

Regional water availability report

Weekly edition
23 September 2019

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1. Overview

WaterNSW manages and operates 42 dams and storages to deliver water for environmental, domestic, town water, stock, industrial and irrigation purposes across the state.

WaterNSW storages provide supplies to all the major river systems in Western NSW, Greater Sydney, the Southern Highlands, Shoalhaven Bay as well as the Hunter, Bega, and Iron Pot valleys in coastal NSW.

The total active storage percentage of rural water supplies on 23 September 2019 was 33% of the total active storage capacity. This was an increase of 0.1% since last week.

The total storage level of urban water supplies on 23 September 2019 was 49.4% of the total storage capacity. This was an increase of 0.5% since last week.

2. System risks

- Water allocations for the Year have been reduced for some high security, carryover water and conveyance licences due to reduced water availability and deliverability constraints. (see summary on back table and [link](#) to detailed operational updates for impacted valleys.)
- Menindee Lakes continues to be below the 480/640GL trigger for NSW control, and four temporary block banks have been constructed to extend drought security beyond January 2019. The water level behind the banks is now quite low and inadequate for next summer's supplies. The cease to flow conditions increase the possibility of decreasing water quality and fish deaths, with increases in salinity, pH and algae, and reduced dissolved oxygen.
- Flows have ceased along the whole length of the unregulated Barwon Darling system.
- In the Lower Namoi, releases from Keepit Dam ceased in December 2018 and until rain in late March, cease to flow conditions existed from downstream of Keepit Dam to Walgett. Cease to flow has recommenced in the whole river from Gunnedah to Walgett.
- The Peel valley is in drought stage 4 and drought planning is underway, including the implementation of works to restrict flows below Dungowan village, to secure water supply for Tamworth.
- In the Macquarie the combination of current storage volumes and a continuation of zero inflows will mean that there isn't enough water to maintain river flows to the whole valley for all of

2019/20. With the continuation of low inflows to the system the priority will be to extend supply for towns and critical industries. To secure water for these requirements cease to flow conditions have been implemented for the river below Warren for Duck and Crooked Creeks. If inflows do not occur at all next year, then all storage water will be depleted before the end of May 2020 and the whole river would then stop flowing. Hence the importance of implementing these drought measures.

- The Lachlan system continues to experience very low inflows. The low inflows this winter mean the system has entered a record new low inflow record, hence 1 July restrictions to 57% of general security account balances.
- Due to drought conditions, end of system daily environmental flow requirements in the Belubula River have been suspended, and customers are regularly advised of deliverability constraints.

3. Climatic Conditions

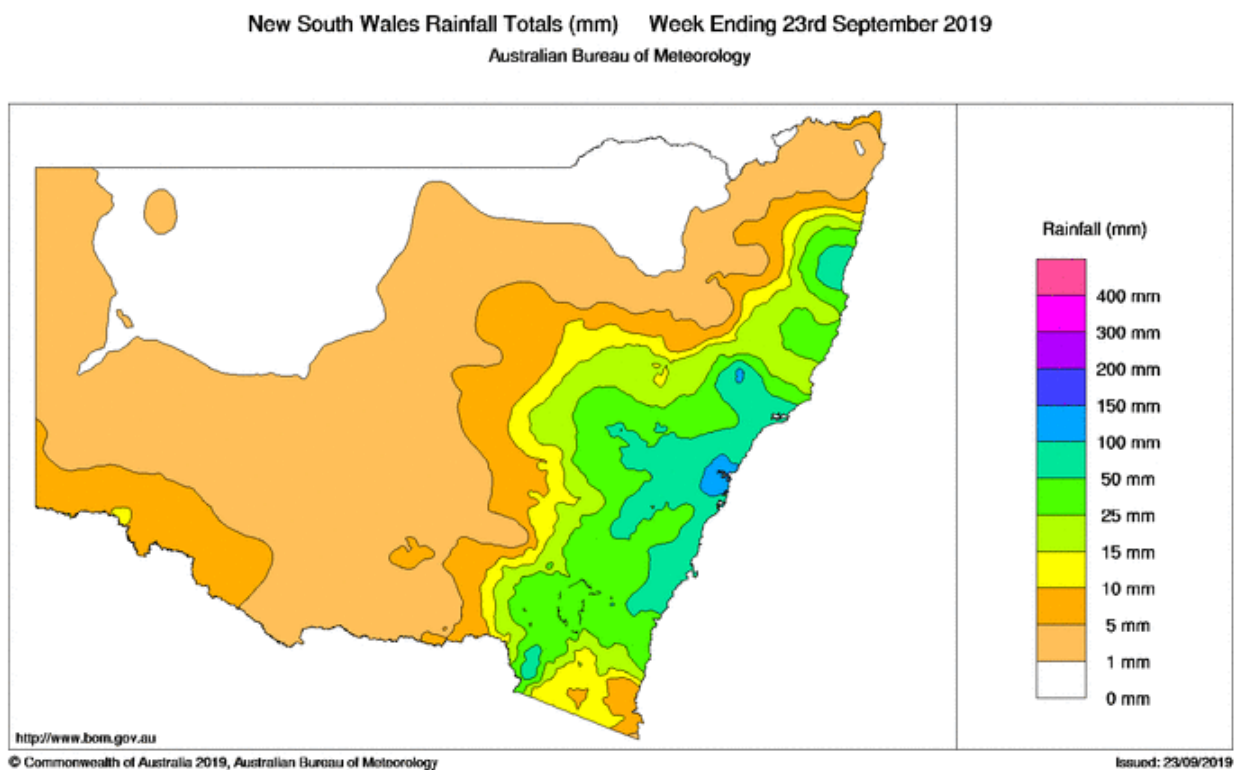


Figure 1 - Weekly rainfall totals for New South Wales

This week's weather forecast

For the first part of the week, a shower or two along the coast north from the Illawarra, dry and partly cloudy elsewhere. Daytime temperatures close to average with south-west to south-easterly winds.

Further on in the week, a few showers over the north-east corner and chance of a shower or two along the remainder of the coast, south to about Illawarra. Dry elsewhere with daytime temperatures near average over the northeast corner and above average elsewhere.

