MURRUMBIDGEE REGULATED RIVER WATER SOURCE

Water Allocations—how they are determined

NSW Department of Industry – Lands & Water | Neeraj Maini | 13 November 2018

This talk

- How allocations are made
  - Approach
  - What allocations provide
  - How available water is calculated
- Current status
  - Status of current water resources
  - Allocation scenarios
  - Water allocation statement

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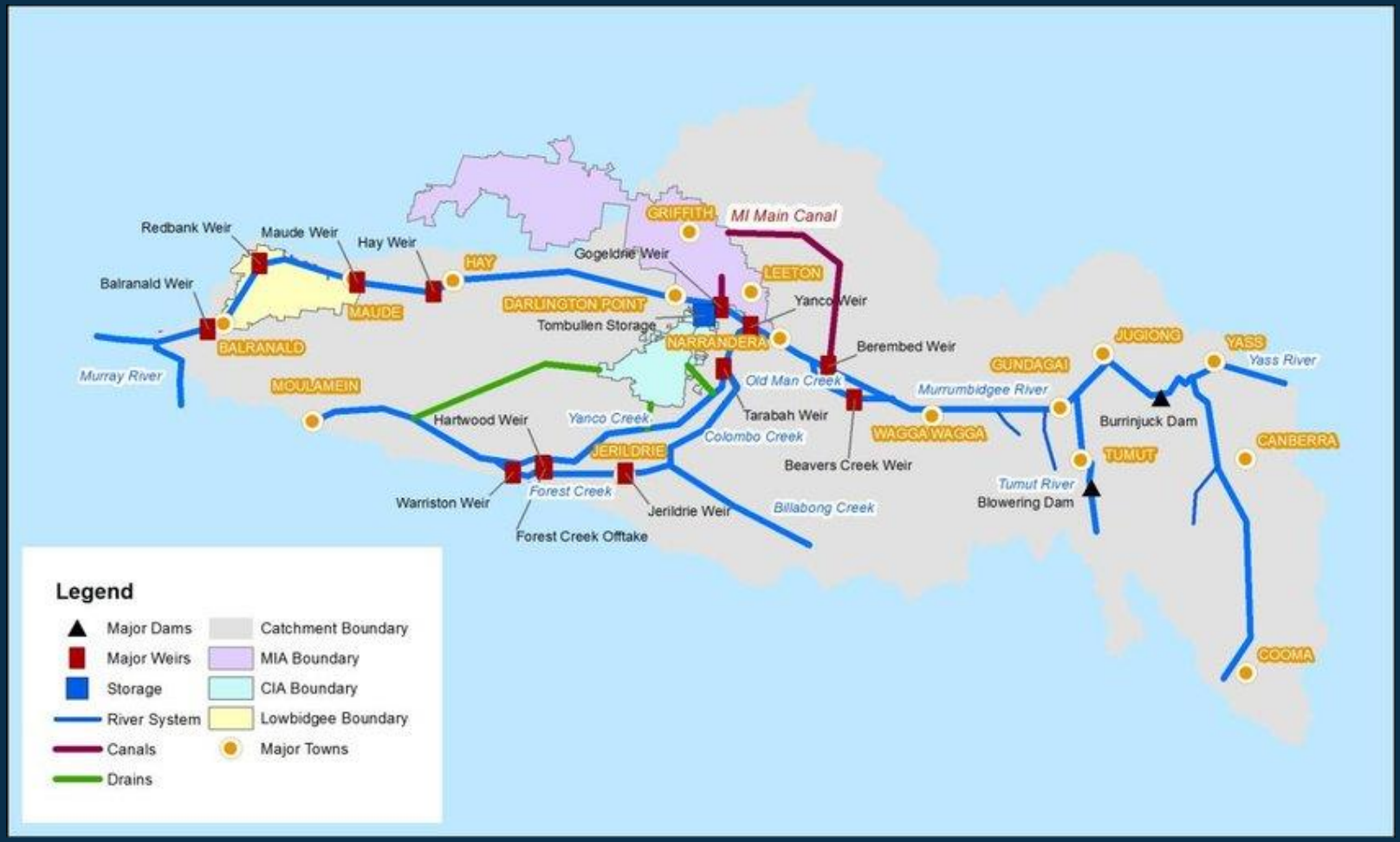
Murrumbidgee regulated system



Source: Murrumbidgee Irrigation

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Water allocation - approach

- Government assumes an extremely dry outlook
  - Low risk
  - Need to avoid allocating water that doesn't exist/cannot be delivered
- Allocation priorities codified in the water sharing plan
  - Priority of access to water (towns, domestic, stock, …)
  - End of system flow requirements
  - Planned environmental water allowances
- Annual accounting (July - June)
- www.industry.nsw.gov.au/water/allocations-availability

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What does a resource assessment provide?

- The amount of water available for allocation
- The sharing of water between users and the environment
- Sharing between water users - access licence categories
- Information to advise licence holders of allocations/available water

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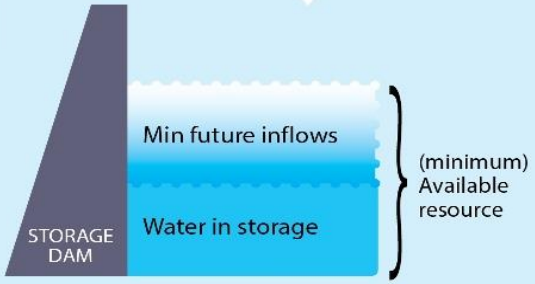
Overview of how water is allocated

Assess the supply

1

Minimum future inflows = very likely to occur



Assess existing commitments

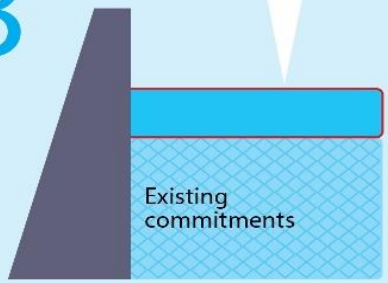
2

Water committed at beginning of water year

Assess for AWD

3

Water that is not committed → allocate by licence category



Announce AWD

4

Licence categories

- Domestic and stock
- Town water supply
- High security
- Conveyance
- General security

If category < 100% at 1 July, iterative process (steps 1–4) throughout water year as additional inflows arrive.

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Step 1: Assess the supply – future resources

- Conservative estimate of future inflows for rest of year
  - Into upper storages and into river from tributaries
  - Minimum estimate based on about 110 years of historical records – pre Millennium Drought
- Calculated inflow recession (from any recent rainfall)
- Snowy assured storage inflow
  - Required annual releases (RAR) – nominally 1026 GL
  - Timing uncertain
- Late season discount volume
  - Portion of expected inflows to arrive after peak irrigation season (March to June)

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Step 2: Assess existing commitments

- Essential/fixed requirements
  - Already allocated volumes
  - End-of-system targets
  - Environmental water accounts (EWAs)
  - Storage reserves (includes provisional storages - PSVs)
- System losses
  - Evaporation
  - Transmission
  - Operational
- Water committed at the start of the year
  - IVT, carry over , essential supplies, planned environmental water (EWA a/cs)

