

15 August 2019

Murrumbidgee Valley

Water allocation update

Murrumbidgee regulated river general security allocation has increased to **3 per cent of entitlement** for the 2019-20 water year. Inflows in the last fortnight, together with reduced river losses, were the main contributor to this increase in water allocations. However, flows into the main storages are still well below the long term average for this time of year.

This assessment is based on finalised carryover figures, some 8 per cent of entitlement, meaning that average general security water availability is now 11 percent of entitlement.

The next year's high priority needs have been met unless future inflows are less than those assumed in this assessment.

2019-20	High Security	General Security	Average Carryover	Drought Stage
Murrumbidgee	95%	3%	8%	 Stage 1

Drought stage

The **Murrumbidgee Valley** regulated river water source has improved to Stage 1 drought criticality, meaning all allocated water can now be delivered under normal regulated river operations. Despite the small improvements, drought conditions continue to threaten.

A Critical Water Advisory Panel has been formed for southern valleys to advise on drought management options and is ready to convene again later this year if required.

Further information on the policy and related drought stages can be found at: www.industry.nsw.gov.au/water/allocations-availability/droughts-floods/extreme-events

Storage levels (as at 13 August 2019)

- Blowering Dam is 49 per cent full – steady – holding 815,000 ML.
- Burrinjuck Dam is 31 per cent full – steady – holding 327,000 ML.

Climatic outlook

The Bureau of Meteorology seasonal outlook for August to October, issued on 25 July 2019, indicates that the Murrumbidgee catchment is likely to experience drier than average conditions, with headwater parts of the catchment likely to experience the largest rainfall deficiencies. Temperatures over this period are likely to be above average.

The Bureau indicates that the El Niño-Southern Oscillation (ENSO) remains neutral. Modelling suggests that the ENSO is likely to remain neutral over the remainder of 2019. Positive Indian Ocean Dipole (IOD) conditions are forecast for the remainder of winter and spring. A positive IOD will likely mean below average winter-spring rainfall and above average temperatures.

For further details: www.bom.gov.au/climate/outlooks/#/overview/summary

Trade

Inter and intra Murrumbidgee trade is currently open. Water users are encouraged to monitor the WaterNSW website (www.waternsw.com.au) for daily information about the IVT account balance and status of trade.

Next announcement

The next water allocation statement for the Murrumbidgee Valley will be on **Monday 2 September 2019**.

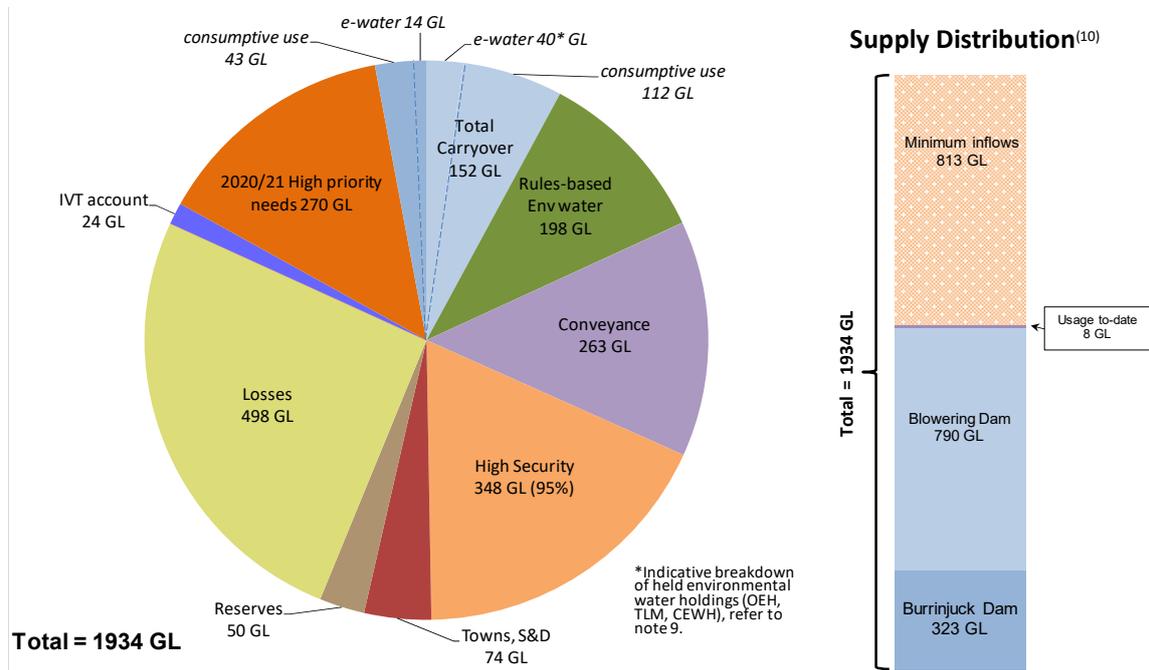
The next updated probability analysis showing the outlook for water availability under different inflow scenarios, including the rocket diagram, will be issued on Monday 16 September 2019. The two year resource assessment, used to ensure future high priority needs can be met before further allocating in the current year, will also be provided.