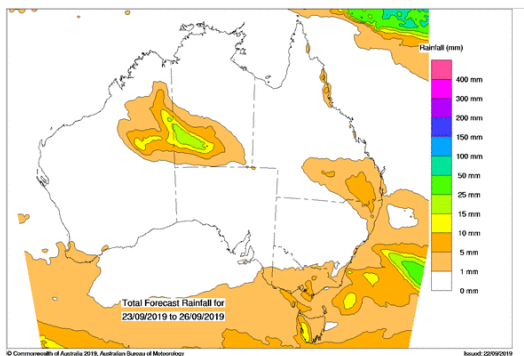


Figure 2a – First 4-day Forecast (23 - 26 September 2019)

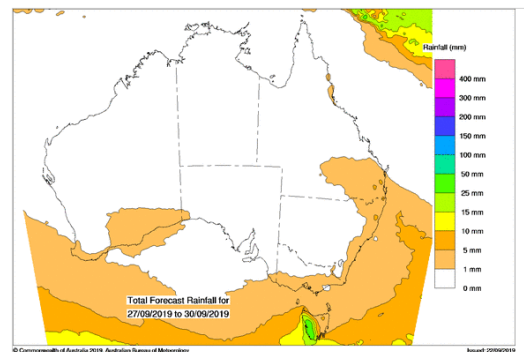


Figure 2b – Following 4-day forecast (27 - 30 September 2019)

Rainfall for the remainder of 2019 is likely to be below average across New South Wales. October is showing particularly strong chances of being a drier than usual month.

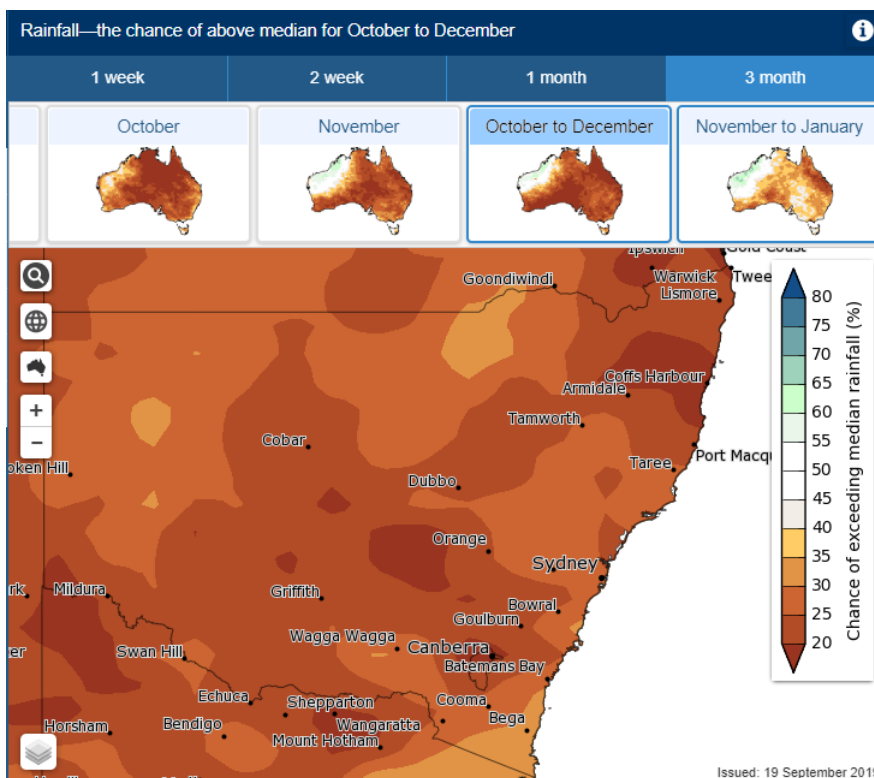
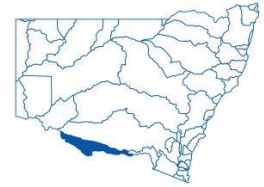


Figure 3 – 3-month rainfall outlook

4. Southern valley based operational activities

4.1 Murray valley



Storage and release status

- Hume Dam is currently 42% of active capacity, releases currently are about 11,950ML/d.
- Release downstream of Yarrowonga Weir increased to 15,055ML/day.
- The Edward River Offtake flow is currently about 1,556ML/d, flow will stay around 1560 ML/d during the week.
- The Gulpa Creek Offtake flows are at about 700ML/d. The flows are expected to remain steady at 700ML/day until second week of October.
- Stevens Weir level is about 4.48m. Water level upstream of Wakool Canal offtake is about 1.78m. Flow downstream of Stevens Weir is about 3,170ML/day and is expected to increase over 3,400 ML/d during next two weeks.
- Flows in the Colligen Creek (275ML/day) and Yallakool Creek (435ML/day) are likely to vary marginally in line with system demands.
- Wakool River offtake (73ML/day) will remain steady at about 50ML/day as per eWater plan
- Flow in Niemur River at Mallan School is currently about 720ML/d and will gradually increase during this week.
- Merran Creek flows upstream of its confluence with Wakool is about 81 ML/day and is likely to increase over the week.
- Flow in Wakool River at Stoney Crossing is currently at about 930 ML/day and is likely to increase over the week.
- Flows at Balranald are currently about 1,330ML/d – slightly under 1390 ML/d target, as required by Water Sharing Plan for the month of September.
- Lake Victoria is currently holding about 583GL or 84% of active capacity. The flow to South Australia is about 7,925ML/d. (<https://riverdata.mdba.gov.au/system-view>)

Environmental water operations

- Environmental water holders will be using environmental entitlements throughout winter and spring to benefit the ecology and build resilience in the ecosystem. Two separate pulses were planned – one for August and the other for September.
- Environmental entitlements were used to gradually increase the release downstream of Yarrowonga to 15,000 ML/day. Releases will be reduced back to operational flows by mid-

September. A second longer pulse (release of environmental water) is being planned later in September 2019.

- The flow into Gulpa Creek system will be increased to about 700ML/day for about 6-weeks over September / October to completely fill the Gulpa Wetlands (Reed Beds, Coppingers and Duck Lagoon) to provide optimal bittern nesting habitat over October-November and into December. The flows will recede in mid-October to aim to discourage colonial nesting waterbirds nesting in the wetlands.

Water availability

- The latest [DPIE Water Allocation Statement dated 16 September 2019](#) confirmed that allocations remain unchanged. High security licences have 97%, while general security licences have 0% allocation. General security licence holders have full access to water carried over from 2018-19, which is a volume equivalent to about 18% of general security share components. Allocations are 100% for local water utility, domestic and stock and high security sub-categories (town water supply, research, and community and education). Regulated river (conveyance) has increased to 6.1%.

Drought operation measures

- The NSW Murray regulated river water source has advanced to Stage 2, meaning drought operational planning has commenced in preparation for extreme dry conditions that may continue through 2019-20.

Water quality

- Potential Blue Green Algae issues:
 - There are no red alerts to report for the Murray or Lower Murray other than at Menindee Lakes
 - Recent Blue Green Algae (BGA) sampling at [Lake Hume](#) shows Lake Hume at Green alert level.
 - For more information visit: [Water Quality Algae](#)

Planned supply interruptions:

- Planning is underway to maintain the Stevens weir gates and super structure under the Coatings Programme. However, the maintenance activity is not expected to impact the normal river operations and Weir levels.



