Regional water availability report

Weekly edition
28 January 2019

waternsw.com.au

Contents

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 28 January 2019 was 34.3% of the total active storage capacity. This was a decrease of 0.9% from last week.

The total storage level of urban water supplies on 28 January 2019 was 60.0% of the total storage capacity. This was a decrease of 0.3% since last week.

2. System risks

- 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. Releases from Lake Pamamaroo, and filling these banks, have ceased. Cease to flow, between these banks has now commenced. The cease to flow conditions increase the possibility of decreasing water quality and fish kills, with increases in; salinity, pH and Algae, and reduced dissolved oxygen.
- Lower Murrumbidgee weirs (Maude and Redbank) are being lowered to improve water quality and fish habitat. The NSW environmental water holder has ordered additional flows at Balranald over the next few weeks to improve fish habitat and reduce algae with increased flow velocities in the lower Murrumbidgee system below Hay Weir.
- In the Lower Namoi, releases from Keepit Dam have ceased as the single block release strategy from October through to December 2018 is now complete. Cease to flow conditions now extend from downstream of Keepit Dam and for the majority of the Namoi River downstream to Walgett.
- In the Macquarie the temporary water restriction remains in place and only 70% of remaining carryover can be delivered with the current stored volumes and the new, lower inflows. The actual inflows to Burrendong Dam since the last AWD in August 2017 total about 70 GL. This is only 30% of the previous record low inflow of about 228GL for the 18 months ending in January.

- Due to drought conditions, end of system daily environmental flow requirements in the Belubula River are being met intermittently, and customers are regularly advised of rescheduling requirements.
- Cease to flow conditions continue in the Barwon Darling system as it remains dry.
- Block releases are ceasing in the Gwydir valley as delivery of the small volumes remaining in customer accounts is completing.
- Grouping of water orders and an early cessation to deliveries in the western section of the Border rivers is underway.

