

15 April 2020

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 to-date in April has been near average; however, as April is historically a low rainfall and low inflow month, the total resource improvement is limited. The notional improvement for the NSW Murray is 80,000 megalitres (ML) from reduced system losses and better than expected inflows. However, a majority of this will not translate into NSW Murray resource for next year. This is mainly due to likely increased NSW obligations under the Murray Darling Basin Agreement in 2020-21 if dry conditions persist, coupled with a forecast increase in carryover liability.

Therefore, while the 80,000 ML improvement has been set aside for 2020-21 high priority needs, taking the total to 285,000 ML, it is currently estimated that at least 400,000 ML is needed. This statement provides an updated outlook for 2020-21 further below. It will continue to be reviewed and updated fortnightly in the lead-up to 1 July.

Low water availability is understandably causing great distress among NSW Murray water users. To provide greater insight and understanding of the inflow conditions of recent years and the water availability outcome for NSW Murray general security water users, a factsheet will be published in coming weeks. In addition, as we approach 1 July 2020, public information sessions using remote conferencing technology will be organised to update and expand on the information provided and respond to questions.

Overall dry conditions continue to strain resources; therefore, the system is being managed to maintain deliverability of all account water and support full opening allocations to high priority needs in 2020-21, including general security carryover, as required by the water sharing plan.

The Menindee Lakes system has experienced significant resource improvement due to the arrival of northern basin inflows. It is currently at 16 per cent full, holding around 270,000 ML and will continue to rise over the coming weeks. Temporary water restrictions in the Lower Darling have been lifted to provide access to all water in accounts, including general security carryover. There is currently not enough water in storage to make an allocation to all general security entitlements.

Releases commenced from the Menindee Lakes system on March 26, peaking at around 3,000 ML/day for about a week. The releases are now receding toward baseflow levels. Regulated operations have commenced, with all block banks removed and enough resource is expected to be available to maintain connectivity to the Murray for at least 12 to 18 months.

2019-20	High Security	General Security	Average Carryover	Drought Stage
Murray	97%	0%	18%	 Stage 2
Lower Darling	100%	0%	19%	 Stage 3

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 in Stage 3 drought criticality. This is likely to be eased further in coming weeks as inflows firm or on the back of further improvements.

Further information on critical valleys in drought can be found at:

www.industry.nsw.gov.au/water/allocations-availability/droughts-floods/drought-update/critical-valleys-in-drought

Storage levels (as at 14 April 2020)*

- Dartmouth Dam is 47 per cent full – steady – holding 1,810,000 ML.
- Hume Dam is 14 per cent full – steady – holding 410,000 ML.
- Lake Victoria is 34 per cent full – steady – holding 230,000 ML.

* NSW share of this water is approximately 33%, 47% and 49% for these storages respectively, or 37% in total.

State sharing of the Murray resource

The end of March accounts indicates that 2,170 gigalitres (GL) of total shared Murray resource is available in the extreme dry (99th percentile) case, of which about 470 GL is needed to run the system. The NSW portion of this shared resource is 760 GL based on rules in the Murray-Darling Basin Agreement. Following adjustments including trade, tributary inflows and usage to date, the assessment results in 1,150 GL of water being available for NSW to manage.

Climatic outlook

The Bureau of Meteorology's seasonal outlook for May to July indicates that conditions are likely to be wetter than average across the catchment. Temperatures are likely to be average to warmer than average. The Bureau also indicates that the El Niño-Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD) are neutral and will likely remain neutral into winter.

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 protect 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 the status of trade across the Barmah choke.

Temporary trade between the Lower Darling and the Murray is closed and typically remains closed until the system recovers to hold more than 640 GL of water, and the Menindee Lakes become part of the shared Murray system. Trade within the Lower Darling water source is allowed.

Trade **out and into** the Murrumbidgee Valley is open (as of 8 April 2020). Water users should monitor the WaterNSW website (www.waternsw.com.au) for daily information about the IVT account balance and status of trade, particularly up-coming seasonal trade closure dates.

Next announcement

The next water allocation statement will be published on **Friday 1 May 2020**. It will be an abbreviated statement to confirm conditions and keep water users updated.

The **final water allocation statement for the water year will be issued on Friday 15 May 2020**. It will provide the best estimates of expected opening (1 July 2020) water availability and allocations, and the likelihood of improvement under different inflow scenarios.