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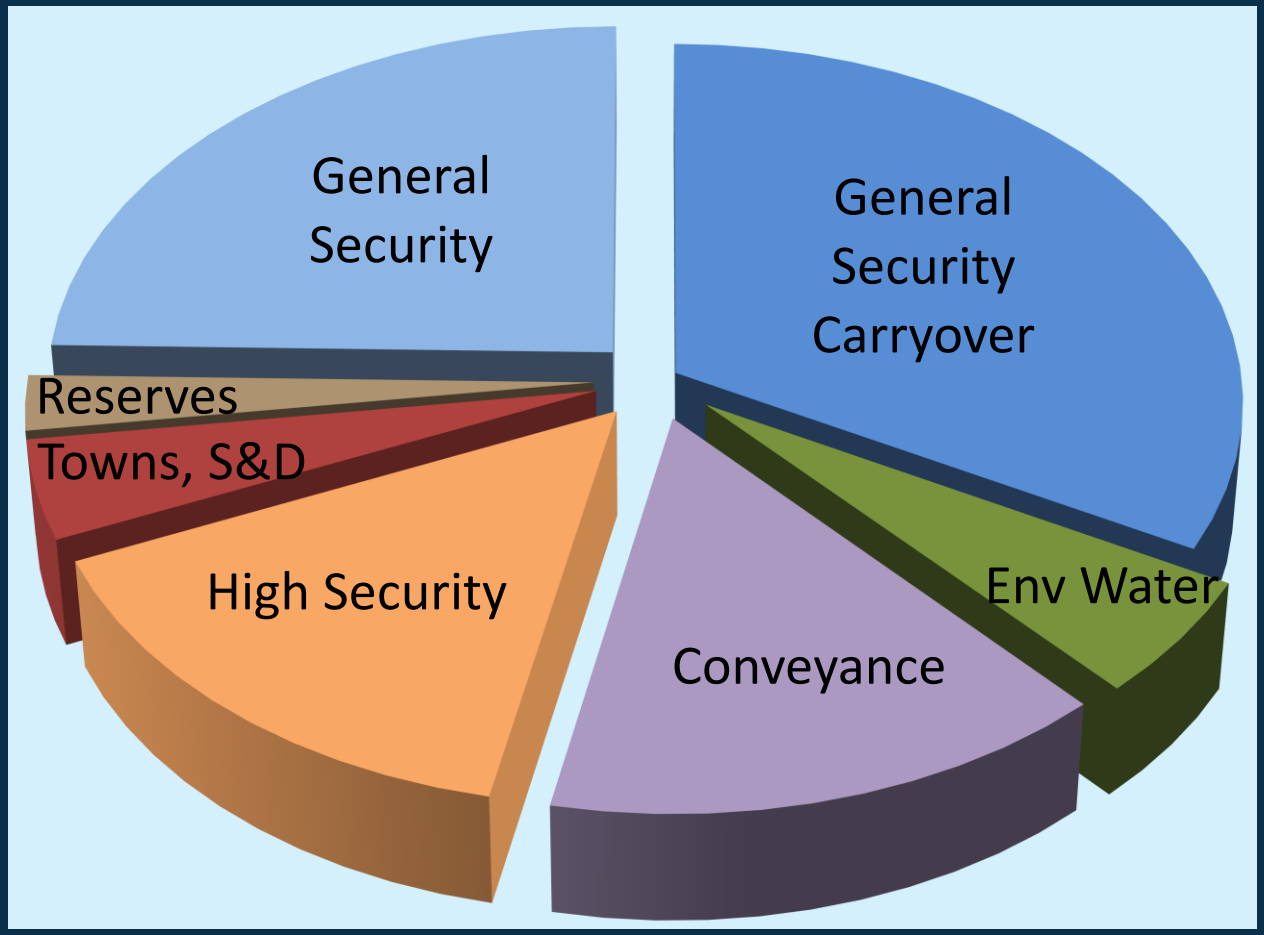
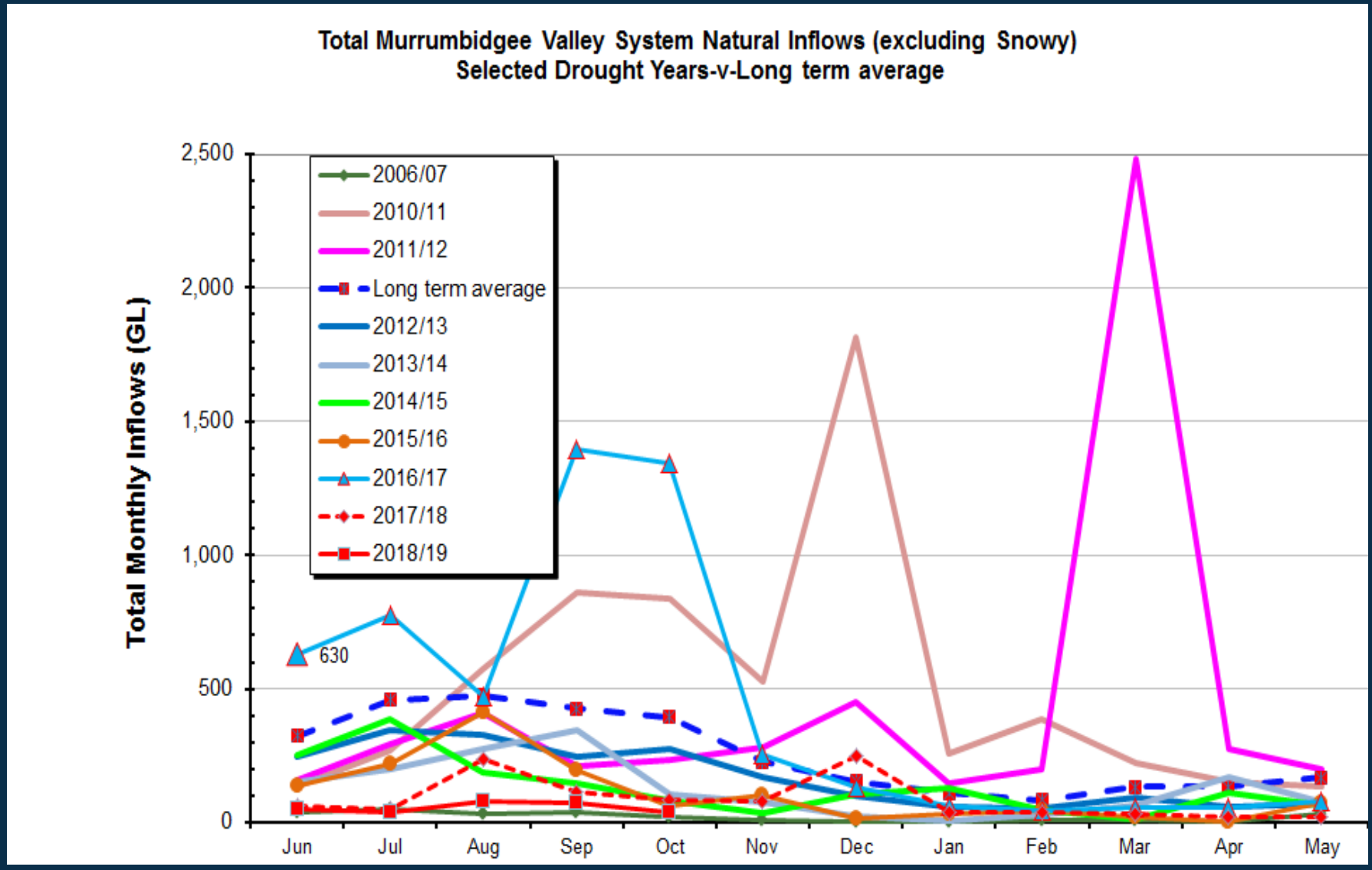
Resource assessment and allocation process





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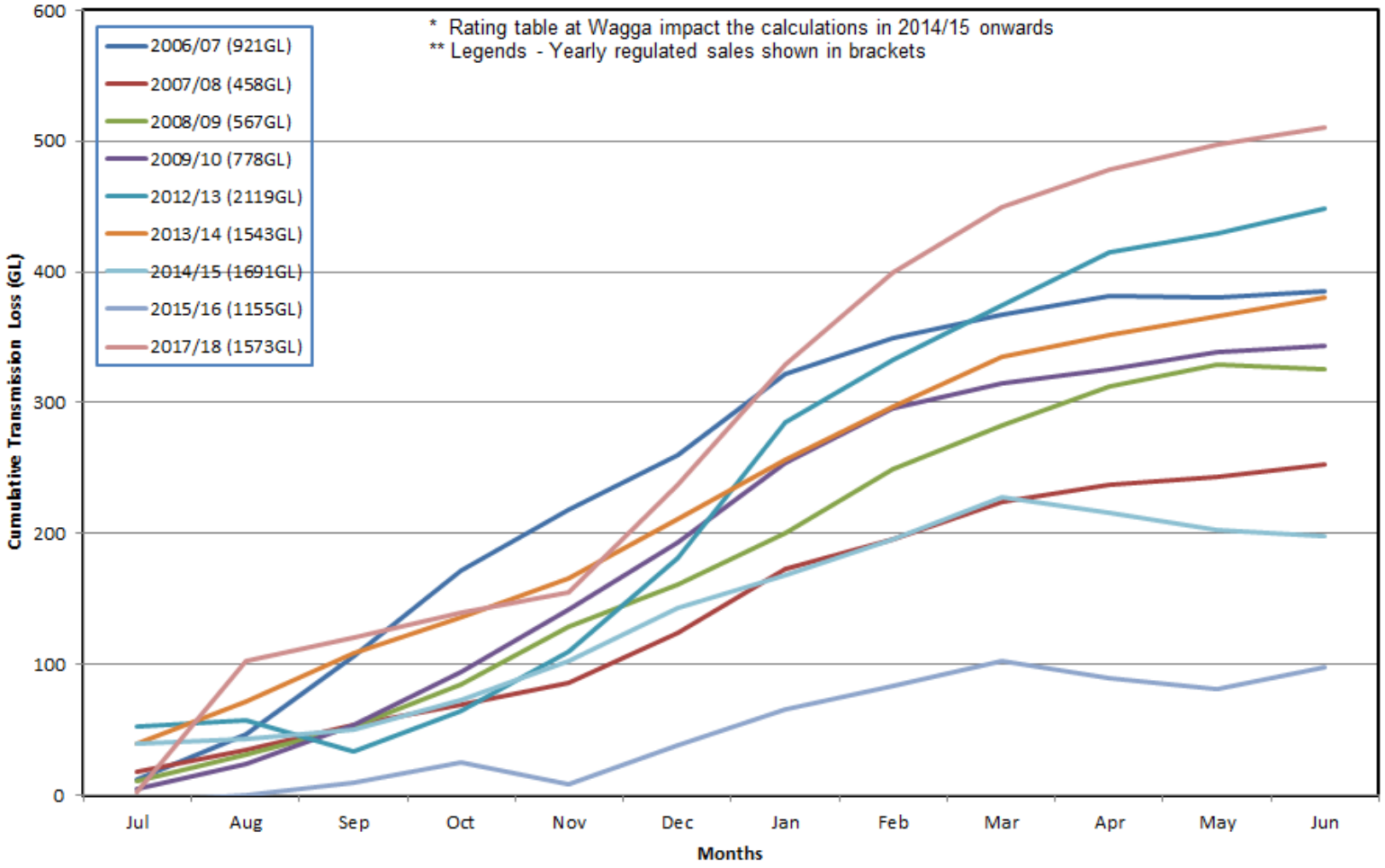
Annual River Loss: Murrumbidgee and Yanco
Excludes flood years