3. Climatic Conditions

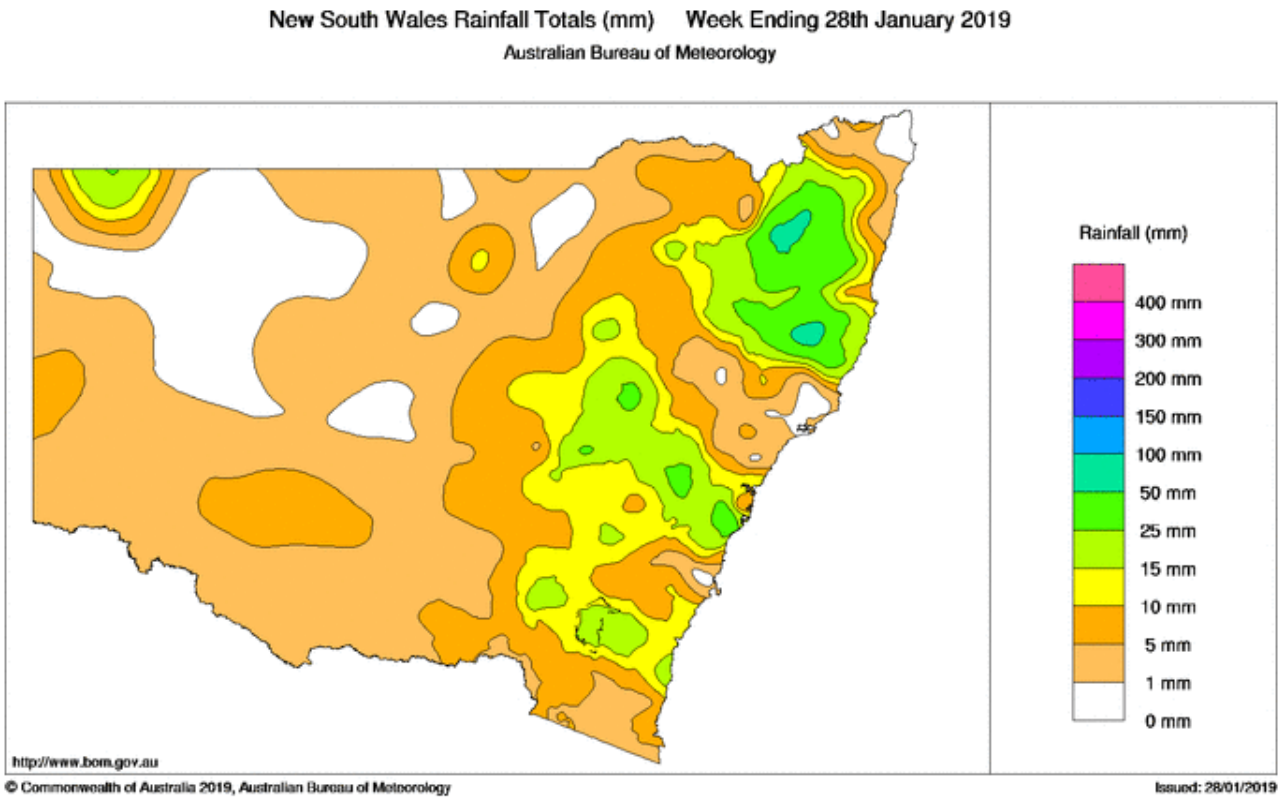


Figure 1 - Weekly rainfall totals for New South Wales

Rainfall of around 10 – 50mm was received across the central to eastern parts of the state. The Northern reaches of the Upper Western areas received around 15mm. The rest of the state continued to remain dry.

A high-pressure system over the Tasman Sea will remain near stationary during the next few days, maintaining a ridge towards the Queensland coast. Meanwhile, a low-pressure trough over western New South Wales is expected to push further into the state, stretching from the far northwest to the

central coast. Southerly winds behind this trough should take the edge off the heat in many districts, although the northern inland is forecast to remain very hot. The trough is forecast to weaken in the early parts of the week and shift westwards as the high over the Tasman Sea becomes dominant. Little change to this pattern is expected through the coming week, with a trough lingering over the western inland, and hot conditions returning to much of the state.

For the first part of the week, the eastern and southern parts of the state are forecast to receive at least 1mm of rainfall. As the week progresses, it is forecast that rainfall of 1 – 10mm should fall across the central to eastern parts of the state. The lower and upper western areas are forecast to remain dry.

For the start of the week, NSW is forecast to see temperatures in the Upper and Western areas of the state reaching around 42 degrees, with the rest of the state varying between 30 – 39 degrees. The coastal regions should reach a maximum of around 33 degrees.

As the week progresses, the Lower and Upper regions of the state should see temperatures of around 39 degrees. As Friday approaches, temperatures of between 30 – 39 degrees is forecast across the state in the Central and Western parts of the state. Coastal regions should range between 20 – 33 degrees.

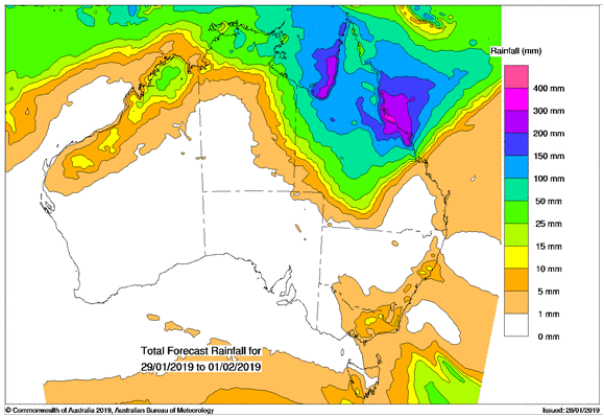


Figure 2a – First 4-day Forecast (29 Jan - 1 Feb 19)

