

Greater Sydney Operations Plan

July 2019

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1. Highlights

As of 4 July 2019, Sydney's dam levels are at 52.0%, a decrease of 6.6% since the previous CAG Meeting Report in February. Rainfall across Sydney catchment over the last 24 months has been very much below average.

The 60% total storage level was reached on 27 January 2019, which is a trigger under the Metropolitan Water Plan to initiate the restart of the Sydney Desalination Plant. The plant began producing water during March and anticipate that they will be at full capacity in August. This desalinated water enters directly into Sydney's drinking water system, which is administered by Sydney Water Corporation.

The 50% drought trigger may be reached in July assuming drought conditions continue. The current BoM outlook indicates a drier than average winter, with daytime temperatures likely to be warmer than average.

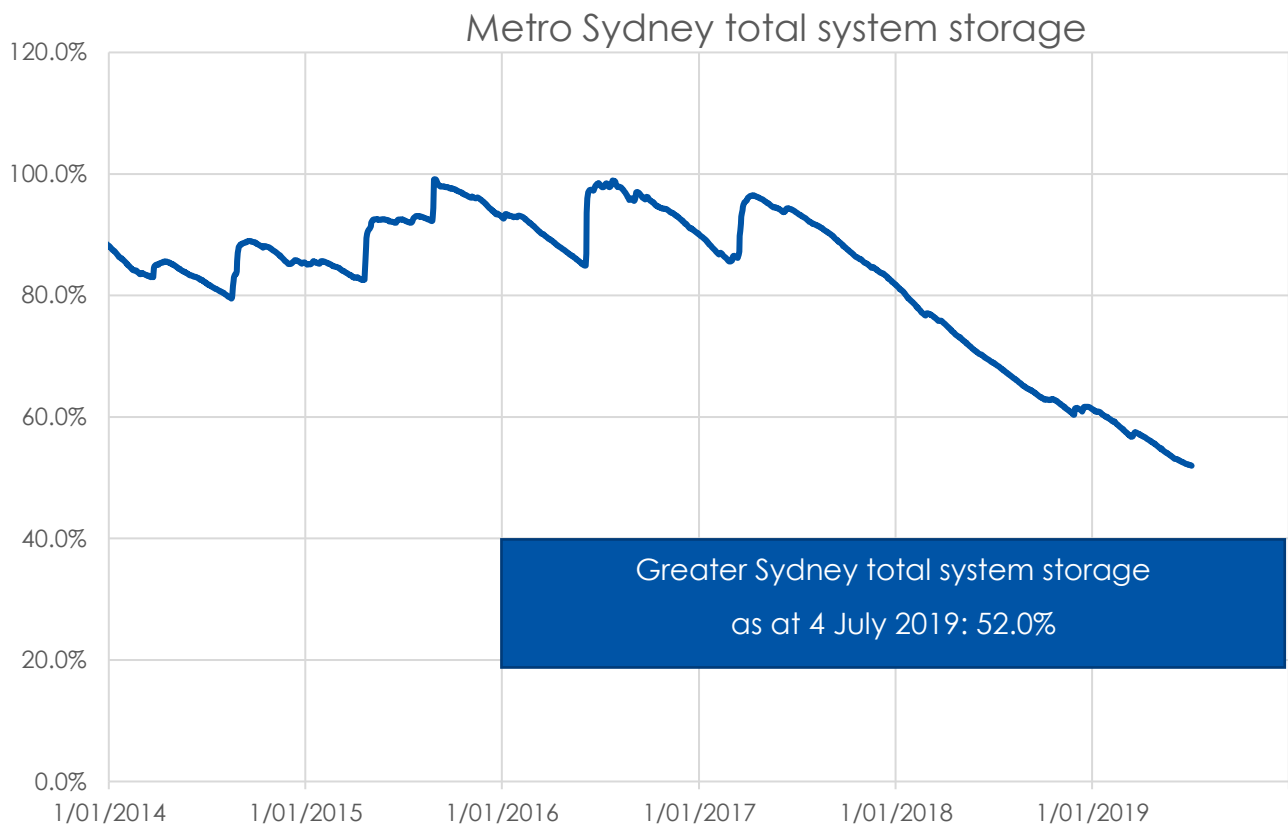
Approximately 33GL has been transferred from the Shoalhaven since Burrawang Pump Station commenced operation on 7 September 2018. Transfers have resulted in significant improvements to security of the Upper Nepean system.

The trigger to implement Level 2 Water Restrictions for the FRWS was reached on 11 Feb. The restrictions will not impact current operation of the system as customer usage is below the restricted amount.