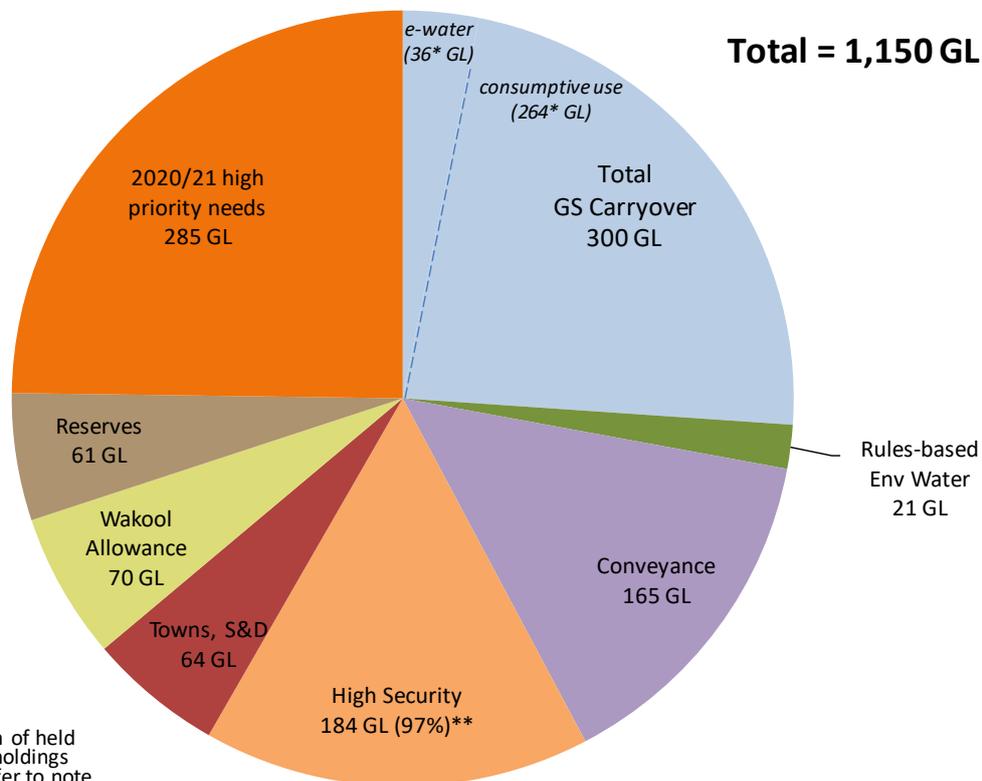
The availability outlook for next year aims to help water users with their end of year water management decisions. Forecast conditions are best estimates only and not guaranteed water availability. They should be used with caution, particularly when projecting many months ahead.

NSW Murray resource assessment data sheet

Resource Distribution (15 April) for 2019-20	Volume (GL)
Total Available Resource ⁽¹⁾	1,150
less	
General Security Carryover ^{(2), (8)}	300
Rules based Environmental Water ⁽³⁾	21
Towns, Stock, Domestic ⁽⁴⁾	64 (100%)
Announced High Security subcategory ⁽⁴⁾	<1 (100%)
Announced High Security ⁽⁴⁾	184 (97%)
Conveyance ⁽⁵⁾	165 (50%)
Wakool Allowance ⁽⁶⁾	70
Reserves ⁽⁷⁾	61
Announced General Security ⁽⁸⁾	0 (0%)
2020-21 high priority needs ⁽⁹⁾	285

*See notes below.

NSW Murray resource distribution 2019-20 – 15 April 2020



* 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 540GL. 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 291GL – 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". Drought critical

