rainfall and flooding across the catchments of Northern NSW and Southern Queensland during late March 2021 is continuing to provide substantial inflows into the Barwon-Darling. Significant drainage from the floodplains upstream of Walgett and Brewarrina have been observed during the last few days.

This event will also provide significant inflows to the Menindee Lakes system. Based on current forecasts, the table below indicates the range of inflows that are expected.

Location	Observed volume up to 3 May (GL)	Total forecast volume including observed since January 2021 (GL)
Bourke	1,027	1,200 - 1,350
Wilcannia	455	900 - 1,100
Lake Wetherell	318	800 - 1,000

The significant increase in the forecast inflows into Menindee is due to the volume of water entering the Barwon-Darling from the flood plains around Collarenebri and Walgett. Over 500GL has flowed off the flood plain and is not entering the Barwon-Darling via the major tributaries of the Mehi and Namoi. The volume of water still flowing off the flood plain has been in the order of 3,000 ML/d in this section of the river. With no gauges on the flood plain it is very difficult to forecast how much water will continue to enter the Barwon.

WaterNSW is also starting to see gains in river flows above and below Brewarrina, which is likely water that has flowed out onto the flood plain downstream of Walgett. Flows peaked at Walgett on the 8 April at 75,764 GL/d with the peak downstream at Brewarrina on the 20 April reduced to 33,654 GL/d. Forecasting total flows is very difficult as the volume of water re-entering the river varies from one event to the next. Based on current forecast, a total of around 400GL is forecast to be loss on the flood plain between Walgett and Bourke.

WaterNSW is observing increase losses between Wilcannia and Menindee. Water has started to fill Lake Menindee and the increased observed losses is likely to be associated with the expected initial losses in wetting up the lake beds in Lake

Menindee and Lake Cawndilla. This is in line with original forecast that up to 200 GL could be lost wetting up the base lower Lake.

Catchment	Tributary forecast volumes for the recent rainfall event (3rd week of March) (GL)
Border	287
Moonie	100
Gwydir (via Gil Gil)	80
Gwydir (via Mehi)	215
Gwydir Flood Plain	587
Namoi	91
Macquarie	50
Bogan & Little Bogan	42
Culgoa	139
Warrego	5
Total	1,596

Assumptions and challenges:

- Extraction of Supplementary water in the northern valleys has been considered in those respective valleys.
- Extractions along the Barwon-Darling will align with the current Expressions of Interest.
- Channel capacity constraints in the Border and Gwydir systems result in water breaking out onto the flood plains. It is difficult to estimate how much of that water will return to the Barwon-Darling. WaterNSW has included an estimate of floodplain drainage based on historical events but the drainage has a high variation.
- High flows in the Barwon-Darling result in overbank flows to the floodplain due to channel capacity constraints. A significant volume can be lost between Walgett and Boorooma and water will also flow to flood plains downstream of Bourke.