2. Dam storage

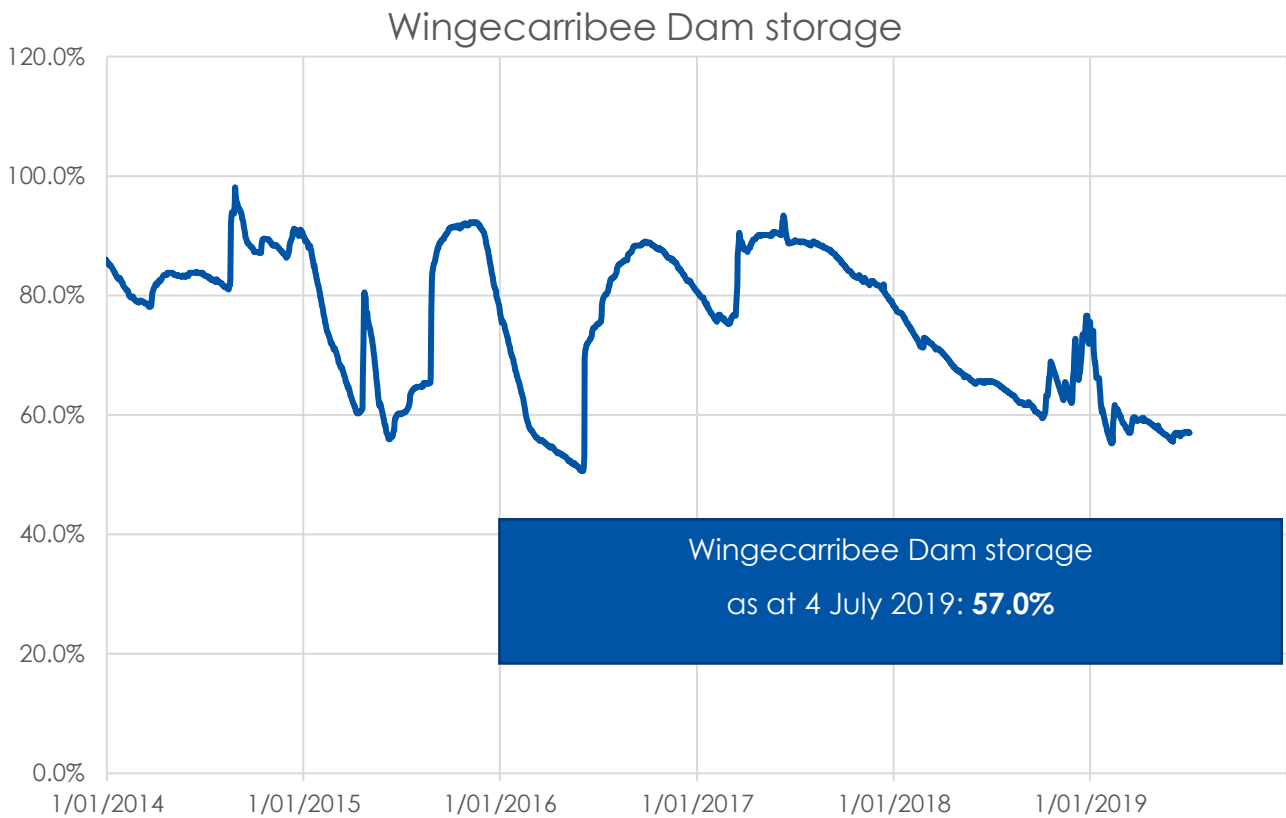
2.1 Greater Sydney total system storage

The figure below shows the Greater Sydney total system storage level, with historical perspective, comparing levels since 1 January 2014. The current total system storage as at 4 July 2019 is 52.0%.



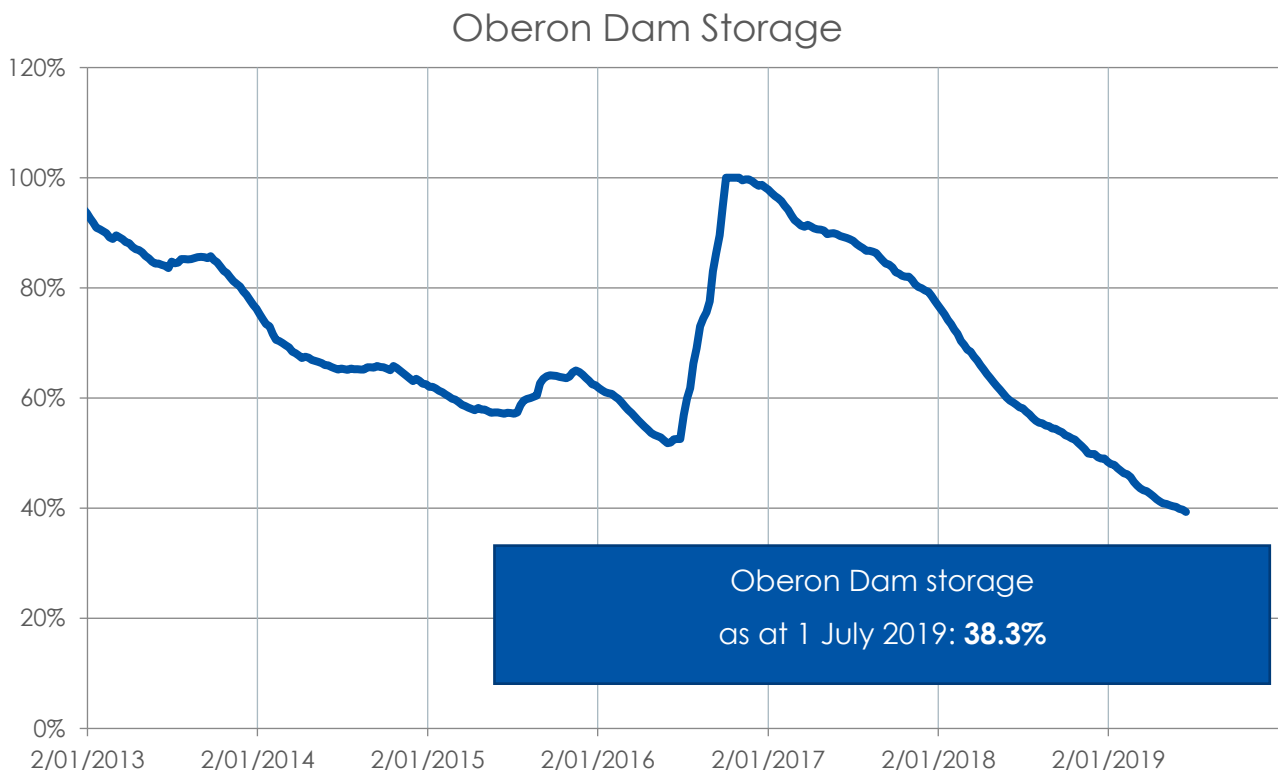
2.2 Wingecarribee Dam storage

The figure below shows the Wingecarribee Dam storage level, with historical perspective, comparing levels since 1 January 2014. The current total system storage as at 4 July 2019 is 57.0%.