Murrumbidgee resource assessment data sheet

Resource Distribution (15 August) for 2019-20	
	Volume (GL)
Total Available Resource ⁽¹⁾	1,934
less	
Carryover (GS and Conveyance)	152
Rules based Environmental Water ⁽²⁾	198
Towns, Stock, Domestic	74 (100%)
Reserves ⁽³⁾	50
Conveyance ⁽⁴⁾	263
Announced High Security	348 (95%)
Losses (transmission, evaporation, operational) ⁽⁵⁾	498
Murrumbidgee IVT account (carryover as of 1 July) ⁽⁶⁾	24
Late Season Inflows ⁽⁷⁾	0
Announced General Security	57 (3%)
Future (2020-21) high priority needs ⁽⁸⁾	270

**See notes below.*

Murrumbidgee resource distribution 2019-20 – 15 August 2019



Notes

- 1) Total available resource – total active storage volume (Blowering & Burrinjuck Dams) at the day of assessment plus any usable flows in transit plus drought inflows for rest of the year plus Snowy Hydro's assured Required Annual Release (RAR) (including any flex (pre-release) from the prior year), as well as estimated usage to date. Snowy Hydro's net Jounama Release for this year (2019-20) is estimated to be about 869GL.
- 2) Rules-based environmental water – water required to be set aside under water sharing plans to provide for riverine environments. Includes end-of-system flow requirements (currently 177 GL) and environmental water allowances (EWA1 = 0 GL, EWA2 = 21 GL, EWA3 = 0 GL). Excludes 'licence-based' environmental water also known as held environmental water (HEW). This total volume typically reduces as commitments are met and water is used during the year.
- 3) Reserves – required primarily under statutory plans, and mainly used for emergency purposes and critical needs. Includes 25GL per dam as an operational reserve, and Provisional Storage Volumes (PSV1 = nil, PSV2 = nil).
- 4) Conveyance entitlement – a category of access licence originally issued to Irrigation Corporations to facilitate delivery of water through their channel systems. Allocation to this category is prescribed in the water sharing plans and is a function of high and general security allocations. (This category of licence in the Murrumbidgee valley, like general security, can carry over up to 30% of entitlement).
- 5) Losses – is the best estimate of the volume required to run the river under dry conditions to meet demands for the remainder of the water year. This includes storage evaporation, transmission losses and operational loss. This estimate is regularly updated as the year unfolds.
- 6) IVT account – this is the carryover value into 2019-20. There is currently a positive balance (24 GL).
- 7) Late Season Inflows – is the estimated inflow volume that will arrive into storage late in the year, after the peak irrigation demand season (usually post-February). This water cannot be allocated to water users at the start of the water-year, otherwise there could be an expectation that the water is available for delivery and use before it is captured in storage.
- 8) Future high priority needs – it is required to look ahead to next water year (2020-21) to ensure there is sufficient resource available to meet high priority commitments on 1 July 2020. This volume is currently estimated to be about 270GL. This value changes from month to month based on the complex interaction of climatic factors, projected historical inflow sequence including Snowy Hydro Required Annual Releases, usage/potential carryover, and actual transmission and operational losses as the water year unfolds.

