

15 October 2018

NSW Murray and Lower Darling Water allocation update and outlook

There has been **no increase** in general security or conveyance allocations in the NSW Murray regulated river resources since the last assessment.

Dry conditions have continued, with September rainfall being well below average in the region. Murray system inflow for the month was in the lowest nine per cent on record, and on the back of a dry second half of 2017/18, and has resulted in low water availability.

The limited NSW inflows that have occurred have been offset by larger than expected transmission losses and the requirement for NSW to, jointly with Victoria, meet its commitments to South Australia as Victoria stepped out of Special Accounting this month.

While the total volume of NSW's share of water availability has reduced by 40 GL to 990 GL due to the increased commitments described above, this has been mostly offset by River Murray Increased Flow (RMIF) usage, being a reduced liability of 35 GL, plus 5 GL from the 10 GL of water temporarily set aside in the last assessment in anticipation of such impacts.

Allocations in the **Lower Darling remain unchanged**. The Menindee Lakes system is at 9 per cent of full supply capacity (holding about 150,000 megalitres) and is critically low.

	High Security	General Security	Average Carryover
Murray	97%	0%	31%
Lower Darling	100%	0%	15%

Murray storage levels (as at 12 October 2018)*

- Dartmouth Dam is 84 per cent full – falling – currently at 3,229,000 megalitres (ML).
- Hume Dam is 50 per cent full – falling slowly – currently at 1,507,000 ML.
- Lake Victoria is 56 per cent full – rising – currently at 380,000 ML.

* NSW share of this water is approximately 33%, 35% and 20% for these storages respectively.

State sharing of the Murray resource

The monthly accounts to end September indicate 5,320 GL of total Murray resource is available in the very dry (99 percentile) case, of which about 1,660 GL is needed to run the system and therefore 3,660 GL is distributed to NSW and Victoria based on rules in the Murray-Darling Basin Agreement.

The NSW share of this is about 1,190 GL from which commitments to South Australia's entitlement flow and trade adjustments are deducted to leave NSW with 990 GL of resource to distribute (99 percentile). This represents a decrease of 5 GL from the last assessment once RMIF usage has been taken into account.

Climatic outlook

The Bureau of Meteorology seasonal outlook for November to January generally indicates likely below median rainfall 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 has moved to El Niño ALERT as sea surface temperatures move towards El Niño thresholds. Models suggest El Niño will likely develop over the coming month or two. Similarly, signs continue to indicate that a positive Indian Ocean Dipole (IOD) is underway. When combined, these two events in spring increase the possibility of a dry and warm end to the year.

Trade

In the Murray, trade across the Barmah choke remains restricted to '**no net trade downstream**'. Downstream trade opens to the extent of the volume of any upstream trade. The trade restriction helps to protect existing downstream entitlement holders from an increased risk of delivery shortfall due to the limited physical capacity of the Barmah choke. Water users are encouraged to monitor the Murray-Darling Basin Authority (MDBA) website (www.mdba.gov.au) for information about the trade balance and status of trade.

The Menindee Lakes system is below 480 GL, the threshold at which the Lower Darling becomes administratively separated from the Murray. Temporary trade with the Murray is therefore closed. Trade typically remains closed until the system recovers to above 640GL. Trade within the Lower Darling water source remains unaffected.

Trade **out** and **within** the Murrumbidgee Valley is open, but trade **into** the Murrumbidgee Valley is closed. Trade into the Murrumbidgee Valley will re-open when the Murrumbidgee inter-valley trade (IVT) account balance climbs to 15 GL. Water users are encouraged to monitor the WaterNSW website (www.watersw.com.au) for daily information about the IVT account balance and status of trade.