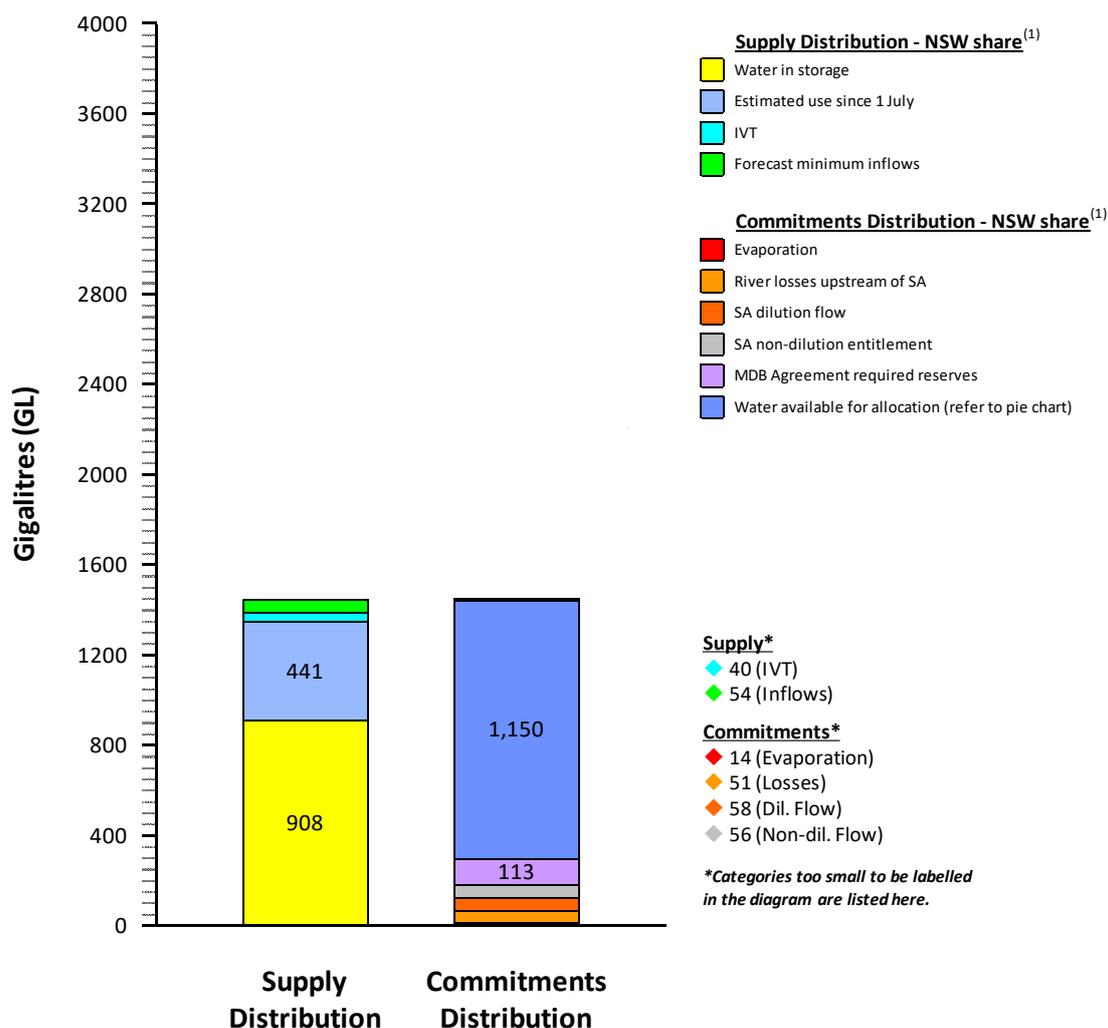
Water Allocation Statement

Water availability and allocation update



- conveyance water allocated under Special Purpose Access Licences to small irrigation districts for running channels to supply high priority entitlements has been included in this category totalling about 6 GL.
- (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, 25GL 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 – 15 April 2020



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.

Outlook for 2020-21

Key information

- This outlook for 1 July 2020 water availability is conservatively based on assumed very dry (95th percentile) inflows for the remainder of this water year and extreme dry (99th percentile) conditions for 2020-21. Actual inflow conditions better than these will improve water availability. Indicative forecast general security allocations for September and November 2020 under a range of inflow scenarios are provided to assist water users to manage risk and plan.
- For context, the NSW Murray has experienced about 95th percentile conditions this water year, that is, only five years out of a given 100 years of historical record experience drier conditions.
- The forecast information is not guaranteed and should be used at one's own risk. It will be updated once more before 1 July in the mid-May statement.
- Dry conditions across the Snowy Hydro scheme is having a strong bearing on the Murray resource availability outlook, with assessments indicating potential reduced water availability.
- Although very dry conditions are assumed to continue, heavy rainfall and significant inflows can occur at any time, and allocations will be promptly adjusted accordingly.
- It is difficult to reliably predict end-of-year carryover, as it is highly dependent on weather conditions and individual decisions by water users. Nevertheless, it is estimated that the NSW Murray carryover will be around 18 per cent (some 300 GL) on average. Maximum general security carryover in the valley is 50 per cent of entitlement.
- Current water stored in Hume and Dartmouth dams combined is about 780,000 megalitres (ML) lower than this time last year.
- As usual, the Barmah Choke trade balance will be re-set on 1 July and reflect the volume of annual Snowy Savings below the choke that will not need to be delivered downstream.
- Once the commencing allocations are announced on 1 July 2020, regular assessments will be undertaken and allocation announcements made fortnightly on the 1st and 15th of each month, or next working day following, until full allocations are achieved.

