

# Greater Sydney Operations Plan

November 2018

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## 1. Highlights

After a few relatively wet and cool weeks in October that resulted in a steadying of total system storage levels, a return to dry warm conditions has once again seen levels decline. As of 31 October 2018, Sydney's dam levels are at 62.3%. Weekly decreases are averaging 0.4% to 0.5%.

A continuation of dry conditions in the Shoalhaven means there is only minor volumes available for transfer. WaterNSW continues to release water for supply to Shoalhaven City Council and maintains releases for the environment, as per requirements of the Water Sharing Plan. WaterNSW is continuing to release transfers from Shoalhaven to the Upper Nepean System at a rate of 50 ML/d. This is resulting in a slow but steady rise in Nepean Dam, providing much needed relief to the Upper Nepean system which supplies Nepean, Avon and Macarthur water filtrations plants.

Based on predictions as at 31 October, WaterNSW expects the 60% drought trigger to be reached on 29 November 2018, based on dry conditions returning and temperatures starting to increase.

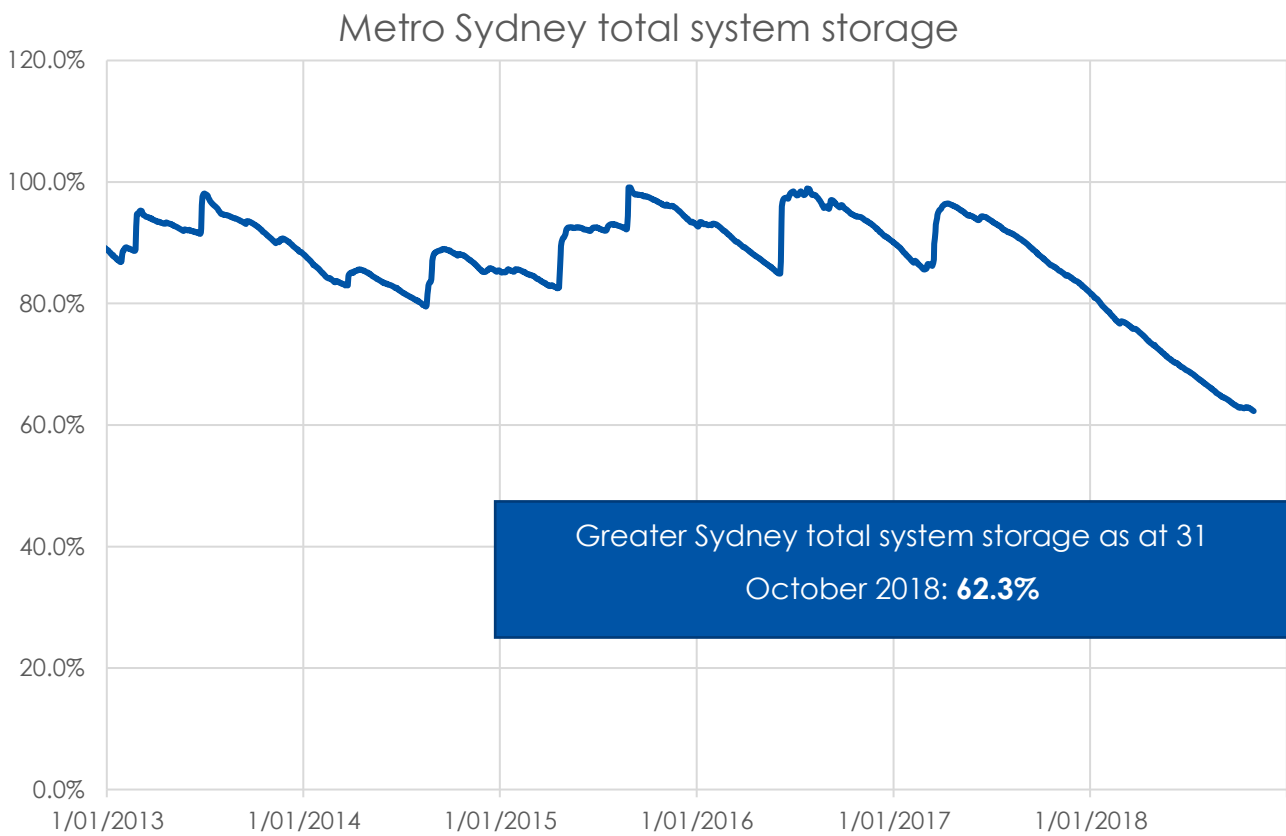
Drought conditions remain throughout the Sydney catchments, with ongoing predictions of a dry spring and summer.

Above median rainfall is required to provide improved storage conditions; however, the current Bureau of Meteorology (BoM) outlook (as at 31 October) only indicates there is 40% chance of above median rainfall over the next three months.