2.3 Oberon Dam storage

The figure below shows the Oberon Dam storage level, with historical perspective, comparing levels since 1 January 2014. The current total system storage as at 1 July 2019 is 38.3%.



3. Water quality

Ongoing drought conditions have contributed to generally good, stable water quality. Turbidity is generally low and within operational ranges and colour continues to decline. Increased alkalinity has been noted in Cascades and Illawarra raw water but this is not causing issues for treatment. With cooler weather, metropolitan storages (not artificially mixed) have undergone seasonal turnover and WaterNSW is conducting special monitoring to set offtake levels for preferred water quality. Increasing concentrations of common metals such as iron and manganese may be expected.

ASU (a measure of algal biovolume and filter clogging potential) has been elevated in Macarthur, Illawarra and Cascades raw water through late autumn. Potential toxin producing algal species have been recorded above trigger levels in Wingecaribee Reservoir and at lower counts in Kangaroo Valley. Wingecaribee water treatment plant continues to use powdered activated carbon and treated water is within Australian Drinking Water Guidelines. Cooler weather will reduce the risk of problematic algae.

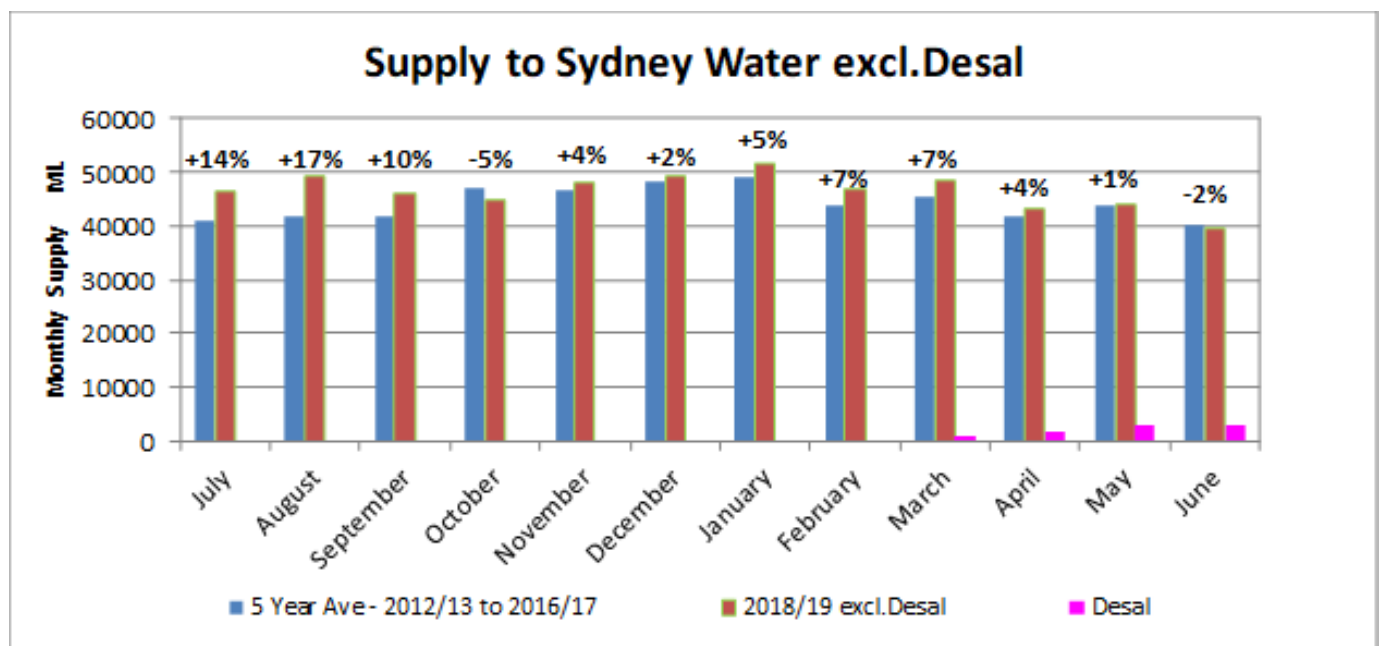
Drought conditions are generally typified by good water quality as there are no large inflows bringing turbid water and contaminants into the storages. Conversely, declining storage levels mean less options for reconfiguring supplies to avoid poor quality water during an event.

4. Demand

4.1 2018/19 Demand vs five-year average

Water supplied for Sydney was higher than the 5-year average for April and May but lower in June, possibly due to a number of factors such as increased rainfall experienced in June as well as supplementary water supplied by the Sydney Desalination Plant (SDP) which commenced producing water during in this time. SDP anticipate they will be at full capacity in August, well ahead of the 27 September contractual deadline.