Next announcement

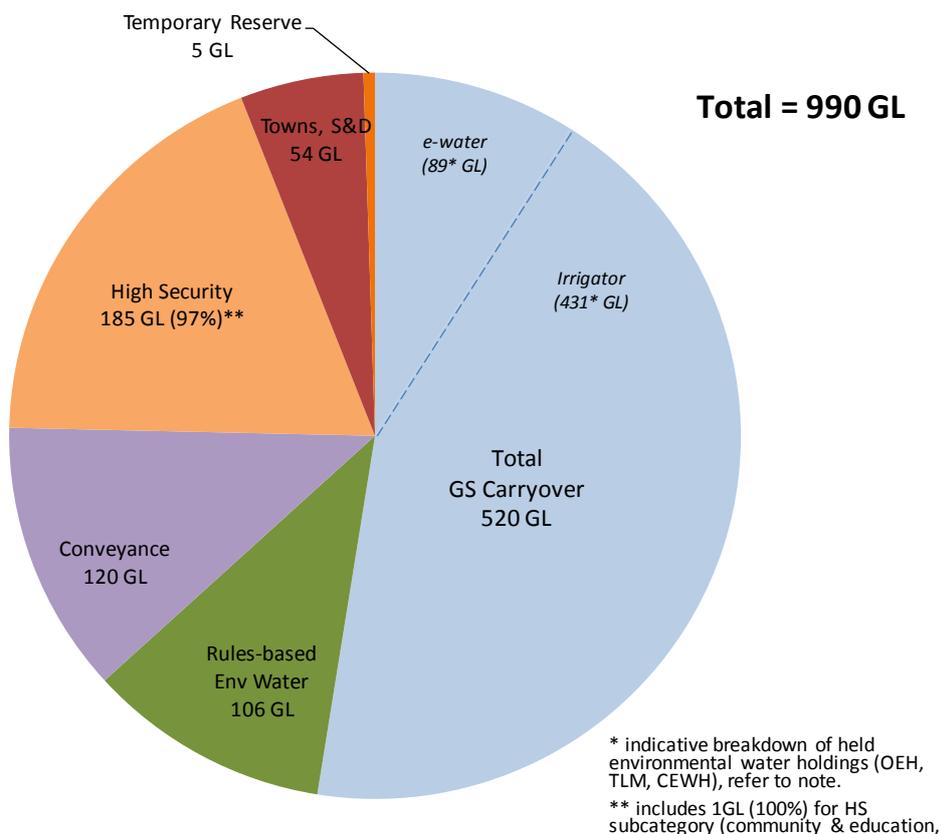
The next water allocation statement for the NSW Murray and Lower Darling valleys will be issued on **Thursday 1 November 2018**.

NSW Murray resource assessment data sheet

Resource Distribution (15 October) for 2018-19	Volume (GL)
Total Available Resource ⁽¹⁾	990
less	
Carryover ^{(2), (7)}	520
Rules based Environmental Water ⁽³⁾	106
Towns, Stock, Domestic ⁽⁴⁾	54 (100%)
Announced High Security subcategory (education, research) ⁽⁴⁾	1 (100%)
Announced High Security ⁽⁴⁾	184 (97%)
Conveyance ⁽⁵⁾	120 (36%)
Reserves ⁽⁶⁾	0
Announced General Security ⁽⁷⁾	0 (0%)
Temporary Reserve ⁽⁸⁾	5

*See notes below.