## 2. Dam storage

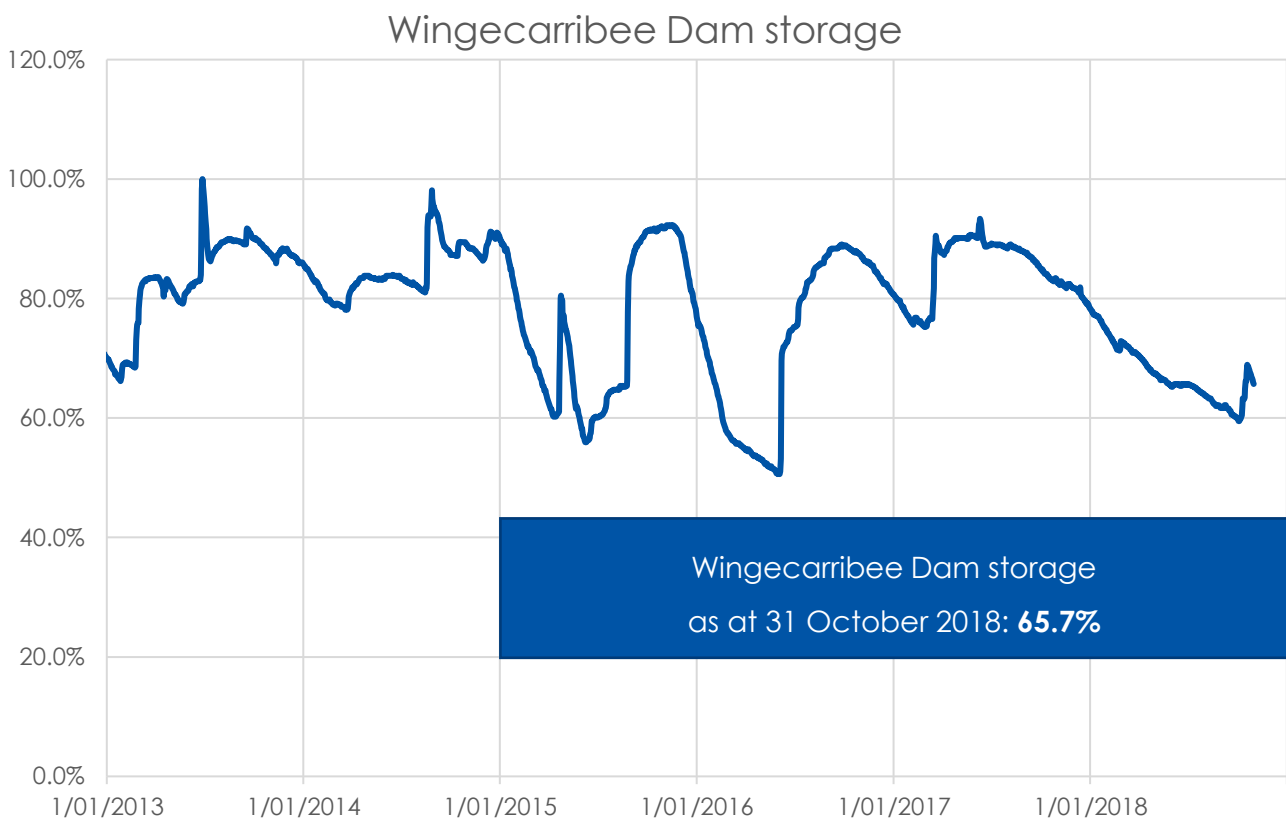
### 2.1 Greater Sydney total system storage

The figure below shows the Greater Sydney total system storage level, with historical perspective, comparing levels since 1 January 2013. The current total system storage as at 31 October 2018 is 62.3%.