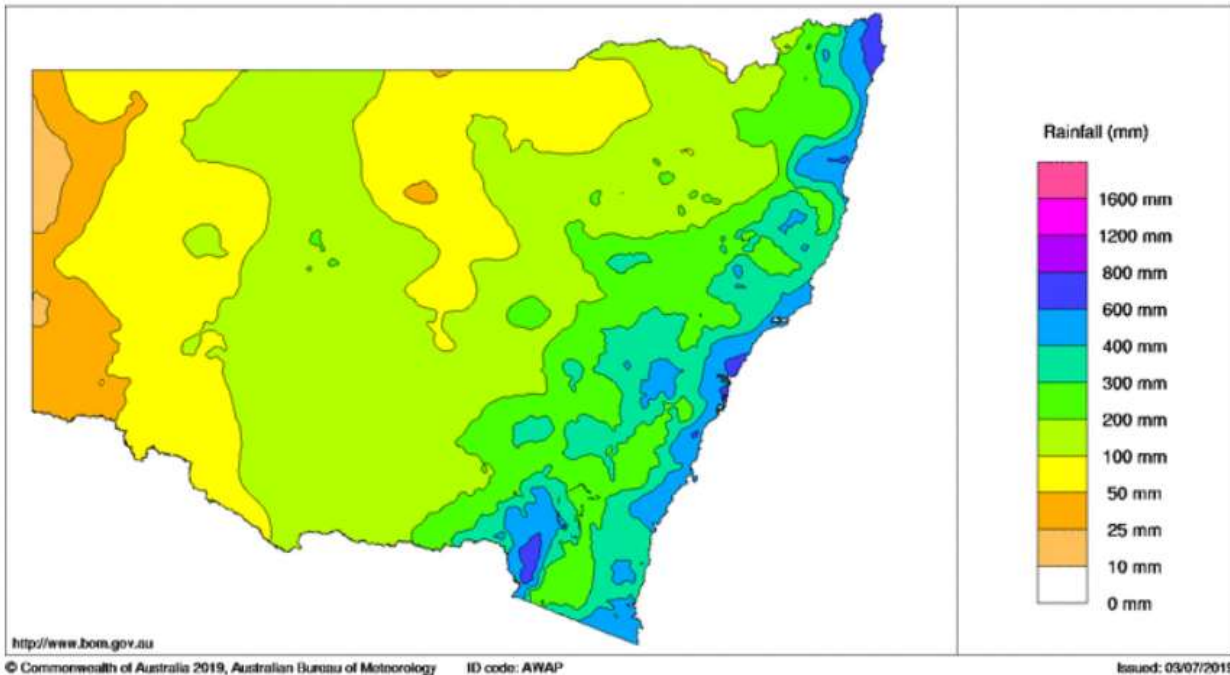
Sydney Water Corporation have also commenced a media campaign encouraging people not to waste water. The 60% drought trigger was reached on 27 January 2019, with level one restrictions introduced from June 1 when total system storage was at 53.2%.



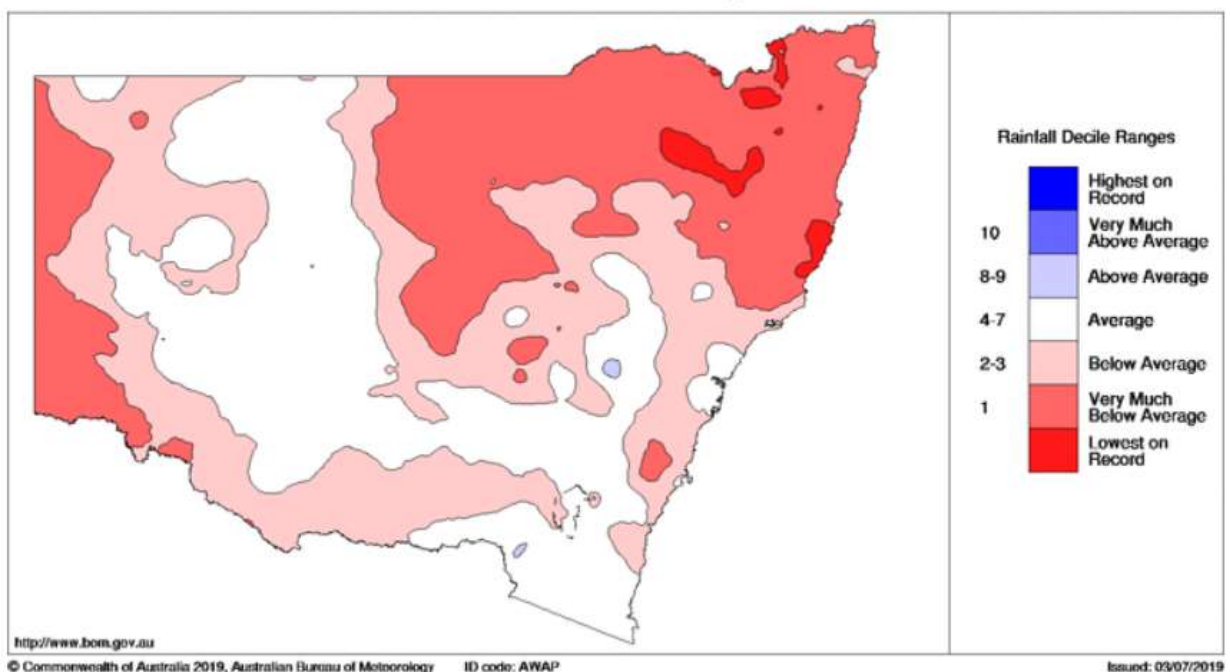
5. NSW rainfall

5.1 6-month rainfall

New South Wales Rainfall totals (mm) 1 January to 30 June 2019
Australian Bureau of Meteorology