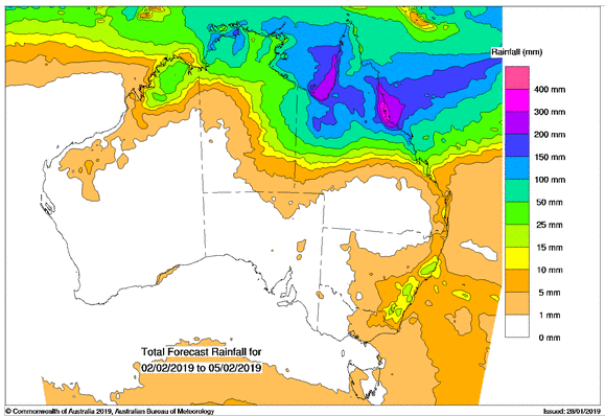


Figure 2b – Following 4-day forecast (2 – 5 Feb 19)

February to April is likely to be drier than median for the eastern parts of NSW. For the remainder of the state, there are roughly equal chances of a wetter or drier three months, i.e., no strong tendency towards a wetter or drier than median season ahead.

Historical outlook accuracy for February to April is moderate across most of NSW.

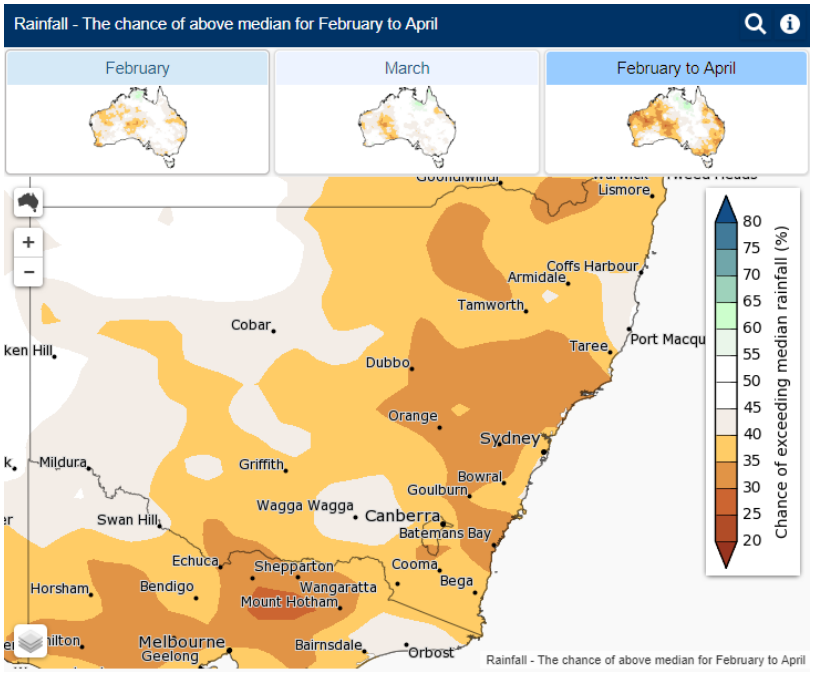


Figure 3 – 3-month rainfall outlook

4. Southern valley based operational activities

4.1 Murray valley

Storage and release status

- Hume Dam is currently 33% of active capacity, releasing about 14,400ML/d. Releases from Hume Dam are forecast to reduce over the week.
- Release downstream of Yarrawonga Weir is within channel capacity at about 9,300ML/day and is likely to remain steady.
- The Edward River Offtake is currently about 1,560ML/d and will remain below the channel capacity of 1,600ML/day.
- The Gulpa Creek Offtake is currently about 340ML/d and will remain below the channel capacity of 350ML/day.
- Stevens Weir level is about 4.46m to manage the level upstream of Wakool Canal offtake, which is about 1.74m. Flow downstream of Stevens Weir is about 2,600ML/day and is expected to remain relatively steady.
- Flows in the Colligen Creek (405ML/day), Yallakool Creek (412ML/day) and Wakool River (57ML/day) are likely to vary marginally in line with Stevens Weir pool height.
- The combined Wakool – Yallakool flows are augmented with supply from Mulwala Escape at Wakool so that the flows are being maintained at about 600ML/day in the Wakool system.
- Supply through Perricoota Escape (90ML/day) and Wakool Escape (100ML/day) are expected to continue for the next several weeks.
- Supply to Edward River is also augmented with Billabong Escapes at Finley, (250ML/day), which is likely to continue for the next several weeks.
- Flow at Moulamein is currently at about 2,630ML/day and is likely to remain relatively steady.
- Flow in Niemur River at Mallan School is currently about 360ML/d and is likely to vary between 300 and 400 ML/day over the week.
- Merran Creek flows upstream of its confluence with Wakool is about 70ML/day and is likely to vary marginally.
- Flow in Wakool River at Stoney Crossing is currently at about 800ML/day and is likely to remain relatively steady.
- Flows at Balranald are currently about 160ML/day. The trial by NSW environmental water holder for improving the water quality at Balranald is expected to arrive at Balranald in next couple of days and increase to flows of about 400ML/day over the next three weeks.