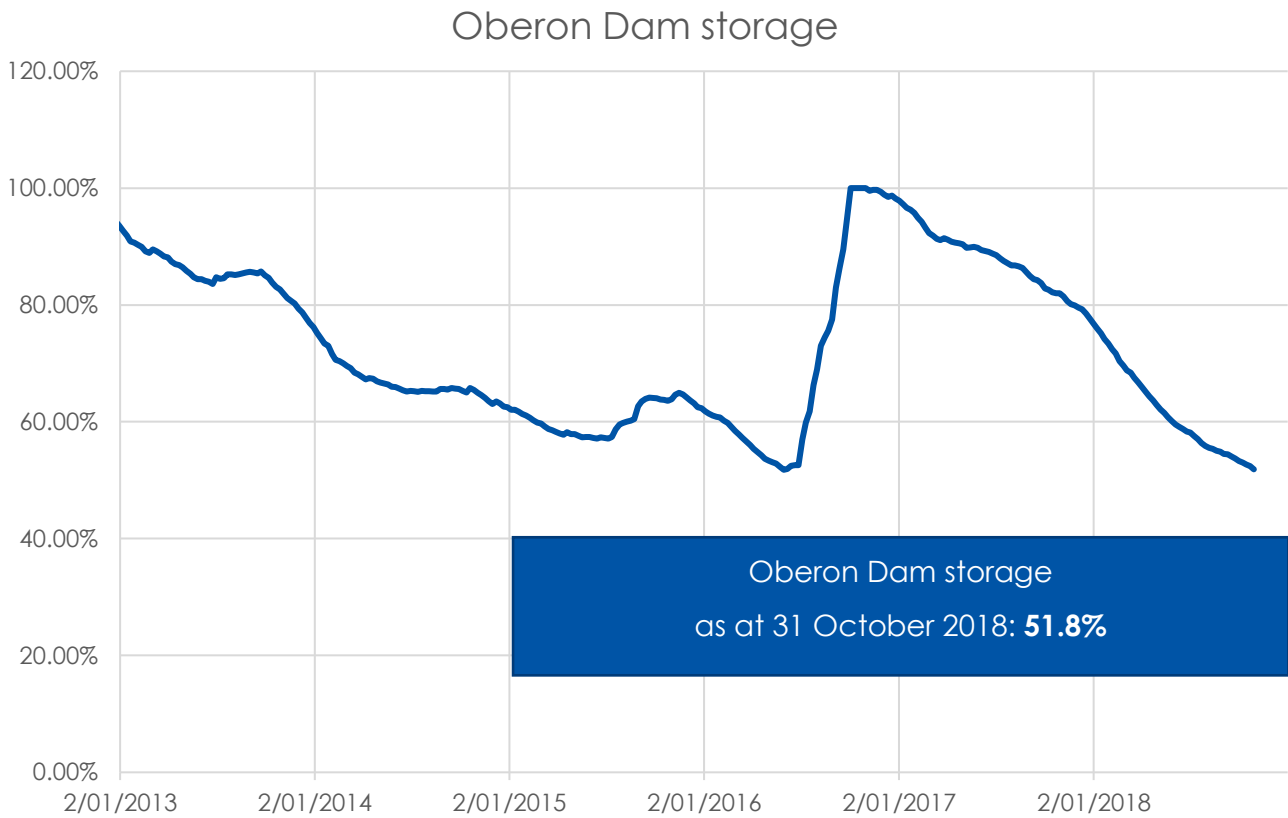
## 2.2 Wingecarribee Dam storage

The figure below shows the Wingecarribee Dam storage level, with historical perspective, comparing levels since 1 January 2013. The current total system storage as at 31 October 2018 is 65.7%.



### 2.3 Oberon Dam storage

The figure below shows the Oberon Dam storage level, with historical perspective, comparing levels since 1 January 2013. The current total system storage as at 31 October 2018 is 51.8%.



### 3. Water quality

Ongoing drought conditions have contributed to good, stable water quality. Turbidity is generally low and within operational ranges. Colour is also showing gradual decline. With warmer weather, metropolitan storages without artificial destratification systems are beginning to stratify.

Warmer weather is also contributing to increasing algal activity and associated issues such as filter clogging potential, taste and odour and in some cases potential toxin producing species. Some water filtration plants (Cascades, Macarthur and Illawarra) experiencing elevated ASU (a measure of algal biovolume and filter clogging potential) due to large populations of diatoms. Upper Cascades lake is also experiencing increased concentrations of geosmin (a potential odour causing substance), which is being managed by blending supplies from Greaves Creek and Fish River.

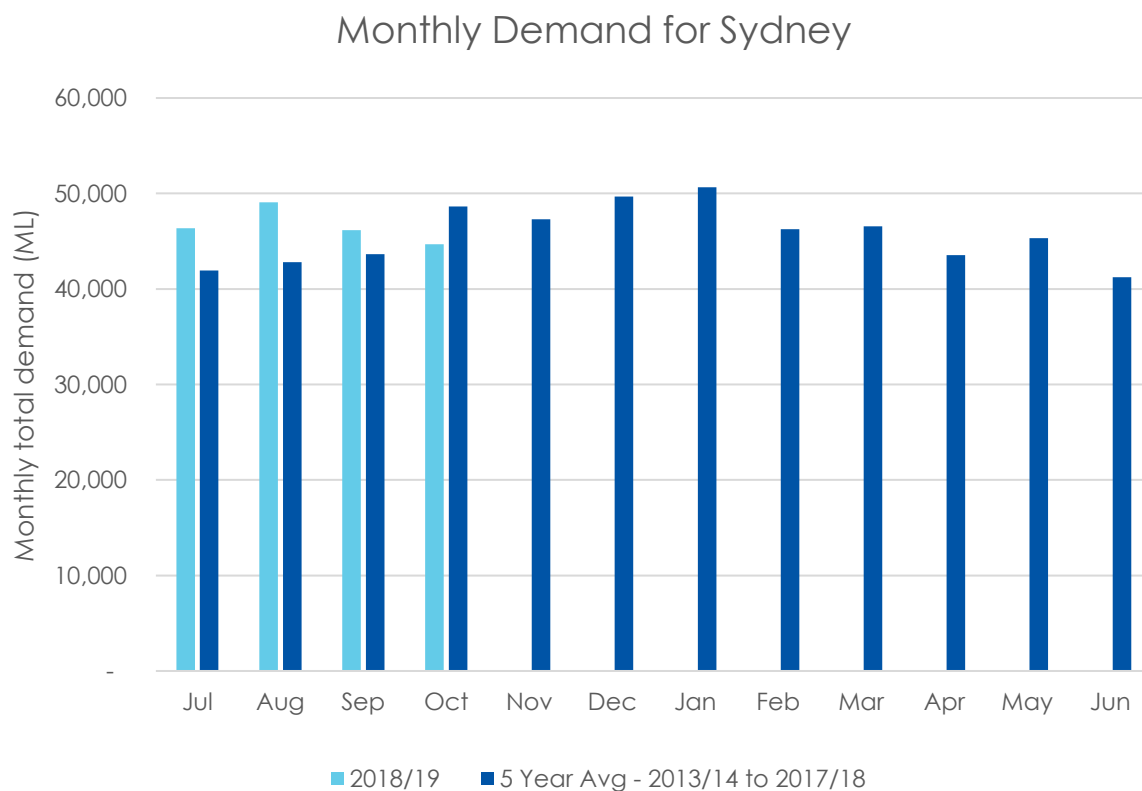
Biovolumes of potential toxin producing algal species are also fluctuating around incident trigger levels in Wingecarribee Reservoir but can be managed by the water treatment plant using powdered activated carbon.

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 tracking higher than the 5-year average for July, August and September. Demand dropped in October, which was most likely due to increased rainfall in October (see Section 6 for details). Sydney Water Corporation have also commenced a media campaign encouraging people not to waste water, which may have also started to influence demand.