4.2 Lower Darling valley

Storage and release status

- The lakes currently hold less than 1% of active capacity. The total active storage is about 12.9 GL.
- Lake Tandure, Lake Cawndilla and Lake Menindee are currently dry, while Lake Pamamaroo holds less than 10ML.
- The release from Wetherell reduced on 12 Feb 2019 and flows at Weir 32 have ceased from mid-February 2019.
- Current level at the block bank near Karoola is very low. The pipes in the Karoola bank remain closed but will be managed to maintain limited supplies downstream.
- Current level at the block bank near Jamesville is about 0.84m. The pipes at the bank remain closed, except for minor releases to supply permanent plantings immediately downstream.
- Ashvale Bank is currently very low. The pipes at the bank remain closed.
- The average pan evaporation rate at Menindee over the last week was about 7.7 mm/d equivalent to about 210ML lost from the lakes over the week.

Water availability

- The total storage of Menindee Lakes reached the 480GL trigger for NSW control of the lakes on 16 December 2017. The storages will be managed as per the Lower Darling Operations Plan until the storage volume next exceeds 640GL. For more information visit: [Lower-Darling Operational Plan](#).
- Inflows from the Warrego River reached Wilcannia on 15 June and ceased on 19 Aug 2019. The inflows past Wilcannia have not improved water availability in Lake Wetherell with losses between Wilcannia and Wetherell accounting for all the inflows.
- Water allocations for 2019/20 are 50% for stock and domestic licence holders and local water utility licence holders, 30% for high security licence holders and 0% for general security licence holders. While water has been allocated for users, delivery will be dependent upon inflows to the system as limited water available locally.
- Lower Darling water users are restricted to use water for critical human needs and permanent plantings only. The restriction will be eased or removed if flow situation improves in the future.

Drought operation measures

- A temporary water restriction came into effect on 4 December 2018 limiting the taking of water to town water, domestic and stock, permanent plantings, and, from Copi Hollow, high security licences. [Gazette](#)
- The Lower Darling regulated river water source is assessed to be in drought [Stage 4](#), as restrictions limit access to water for critical needs only.
- Four temporary block banks viz. Karoola, Court Nareen, Jamesville and Ashvale have been constructed to extend supply to domestic, stock and permanent plantings. The water level behind the banks is now quite low and inadequate for next summer's supplies
- Pumping by Essential Water to Broken Hill is now met from the Wentworth to Broken Hill pipeline while pumping from Copi Hollow continues at lower rates for Menindee town and pipeline customers.
- The release to Lower Darling River from the storages has ceased and this will impact the river conditions below Weir32. River users are reminded to monitor the river levels, to look for water quality alerts and be aware of snags and other obstructions that may appear while the river ceases to flow below Weir 32.

Water quality

- Red Alert for Lake Wetherell (sites 1 and 4)
- Amber Alert for Copi Hollow (site N1094) and Lake Wetherell (site 3).
- Green Alert for Darling River at Wilcannia (N1042), Darling River at Menindee pumping station (site N1095), Lake Wetherell (site 2), Darling river at Weir 32 (site N1086) and Darling river u/s of Weir 32 (site N1171).
 - For more information visit: [Water Quality Algae](#).

Planned supply interruptions:

None.

4.3 Murrumbidgee valley



Storage and release status

- Burrinjuck Dam is currently at 33% of active capacity, releasing about 453ML/d and will vary marginally as per minimum transparency/translucency rules.
- Blowering Dam is currently at 57% of active capacity, releasing about 1,870 ML/d to meet smaller irrigation demand.
- The operational target at Kywong in Old Man Creek is about 600ML/day in September. However, with current low flows in Murrumbidgee river the flows in the creek system may not improve unless the weather turns wet or the irrigation demands increase substantially in the Murrumbidgee system
- Berembed Weir is currently about 4.84m and will be managed to meet any minor increase in downstream demands. The minimum operating level of Berembed Weir is planned to be about 3.5m during the season.
- Bundidgerry storage is currently near full at 3.79m and is likely to increase during this week to 4.02m.
- Gogeldrie Weir, currently near full at 6.05m, and will be managed to meet any minor increase in downstream demands. The minimum operating level of Gogeldrie Weir is planned to be about 5.3m during the season.
- Tombullen storage is at about 0.10m (0.648GL, 6% of active storage volume); releases of about 10 ML/d are planned to stop on 23rd September. The storage is practically fully drained.
- Hay Weir is currently at about 6.69m; and the water stored in the weir will be used to meet downstream demands. In view of the prevailing drought conditions the minimum operating level of Hay Weir is planned to be about 5.5m during the season.
- Maude Weir is at about 1.31m and will increase over the week to 2.50m.
- The planned maintenance work at Redbank Weir has been successfully completed and the gates were reinstated on 22/8/19. Currently, the weir level is about 1.24m and is being gradually re-filled. The minimum operating level in Redbank Weir will be about 2.1m during the season.
- Flows at Balranald are currently about 1,330ML/d – slightly under 1390 ML/d target, as required by Water Sharing Plan for the month of September.
- The current diversion into Yanco Creek is about 298 ML/d and is expected to remain around 280 ML/d during the next two weeks.
- Supply to Billabong system has been augmented via Finley Escape at a rate of about 100ML/d. It is expected to increase to 250ML/d later this week.

- Combined flows to Yanco-Billabong system via Coleambally Irrigation Escapes (CCD and DC800) are slightly over 30ML/day.

Environmental water operations

- Planned environmental releases are being made from both Burrinjuck and Blowering dams as per the water sharing plan rules.
- Planned environmental water flow rules are fully complied at both Balranald and Darlot.

Water availability

- For Inter Valley Transfer (IVT) account from Murray to Murrumbidgee refer to WaterNSW website [IVT Ordering](#). The IVT balance recently increased to about 100GL and hence the trade out of Murrumbidgee is currently closed.
- The [DPIE Water Allocation Statement of 16th September 2019](#) has increased allocations with allocations now at 100% for towns and 95% for high security, while general security has increased to 6%. General security licence holders in the Murrumbidgee will have full access to water carried over from 2018-19, which is a volume equivalent to about 8% of general security share component.

Drought operation measures

- The Murrumbidgee regulated river water source is at drought [Stage 1](#), meaning all allocated water can now be delivered under normal regulated river operations. Despite the small improvements, drought conditions continue to threaten.

Water quality

- Potential Blue Green Algae issues:
 - Lake Albert in Wagga Wagga is on a Green alert for blue-green algae. More information can be obtained from the following link: [Lake Albert - Wagga City Council](#)
 - Lake Wyangan South in Griffith has an Amber status for blue green algae. For more information select the following link: [Murrumbidgee Irrigation](#).
 - Lake Wyangan North in Griffith has a Red status for blue green algae. For more information select the following link: [Lake Wyangan](#).
 - The Hay weir at Leonard Street and Murrumbidgee River at Maude Weir Buoy are on a Green alert status.
 - Green alert is current for Burrinjuck Dam and Green alert downstream of the dam wall.