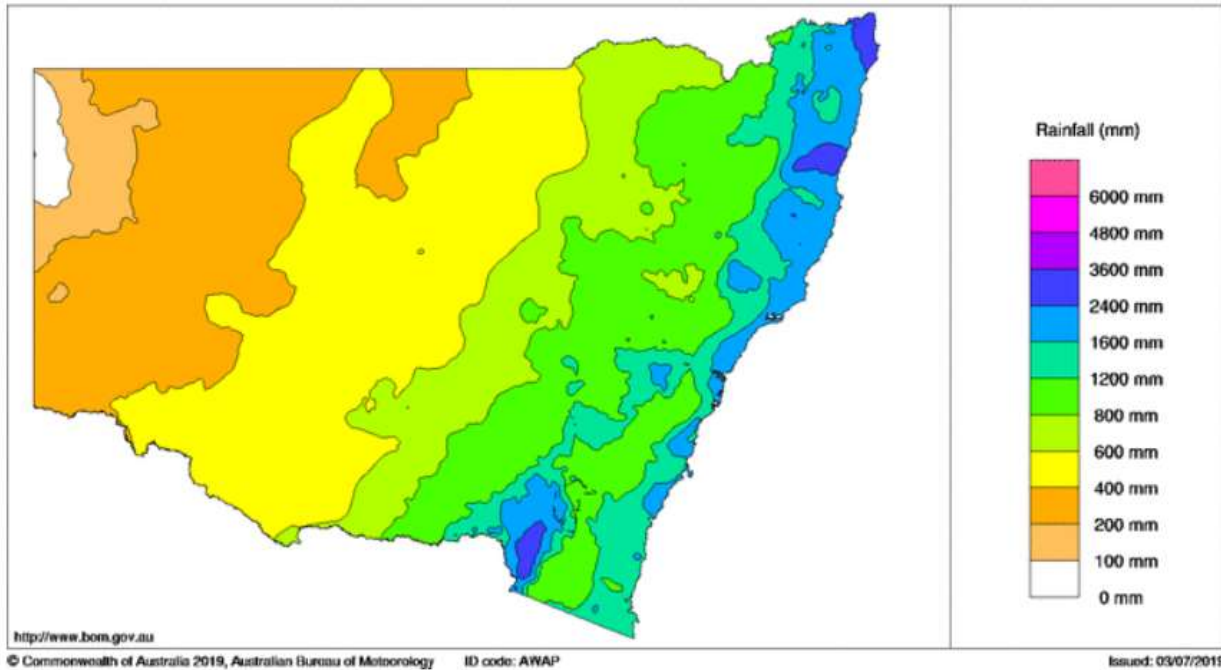


New South Wales Rainfall Deciles 1 January to 30 June 2019
Distribution Based on Gridded Data
Australian Bureau of Meteorology