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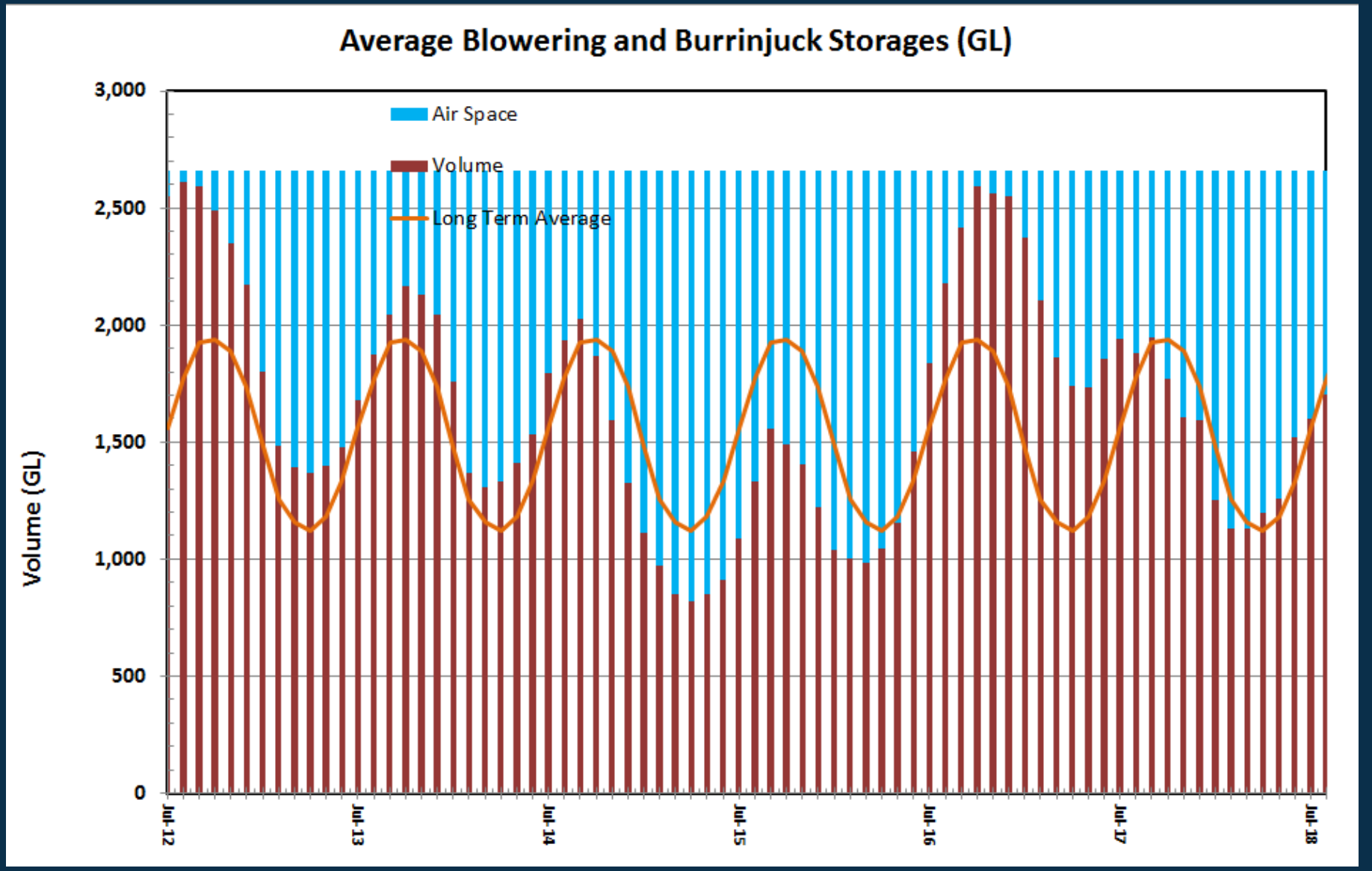

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Allocation update as of 1 November 2018

- Status of current water resources
- Operational requirements
- Existing commitments
- Allocation scenarios
- Water allocation statement

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Murrumbidgee resource assessment
1 November 2018

Items	Volume (GL)	Comments
Total resources	1,948	Active volume in storage (1364 GL), snowy RAR, inflows and recessions
Operational requirements		
Volume required for system losses	420	Storage evaporation, transmission losses, ops loss main river & Yanco Creek
EOS flow target	83	Flow committed to River Murray for rest of the year
Late season inflows	18	Inflows too late in the season
Storage reserves	50	End of season reserve
Total operational requirements	**571**	

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Murrumbidgee resource assessment 1 November 2018

Current Commitments	Volume (GL)	Comments
Carryover	419	From 2017/18 into 2018/19
IVT (carryover from previous year)	14	Undelivered IVT at start of year
EWA Account/s	51	Estimated balance
TWS	44	Town water allocation at 100% on 1 July 2018
Domestic & Stock	34	Domestic and stock at 100% 1 July 2018
High Security	345	95% HS announced on 1 July 2018
Conveyancing for IC's category	266	Conveyance licence
General Security allocations	132	GS allocation as =7%
Volume reserved for next year essential supplies	72	
Total current commitments	**1377**	

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Murrumbidgee resource assessment 1 November 2018

	Volume (GL)	Comments
Total resources	1948	Proposed GS allocation increment=0%
Total operational requirements	- 571	
Total current commitments	-1377	
Additional resources	**0**	
Proposed distribution		
Proposed general security	0	Proposed GS allocation increment=0%
Conveyance entitlement	0	Conveyance for IC's and river pumpers