- Lake Victoria is currently holding about 408 GL or 53% of active capacity. The flow to South Australia is about 7,800ML/d.

Environmental water operations

- Environmental water delivery to Wakool-Yallakool and Colligen-Neimur Creek systems as per the hydrograph provided by Fisheries have been suspended. The flows are now managed to maximise the delivery to Murray using the Edward Wakool system subject to channel capacity in the Wakool system.

Water availability

- The latest Water Allocation Statement by DOI-Water confirmed that the general security allocation of zero, while Available Water Determinations (AWD) are 100% for towns, 97% for high security, and 50% for Conveyance. Average carryover into 2018-19 is estimated to be about 31% of general security share components. There is currently a shortfall of about 200GL for delivery of next year's high priority needs before this year's AWDs can be increased.

Drought operation measures

- System inflows over the last six months of this water year (July to December) have been tracking in the lowest 9 per cent of historical record. However, the NSW share of system inflows has been much less than Victoria's, meaning that the NSW resource has tracked drier than overall system inflows over this period. At this time of year, resource improvements must be used to ensure next year's (2019/20) high priority commitments before further allocating to general security users.
- As per the recently released NSW Extreme Events Policy for all surface and ground water sources in the NSW Murray Darling Basin, the NSW Murray regulated river water source is assessed to be in Stage 1. There are no account restrictions in force in the valley and water supplies are being managed according to the water sharing plan rules. There is currently a shortfall of about 200GL for delivery of next year's high priority needs, but recovery is highly likely through autumn and winter inflows.

Water quality

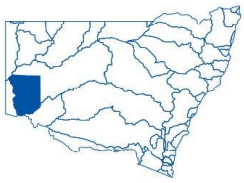
- Potential Blue Green Algae issues:
  - There is a new RED ALERT for Lake Hume.
  - The red alert warnings (high alert) for blue-green algae in the Murray River have been lifted in the Mildura weir pool from Karadoc to Lock 11 and in the Wentworth weir pool from Lock 11 to Apex and in the Lock 9 weir pool, in the Lower Murray Region, following regular monitoring by Lower Murray Water.

- A red alert warning (high alert) for blue-green algae in the Murray River remains in place in the Wentworth weir pool from Merbein to Lock 10.
- For more information visit: Water Quality Algae

Planned supply interruptions:

- None.

4.2 Lower Darling valley



Storage and release status

- The lakes currently hold about 1% of active capacity. The total storage is about 43 GL.
- Lake Cawndilla is currently dry, and Lake Menindee has been dry since 6 Feb 2018.
- Lake Tandure is below active storage levels from end of November 2018
- Releases from Lake Pamamaroo have now ceased due to water quality issues.
- Currently a release of about 50ML/day from Lake Wetherell to maintain a minimal flow in the river from Weir 32 to the temporary block bank at Karoola. The release is likely to reduce further in February 2019 to maintain the residual pool in Weir 32.
- Current level at the block bank near Karoola is about 2.64m and falling slowly. The pipes in the Karoola bank remain closed, but will be managed to fill new private banks under construction.
- Current level at the block bank near Jamesville is about 2.82m, The pipes at the bank are closed.
- Current level at the block bank near Ashvale is about 0.25m. The pipes at the bank are closed.
- The average pan evaporation rate at Menindee over the last week was about 14.6 mm/d equivalent to about 4,100ML 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 releases from 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.