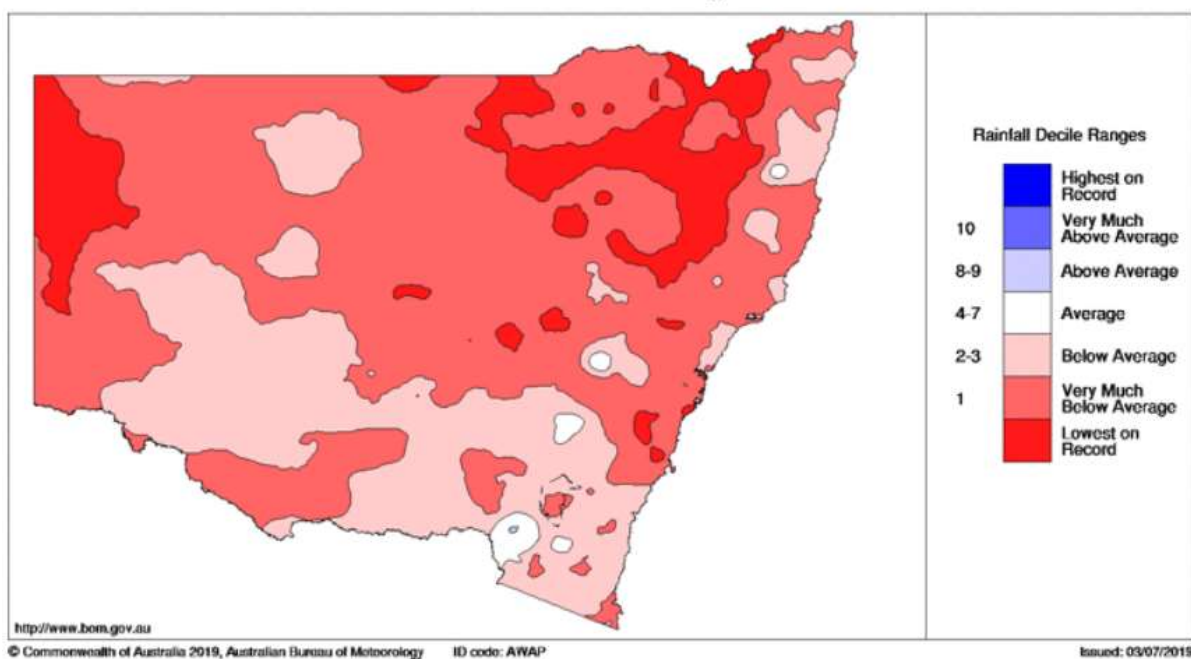


5.2 24-month rainfall

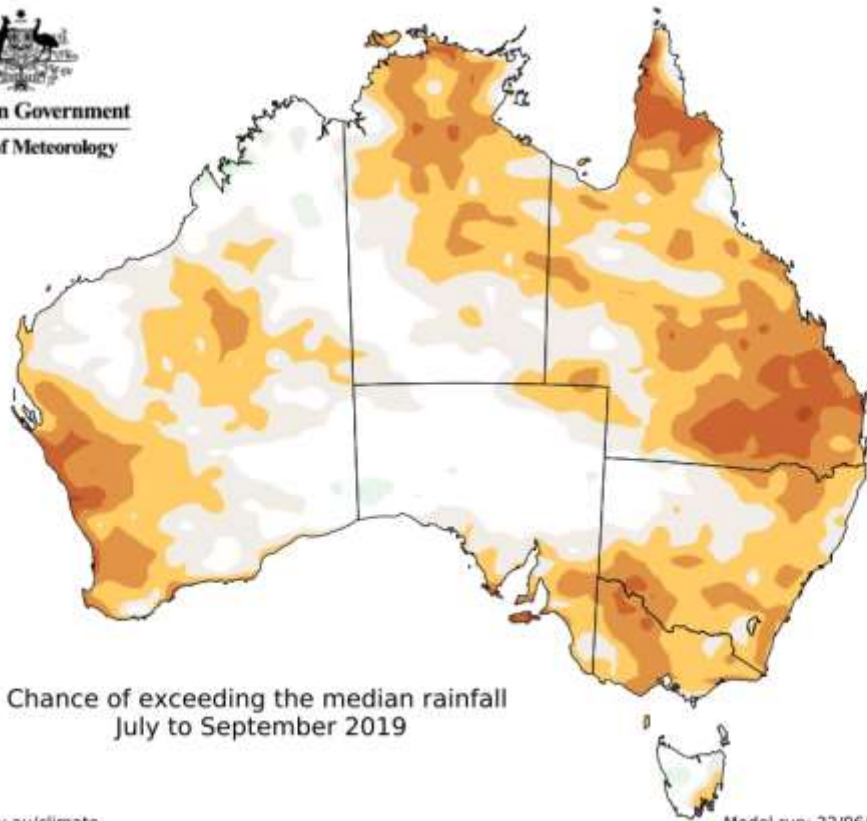
New South Wales Rainfall totals (mm) 1 July 2017 to 30 June 2019
Australian Bureau of Meteorology



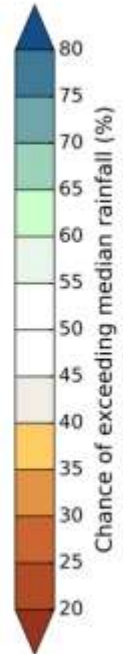
New South Wales Rainfall Deciles 1 July 2017 to 30 June 2019
Distribution Based on Gridded Data
Australian Bureau of Meteorology



5.3 Rainfall outlook



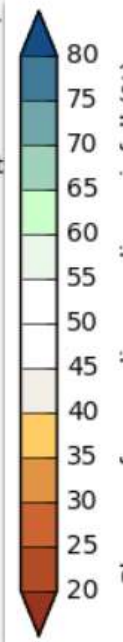
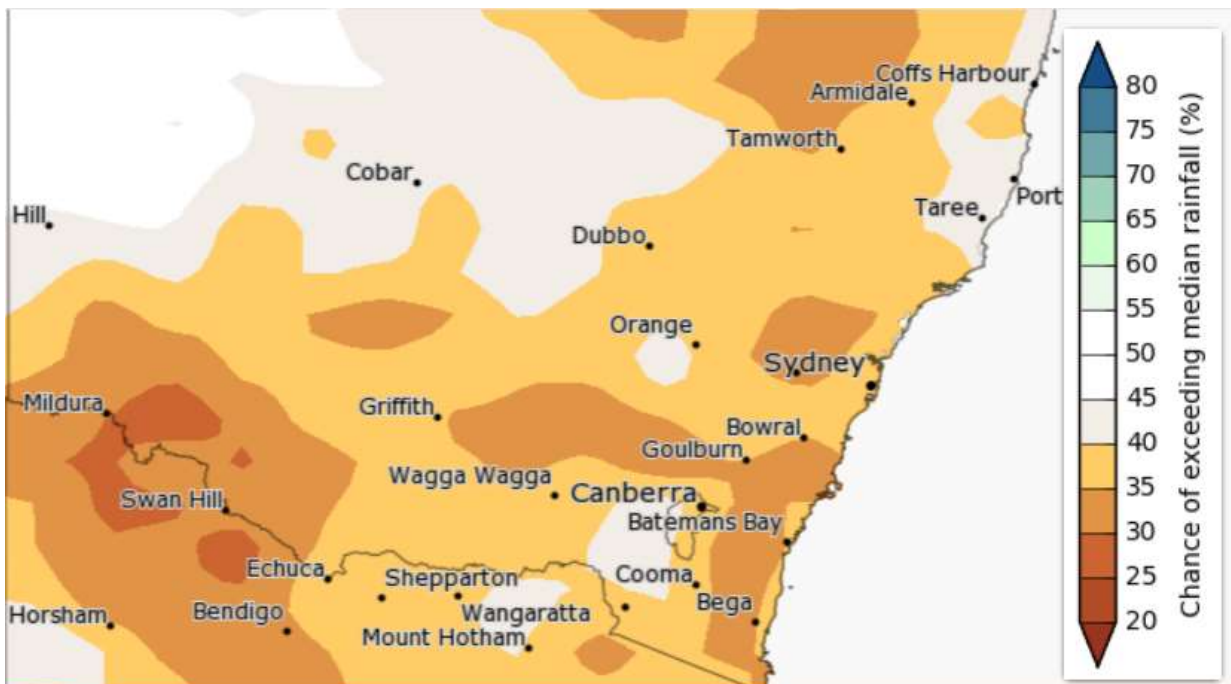
Chance of exceeding the median rainfall July to September 2019



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Model run: 22/06/2019
 Issued: 27/06/2019