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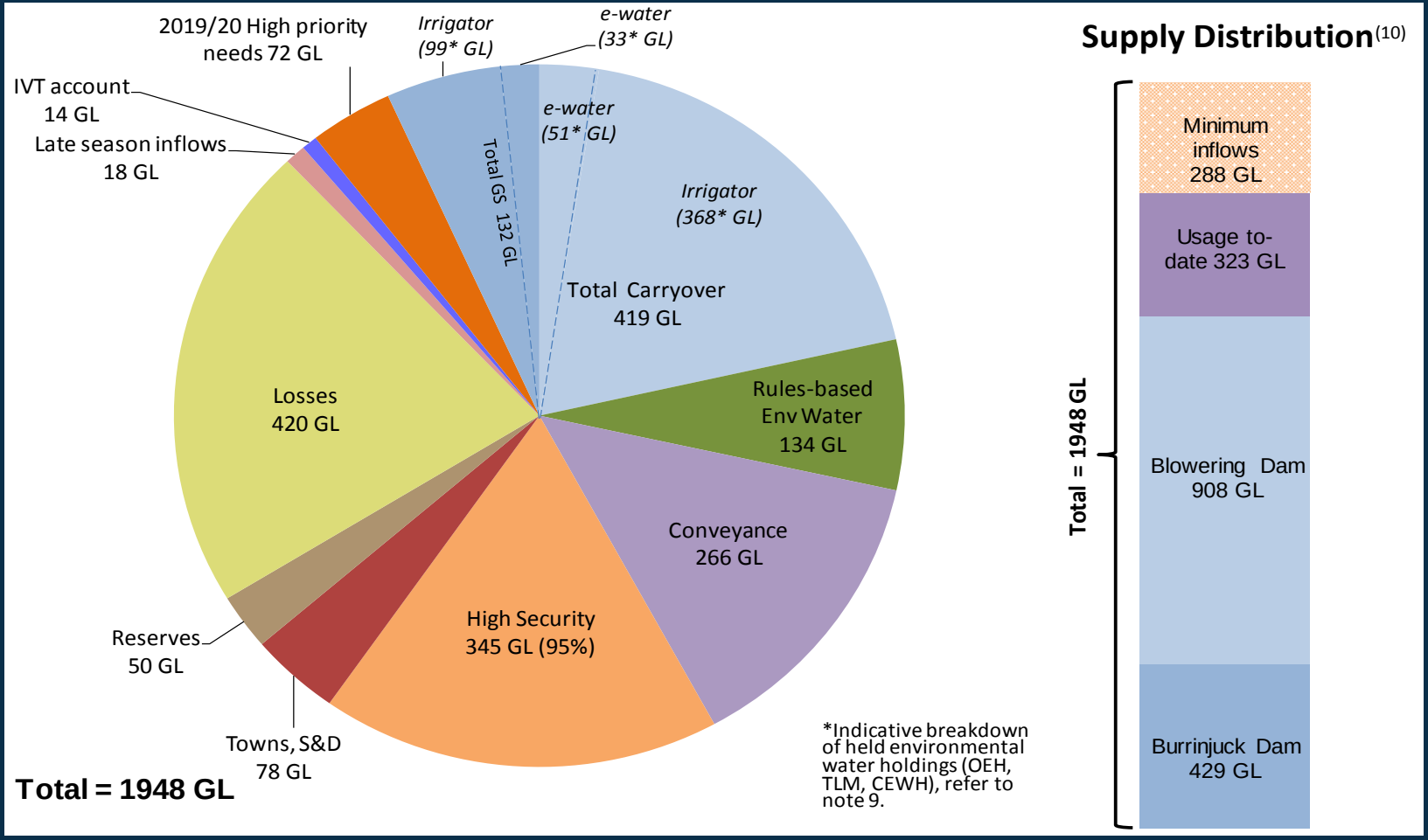
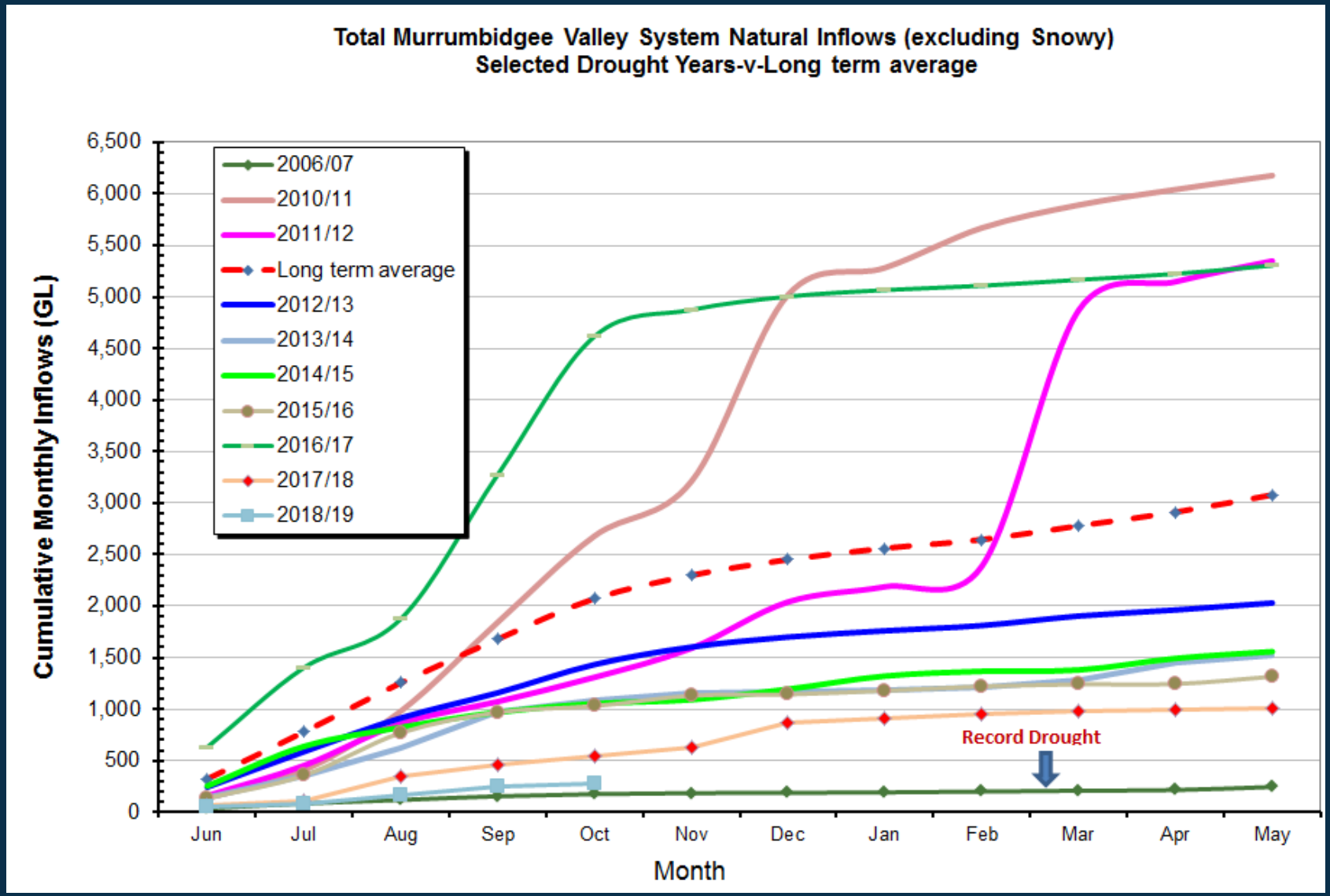
Murrumbidgee resource distribution 2018-19 – as at 1 November 2018





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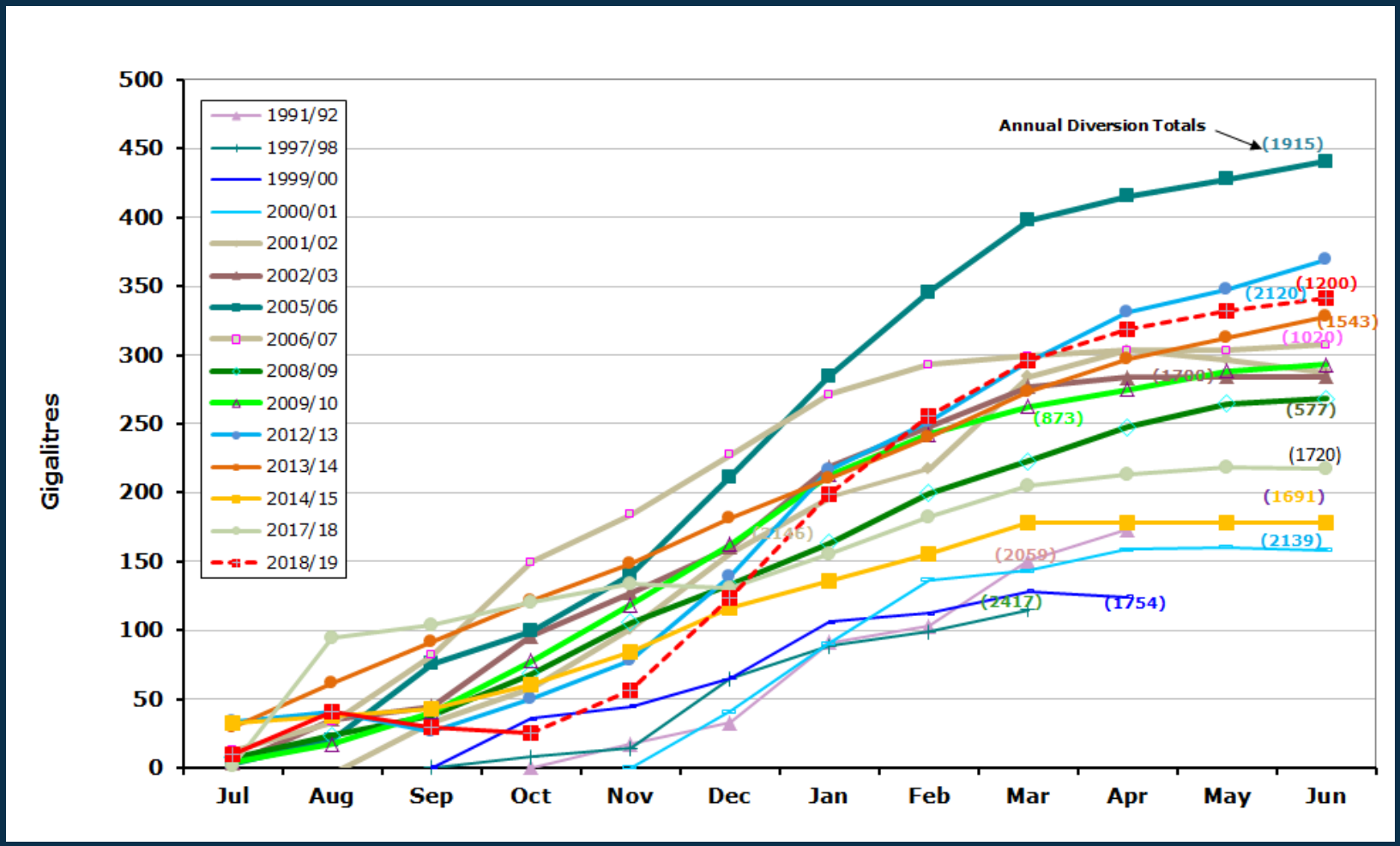
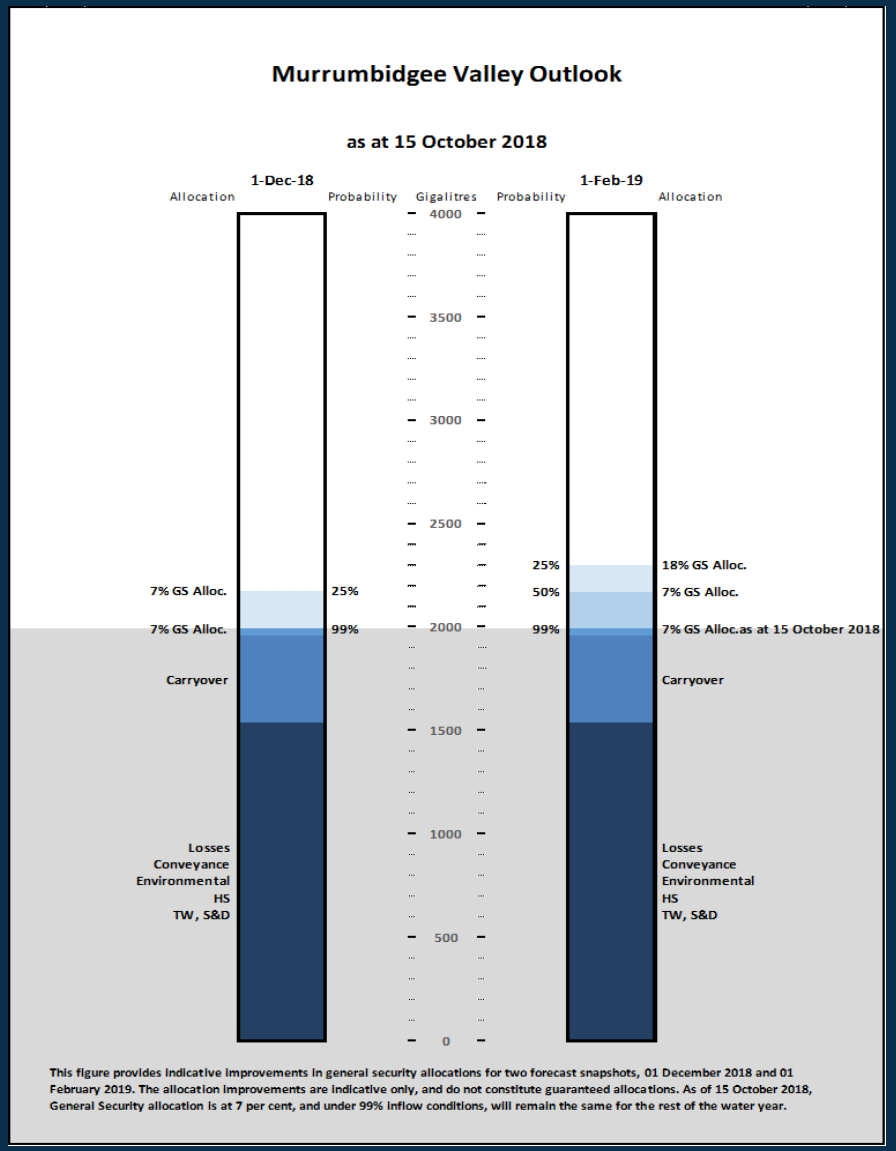
Transmission river losses below Wagga Wagga



