

16 December 2019

NSW Murray and Lower Darling

Water allocation update

General security allocations in the NSW Murray and Lower Darling regulated river water sources **remain unchanged**.

Rainfall continues to trend well below average and inflows are tracking near assumed minimums. Extreme dry catchment conditions and soil moisture deficits will inhibit the catchment's runoff response, therefore soaking rainfall is required to improve resources and provide water for allocation.

The total improvement to the NSW resource from slightly better than assumed inflows is 20,000 megalitres (ML). This water is building security for next year (15,000 ML) and reducing the current year's shortfall to Conveyance entitlement holders (5,000 ML).

Statistically, in the Murray, good inflows are unlikely now until next winter/spring. However, in reality, individual storms can bring heavy rainfall and good inflows at any time. Water users are encouraged to plan for the worst and hope for the best. In the meantime, conditions will continue to be closely monitored and statements updated, ensuring that any water that does become available is safely and promptly allocated in accordance with statutory water sharing plans.

The Menindee Lakes system remains critical; below 1 per cent full, holding just 8,300 ML. The widespread cease-to-flow conditions pose significant challenges and risks.

2019-20	High Security	General Security	Average Carryover	Drought Stage
Murray	97%	0%	18%	 Stage 2
Lower Darling	30%	0%	19%	 Stage 4

Drought stage

The **NSW Murray** regulated river water source is in Stage 2 drought criticality. Drought operational planning has commenced so that contingency measures can be readied to protect critical water supplies if conditions deteriorate beyond this year. A Critical Water Advisory Panel has been formed for southern valleys to provide advice on drought management options and will convene as conditions necessitate.

The **Lower Darling** regulated river water source is at maximum Stage 4 drought criticality and there are no foreseeable inflows. Restrictions limit water usage to critical needs.

Isolated heavy rainfall in proximity to Bourke in October briefly returned some flow to the Darling and Warrego Rivers. However, despite the temporary water restrictions, the peak flows below Bourke of nearly 1,500 ML/day in the first week of November, plus the Warrego flows, will likely provide no benefit to Menindee due to the natural attenuation of flows over hundreds of kilometres of dry river beds and the lack of follow-up rainfall and flows.

The temporary water restrictions are likely to remain until the resource situation improves. Follow this link for further details on the reasons for the temporary restriction:

www.industry.nsw.gov.au/water/allocations-availability/temporary-water-restrictions

More information on NSW's Extreme Events 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 December 2019)*

- Dartmouth Dam is 53 per cent full – falling – holding 2,043,000 ML.
- Hume Dam is 31 per cent full – falling – holding 938,000 ML.
- Lake Victoria is 75 per cent full – steady – holding 505,000 ML.

* NSW share of this water is approximately 28%, 49% and 49% for these storages respectively, or 37% in total.

State sharing of the Murray resource

The end of November accounts indicate that 3,710 gigalitres (GL) of total shared Murray resource is available in the extreme dry (99th percentile) case, of which about 1,380 GL is needed to run the system. The NSW portion of this shared resource is 950 GL based on rules in the Murray-Darling Basin Agreement. Following adjustments including trade, tributary inflows and usage to date, the assessment results in 995 GL of water being available for NSW to allocate.

Climatic outlook

The Bureau of Meteorology seasonal outlook for January 2020 to March 2020 indicates that the Murray catchment is likely to experience below average to average rainfall conditions and hotter than average temperatures.

The Bureau indicates that the El Niño-Southern Oscillation (ENSO) remains neutral. Modelling suggests that the ENSO is likely to remain neutral well into 2020. Positive Indian Ocean Dipole (IOD) conditions are forecast well into summer, suppressing likely rainfall and increasing temperatures.

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

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 address the physical constraint at the choke and protects existing downstream entitlement holders from an increased risk of delivery shortfall. 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 across the Barmah choke.

The Menindee Lakes system is effectively empty. Temporary trade with the Murray is closed and typically remains closed until the system recovers to hold more than 640 GL of water and becomes part of the shared Murray system. Trade within the Lower Darling water source is allowed although there is no regulated water delivery.