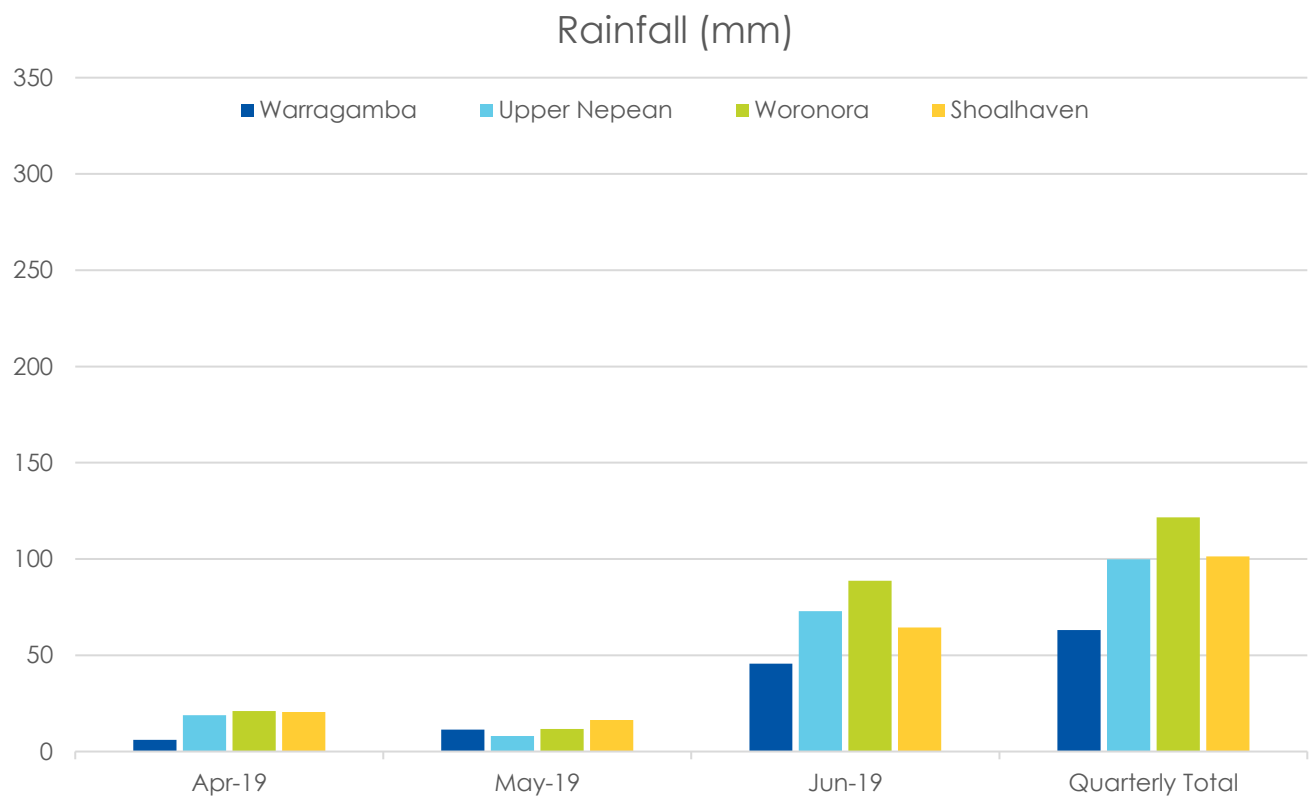
Model: ACCESS-S1
 Base period: 1990-2012



6. Sydney catchment area rainfall

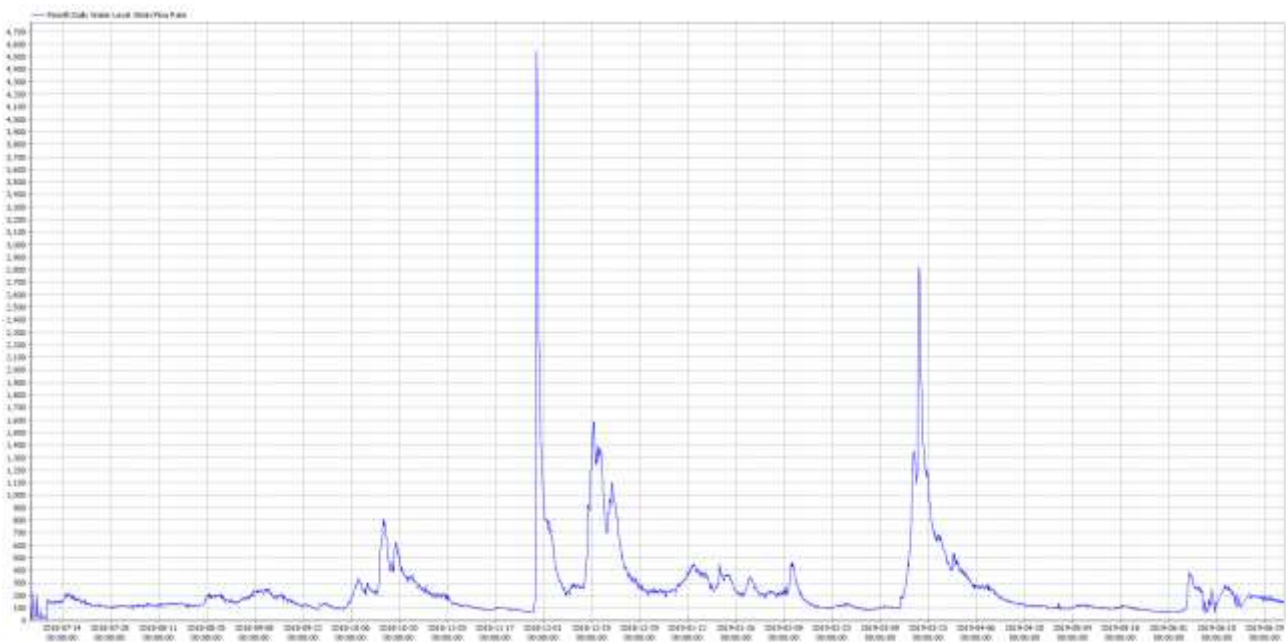
6.1 Rainfall recorded within the Sydney catchments - 01/04/19 to 30/06/19