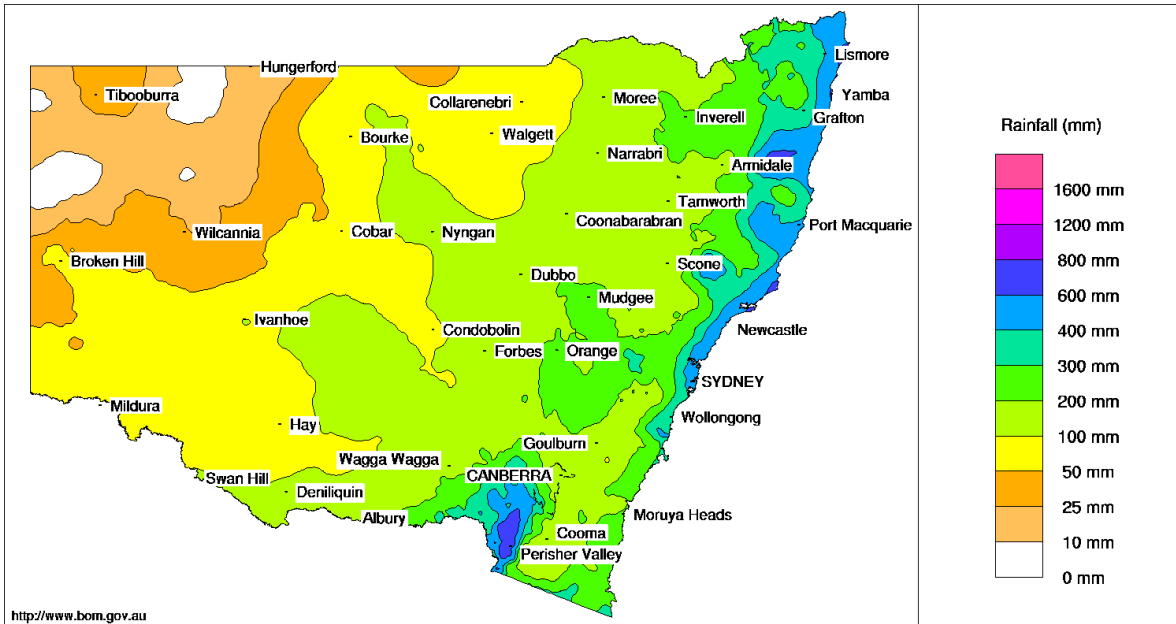




# 5. NSW rainfall

## 5.1 6-month rainfall

New South Wales Rainfall totals (mm) 1 May to 31 October 2018  
Australian Bureau of Meteorology



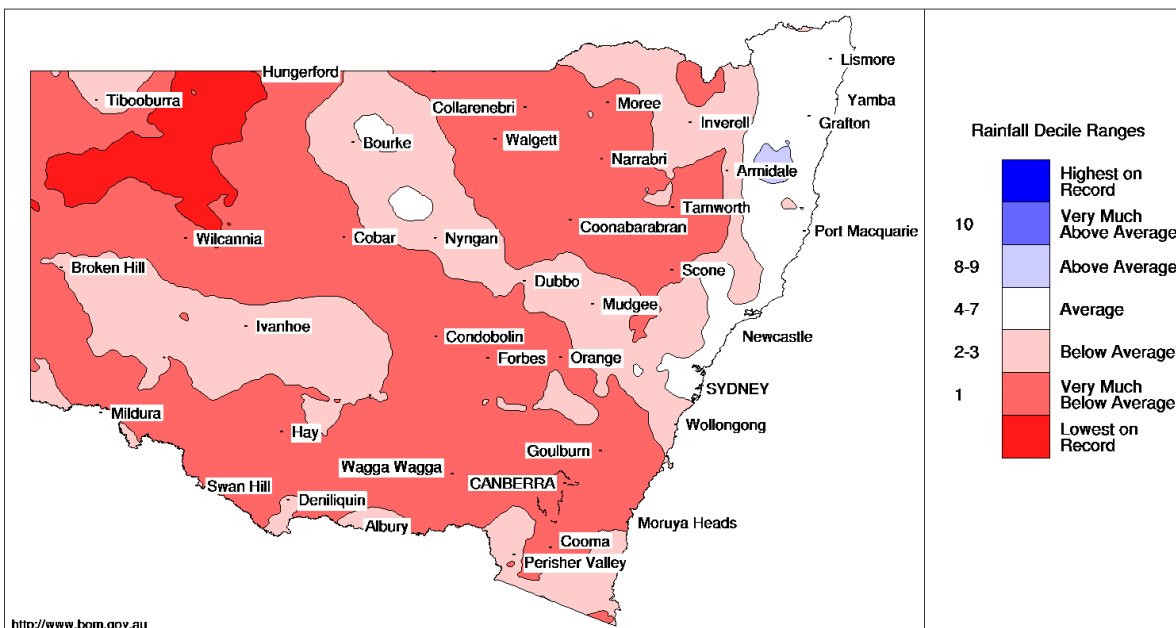
<http://www.bom.gov.au>

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New South Wales Rainfall Deciles 1 May to 31 October 2018