GS allocation forecasts under various inflow scenarios (as at mid-October 2018)

Inflow Conditions	1 Dec 2018	1 Feb 2019
99 chances in 100 (extreme) (99%)^	**7**	**7**
9 chances in 10 (very dry) (90%)	**7**	**7**
3 chances in 4 (dry) (75%)	**7**	**7**
1 chance in 2 (mean) (50%)	**7**	**7**
1 chance in 4 (wet) (25%)	**7**	**18**



This figure provides indicative improvements in general security allocations for two forecast snapshots, 01 December 2018 and 01 February 2019. The allocation improvements are indicative only, and do not constitute guaranteed allocations. As of 15 October 2018, General Security allocation is at 7 per cent, and under 99% inflow conditions, will remain the same for the rest of the water year.

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Comparison with this time last year

Item		1 Nov 2017 (GL)	1 Nov 2018 (GL)	Comments
Storage* volume (GL)	Burrinjuck	614	432	Inflows are low since May
	Blowering	1,060	918	Reduced tributary inflows
	Total	1,674	1,350	Overall 13% lower storage compared to last year
Losses (transmission, evaporation, operations)**		571	420	Reduced water deliveries
1 July IVT carryover balance		100	-14	Reflects market pressures
Late season inflows		0	-18	Low allocations
GS available		33%	7%	Reduced water availability
Average GS carryover		27%	22%	Lower this year

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- Feedback on the statements welcome

Water Allocation Statement

1 November 2018

Murrumbidgee Valley

Water allocation update

The Murrumbidgee regulated river general security allocation **remains unchanged at seven per cent of entitlement.**

With the dry conditions and outlook, combined with the likelihood of significant inflows continuing to reduce statistically as summer approaches, resource improvements must first be set aside to ensure high priority commitments can be met on 1 July 2019, before allocating further to general security entitlements in the current water year.

Scattered intermittent rainfall during October and lower than expected losses has resulted in a small resource improvement that has been assigned to the 2019-20 high priority commitments.

	High Security	General Security	Average Carryover
Murrumbidgee	95%	7%	22%

Storage levels (as at 31 October 2018)

- Blowering Dam is 55 per cent full – decreasing – holding 918,000 megalitres (ML).
- Burrinjuck Dam is 42 per cent full – steady – holding 432,000 ML.

Climatic outlook

The Bureau of Meteorology seasonal outlook for November to January indicates that rainfall conditions are generally likely to be drier than average in the valley over this period, with November indicating high chances of being dry, while December shows no clear indications of drier or wetter than average conditions. Above average temperatures experienced so far in 2018 are likely to continue into early 2019.

The Bureau's El Niño-Southern Oscillation (ENSO) Outlook remains at El Niño ALERT, with El Niño likely to develop before the end of the year. Observations continue to indicate that a positive Indian Ocean Dipole (IOD) event is likely underway, though may dissipate through November. When combined, an El Niño and positive IOD event increase the chances of dry and warm conditions, particularly during spring.

Trade

Water allocation can currently be traded **within** and **out** of the Murrumbidgee Valley, but trade **into** the Murrumbidgee Valley is closed. Water users are encouraged to monitor the WaterNSW website (www.waternsw.com.au) for information about the Murrumbidgee inter-valley trade (IVT) account balance and status of trade.

Next announcement

The next water allocation statement for the regulated Murrumbidgee Valley will be issued on **Thursday 15 November 2018**. Forecast improvements under various inflow scenarios, including the rocket diagram, will be included in this next water allocation statement.

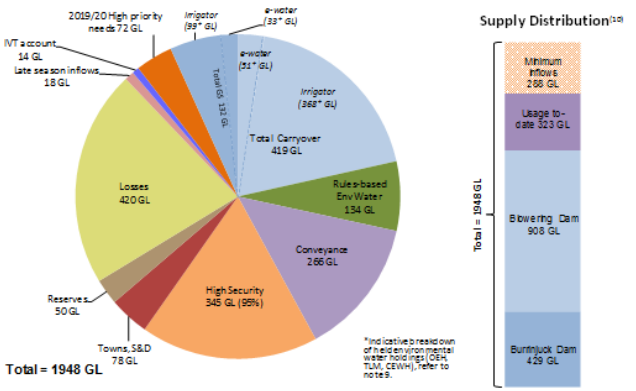
Water Allocation Statement

Murrumbidgee resource assessment data sheet

Resource Distribution 2018-19 (at 1 November 2018)	
	Volume (GL)
Total Available Resource[1]	1,948
less	
Carryover (GS and Conveyance)	419
Rules based Environmental Water[2]	134
Towns, Stock, Domestic	78 (100%)
Reserves[3]	50
Conveyance[4]	266
Announced High Security	345 (95%)
Losses (transmission, evaporation, operational)[5]	420
Murrumbidgee IVT account (carryover as of 1 July)[6]	14
Late Season Inflows[7]	18
Announced General Security	132 (7%)
Future (including 2019/20) high priority needs[8]	72