- Green alert is current for Blowering Dam and Green alert downstream of the dam wall.
- Green alerts are current at Gogeldrie Weir, Hay weir Buoy and Balranald,
- Other sites have no alerts. For more information visit: [Water Quality Algae](#).

Planned supply interruptions:

- Maintenance of Tarabah Weir is underway. However, the structure is being operated manually to deliver about 50ML/d below the structure.
- Nimmie Creek, North Caira and South Caira offtake regulators are under maintenance and will remain unavailable until early October.
- Essential maintenance of Maude Weir has commenced and are planned to continue for about two weeks. At the successful conclusion of the maintenance work the weir will be reinstated and raised to about 2.5m.
- An [operations update](#) has been issued on the planned maintenance schedules for Berembed, Gogeldrie, Maude and Redbank Weir weirs; and, Yanga and Waugorah regulators.

5. Central valley based operational activities

5.1 Lachlan valley



Storage and release status

- Carcoar Dam is currently 21% of capacity and releasing 2ML/d. Releases are forecast to be around 2 ML/d for the rest of the week.
- Wyangala Dam is currently 22% of capacity and releasing an average of around 2,400ML/d. Releases are forecast to reduce during the week. These increased releases are part of an environmental spring fresh.
- Lake Cargelligo is currently around 54% of capacity and the level is likely to start increasing at the end of the week.
- Releases downstream of Brewster Weir are currently around 300ML/d. Releases are forecast to stay around 200-300ML/d this week.
- Annual S&D replenishment flows into Merrowie Creek started on 18th May and finished on 13th July. Willandra Creek and Merrimajeel/Muggabah started on 15th June and 17th June respectively. Muggabah Creek offtake was closed on the 15th August. Stock and Domestic flows into Merrimajeel ceased on the 12th August, the current flows are for the Environment.

Environmental water operations

- About 22 gigalitres of held Commonwealth environmental water will be used in a series of 'spring freshes' and wetland refugia watering's starting 26 September from Wyangala Dam. The run-of-river pulse will last for approximately 3 weeks to improve native fish, plant and animal health. This flow will enable the river to be linked to other key sites that will also be watered including Booberoi Creek, Brewster Weir pool, Yarrabandai Lagoon and sites in and near The Great Cumbung Swamp. The event aims to build resilience in priority environmental assets and maintain refugia throughout the entire Lachlan riverine system before high evaporative losses in summer reduce the efficiency and efficacy of delivery. Further information about this watering event is available from the Commonwealth Environmental Water Office website at - <https://www.environment.gov.au/water/cewo/publications/lachlan-river-spring-flow-2019>
- There was a watering event into Booberoi Creek to prevent slack water lagoons and back channels (prime habitat for small-bodied native fish and aquatic macrophytes) from drying down over winter with lower than normal operational base flow, which started on the 6 June and finished on the 31 August. Booberoi Creek is a strategic long-term drought and ell-tailed catfish refugia.

- Around 180 ML of Licenced Environmental water was delivered starting 24 July to a known threatened species and migratory wader (Painted Snipe, Australasian Bittern, Brolga) refuge and foraging site in the Mid Lachlan (Kiagarthur Swamp). The swamp was partially filled to create shallow mud flats (prime foraging habitat) as it dries down over spring and will be topped up in early summer.
- At the end of S&D flow, Environmental water was delivered in Merrowie Creek for Murphy's Lake (17–26 July), providing another waterbird refuge into next Autumn as part of the landscape foraging and roosting habitat strategy.
- At the end of S&D flow, Environmental water is currently still being delivered into Merrimajeel Creek and has now reached the nationally significant wetland, Angora Clump (Murrumbidgee Swamp). While maintaining the River Red Gum recovery and recharging the root zone was the primary objective, the flows also inundated several wetland types and frog and waterbird habitat upstream of Angora. The event also contributed to increased flow passing Booligal.
- Due to drought conditions, end of system daily environmental flow requirements in the Belubula River have been suspended and are only being met intermittently with the contribution from tributaries.

Water Availability

- It is estimated that a combined dam and tributary inflow volume of more than 318,000 ML is required in September before a further allocation can be made in the Lachlan River. Inflows received to date are around 500 ML.
- The DPIE Water Allocation Statement (WAS) on 1 July 2019 announced that the water access licence holders are only allowed to access 57% of the volume of water in their accounts carried over from 2018-19 water year. The restriction will be eased or removed if inflow situation improves in the future.
- The temporary water restriction can be viewed at – <http://www.industry.nsw.gov.au/water/allocations-availability/temporary-water-restrictions>
- Local water utility and domestic and stock access licence holders on the Lachlan regulated river receive 100% of allocation.
- Regulated river high security water access licence holders receive an allocation of 87%, while regulated river general security access licence holders receive no allocation at this time.
- In the Belubula, general security water access licence holders have 0% allocation but will have access to account water that has been carried over from the previous water year. Deliverability of this water is restricted. [Belubula-Operations-Update-1-July-2019](#)
- High security and domestic and stock access licence holders on regulated Belubula receive 100% allocation.

- The detailed September WAS by Dept Planning, Industry & Environment can be viewed at: [WAS](#)

Inflows needed to improve deliverability of carryover

2019-20 inflow period	Estimated cumulative inflow required prior to easing of restrictions (GL)	Inflows received since 1 July 2019 (GL)	Additional inflows required to increase GS delivery to 75% and increase HS allocation to 92% (GL)	Additional inflows required for new GS AWD (GL) (no restrictions)
By end of September	134	7	168	318
By end of October	151	7	185	
By end of November	160	7	192	
By end of December	164	7	198	

Notes: Estimated water held in general security accounts on 1 July 2019 was 155,000 megalitres (ML). Water delivery operations in 2019-20 provided under drought contingency planning (Stage 3). Minimum storage level of 5% is targeted at end 2019-20 water year to maintain critical supplies in 2020-21.

- These are indicative improvements only and are not guaranteed. 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.
- The assessment for the table above is based on water delivery operations in 2019-20 provided under drought stage 3 and 2020-21 under severe drought stage 4. NSW extreme events policy can be viewed at [Extreme Events Policy](#).
- The meeting with Belubula Landholders Association at Canowindra on 3 June 2019 to discuss river operation and delivery options for 2019/20 was well-attended with many active water users. Following a detailed presentation on the HS and GS account balances, the volume in Carcoar and the rules on uncontrolled flow access and end of system flows, there was a wide-ranging discussion on river management options for 2019/20.
- There was unanimous support from the meeting for WaterNSW to make the following recommendations to DPIE -Water on operations in 2019/20:
 - Access to water held on GS accounts should be unrestricted from 1 July to 30 September and expected to be delivered primarily from downstream tributary inflows. Releases from Carcoar will only be made to deliver water upstream of Needles.
 - From 1 October access to GS account balances may be restricted.
 - Access to uncontrolled flows will be available in accordance with current WSP rules.
 - The effective available water for uncontrolled flow access should be calculated based on the restriction applied to GS account balances.

