

Flood flows in the Barwon-Darling River system

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This is the ninth and final information paper in this series issued by the NSW Office of Water to provide advice to communities, industries and landowners about the passage of floodwaters through the Barwon-Darling River to the Menindee Lakes and the Lower Darling River.

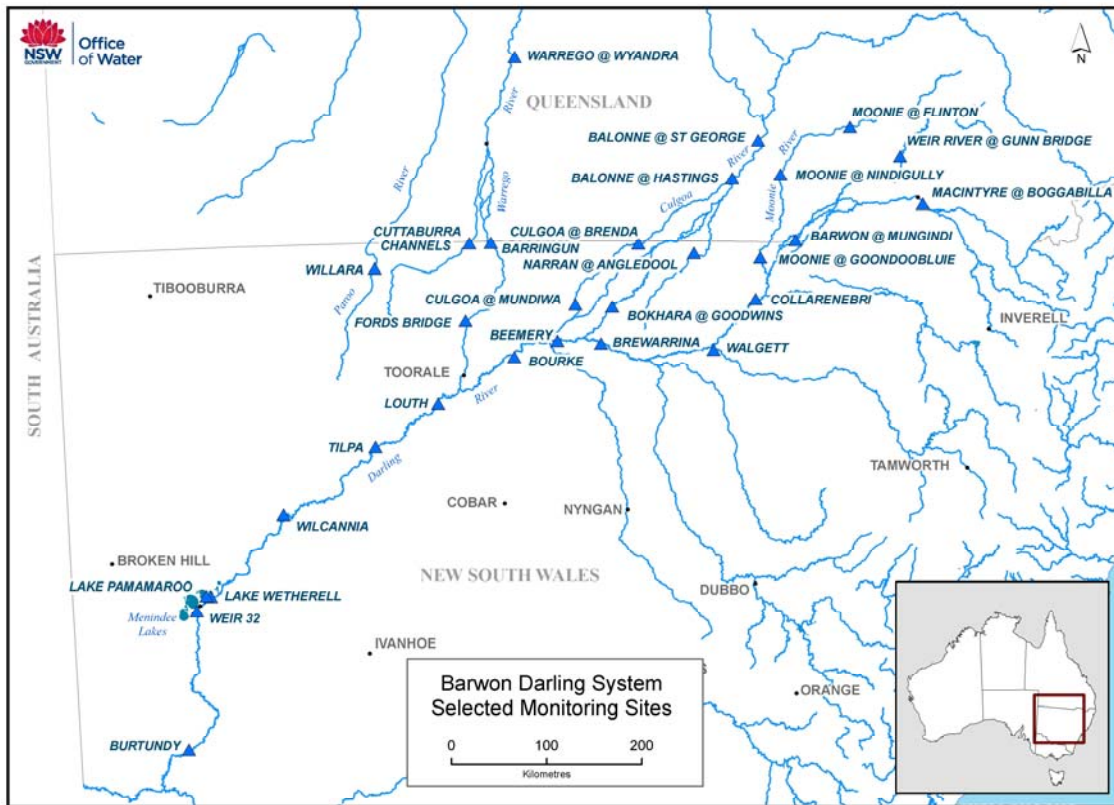
Lake Wetherell – Currently surcharged to 130 per cent capacity



Photo Courtesy of Barry Philp, State Water Corporation, Menindee, dated 24 May 2010

The last of the upper Darling River flood flows have now passed Wilcannia and flows upstream of Wilcannia have receded to base levels. Flows at Wilcannia are currently steady at around 5,000 megalitres per day (ML/d). Waters draining from the Paroo catchment are contributing significantly to the maintenance of these flows. There has been no significant peak observed in the Paroo, rather a steady flow of up to 3500 ML/d at Porters Crossing. The higher flow rates from the Paroo that occurred in the 1990 flood, the only previous time that flows in the Paroo have been gauged, are unlikely.