Drought operation measures

- A temporary water restriction came into effect on 4 December limiting the take of water to; town water, domestic and stock, permanent plantings, and, from Copi Hollow, high security licences. Gazette
- As per the NSW Extreme Events Policy for all surface and ground water sources in the NSW Murray Darling Basin, the Lower Darling regulated river water source is assessed to be in 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.
- Pumping from Lake Pamamaroo to top-up Copi Hollow ceased on 10/12/18.
- Pumping by Essential Water to town water supply to Broken Hill has now been shifted to Copi Hollow.

Water quality

- The RED ALERT continues for Lake Wetherell, Lake Tandure, Lake Pamamaroo, Copi Hollow, Lake Cawndilla Outlet and for the Darling River from Louth downstream to Tolarno and at Burtundy
  - Media release: Water Quality Algae.

Planned supply interruptions:

- None.

4.3 Murrumbidgee valley

Storage and release status

- Burrinjuck Dam is currently at 38% of active capacity, releasing about 4,250 ML/d. The release is expected to remain relatively steady this week
- Blowering Dam is currently at 31% of active capacity, releasing about 4,300 ML/d and the release is expected to marginally reduce this week.
- The Beavers Creek Offtake is targeting a flow of at least 60ML/day in January at Kywong.
- Berembed Weir is currently at about 4.97m and is likely to remain steady.
- Bundidgerry storage is currently at 3.97 and will be actively used for re-regulation of flows and hence the level is likely to fluctuate between 4.0m and 4.4m over this week.
- Gogeldrie Weir is currently at 6.1m. The weir is being actively used for re-regulation to capture any system surplus and then to meet downstream system demands while maintaining sufficient head to supply water to meet the irrigation demand to Sturt Canal and Coleambally Main Canal.
- Tombullen storage is at about 0.78m and release from the storage has ceased in view of the algal report received on 18/1/2019.
- Hay Weir is currently at about 8.1m and is likely to remain to relatively steady.
- The current diversion into Yanco Creek is about 400 ML/d and is likely to gradually reduce to 330ML/day.
- Delivery to Billabong system via Finley Escapes is about 250ML/day and is likely to remain at this maximum capacity for the next several weeks.
- Delivery to Yanco-Billabong system via Coleambally Irrigation Escapes (CCD and DC800) is about 100ML/day.

Environmental water operations

- Maude Weir is currently at 5.00m and will be gradually lowered until the gates are clear of water by third week of February 2019. The water in the weir will be used for downstream demands,
- Redbank Weir is at about 5.50m to supply environmental water to Yanga wetlands. The environmental delivery to Patterson's Pipe that commenced on 29 November is expected to continue for next few days. The Redbank Weir will be drawn down on the completion of the delivery to Lowbidgee via Yanga Regulator.

- The lowering of both Maude and Redbank weirs are expected to improve fish connectivity between Hay weir and Balranald Weir and also improve the water quality in the lower reaches of the river.
- In view of the emergent wider system need to target water quality issues, NSW environmental water holder is currently targeting additional flows at Balranald to about 400ML/day and with a possible peak of about 700ML/day. The aim is to increase flow velocities for fish habitat and to reduce BGA counts in the lower Murrumbidgee system below Hay Weir.
- Flows at Balranald are currently about 160ML/day. The trial by NSW environmental water holder to improve the water quality at Balranald is expected to arrive at Balranald in next couple of days and increase to flow of about 400ML/day over the next three weeks.