Month	Warragamba	Upper Nepean	Woronora	Shoalhaven
Apr-19	6	19	21	21
May-19	11	8	12	16
Jun-19	46	73	89	64
Quarterly Total	63	100	122	101



7. Flow at Penrith weir

Flows at Penrith weir for the past 12 months are shown below, with a reading of approximately 150 ML/D on the 30 June 2019. Flows peaked at approximately 4 400 ML/D on 29 November 2018 following a significant rainfall event the day before. A follow up rain event that occurred mid December 2018 increased flows to 1600 ML/D.

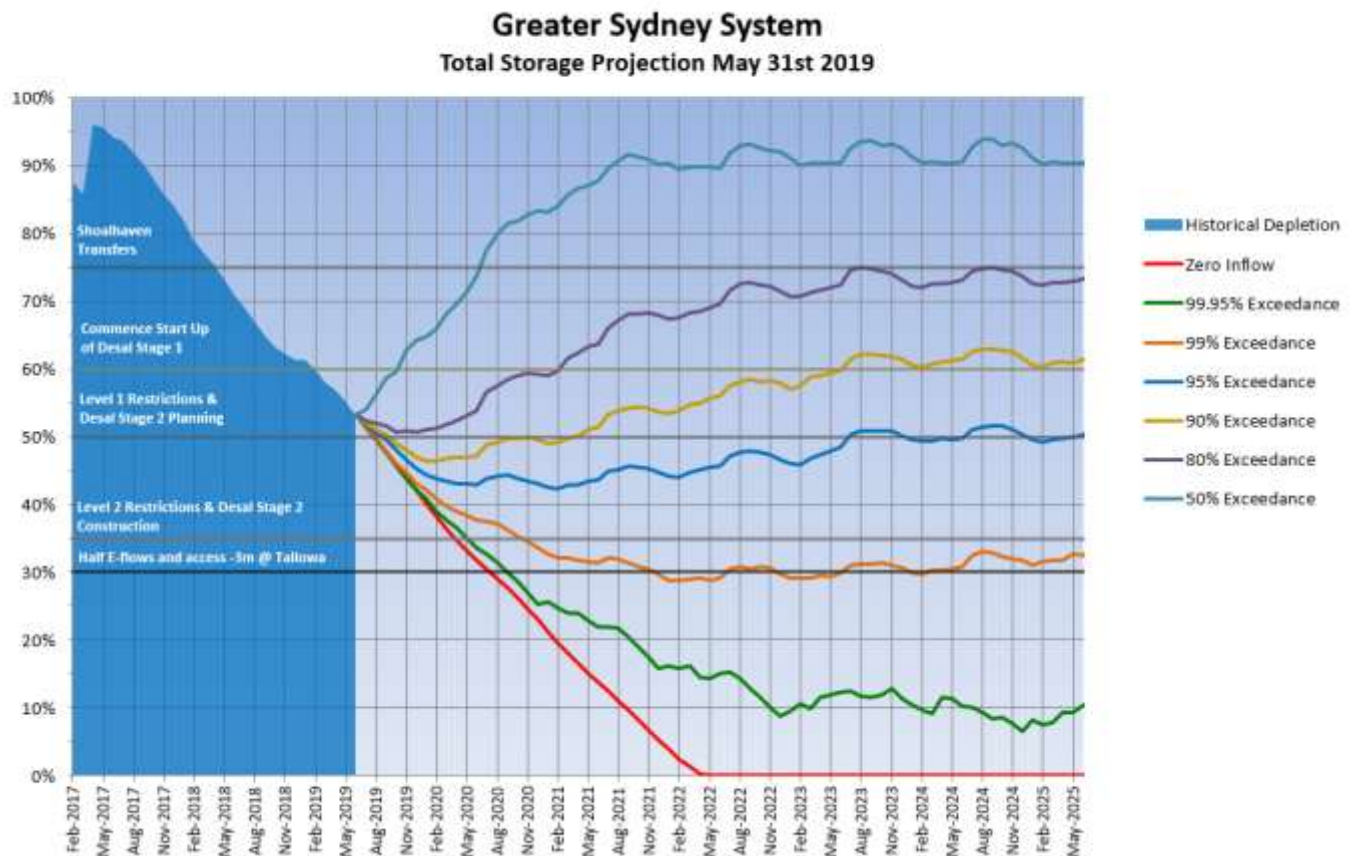


8. Storage forecast

Greater Sydney system - total system storage projections May 31 2019

This model assumes:

- SWC forecast demand (dry conditions) to June 2025
- Metro Water Plan (MWP) drought response mechanisms



9. Outage planning

Item	Time	Description
Warragamba Pipeline Valve Upgrade	Sept / Oct	An amended scope for the Winter outage is being arranged. During this time, Sydney will be supplied by Pipeline 2, Prospect raw water pumping station, as well as the Sydney Desalination Plant
Warragamba DWPS Commissioning	Oct / Nov	Testing of the Deep Water Pumping Station will require reconfiguration of Warragamba pipelines, but supply will remain online.
Shoalhaven System – Bendeela Pumping Station and Kangaroo Valley Power Station	Ongoing	The Shoalhaven Scheme remains offline as Origin Energy continue to have issues recommissioning Bendeela Pumping/Power Station.

More information

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