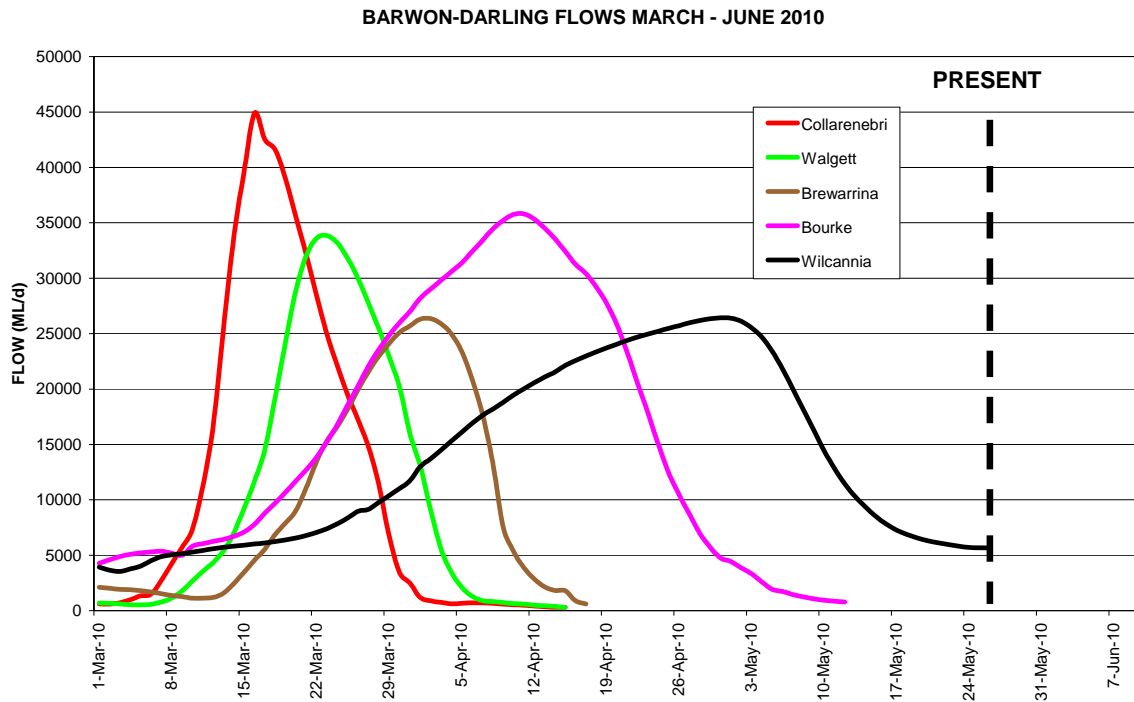
Monitoring flows and river levels



As the flood passes downstream, flows and river heights will rise and fall at different locations. This map shows the location of gauging stations used to monitor and report on the passage of flows. Daily updates of the flows and heights at these and other gauging stations throughout NSW are available on the NSW Office of Water website, www.water.nsw.gov.au. Follow the links to 'Real-time data / Rivers and streams'.

Following the flood

Hydrographs at selected locations show flows and their respective flow peaks.



The points to note are:

- The relatively large hydrograph at Bourke compared with Brewarrina in this event is due to the inflows downstream of Brewarrina from the Culgoa system of rivers.
- The volume in the Bourke hydrograph is similar to that in the Wilcannia hydrograph because transmission losses between Bourke and Wilcannia were offset by inflows from the Warrego River.
- The hydrograph at Wilcannia is showing a baseflow of about 5,000 ML/d which is largely drainage from the Paroo catchment. This is likely to persist into next week before falling away.

Stream flows (26 May 2010)

Location	Height (m)	Flow (GL/d *)	Comments
Bourke	4.11 F	0.4	Peaked 35.9 GL/d (11/04) Volume** 1145 GL
Louth	1.68 F	0.7	Peaked 37.3 GL/d (20/04) Volume** 1208 GL
Tilpa	1.47 F	1.1	Peaked 32.7 GL/d (23/04) Volume** 1228 GL
Wilcannia	3.09 F	5.6	Peaked 26.4 GL/d (30/04) Volume** 1182 GL
Menindee Lakes Scheme (MLS)			
Lake Wetherell	62.23	Vol = 253	
Lake Pamamaroo	61.48	Vol = 352	Total MLS = 1382 GL, 80%
Lake Menindee	58.36	Vol = 386	
Lake Cawndilla	57.74	Vol = 390	
Weir 32	1.57 S	0.2	
Lower Darling River			
Burtundy	0.91 S	0.7	

R= Rising, F = Falling, S = Steady

* Flows are in gigalitres per day (GL/d): 1 gigalitre = 1000 megalitres = 1 billion litres.