Trade **into** the Murrumbidgee Valley is open; however, trade **out** is closed (as of 13 December 2019). Water users should monitor the WaterNSW website (www.waternsw.com.au) for daily information about the IVT account balance and status of trade. Trade **out** of the valley will open again when the IVT balance falls to 85 GL but will then close again should it rise to 100 GL.

Next announcement

There will be no statement on 2 January 2020. Fortnightly assessments and statements for the NSW Murray regulated river will resume in the New Year on **Wednesday 15 January 2020**.

If significant changes in weather patterns or water availability are observed, interim allocation announcements will be provided.

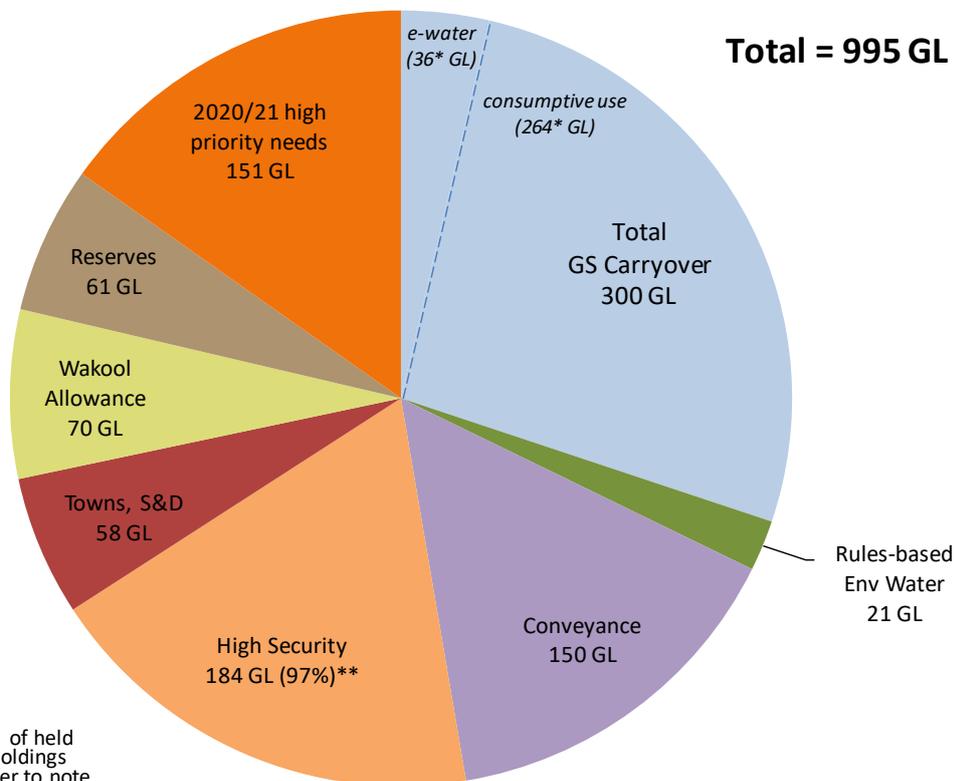
The seasonal outlooks (rocket diagrams) will now cease for this water year. From mid-February 2020 onward, the forecasts will focus on the indicative starting allocations for 1 July 2020 and the water for next (2020/21) water year. This aims to help water users with their end of year water management decision.

NSW Murray resource assessment data sheet

Resource Distribution (16 December) for 2019-20	Volume (GL)
Total Available Resource ⁽¹⁾	995
less	
Carryover ^{(2), (8)}	300
Rules based Environmental Water ⁽³⁾	21
Towns, Stock, Domestic ⁽⁴⁾	58 (100%)
Announced High Security subcategory ⁽⁴⁾	<1 (100%)
Announced High Security ⁽⁴⁾	184 (97%)
Conveyance ⁽⁵⁾	150 (45%)
Wakool Allowance ⁽⁶⁾	70
Reserves ⁽⁷⁾	61
Announced General Security ⁽⁸⁾	0 (0%)
2020-21 high priority needs ⁽⁹⁾	151

*See notes below.