Distribution Based on Gridded Data  
Australian Bureau of Meteorology



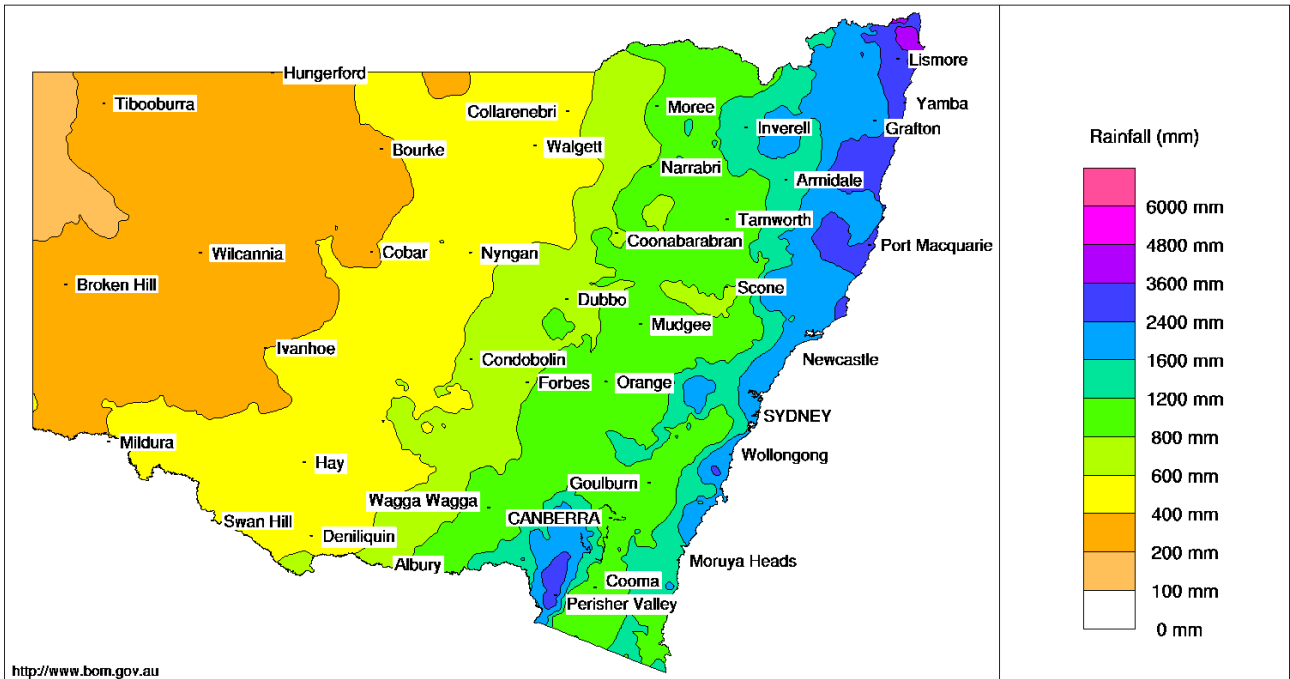
<http://www.bom.gov.au>

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## 5.2 24-month rainfall

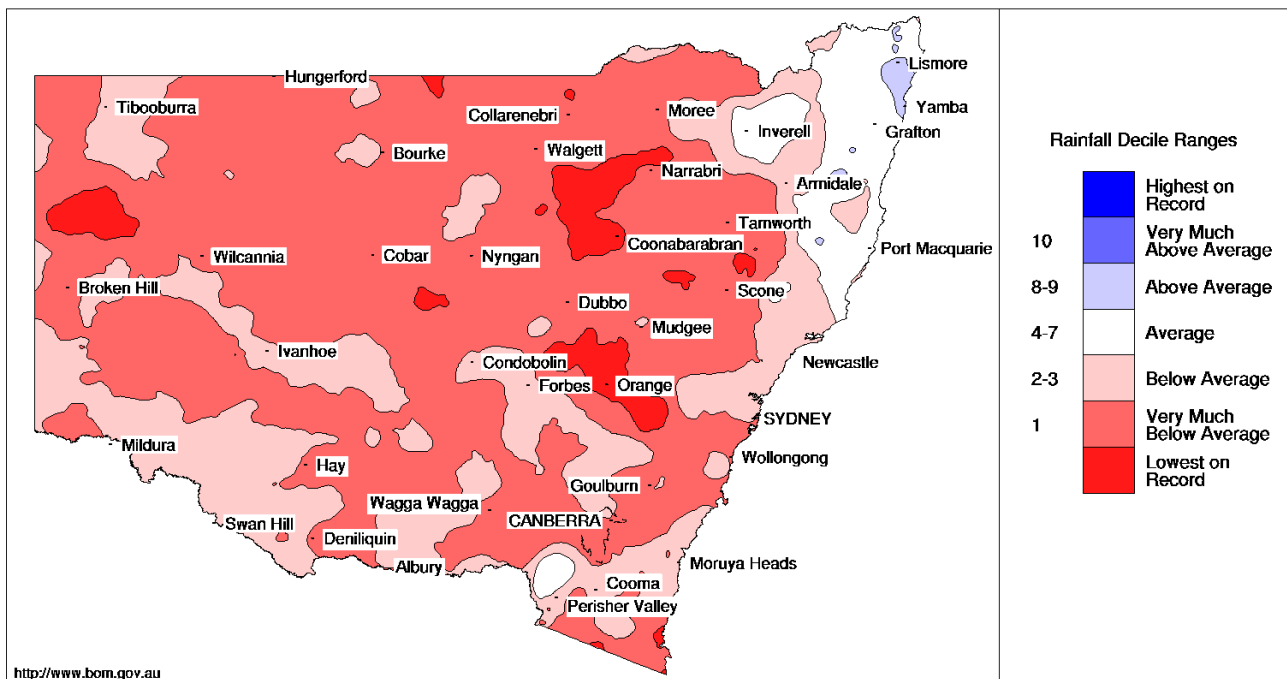
New South Wales Rainfall totals (mm) 1 November 2016 to 31 October 2018  
Australian Bureau of Meteorology