NSW Murray resource distribution 2018-19 – 15 October 2018



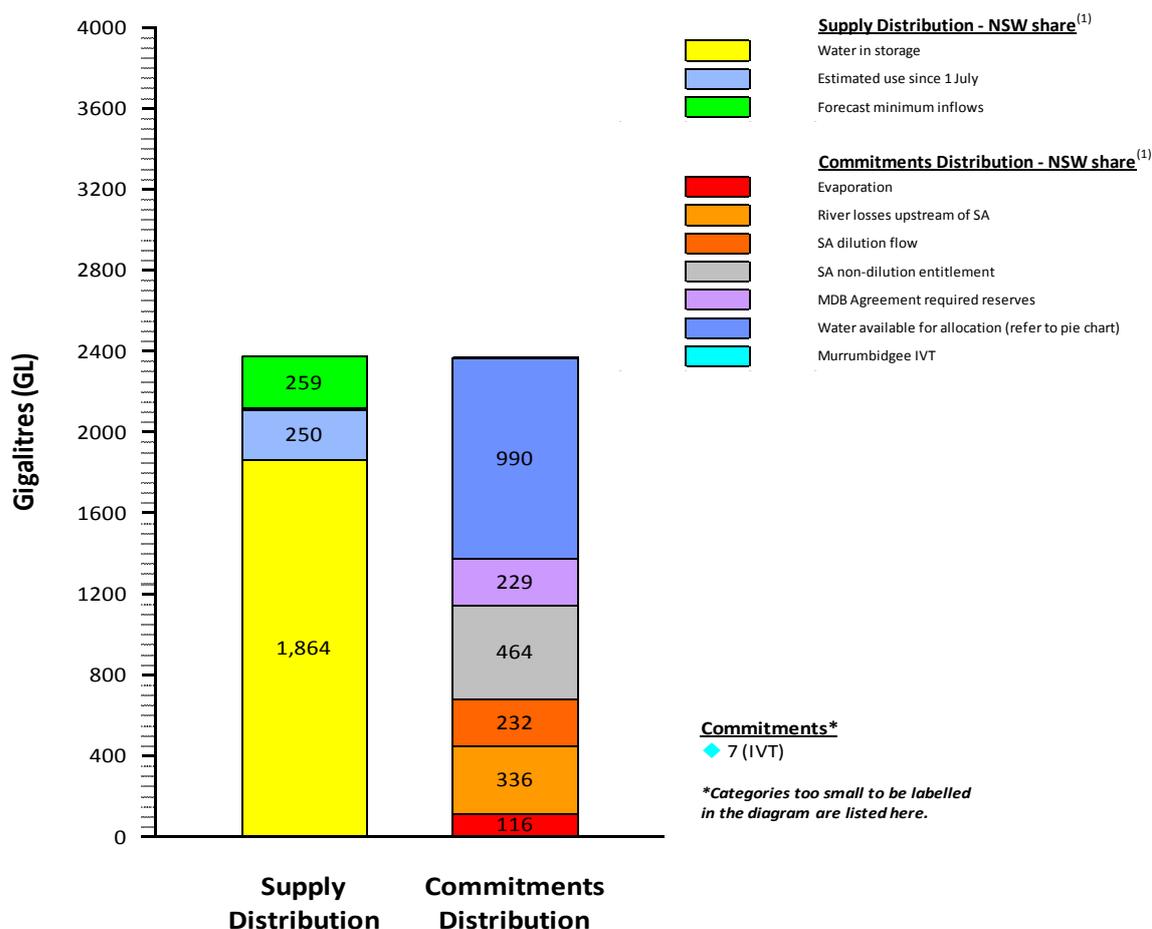
Data sheet notes

- (1) Total available resource - NSW's state share of active storage volume (Hume, Dartmouth, Menindee and Lake Victoria) as assessed and accounted for under the Murray-Darling Basin Agreement at the time of the assessment plus any usable flows in transit plus assumed (99%ile) inflows for the 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 M1 releases to date for this water year (2018-19) is 587GL, and 200GL of flex was pre-released in 2017-18. NSW is in Special Accounting with South Australia (SA), details of which can be found in the MDB Agreement clauses 123-129. Special accounting is triggered when NSW is forecast unable to meet the required reserve of 1,250 GL by the end of the water year to supply SA with its entitlement in the following year. Larger Victorian tributary inflows often allow Victoria to step out of Special Accounting earlier than NSW, as has occurred in this assessment. At such time, as both states must contribute equally (50:50) to South Australian commitments, NSW must provide a matching contribution, prior to NSW receiving its share of the resource.
- (2) Carryover – NSW Murray general security water users can carryover a maximum account balance of 50 per cent of their entitlement into the following water year. The account limit is 110 per cent of entitlement, meaning that account credits from allocation and/or carryover cannot exceed 110% of entitlement in any water year. The limit does not include allocation trade.
- (3) Primarily rules-based planned environmental water – water required to be set aside to provide for riverine environments, as per water sharing plan and other interjurisdictional agreements. In the NSW Murray this includes the Murray Additional Allowance (MAA) (about 6 GL), Wakool system requirements (up to 70 GL, currently 40 GL available), and the Barmah-Millewa Allowance (B-MA) (about 248 GL – currently 100% borrowed). It also includes River Murray Increased Flows (RMIF) in Hume, accrued as part of the Snowy Water Initiative (currently 60 GL available out of a total commitment of about 90 GL). The total commitments to B-MA and RMIF will decrease over the water year as they are released from Hume for use. Excludes 'licence-based' environmental water also known as held environmental water (HEW).
- (4) The *Water Sharing Plan for the New South Wales Murray and Lower Darling Regulated Rivers Water Sources 2016* has subcategories of high security licenses in the Murray Water Source. High security subcategory licences under *Part 7 Division 2 Clause 46(2)* that are present in the Murray include community and education, research, and town water supply. At the commencement of each water year, these licences are to receive 100% allocation, while remaining high security licences are to receive 97% allocation. For the purposes of this water allocation statement, the high security town water supply allocation volume has been grouped as "Towns, S&D".
- (5) 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 plan and is a function of current high and general security allocation.
- (6) Reserves – required primarily under statutory plans; set aside for emergency purposes and critical needs.
- (7) Held environmental water (HEW) – 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 limited to only NSW entitlements, reporting of credits to accounts (not usage or trade), and estimated to be 0 GL of GS, 24 GL of HS, 18 GL of conveyance allocation and 89 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.
- (8) Temporary reserve – small reserve introduced to buffer against elevated risk of high-than-budgeted losses.