NSW Murray resource distribution 2019-20 – 16 December 2019



* indicative breakdown of held environmental water holdings (OEH, TLM, CEWH), refer to note
 ** includes <1GL (100%) for HS subcategory

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 M1 releases to date for this water year (2019-20) is estimated to be about 394GL. 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 forecasts indicate that NSW is unable to meet the required reserve of 1,250GL by the end of the water year to supply SA with its entitlement in the following year.
- (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 (PEW) – water required to be set aside to provide for riverine environments, as per water sharing plan and other inter-jurisdictional agreements. In the NSW Murray this includes the Murray Additional Allowance (MAA) (about 6GL) and the Barmah-Millewa Allowance (B-MA) (about 285GL – currently 100% borrowed). It also includes River Murray Increased Flows (RMIF) in Hume, accrued as part of the Snowy Water Initiative (currently about 15GL). 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, 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 licences 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".

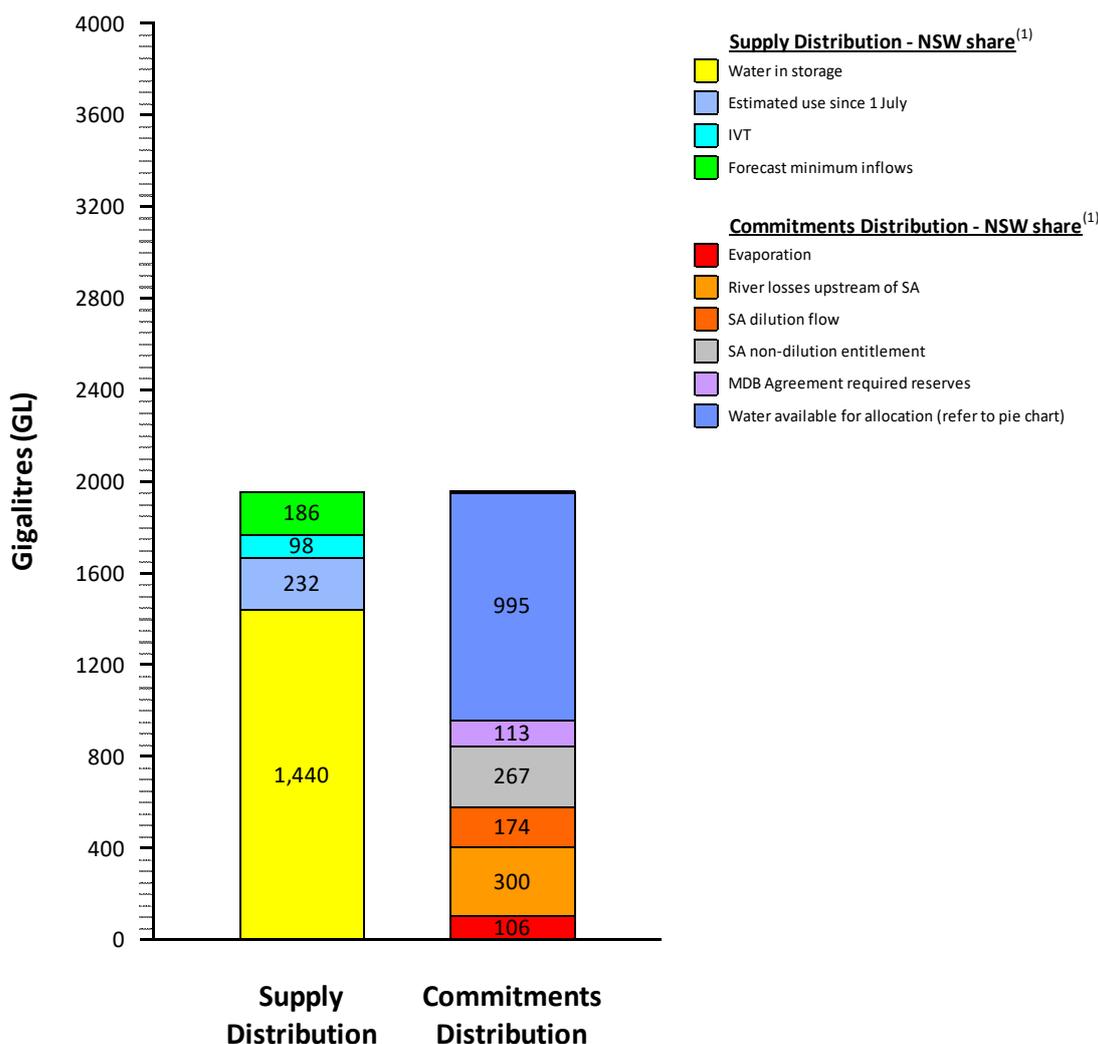
Water Allocation Statement

Water availability and allocation update



- (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) Wakool Allowance – a conveyance volume necessary for NSW to operate the Edward-Wakool system. Typically up to 70 GL.
- (7) Reserves – required primarily under statutory plans, up to 61GL; set aside for critical human needs in accordance with Clause 11.03 of the Basin Plan.
- (8) 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 0GL of GS, 24GL of HS, 23GL of conveyance allocation and 36GL 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.
- (9) 2020-2021 high priority needs on 1 July 2020 - volume set aside to cover high priority needs on 1 July 2020, for 'Year 2', including potential carryover

NSW Murray water balance – 16 December 2019



Water balance notes:

- (1) Supply Distribution and Remaining Commitments – 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, and Murrumbidgee end of system flows).
 - IVT: Total tributary system water bought by Murray system users that is yet to be delivered.