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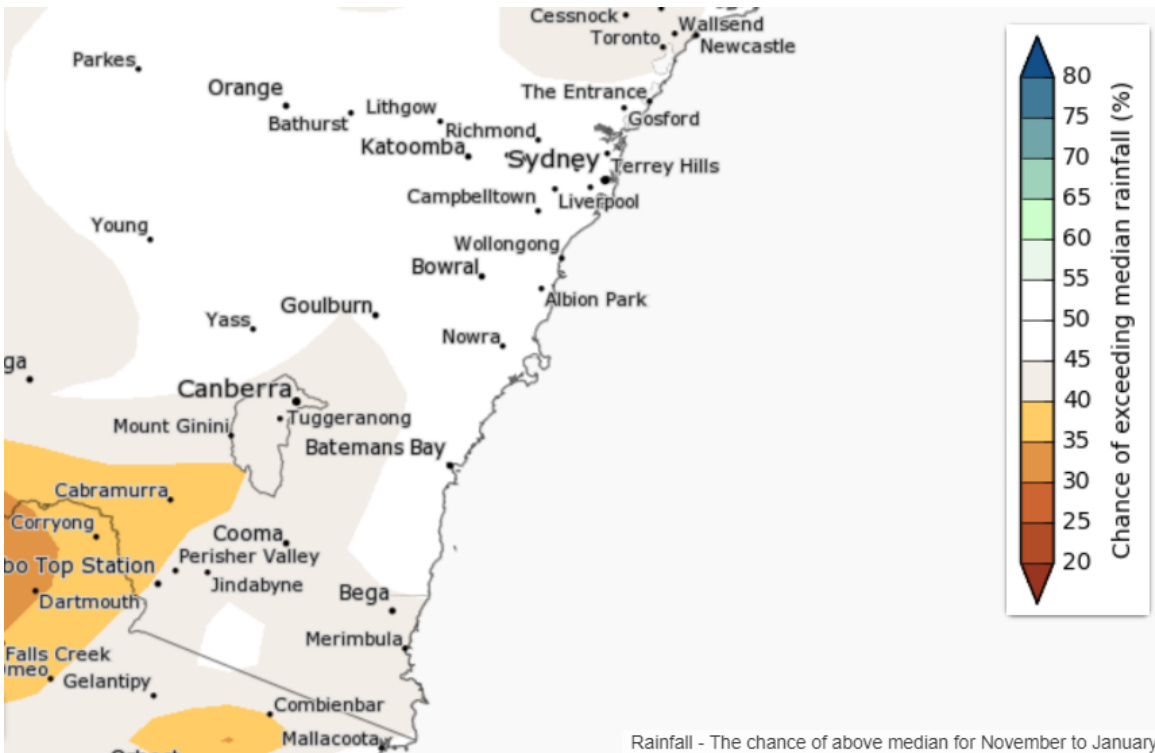
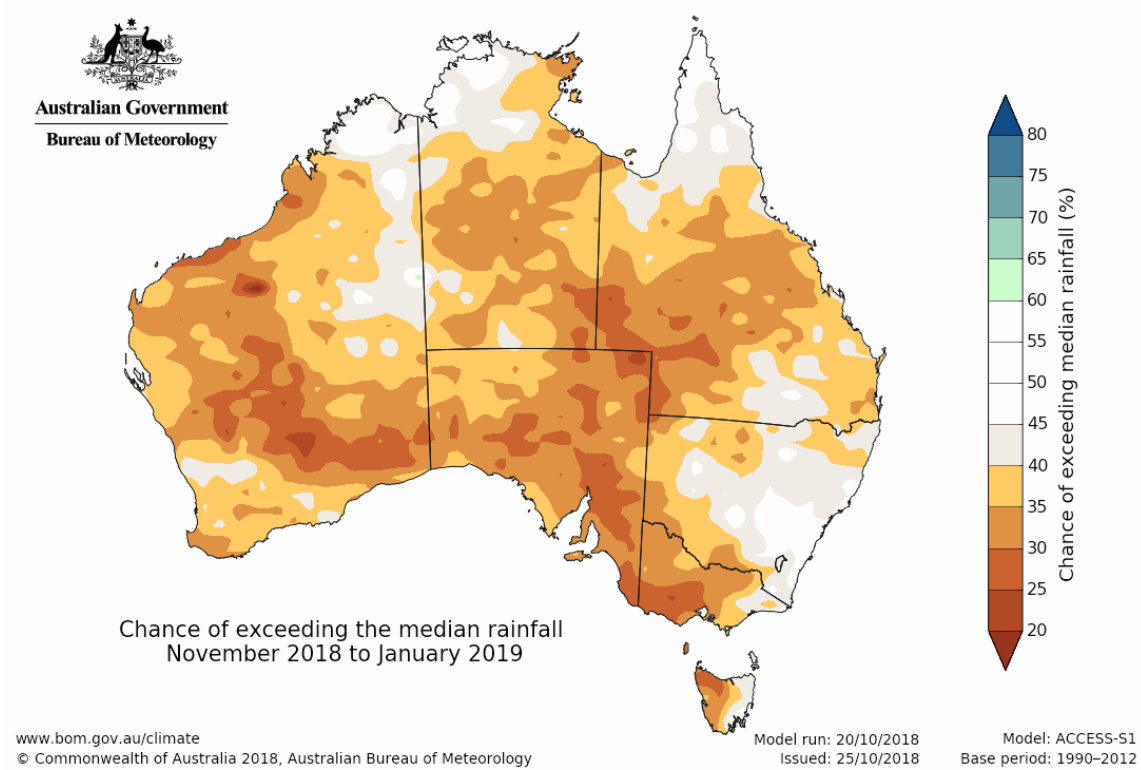
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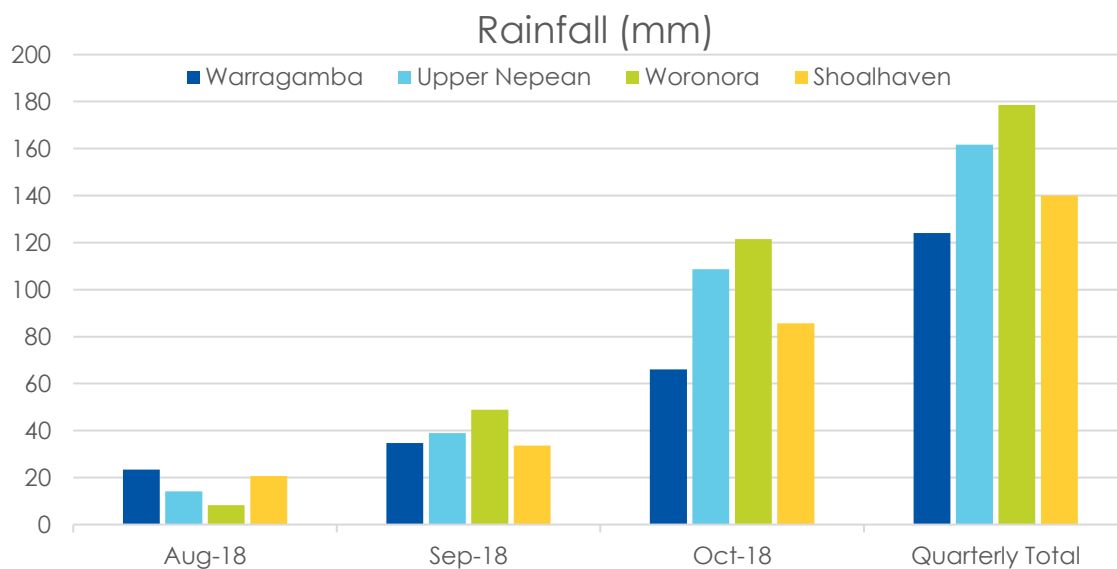
### 5.3 Rainfall outlook