- 9) Held environmental water (HEW) – licenced water administered by environmental water holders is reported here, with the associated portions of general security allocation and carryover also identified in the above pie chart. This reporting of held environmental water is the total credited to accounts (not usage) and is estimated to be 14GL of GS, 15 GL of HS, 42 GL of conveyance allocation and 40 GL of GS carryover. These entitlements are held and/or managed either singly or jointly by various environmental holder groups, including the NSW Office of Environment and Heritage (OEH), The Living Murray (TLM) and the Commonwealth Environmental Water Holder (CEWH). Details on environmental holdings can be found on individual agency websites.
- 10) Supply Distribution – the distribution of supply includes volumes at the time of the assessment for the following categories: active volumes in the dams, indicative usage to-date (may be estimates prior to reconciliation with hydrographic updates) and assumed minimum future inflows (includes Snowy Hydro's guaranteed inflows for the water year, and late season inflows).

Water availability outlook for 2019-20

Murrumbidgee Resource Assessment – Comparison with this time last year

Item		Mid Aug 2018 (GL)	Mid Aug 2019 (GL)	Comments
Storage Volume (GL)	Burrinjuck	417	325	With dry weather, inflows have reduced
	Blowering	1,191	815	Reduced tributary inflow & Snowy releases
	Total	1,608	1,140	Overall 30% lower storage volume compared to last year
Losses (transmission, evaporation, operations)*		558	498	Reduced budget, less water to deliver
1 July IVT carryover balance		-14	24	Reflects market pressures
Late Season Inflows		0	0	
GS Available		6%	3%	Reduced water availability
Average GS Carryover		22%	8%	Much lower this year

* Includes assumed loss from downstream of storages along the entire river length.

Chances of improvement

The chances of improved general security allocation in the Murrumbidgee, based on a repeat of historical inflows, are provided in the following table under a variety of conditions. The forecast is based on all available historical data. Note: that this gives a better outlook than using just the driest one-third of years on record (dry tercile).

It is important to note these estimates are indicative improvements only and are not guaranteed allocations. Estimates may change based on weather variability, water management decisions and other events. This means that water users should use this information with caution and at their own risk, as it projects many months ahead. The reliability of the outlook is expected to improve as the forecast period reduces.

Forecast General Security allocation (per cent)

(Any carryover water can be added to these indicative allocations)

Historical Inflow Scenario	1 Oct 2019	1 Feb 2020
99 chances in 100 (extreme) (99%)	3	3
9 chances in 10 (very dry) (90%)	3	3
3 chances in 4 (dry) (75%)	5	8
1 chance in 2 (median) (50%)	14	32