Indicative allocations on 1 July 2020 – Lower Darling

- The Menindee Lakes System is rising as northern basin inflows continue to accrue. It is currently 16 per cent full, holding around 270,000 ML and is forecast to rise to around 20 per cent full in coming weeks.
- The inflows have been enough to safely re-start the Lower Darling river.
- All temporary drought works have been removed and water restrictions eased. Inflows should be sufficient to run the Lower Darling for at least 12 months, probably longer. The drought criticality level has been eased and is likely to be eased further.
- Until the Menindee system recovers to over 640 GL, flows will be managed to prioritise water supply security to Lower Darling water users and ecosystems, ahead of delivery to the Murray.
- Full (100 per cent) allocation can be expected for **towns, domestic and stock** access licences, and **high security** entitlements in 2020-21.
- Full allocations for **supplementary** access licence holders can be expected and is available subject to announced periods of supplementary access.
- At this stage, opening Lower Darling **general security** allocation is likely to be low or zero (0) per cent unless there is significant further recovery in coming months.
- **Carryover** water is likely to be fully available.
- Lower Darling inter-valley trade can resume once the system recovers to above 640 GL.
- The Wentworth to Broken Hill pipeline is operational and supplying Broken Hill's water supply from the Murray.

Indicative allocations on 1 July 2020 – NSW Murray

- Full (100 per cent) allocation can be expected for **towns, domestic and stock** access licences, and **sub-category high security** entitlements.
- Full allocations for **supplementary** access licence holders can be expected and is available subject to announced periods of supplementary access.
- It is forecast that **high security** allocation of 97 per cent and **carryover** commitments will be met on 1 July, and **general security** allocations will be low or zero. A shortfall may impact the **conveyance** entitlement if inflows remain dry. Any shortfalls will be filled as a priority, similar to the current year.
- In the unlikely event that critically low inflows are experienced from now into winter, there may be a larger shortfall challenge on 1 July. A shortfall will be applied to conveyance entitlements and may also need to be shared across general security carryover water and to a lesser extent high security allocation, in accordance with *Water Management Act 2000* priorities.
- Water can be expected to be set aside for environmental requirements in accordance with the rules of the NSW Murray and Lower Darling regulated rivers water sharing plan.
- Payback of the borrowed NSW share of the Barmah Millewa EWA, some 290 GL, will need to commence when general security allocations reach 30 per cent of entitlement.

Chances of improvement

The chances of improved general security allocations after 1 July 2020, 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, which is appropriate given the seasonal outlook, and gives a better outlook than using just the driest years on record (dry tercile).

Historically, droughts have a higher likelihood of breaking in the winter/spring seasons than any other season, and therefore there is a possibility that the current drought may break or ease in the coming months. However, if this does not occur, the forecasting will change from using all available data to using the driest third of all years (dry tercile) early in 2020-21.

It is important to note that these estimates are indicative improvements only and are not guaranteed allocations. Estimates may change based on weather conditions, water management decisions and river operations. This means water users should use this information with caution and at their own risk, as it projects many months ahead.

Forecast General Security allocations (per cent)

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

Repeat of historical inflow conditions	1 Sep 2020	1 Nov 2020
99 chances in 100 (extreme) (99%) [#]	0	0
9 chances in 10 (very dry) (90%)	0	0
3 chances in 4 (dry) (75%)	0	7
1 chance in 2 (mean) (50%)	0	27

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: Forecast assumes 18 per cent general security carryover and 95 percentile conditions for the remainder of 2019-20.

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

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