## 6. Sydney catchment area rainfall

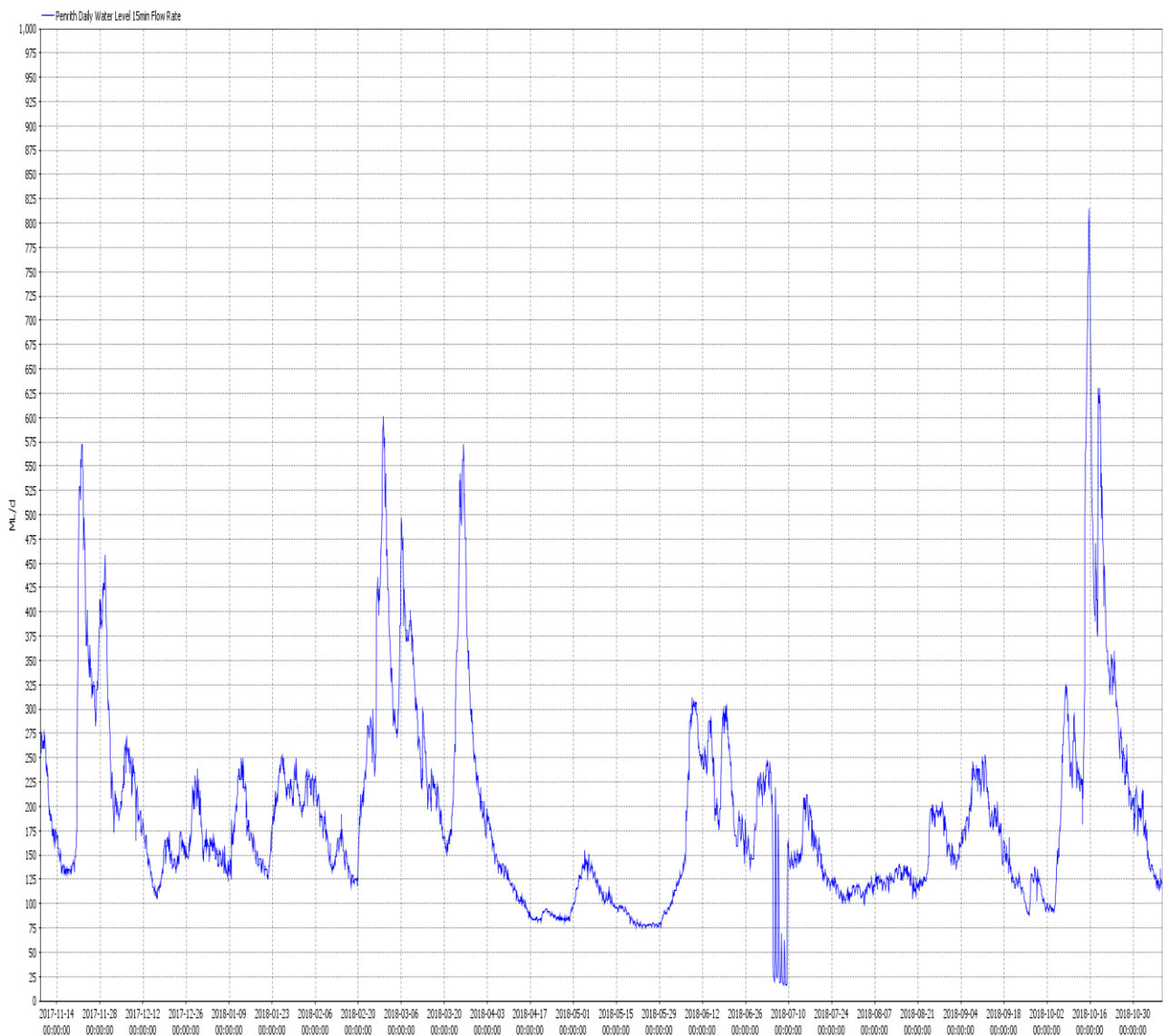
### 6.1 Rainfall recorded within the Sydney catchments - 01/08/18 to 31/10/18