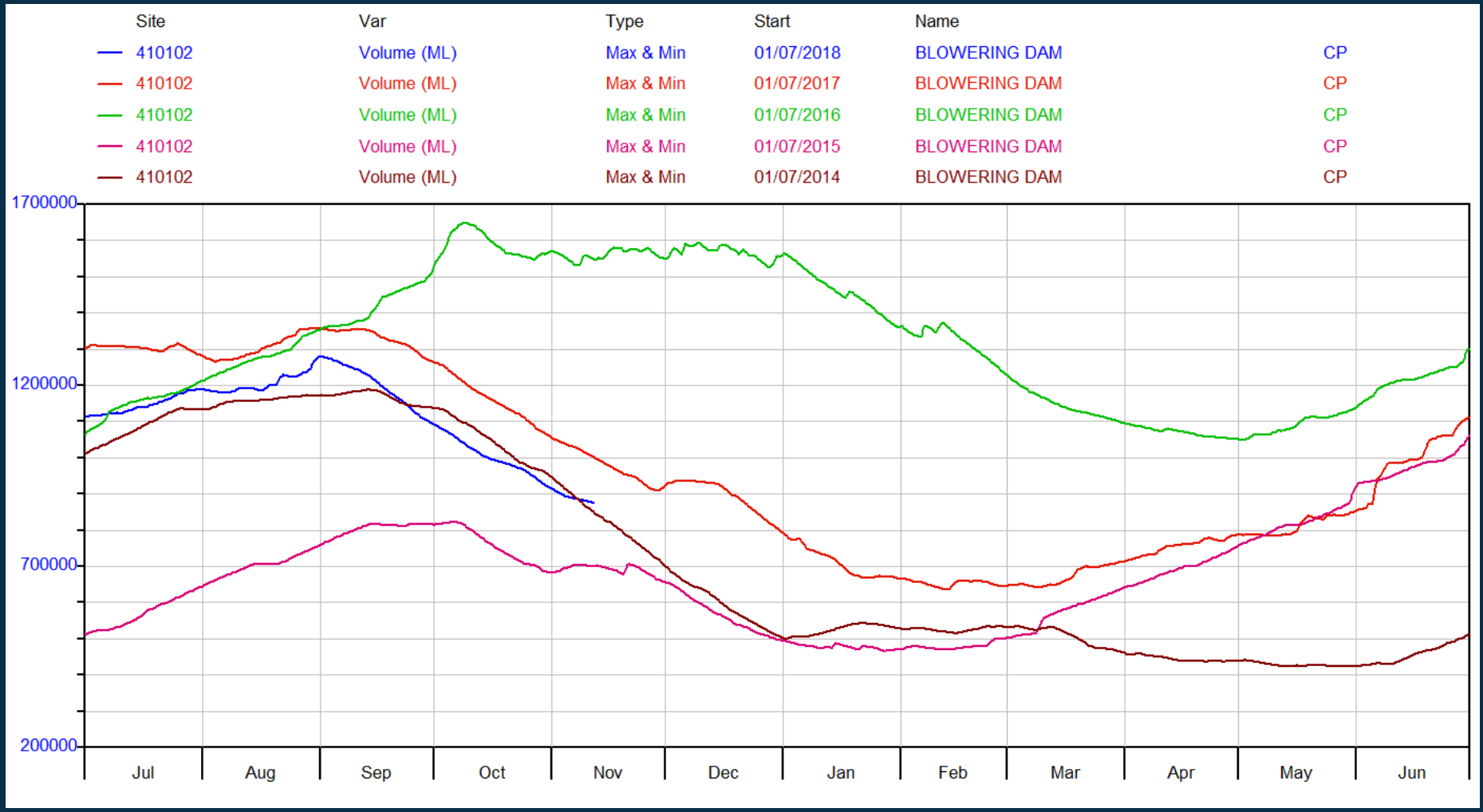
See notes below.

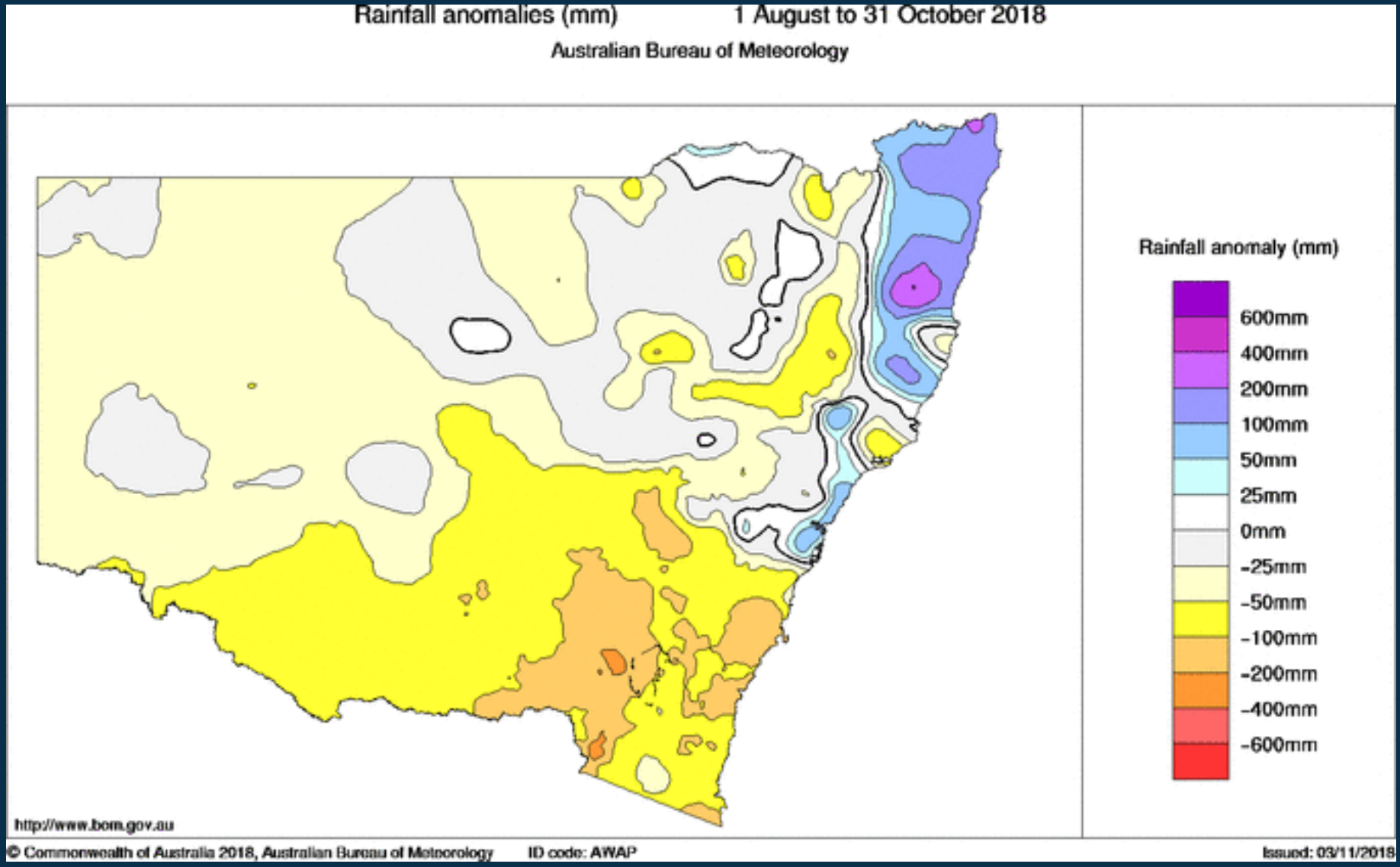
Murrumbidgee resource distribution 2018-19 – 1November 2018