** Volumes (GL) are the total flow passing this station since 1 March 2010.

Current river flows

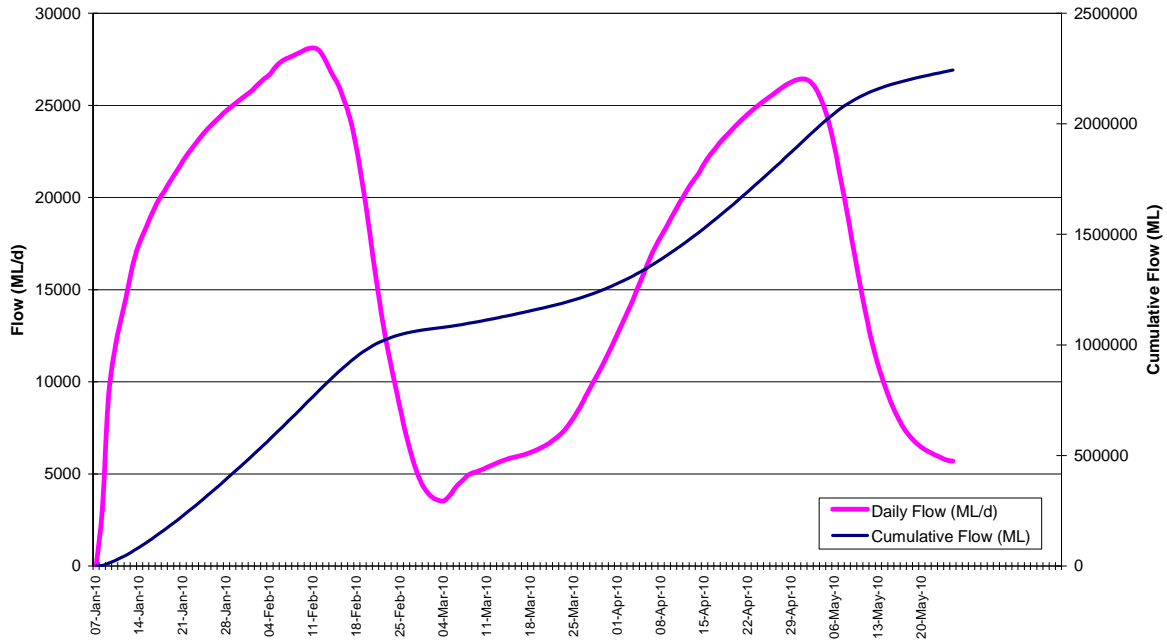
Paroo River

The Paroo River is slowly draining into the Darling River about 30 km upstream of Wilcannia. Peak flows have been gauged at less than 5,000 ML/d at Porters Crossing which is significantly less than the 19,000 ML/d measured during the 1990 flood. This inflow to the Darling will sustain the flows at Wilcannia over the coming week at around 5,000 ML/d before falling. The majority of the floodwaters originating in Queensland in March did not contribute to flows at Menindee, which is 1,000 kms downstream from the source of the flood. Instead these floodwaters replenished the arid floodplains and filled numerous channels, billabongs, anabranches and flood runners, which is the natural process in these western rivers.