| Month                  | Warragamba | Upper Nepean | Woronora   | Shoalhaven |
|------------------------|------------|--------------|------------|------------|
| Aug-18                 | 23         | 14           | 8          | 21         |
| Sep-18                 | 35         | 39           | 49         | 34         |
| Oct-18                 | 66         | 109          | 122        | 86         |
| <b>Quarterly Total</b> | <b>124</b> | <b>162</b>   | <b>179</b> | <b>140</b> |



## 7. Flow at Penrith weir

Flow at Penrith weir for the past 12 months shows a reading of approximately 120ML/D on the 31 October 2018. Flows peaked at approximately 815ML/D on 16 October 2018 following rainfall in the first two weeks of October.

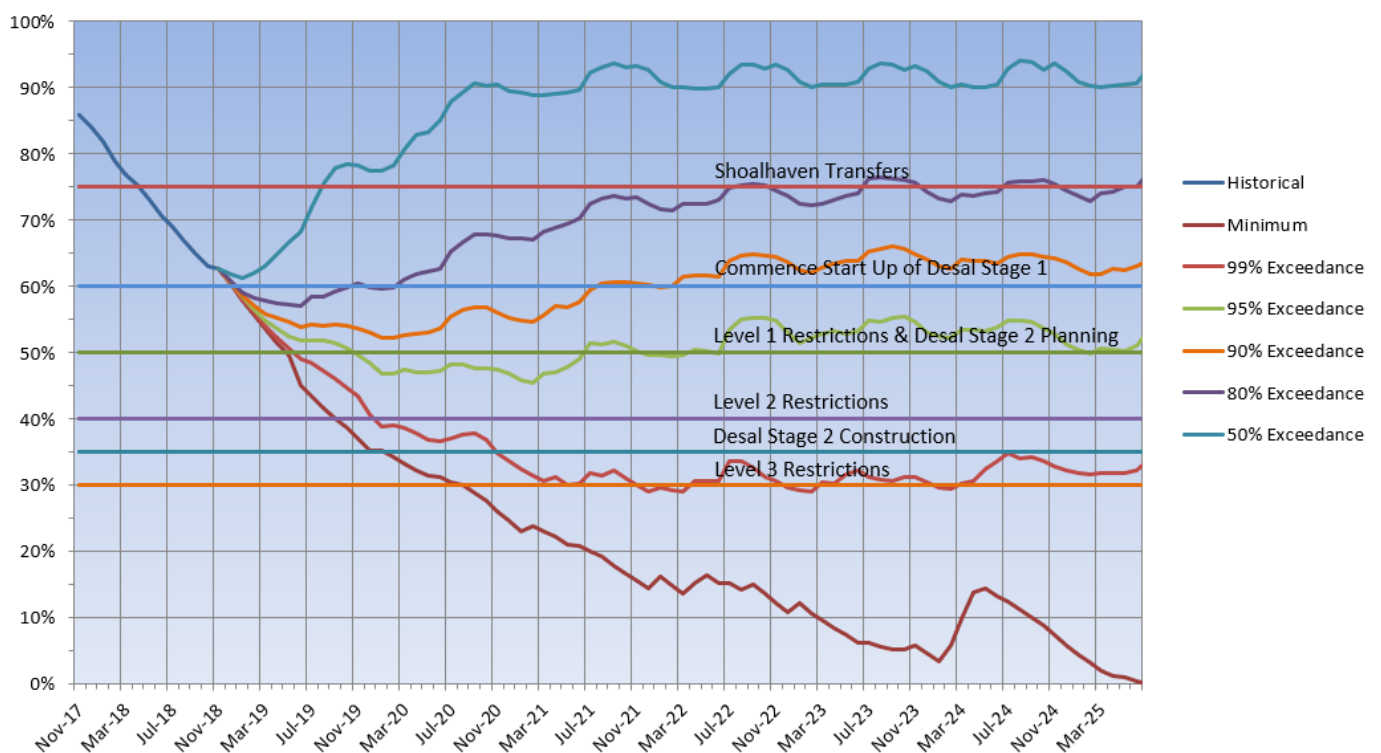


# 8. Storage forecast

## Greater Sydney system - total system storage projections November 2018

This model assumes:

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



## 9. Outage planning

| Item                                      | Time                    | Description   |
|---|-------------------------|---|
| The Upper Canal                           | Now until early January | The Upper Canal is off-line until early Jan 2019 to facilitate important upgrade works. During this period, Prospect WFP will be supplied from the Warragamba pipelines.  |
| Nepean Tunnel                             | 1 Nov - 4 Dec 2018      | The Nepean Tunnel outage is in-progress to facilitate concrete work for the housing of the new isolating gate. The gate itself will be installed in a further 4-week outage in late Feb or early Mar 2019 (to be confirmed). Macarthur WFP to be supplied solely from Cataract Dam.                           |
| Kangaroo Valley pumping and power station | Complete                | The planned outage to facilitate essential maintenance works at Origin Energy's Kangaroo Valley pumping and power station was completed on schedule with the system returned to service on Friday. The Shoalhaven system is now back to full capacity for both pumping and generation over the summer months. |

### More information

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