- Supplementary flow access to be in accordance with current WSP rules.
- If inflows occur the HS allocation to increase at a higher rate than the release of suspended GS account balances.
- Allow trades of GS and HS allocations upstream.
- Target 2,500 ML in Carcoar at the end of the 2019/20 water year.
- The end of system (EOS) flow rule should immediately be formally suspended.
- There was concern that the Flyer's Creek 'wet' trigger of the 120-day moving average exceeding 40 ML/day should not result in automatic reinstatement of the EOS flow rule, due to the risk that dam levels may not recover sufficiently, and advice that a further review of this should be undertaken with the Belubula Landholders Association.

Water Quality

- Latest BGA samples show that Curlew Waters is on green alert. Lake Cargelligo Outlet, Lake Cargelligo TWS, Lake Cargelligo Boatshed and lake Brewster inlet are on Green alert.
- Wyangala Storage results (15th August) show that the overall productivity is low across the storage. The assemblage is currently variable across the storage. All sites remain at green alert.
- Some river flow is being circulated through the Lake Cargelligo with the intention of improving water quality in the channels connecting the lakes and the river.

Planned supply interruptions:

- Nil.

5.2 Macquarie valley



Storage and release status

- Burrendong Dam is at 4.4% of capacity and currently releasing around 100ML/d. Releases are forecast to be remain around 100 ML/d later in the week. Releases are primarily for town water supply and some S&D demands.
- Burrendong Dam has been drawn below 10% on five similar occasions (June 1995, Jan 1998, Apr 2003, May 2004 and Jan 2007).
- Windamere Dam is currently 31% of capacity and releasing 70ML/d. Releases are forecast to be between 60-70ML/d for the rest of this week.
- There have been inflows of about 52,500 ML into Burrendong Dam since 1 January. The combination of earlier Windamere releases and Burrendong inflows has resulted in Burrendong Dam being higher than previously forecast for this stage of the drought planning.
- If conditions remain dry, a second phase of the transfer will recommence in late 2019, leaving a minimum of 70GL in Windamere Dam, which provides a very secure supply for local demand for the next five to seven years.

Environmental water operations

- Translucent environmental water from Windamere Dam is deliverable all through the year when inflows to the dam meet the relevant triggers.
- Environmental water accounts in Burrendong have been suspended to extend supplied for towns and critical industries. [Link](#)

Water availability

- It was estimated that inflows of around 385 GL was required in September before an increment in Available Water Determination could be made. Inflows in August were around 800ML.

Drought operation measures

- The Macquarie is in drought Stage 4, the highest level under the Incident Response Guide.
- The combination of current storage volumes and a continuation of zero inflows will mean that there isn't enough water to maintain river flows to the whole valley for all of 2019/20. If zero inflows continue, then the priority will be to extend supply for towns and critical industries. Cease to flow has been implemented for the river below Warren and for Duck and Crooked Creeks on 28 August. If inflows do not occur at all next year and no drought measures are implemented, then all storage water will be depleted before the end of May 2020 and the whole river would then stop flowing.

- Flows into Duck and Crooked Creeks ceased on the 28th August. Construction of the temporary drought works are now installed at the fishway.
- The Water Allocation Statement from DPIE on 1 July 2019 announced allocations for high security of 70% and high security access licence sub categories of 35%, while general security has 0%.
- Macquarie general security water access licence holders are also restricted from any access to water in their accounts carried over from the previous water year.
- The temporary water restriction can be viewed at - [temporary water restrictions](#)
- The timing of all S&D replenishments in 2019 will depend on further rainfall events, dam inflows, and contributions from downstream tributaries, rather than dam releases.
- Cudgegong general security carryover is not restricted.
- Any inflows received will be used to improve the drought management operations in 2019-20 from stage 4 to stage 3 prior to easing the current restrictions and drought management operations further. The Macquarie–Castlereagh incident response guide can be viewed at [Incident response guide Macquarie](#).
- The actual inflows to Burrendong Dam since the last AWD in August 2017 total about 89 GL to end of June 2019. This is only 35% of the previous record low inflow of about 256 GL for the 23 months ending in June.
- This drier than historical minimum inflow confirms that the system has entered into a new drought of record for Burrendong Dam, and the next few months of inflows will be important for planning this season's operations.

Water quality

- Results for the 5th September show the large Microcystis sp. presence at the Dam Wall has declined again. Information on site suggests biomass near the Dam Wall is highly visible. The Mookerawa arms shows moderate productivity whereas the Cudgegong arm shows a large diatom bloom is occurring. Minor counts of Microcystis sp. were noted downstream. Storage remains at amber alert awaiting another clear result.
- Windamere algal results for the 13th August show the Microcystis sp. presence at all upstream sites has diminished and is now not detectable. Windamere is now on green alert.
- Windamere Dam trash rack position is 12.69m – 15.69m below the water surface.
- Works to reinstate the temperature curtain at Burrendong Dam have been completed and the commissioning phase has commenced. The curtain is fully lowered due to low storage levels.

Planned supply interruptions:

- Nil

6. Northern valley based operational activities

6.1 Namoi valley



Storage and release status

- Split Rock Dam is at 2% of active capacity and is currently releasing around 43 ML/d for the Upper Namoi.
- Keepit Dam is at 1% of active capacity and releases have ceased since December 2018.
- Chaffey Dam is at 20% of active capacity and currently releasing 42ML/d.
- Flows from the last environmental fish flows filled the Walgett weir on the Barwon River providing water for the town supply.
- The Pian Creek replenishment flow was not able to be delivered in the usual manner so unless conditions improve, other supply arrangements may need to be made.

Environmental water operations

- There are not any current orders for the release of environmental water in the Namoi. No water is available to environmental accounts in the Peel River.

Water availability

- There is currently a shortfall of more than 95GL before there is likely to be an AWD increment in the Lower Namoi valley.
- The Water Allocation Statement by DPIE (dated [1st July 2019](#)) confirmed that in the Peel Valley local water utility and domestic and stock allocation is 70%; high security and its sub categories is 50%, and general security is 0%.
- The latest Water Allocation Statement by DPIE (dated [6th September 2019](#)) confirmed that in the Upper Namoi local water utility and D&S have 100%, high security has 75% and general security has 0% and are only allowed to access 75% of the volume of water in their accounts carried over from the previous water year, and that
- Lower Namoi local water utility and D&S have 100%, high security has 75% and general security has 0% and are not allowed to access water in their accounts as of 1 July 2019. The restrictions will be eased or removed if inflow situation improves in the future.