NSW Murray resource assessment – comparison with this time last year

Item	Mid Oct 2017 (GL)	Mid Oct 2018 (GL)	Comments
NSW share of total resources	1,879	990	Significantly lower following very dry conditions since summer
less			
Carryover	730	520	Lower carryover
Environmental	200	106	BMA payback commenced in 2017
Towns, Stock, Domestic	54	54	Same
Allocation to Conveyance licences	203	120	Lower due to lower resource
Allocation to High Security	185	185	Same
Allocation to General Security	502	0	Lower due to lower resource

NSW Murray water balance – 15 October 2018



Water balance notes:

- (1) Supply Distribution and Remaining Commitments – the distribution of supply and commitments is being provided on a monthly basis. The volumes in the categories shown are only those relating to NSW's share of the resource, at the end of the preceding month. The categories include the following:
- Water in storage: Volumes in the dams at the end of the previous month. (Excludes water in storage unavailable to NSW under the water sharing arrangements of the Murray Darling Basin Agreement).
 - Estimated use since 1 July: Estimated NSW usage to-date, reconciled periodically with hydrographic updates (meter readings).
 - Forecast inflows: NSW's share of forecast inflows into the River Murray System based on assumed extremely dry future conditions (includes Snowy Hydro's guaranteed inflows for the water year).
 - Murrumbidgee IVT: Total Murrumbidgee system water bought by Murray system users that is yet to be delivered, as reported in the Murrumbidgee IVT account balance. A negative IVT balance will appear as a commitment of NSW Murray water to the Murrumbidgee, until trades between the two valleys brings the IVT balance up to nil.
 - Evaporation: Water set aside for evaporation for the remainder of the year. This reduces as the year progresses.
 - River losses upstream of SA: Water budgeted for transmission losses from the River Murray system upstream of the South Australian border for the remainder of the year. Generally reduces as the water year progresses.
 - SA non-dilution entitlement: Water to supply South Australia's entitlement flow, as required under the Murray-Darling Basin (MDB) Agreement. Reduces as water year progresses.
 - SA dilution flow: Water to provide South Australia's dilution component of flow, as required under the MDB Agreement. Reduces as the year progresses, unless Additional Dilution Flow (ADF) is triggered.
 - MDB Agreement required reserves: Includes conveyance reserve and minimum reserve to be set aside for use in the next water year, as required by the MDB Agreement in clause 102D and 103, respectively.
 - Water available for allocation: NSW's bulk share of the resource that can be assigned to NSW Murray entitlement holders based on the water sharing plan. This volume includes entitlement holder carryover. The allocation of this volume is provided in the above table and pie chart.

Chances of improvement

The chances of improved inflow conditions and indicative allocations are provided in the following table. The decision to move to 'Dry Tercile' analysis was taken in the mid-September assessment based on the very dry winter period experienced this year together with the climatic outlook. This means that only data from the lowest one-third of years is used and produces lower forecast conditions than using all years of record which are considered more realistic under current conditions.

The likely improvements take into account the need to meet current deficits (for example in allocation conveyance entitlements) and the need to ensure that 1 July 2019 high priority commitments can be met for the 2019-20 water year.

Forecast general security allocation (per cent) – using dry tercile[#]

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

Potential Inflow Conditions*	1 Dec 2018 General Security Allocation	1 Feb 2019 General Security Allocation
99 chances in 100 (extreme) (99%)	0	0
9 chances in 10 (very dry) (90%) [^]	0 ^{^^}	1
3 chances in 4 (dry) (75%)	1	5
1 chance in 2 (mean) (50%)	8	13
1 chance in 4 (wet) (25%)	18	22

[#] Outlook modelling using inflow data for the driest one-third of years only and GS carryover of 31%.

[^] July to September 2018 conditions for the system as a whole have been tracking at 91% AEP.

^{^^} Conveyance estimated to be around 165 GL at 1 December 2018.

B-M Allowance remains borrowed for all scenarios.