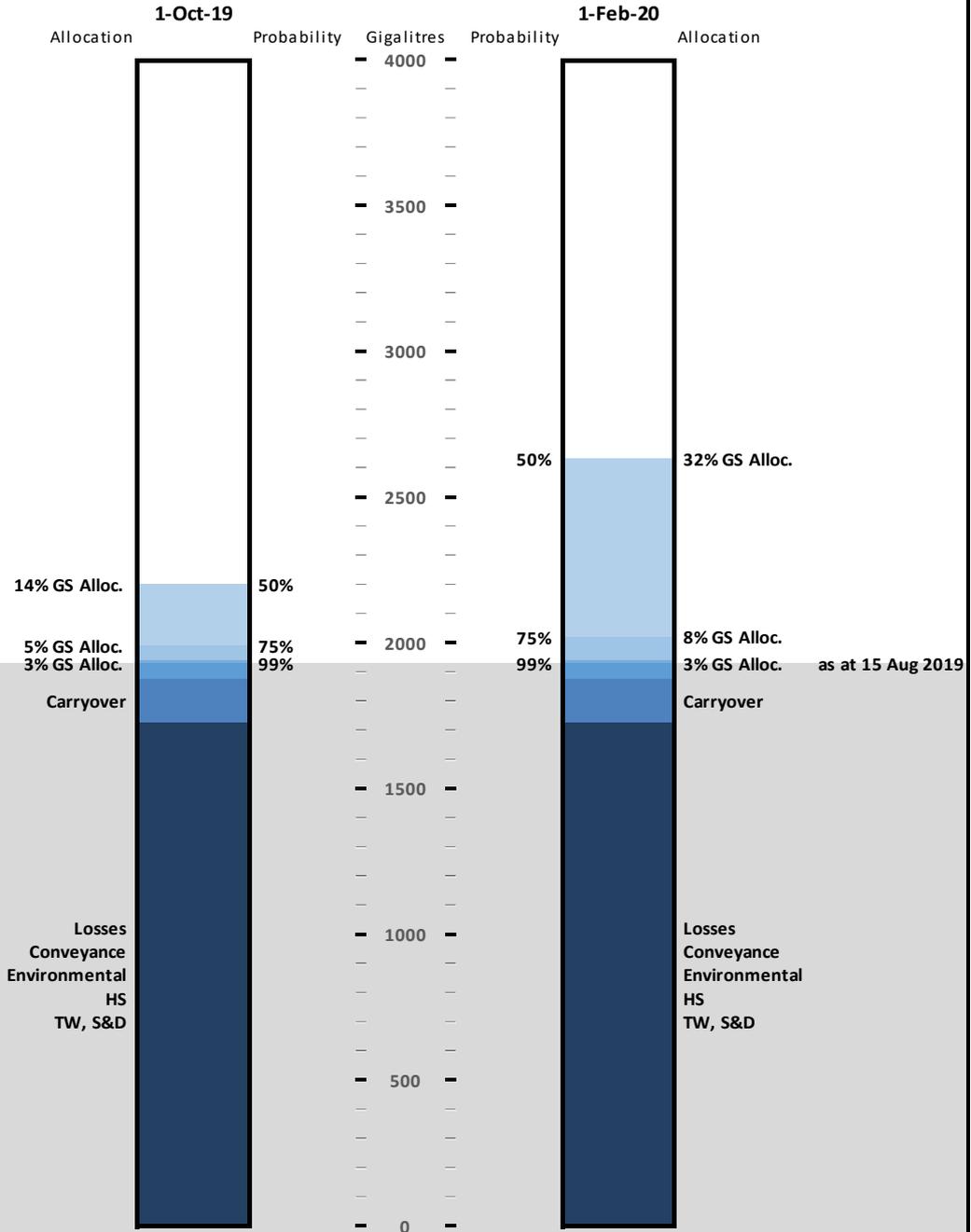
Note 1: Estimated values indicative only, not guaranteed and subject to change based on actual events unfolding.

Note 2: Storage behaviour modelling using all years and general security carryover of 8%.

Note 3: Currently tracking about 90th percentile in the last 2 months (June to July).

Murrumbidgee Valley Outlook

as at 15 August 2019



This figure provides indicative improvements in general security allocations for two forecast snapshots, 1 October 2019 and 1 February 2020. The allocation improvements are indicative only, and do not constitute guaranteed allocations. As of 15 August 2019, General Security allocation is at 3 per cent, and under 99% inflow conditions, will remain the same for the rest of the water year.