Drought operation measures

- The Peel valley is in drought stage 4. Drought planning is underway, including the potential to restrict flows below Dungowan to secure town water supply. Current operational targets below Tamworth are for very low flows. [Operations Update Peel 24-July.](#)

- The Upper Namoi is in drought Stage 3, while the Lower Namoi is at Stage 4, the highest level under the Incident Response Guide.
- Deliverability of water in accounts is restricted, see detailed [Operations Update Namoi 1-July](#)
- Deliverability of this water will rely on tributary flows and/or improved storage volumes. No further block releases are planned for the Lower Namoi until inflows occur.

Water quality

- Split Rock Dam is on an Amber alert in the storage,
- Keepit Dam is on an Amber alert in the storage, and
- Chaffey Dam is on a Green alert in the storage.

Planned supply interruptions:

- Mollee fish way is currently unavailable due to infrastructure failure.



6.2 Gwydir valley

Storage and release status

- Copeton Dam is at 8.5% of active capacity and is currently releasing 17 ML/d.

Environmental water operations

- There are not any current orders for the release of environmental water in Gwydir River.

Water availability

- Inflows of about 50GL are required to refill the Essential Requirements and Delivery Loss accounts before any increase in general security AWD is possible.
- The latest Water Allocation Statement by DPIE -Water (dated [6th September 2019](#)) confirmed that in the local water utility and domestic and stock access licence holders have 100% of entitlement. High security has 100% and general security have 0%. These licence holders have access to general security account water carried over from the previous water year.

Water quality

- Recent Blue Green Algae (BGA) sampling at Copeton shows Copeton at an Amber level.

Drought operation measures

- The Gwydir is in drought Stage 3 as the drought is deepening and tougher measures are needed to protect critical human needs. Management action will focus on ensuring water is available for critical needs for as long as possible.
- However, deliverability will rely on downstream tributary contributions and infrequent block releases. [Operations Update Gwydir 1-July](#)

Planned supply interruptions:

- No supply interruptions are expected.

6.3 Border rivers

Storage status

- Pindari Dam is at 5% of capacity and releasing around 13ML/d (minimum release).
- Glenlyon Dam is at 8% of capacity. Releases currently ceased. A block release is expected to start from this week to move water to Boggabilla for Goondiwindi Town Water Supply.
- Releases currently ceased from Boggabilla.

Environmental water operations

- Releases of about 7.4 GL from Glenlyon Dam to maintain fish refuge areas in the Border and Barwon Rivers commenced on 24 April and ceased on 13 May. [Operations update](#).
- This environmental water arrived at Mungindi on 23 May and around 1,250ML has passed Mungindi. Flow currently ceased.

Water availability

- The Available Water Determinations (AWD) for 2019-20 is 100% for towns and high security, while general security A-class and general security B-class is zero. Total carryover into 2018-19 is around 1.8% of general security share components but 50% of that is restricted until the inflow situation is improved.
- While allocations for the Border Rivers have been announced by DPIE -Water, the delivery of water is restricted due to the ongoing drought. Releases will be made to ensure supplies for towns including Goondiwindi and Boggabilla, however releases are not able to be made to supply Mungindi. No dam releases will be made for Glenlyon to Junction and downstream of the Junction to Mungindi section. Very limited access may be available for Pindari to the Junction customers. Access may be available from tributary inflows for all sections. Detail water delivery arrangements are available in the [operations update](#).

Drought operation measures

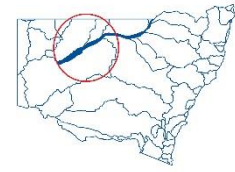
- The Border Rivers is in drought [Stage 4](#). Customers are advised that if dry condition persists, future deliveries, including essential supplies, will be grouped together (block releases) to improve delivery efficiencies.

Water quality

- Recent Blue Green Algae (BGA) sampling at Pindari shows an amber alert level.
- Red alert warning has lifted at Boggabilla and Goondiwindi. [Media release](#).

Planned supply interruptions:

- No supply interruptions are currently forecast



6.4 Barwon-Darling River system

River flow status

- Flows have ceased along the whole length of the Barwon Darling system.
- The environmental release from the Border valley reached Mungindi on 23 May with around 1,250ML over the weir. This flow reached Mogil Mogil on 8 June and total observed volume was around 280ML.
- Gwydir valley releases reached Collarenebri on 27 May with around 15,350ML recorded to date. Water arrived Warraweena, downstream of the Culgoa River junction, on 28 July. Around 506ML was observed at Warraweena and flow did not reach Bourke.
- Flows from the Nebine/Culgoa River reached the Darling River upstream of Bourke on 9 May and Bourke Weir rose about 1.2 m and is currently reducing.
- Flows in the Darling had recommenced between Bourke and Louth because of local rainfall over the Easter weekend and ongoing inflows from the Warrego River that contributed to the flow at Louth. This flow reached Wilcannia on 15 June. Cease to flow conditions re-commenced from Louth to Wilcannia and this inflow event did not contribute any volume to Lake Wetherell.
- The Northern Fish Flow event is coming to an end and cease to flow conditions re-commenced from Mungindi to Brewarrina. Currently a small flow exists at Warraweena.
- The Barwon-Darling Rivers travel through a very arid environment with significant losses from the system due to high evaporation and long travel times. It is very difficult to accurately forecast downstream flows as local conditions can vary significantly over the number of weeks it takes the water to travel along the river. In addition, sections of the river have ceased to flow for an extended time and significant losses will occur with wetting up the river bed along these sections and refilling weir pools and natural holes in the river. WaterNSW provided forecast of flows at different locations along the Barwon Darling during the Northern Fish Flow event 2019. The below summarises the observed flows along the system and timing of the flows reaching sections.

River station	Gauging station	Observed volume (ML)	Total forecast volume – including observed (ML)	Flow arrival/expected arrival date
Barwon at Mungindi	416001	1,250	1,250	23 May 2019
Barwon upstream of Presbury	416050	590	590	27 May 2019
Barwon at Mogil Mogil	422004	279	279	9 June 2019
Barwon at Collarenebri	422033	15,350	15,350	27 May 2019
Barwon at Tara	422025	12,307	12,307	5 June 2019
Barwon at Danger Bridge (Walgett)	422001	9,288	9,288	12 June 2019
Barwon at Boorooma	422026	4,234	4,234	26 June 2019
Barwon at Geera	422027	3,722	3,722	27 June 20019
Barwon at Brewarrina	422002	2,223	2,223	5 July 2019
Barwon at Bemeery	422028	641	641	22 July 2019
Darling at Warraweena	425039	546*	520-550	28 July 2019
Darling at Bourke	425003	0	0	
Darling at Louth	425004	23,428	23,428	29 April 20019
Darling at Tilpa	425900	15,425	15,425	13 May 2019
Darling at Wilcannia	425008	3,352	3,352	14 June 2019
Lake Wetherell	425020	0	0	

*Flow arrived Warraweena on 28 July 2019. Small part of this flow is from Culgoa inflow

Environmental water operations

- Releases of Held Environmental water to maintain fish refuge areas in the Barwon River from Copeton Dam commenced on 16 April and ceased on 23 June. Releases from Glenlyon Dam commenced on 24 April and ceased on 13 May.
- A Section 324 temporary water restriction was in place to restrict irrigation access to this water. This restriction expired on 30 August 2019.
- Planned Environmental Water (PEW) is water in the system that is below the commence to pump conditions for access licences.