 - 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 and conveyance 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. Allocation of this volume is provided in the above table and pie chart.

NSW Murray Resource Assessment – Comparison with this time last year

Item	Mid Dec 2018 (GL)	Mid Dec 2019 (GL)	Comments
NSW share of total resources	1,085	995	Low resource due to continuation of dry conditions.
less			
Carryover	520	300	Lower carryover.
Environmental	101	21	Primarily RMIF.
Towns, Stock, Domestic	54	58	Broken Hill pipeline entitlement added.
Conveyance	165	150	Similar.
Wakool Loss	40	70	Higher due to June/July 2019 inflows.
High Security	185	184	Similar.
Reserves	20	212	Higher in anticipation of continued dry conditions, from cumulative resource improvements.
General Security	0	0	Same. Zero due to lack of resource and extreme dry conditions.

Chances of improvement

The chances of improved general security allocation in the NSW Murray, based on a repeat of historical inflows, are provided in the following table under a variety of conditions.

The forecast from December is based on the driest one-third of years on record (dry tercile). The change from using all available data to using the driest third of all years (dry tercile) was made on the back of failed winter inflows and forecasts of a hot and dry spring and summer. Statistically, the likelihood of good inflows before next autumn/winter has reduced significantly. Allocations are likely to remain at current values under most scenarios (using dry tercile). Limited improvements in resource will be set aside to support high priority commitments for 2020-21 as a priority.

It is important to note that 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 water users should use this information with caution and at their own risk, as it projects many months ahead.

Forecast General Security allocation (per cent) – using dry tercile

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

Historical Inflow Scenario	1 Feb 2020
99 chances in 100 (extreme) (99%) [#]	0
9 chances in 10 (very dry) (90%)	0
3 chances in 4 (dry) (75%)	0
1 chance in 2 (mean) (50%)	0 [^]

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

Note 2: Statistical values reflect NSW share of inflows, not whole of system inflows.

Note 3: Multi-history modelling using driest one-third years. Assumes GS carryover of 18%.