Burrinjuck reservoir volumes

Blowering reservoir volumes





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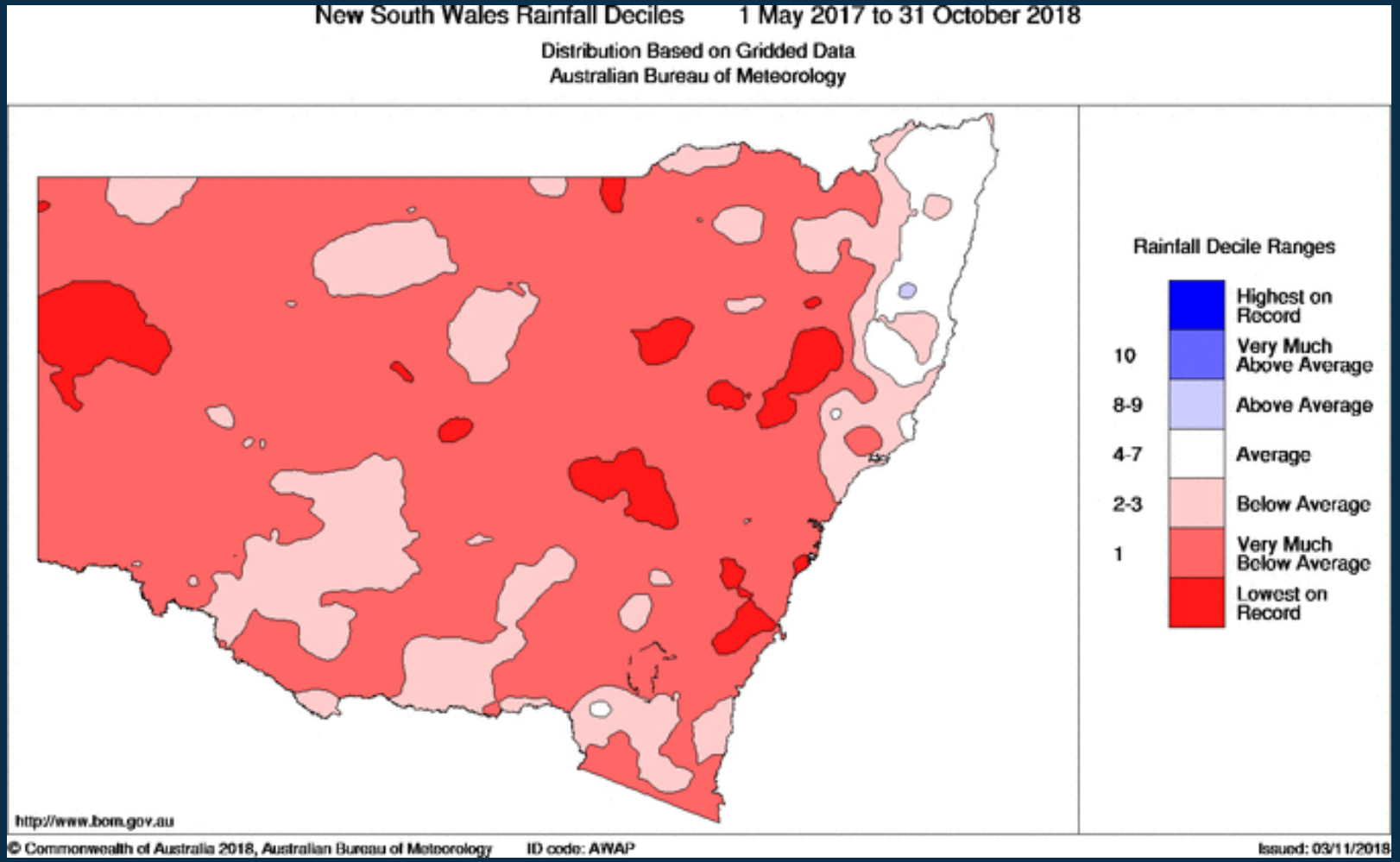
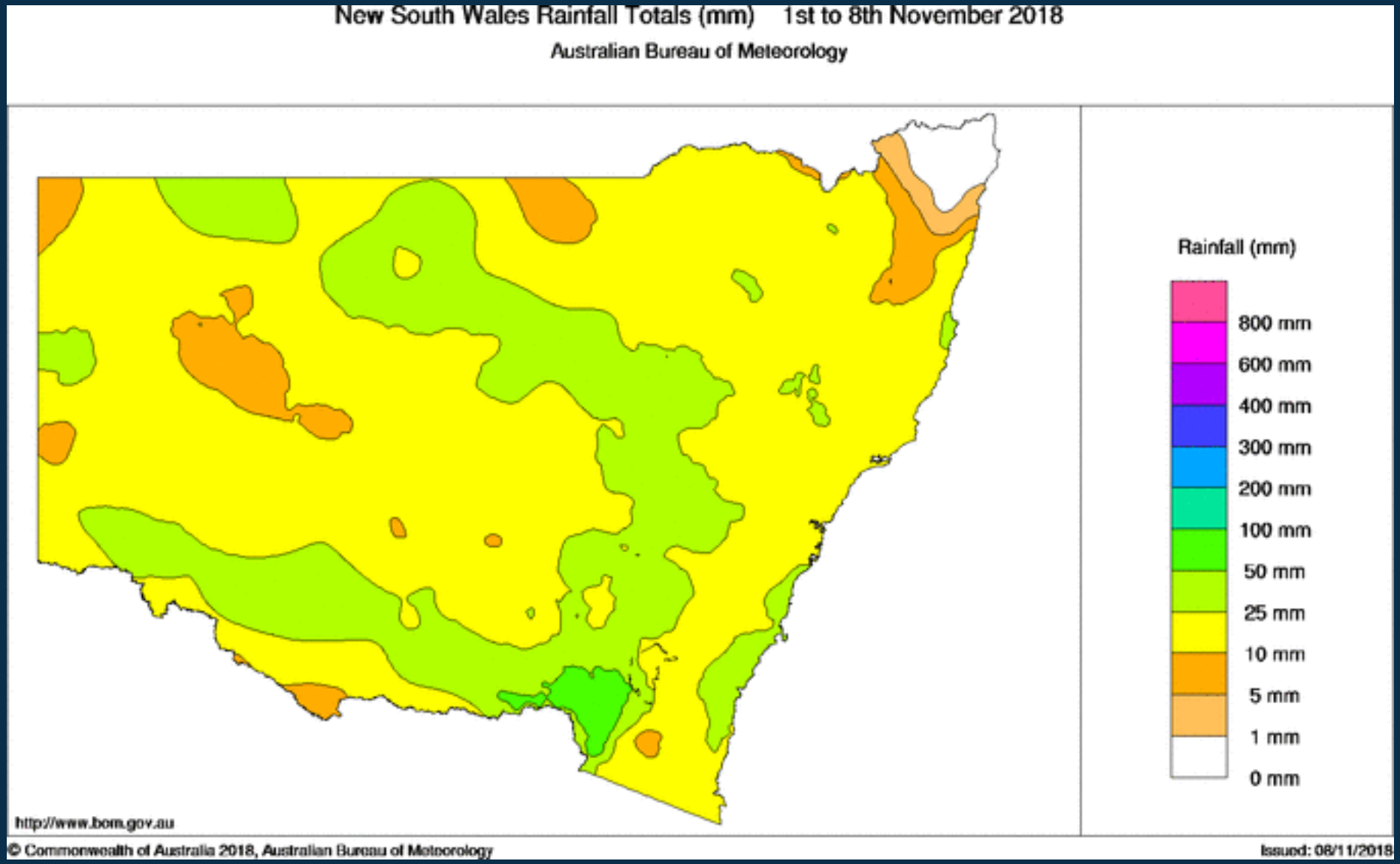
Rainfall deciles - 18 month





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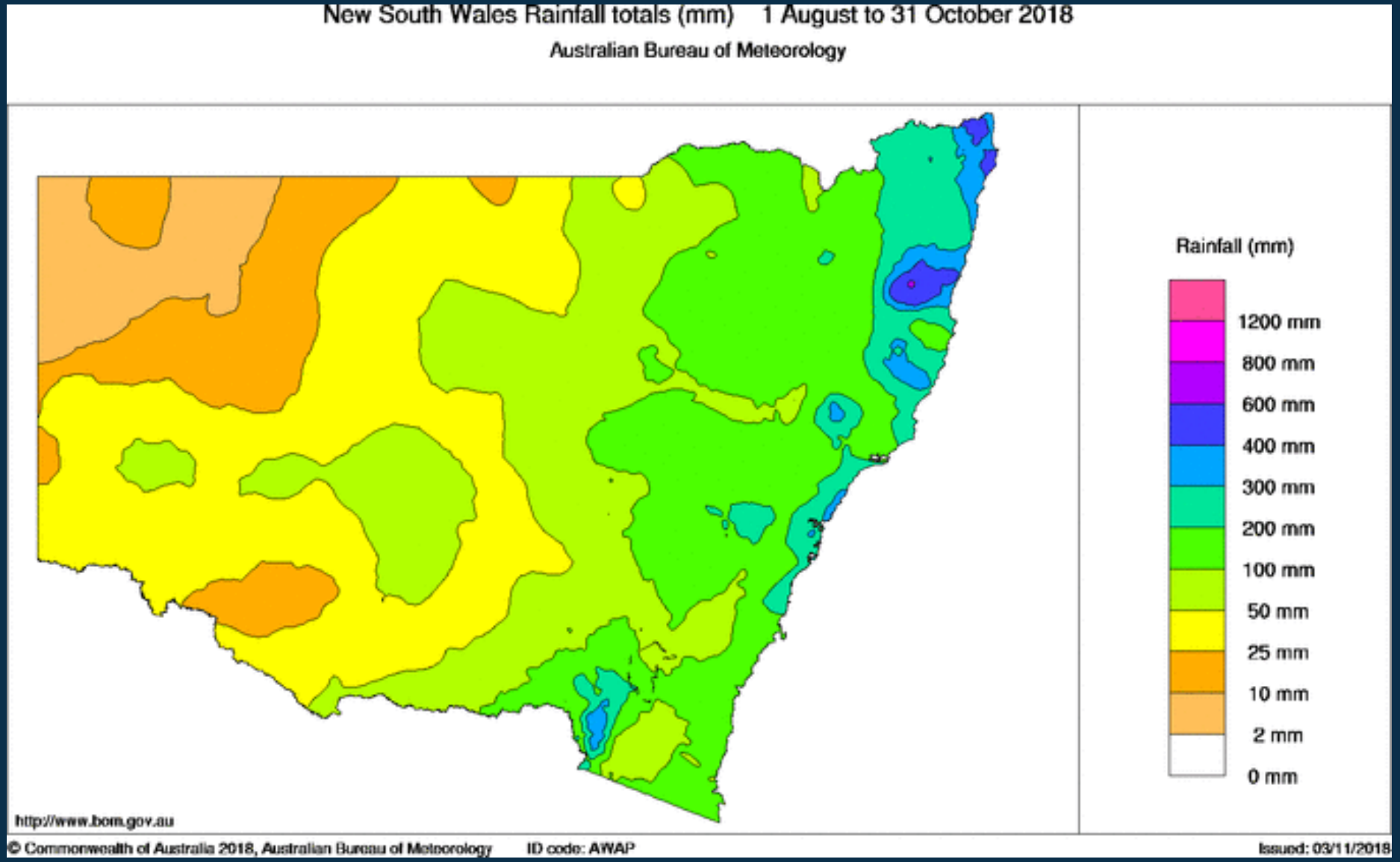