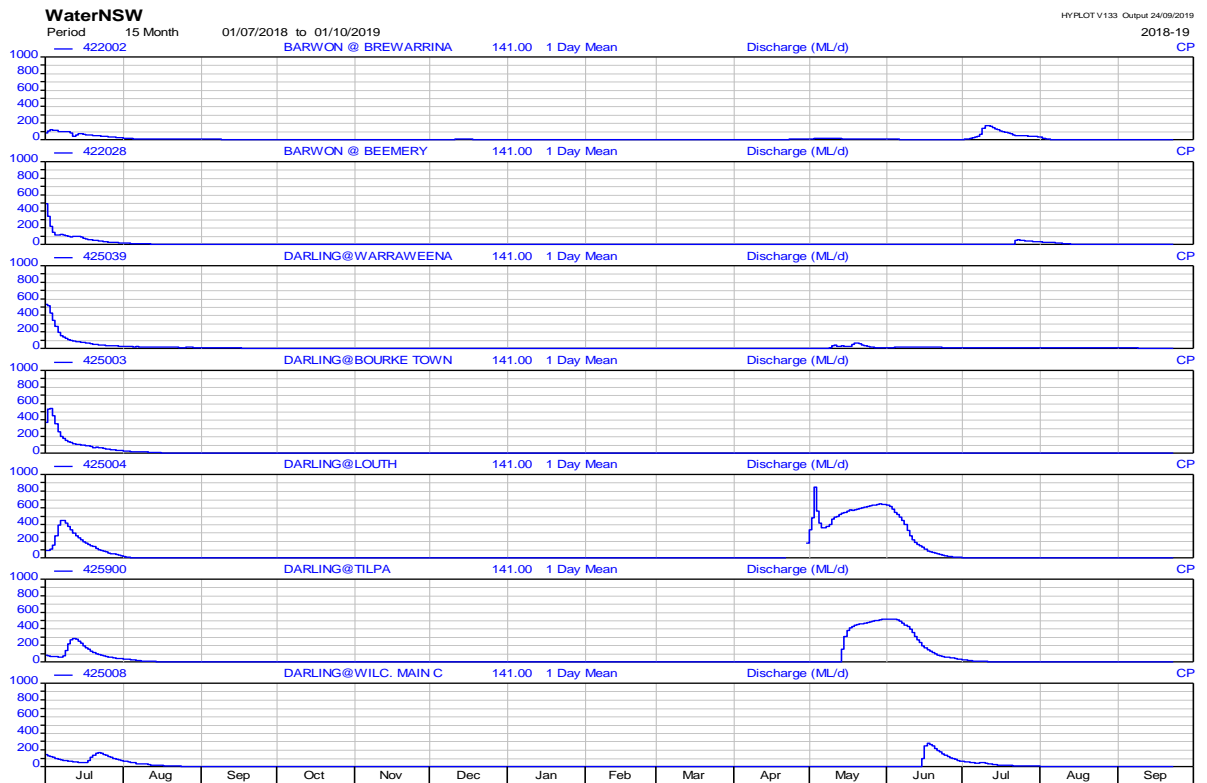
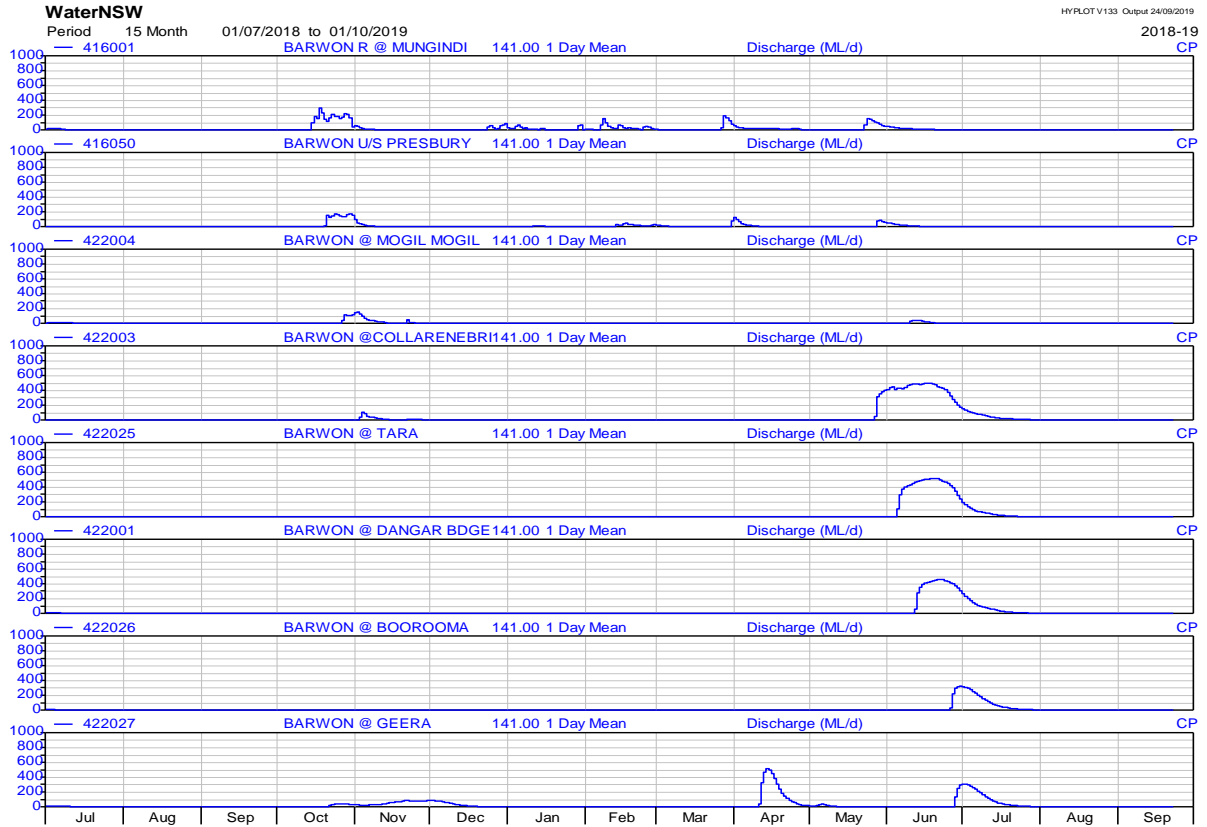
Water Availability

- The table below sets out the river management zones and access availability using daily average data to 6 am, these are provided as an indication only and access may have changed during the 24-hour period.