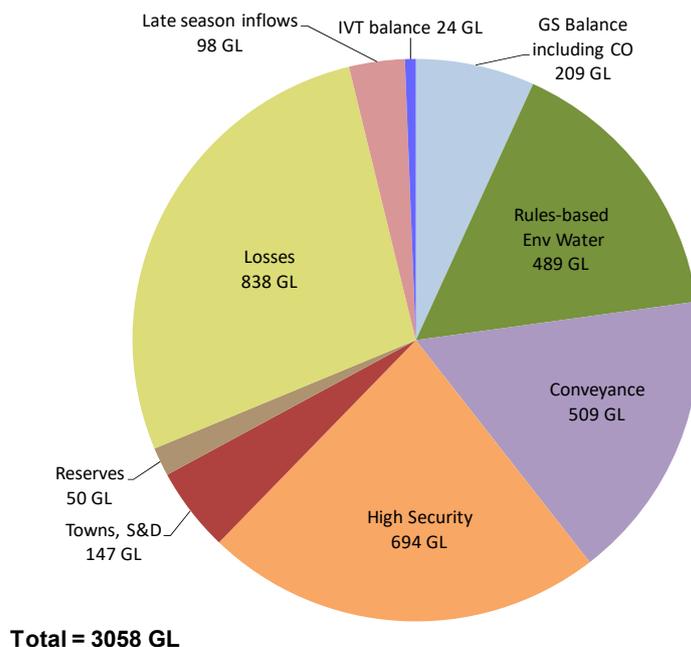
Attachment A

The following table and pie chart provide a volumetric resource breakdown based on a **two year planning horizon**. This is being provided to assist water users in understanding the distribution of resources and inflows across years and the need to reduce the risk of shortfalls for future high priority needs by considering second year commitments early in the current water year.

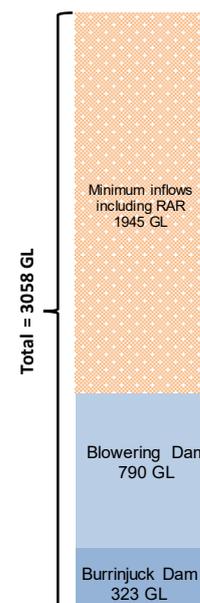
Murrumbidgee resource assessment data sheet for resources until 30 June 2021

Resource Distribution 2019-21 (estimated as at 15 Aug 2019)	
	Volume (GL)
Total Available Resource ⁽¹⁾	3058
less	
GS carry over	152
GS allocation	57
Rules based Environmental Water ⁽²⁾	489
Towns, Stock, Domestic	147
Reserves ⁽³⁾	50
Conveyance ⁽⁴⁾	509
High Security	694
Losses (transmission, evaporation, operational) ⁽⁵⁾	838
Murrumbidgee IVT account (carryover as of 1 July) ⁽⁶⁾	24
Late Season Inflows ⁽⁷⁾	98

Resource Distribution 2019-21 (estimated as at 15 August 2019)



Supply Distribution⁽⁸⁾



Notes

- 1) Total available resource – total active storage volume (Blowering & Burrinjuck Dams) at the day of assessment plus any usable flows in transit plus drought forecast inflows from now to June 2021 plus Snowy Hydro's assured Required Annual Release (RAR) (including flex (pre-release) from the prior year) to April 2021. Snowy Hydro's net Jounama Release for this year (2019-20) is 869 GL.
- 2) Rules-based environmental water – water required to be set aside under water sharing plans to provide for riverine environments to 30 June 2021. Includes end-of-system flow requirements (currently 218GL per year) and environmental water allowances estimated over two years. Excludes 'licence-based' environmental water also known as held environmental water (HEW). This total volume typically reduces as commitments are met and water is used during the year.
- 3) Reserves – required primarily under statutory plans, and mainly used for emergency purposes and critical needs. Includes 25GL per dam per year as an operational reserve, and Provisional Storage Volumes (PSV1 = nil, PSV2 = nil).
- 4) Conveyance entitlement – water required to be set aside under water sharing plan rules to provide for category of access licences originally issued to Irrigation Corporations to facilitate delivery of water through their channel systems. Includes conveyance entitlement requirements estimated over two years.
- 5) Losses – is the best estimate of the volume required to run the river under dry conditions to meet demands through June 2021. This includes storage evaporation, transmission losses and operational loss. This estimate is regularly updated as the year unfolds.
- 6) IVT account – this represents the carryover volume into 2019/20.
- 7) Late Season Inflows – is the estimated inflow volume that will arrive into storage late in the year, after the peak irrigation demand season (usually post-February). This water cannot be allocated to water users at the start of the water-year, otherwise there could be an expectation that the water is available for use and can be delivered before it is captured in storage.
- 8) Supply Distribution – the distribution of supply includes volumes at the time of the assessment for the following categories: active volumes in the dams (excludes early release volumes of next year's Snowy Hydro commitments), indicative usage to-date (may be estimates prior to reconciliation with hydrographic updates) and assumed minimum future inflows from now to June 2021 (includes Snowy Hydro's guaranteed inflows through April 2021, and late season inflows).

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