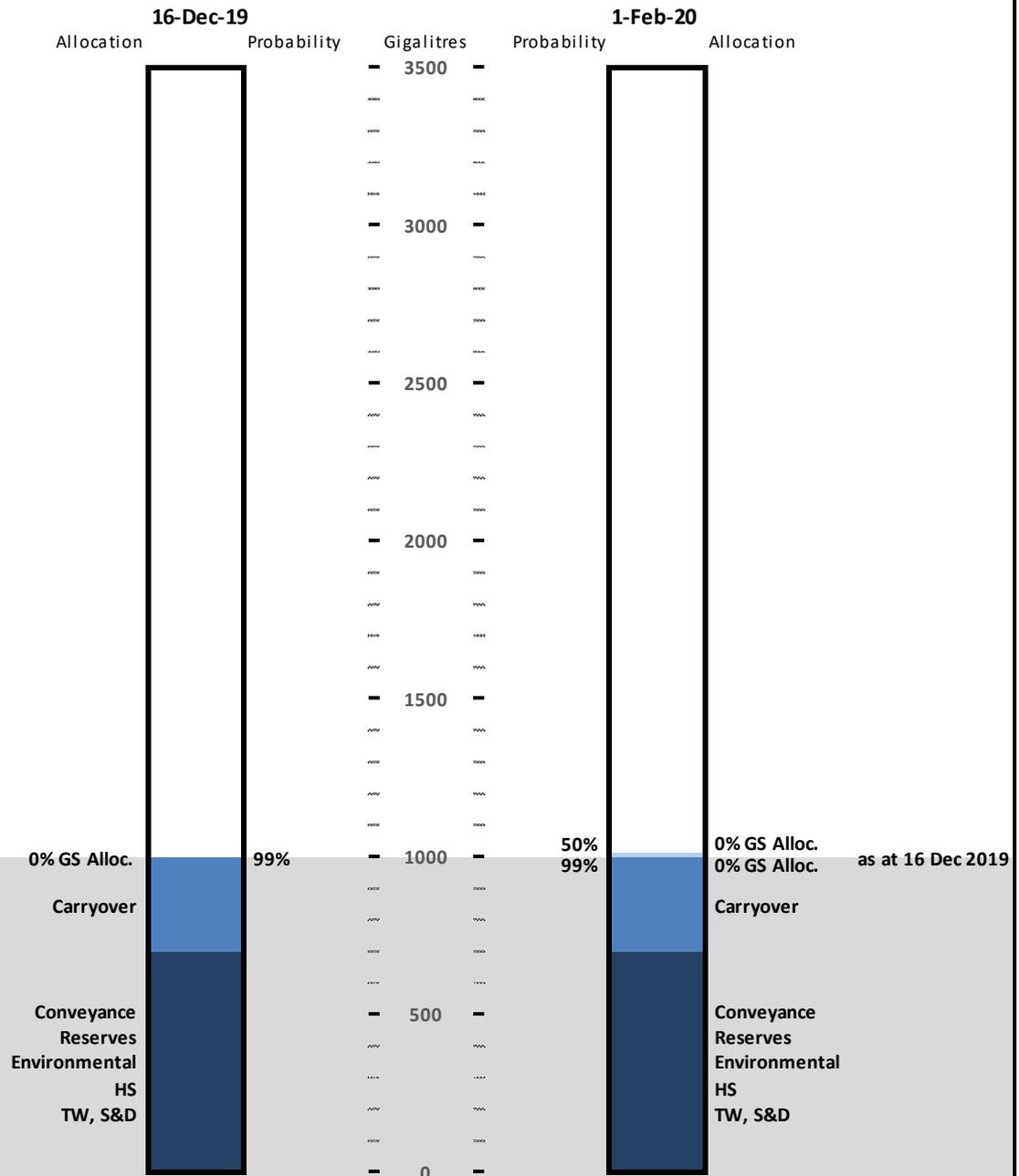
[#] Extreme dry baseline additionally includes Murrumbidgee end of system flows.

[^] By February, under mean (50th percentile) inflow conditions, Conveyance allocation is likely to be about 160GL.

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NSW Murray Valley Outlook

as at 16 December 2019



This figure provides indicative improvements in general security allocations for 1 February 2020 and the current allocations as of 16 December 2019. The allocation improvements are indicative only, and do not constitute guaranteed allocations. This means water users use this information at their own risk. As of 16 December 2019, General Security allocation is at 0 per cent, and under 99% inflow conditions, will remain the same for the rest of the water year.