Drought operation measures

- The Barwon Darling unregulated river water source is assessed to be in Stage 4.

River section	Gauging station	Classification						
		16-09-19	17-09-19	18-09-19	18-09-19	20-09-19	21-09-19	22-09-19
Mungindi to Boomi river conf	416001 - 416050	No access	No access	No access	No access	No access	No access	No access
Boomi river confluence to U/S Mogil Weir	416050 - 422004	No access	No access	No access	No access	No access	No access	No access
Mogil Weir	422004	No access	No access	No access	No access	No access	No access	No access
D/S Mogil to Collarenebri	422,004- 422003	No access	No access	No access	No access	No access	No access	No access
Collarenebri to U/S Walgett Weir	422003 - 422025	No access	No access	No access	No access	No access	No access	No access
Walgett Weir	422001	No access	No access	No access	No access	No access	No access	No access
D/S Walgett to Boorooma	422001- 422026	No access	No access	No access	No access	No access	No access	No access
Geera to Brewarrina	422027- 422002	No access	No access	No access	No access	No access	No access	No access
Brewarrina to Culgoa river junction	422002- 422028	No access	No access	No access	No access	No access	No access	No access
Culgoa river junc to Bourke	425039- 425003	No access	No access	No access	No access	No access	No access	No access
Bourke to Louth	425003- 425004	No access	No access	No access	No access	No access	No access	No access
Louth to Tilpa	425004- 425900	No access	No access	No access	No access	No access	No access	No access
Tilpa to Wilcannia	425900- 425008	No access	No access	No access	No access	No access	No access	No access
Wilcannia to U/S Lake Wetherell	425008	No access	No access	No access	No access	No access	No access	No access



7. Coastal valley based operational activities

7.1 Bega river

Storage and release status

- Brogo Dam is at 76% of capacity and releasing around 30 ML/d.



Environmental water operations

- No current additional operations.

Water availability

- An AWD of 40% for general security, and 100% for all other licence categories was announced on 1 July 19.

Water quality

- Recent BGA sampling at Brogo indicates a green alert level is maintained.

Planned supply interruptions:

- Nil

7.2 Hunter valley

Storage and release status

- Glenbawn Dam is currently at 49% of capacity and releasing around 200 ML/d. Releases are forecast to increase to 240 ML/day during the week.
- Glennies Creek Dam is at 49% of capacity and releases are currently around 120 ML/d. Releases are forecast to remain steady during the week.
- Lostock Dam is at 78 % of capacity and releasing 20ML/d.



Environmental water operations

- No current additional operations.

Water availability

- General Security licenses in the Hunter Valley received 95% allocation on the 1 July 2019 while all other categories received 100%.
- Paterson valley allocations are 100% for all licence categories.

Water quality

- Recent BGA sampling at Hunter storages indicates a green alert is maintained at Glenbawn and Glennies Creek. Lostock storage is also at green alert.

Planned supply interruptions:

- Nil

7.3 Toonumbar Dam

Storage and release status

- Toonumbar Dam is at 53% of capacity and releasing 18 ML/d. Releases are forecast to remain steady for the week ahead.

Environmental water operations

- No current additional operations.

Water availability

- All licence categories have 100% availability.

Water quality

- Recent BGA sampling at Toonumbar indicates a green alert.

Planned supply interruptions:

- Nil

8. Rural Dam Levels

The following table shows the status of water supplies at 23 September 2019.

River Valley	Capacity	Current Status		Weekly change (GL)	Comments	Likely-hood of fill and spill	Allocations for 2019/20		
Storage Dam, Nearest Town	(GL)	% of active capacity	Active (GL)		Supply Issues		High Security	Gen. Security	C'over avail @ 1/7/19
Border Rivers									
Glenlyon Dam, Stanthorpe (Qld)	253	8%	21	-0	C'over restricted to 50% Deliverability restricted	<20%	100%	0%	<1%
Pindari Dam, Inverell	312	5%	15	-0	C'over restricted to 50% Deliverability	<20%	100%	0%	<1%
Gwydir Valley									
Copeton Dam, Inverell	1346	9%	115	-1	Deliverability restricted	<5%	100%	0%	5%
Namoi Valley									
Keepit Dam, Gunnedah	419	1%	4	-0	C'over restricted to 0% Deliverability restricted	<20%	75%	0%	0%
Split Rock Dam, Manilla	394	2%	7	-0	C'over restricted to	<5%	75%	0%	22%
Chaffey Dam, Tamworth	98	21%	20	-0	Deliverability restricted	<50%	50%	0%	N/A
Macquarie Valley									
Burrendong Dam, Wellington	4%	4%	51	0	C'over restricted to 0% Deliverability restricted	<20%	70%	0%	0%
Windamere Dam, Mudgee	31%	31%	115	-0	Regulated releases.	<5%	70%	0%	54%
Lachlan Valley									
Wyangala Dam, Cowra	22%	22%	267	-13	C'over restricted to	<20%	87%	0%	15%
Carcoar Dam, Carcoar	21%	21%	7	0	Deliverability restricted	10%	100%	0%	38%
Murrumbidgee Valley									
Burrinjuck Dam, Yass	1025	33%	340	3	Min Planned eWater	40%	95%	6%	8%
Blowering Dam, Tumut	1604	57%	913	28	Regulated releases	<10%	95%	6%	8%
Murray									
Dartmouth, Mitta Mitta (Vic)	3837	57%	2181	-10	Transfers to Hume	N/A	N/A	N/A	N/A
Hume Dam, Albury	2982	42%	1245	1	eWater & t'fers to L Vic	<25%	97%	0%	18%
Lower Darling									
Menindee Lakes, Broken Hill	1633	1%	13	-1	Temp water restrictions	N/A	30%	0%	19%
Hunter Valley									
Glenbawn Dam, Scone	750	49%	365	-1	Regulated releases	<20%	100%	95%	23%
Glennies Ck Dam, Singleton	282	49%	139	1	Regulated releases	<20%	100%	95%	23%
Lostock Dam, Gresford	20	80%	16	2	Regulated releases	100%	100%	100%	N/A
Coastal Area									
Toonumbar Dam, Kyogle	11	53%	6	-0	Regulated releases	100%	100%	100%	N/A
Brogo Dam, Bega	9	76%	7	-0	Regulated releases	100%	100%	40%	N/A
Total	17746	33.0%	5848	9					

WaterNSW has water resources in Dartmouth, Hume and Glenlyon Dams. TWS = Town Water Supplies

1 Gigalitre (GL) = 1,000 Megalitres (ML) 1 ML = 1,000,000 litres

More information

Subscribe to our customer information (weekly water availability reports, e-newsletters, etc.) at waternsw.com.au/subscribe.