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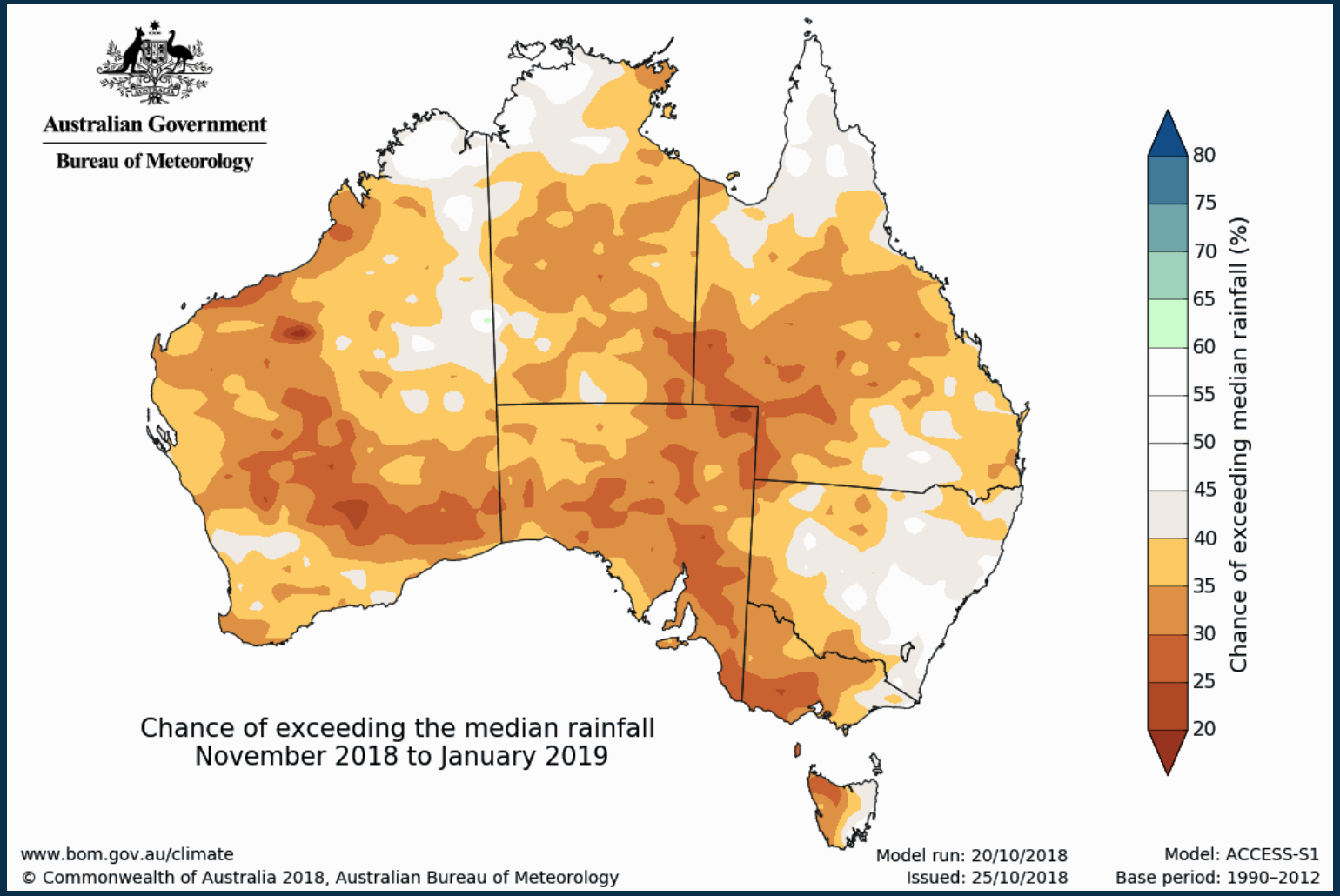
Forecast – November to January – rainfall



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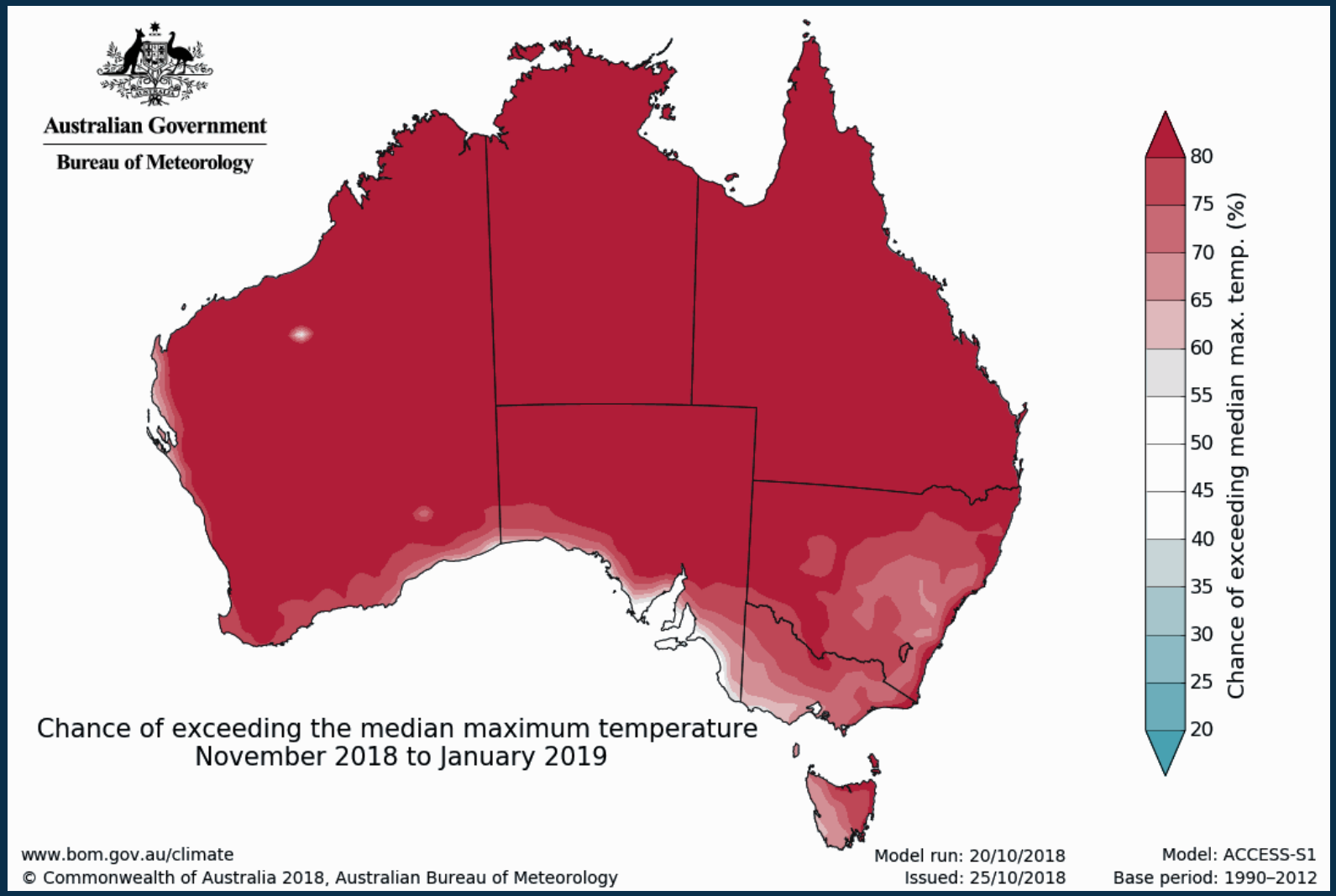
Forecast – November to January – max temp



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How groundwater allocations are made

- Groundwater is managed on a long-term average basis.
- Allocations are based on the average of recent years' extractions, as compared to its WSP extraction limit.
- The large volume of water held in the aquifer buffers against high extraction anticipated during dry periods such as we are having now.
- Allocations are announced each 1 July and generally remain unchanged for the water year.
- There are some exceptions, such as groundwater systems that are highly connected to regulated rivers.
- An example is the Murrumbidgee Alluvial Groundwater Sources, which are linked to Murrumbidgee HS allocations.

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Where and how to apply for a bore licence

- WaterNSW is responsible for managing groundwater licensing in NSW
- You must obtain a water supply work approval for a bore and a use approval for your irrigation area – often issued as a combined approval.
- Within Murrumbidgee Irrigation or Coleambally Irrigation areas the use approval will not be required - just the work approval.
- Application must be made to WaterNSW for an approval.
- Assessment is made including consideration of extraction limits set by the NSW Department of Industry
- The extraction limit is the maximum amount of water that may be extracted from the bore. This limit is set to protect the resource and existing users around your proposed site
- Currently the application process is taking a minimum of four months. The application fee is $2029.63

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Where and how to apply for a bore licence

- In conjunction with the Approval(s) you need a Water Access License linked to the Work Approval.
- You can apply concurrently for a Zero Share Water Access License in the Lower Murrumbidgee Deep Groundwater Source. This application is submitted to Water NSW. The application fee is $340.05.
- Once the Approval is issued, the WAL application is completed with the Approval number linked. It must be registered at the Titles Office for the water Title to be created.
- You must trade water, either on a temporary or permanent basis, to your WAL before the bore can be used.
- For any inquiries please contact the WaterNSW office at Leeton on 0269 539 824 or visit our website for application forms www.waternsw.com.au

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Thank you

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