Darling River

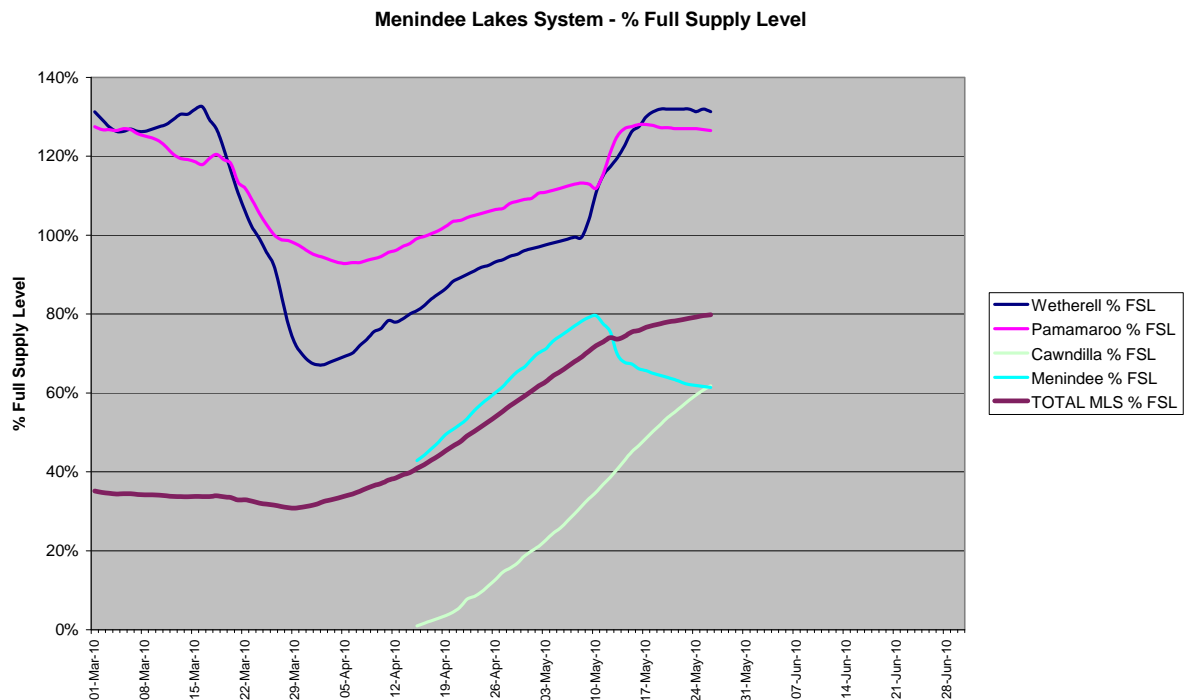
Flows through Bourke have totalled 1,145 GL (since 1 March), after the peak on 11 April 2010. By comparison, the volume passing through Bourke for the Christmas/New Year event was a bit higher at 1,350 GL. Similarly, the volumes passing through Wilcannia for this event will be about 1,200 GL to the end of May compared with 1,050 GL from the earlier event. The increased flow at Wilcannia relative to Bourke in the second flood is due to inflows from the Warrego and Paroo Rivers, coupled with the reduced transmission losses between Bourke and Wilcannia after the initial wetting from the first flood.

Wilcannia Flows (Jan - June 2010)



Menindee Lakes

As at 26 May the Menindee Lakes System was 80 per cent full but the rise in the total volume in storage was slowing. No further significant increase in storage is expected from this event. The regulator from Lake Pamamaroo to Lake Menindee has been reopened to accommodate inflows from the Paroo River. The small inflows to the upper lakes of Wetherell and Pamamaroo is now being offset by natural losses to evaporation and seepage. There is no regulator between the two larger lower lakes of Menindee and Cawndilla so the higher water level in Lake Menindee is currently falling as Lake Cawndilla rises. This will continue until the two lakes reach equilibrium.



In summary, Lakes Wetherell and Pamamaroo were surcharged to maximum capacity (608 GL) at the start of the March. A total of 1180 GL has flowed past Wilcannia this autumn. The volume stored in the Lakes has risen to a total of 1,380 GL. Flow out of the Lakes into the Lower Darling River through Weir 32 since 1 March has totalled 165 GL. Consistent with preliminary estimates, around 242 GL was consumed in wetting losses, transmission losses, and evaporation, as water was diverted into the dry beds of Lakes Menindee and Cawndilla for the first time since 2002.

The available water within the Menindee Lakes System is now shared between NSW, Victoria and South Australia in accordance with the Murray Darling Basin Agreement. Releases from the system through Weir 32 are managed by the Murray Darling Basin Authority and are currently at normal seasonal minimums of 200 ML/d.

Extraction management

Water users in the Barwon-Darling and lower Darling will be able to access the available water according to their licence conditions and supplementary water announcements.

Communications

Updates have been provided weekly, where possible, and are available from the NSW Office of Water's website at www.water.nsw.gov.au

The information provided is advisory only. For real-time and daily information please visit the Office of Water website. For current river level predictions and flood warnings you should consult the Bureau of Meteorology website at www.bom.gov.au.

Contact Bunty Driver 0407 403 234

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