Water availability

- For Inter Valley Transfer (IVT) account from Murray to Murrumbidgee refer to WaterNSW website IVT Ordering.
- The latest Water Allocation Statement by DOI-Water confirmed the Available Water Determinations (AWD) are 100% for towns and 95% for high security, while general security is now 7%. Carryover into 2018-19 is a volume equivalent to 22% of general security share components

Drought operation measures

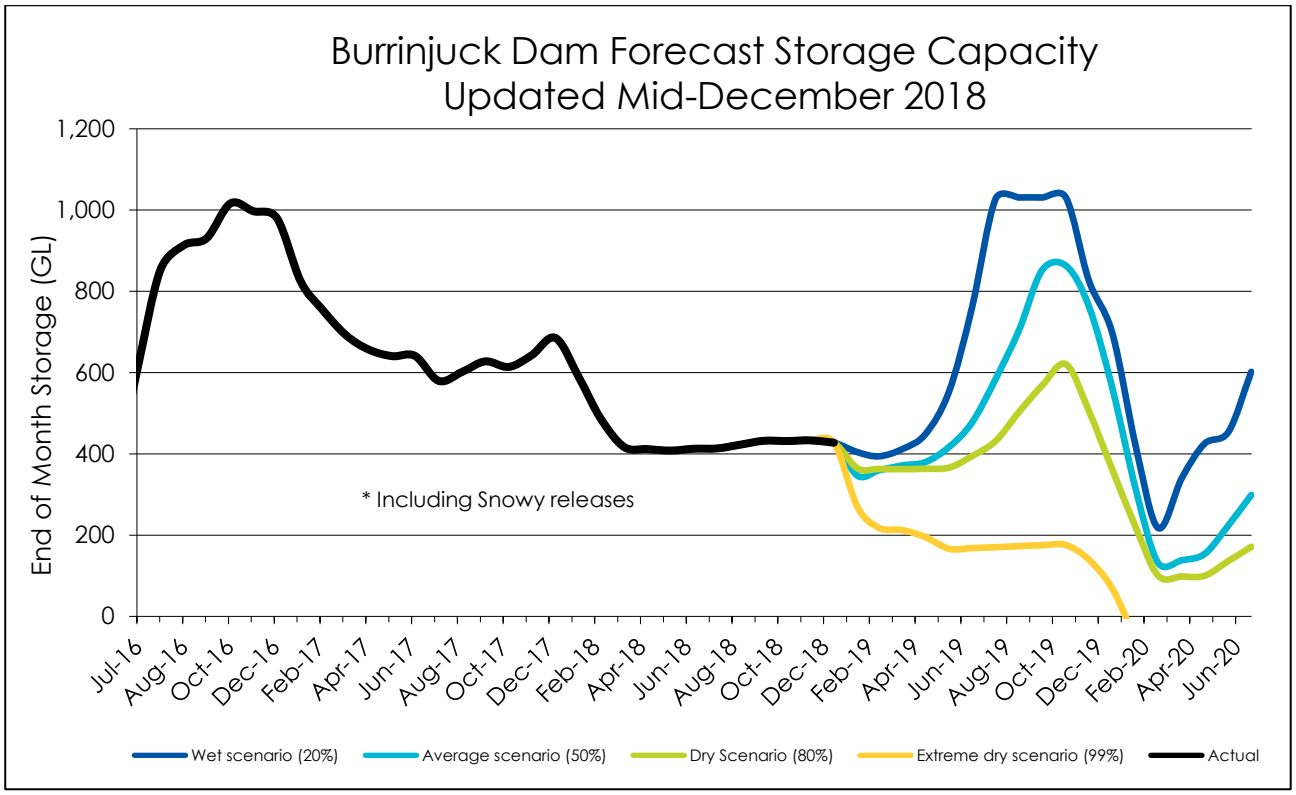
- As per the NSW Extreme Events Policy the Murrumbidgee regulated river water source is assessed to be in Stage 1. There are no account restrictions in force in the valley and water supplies are being managed according to the water sharing plan rules. The shortfall for delivery of next year's high priority needs is currently at least 80,000 ML.

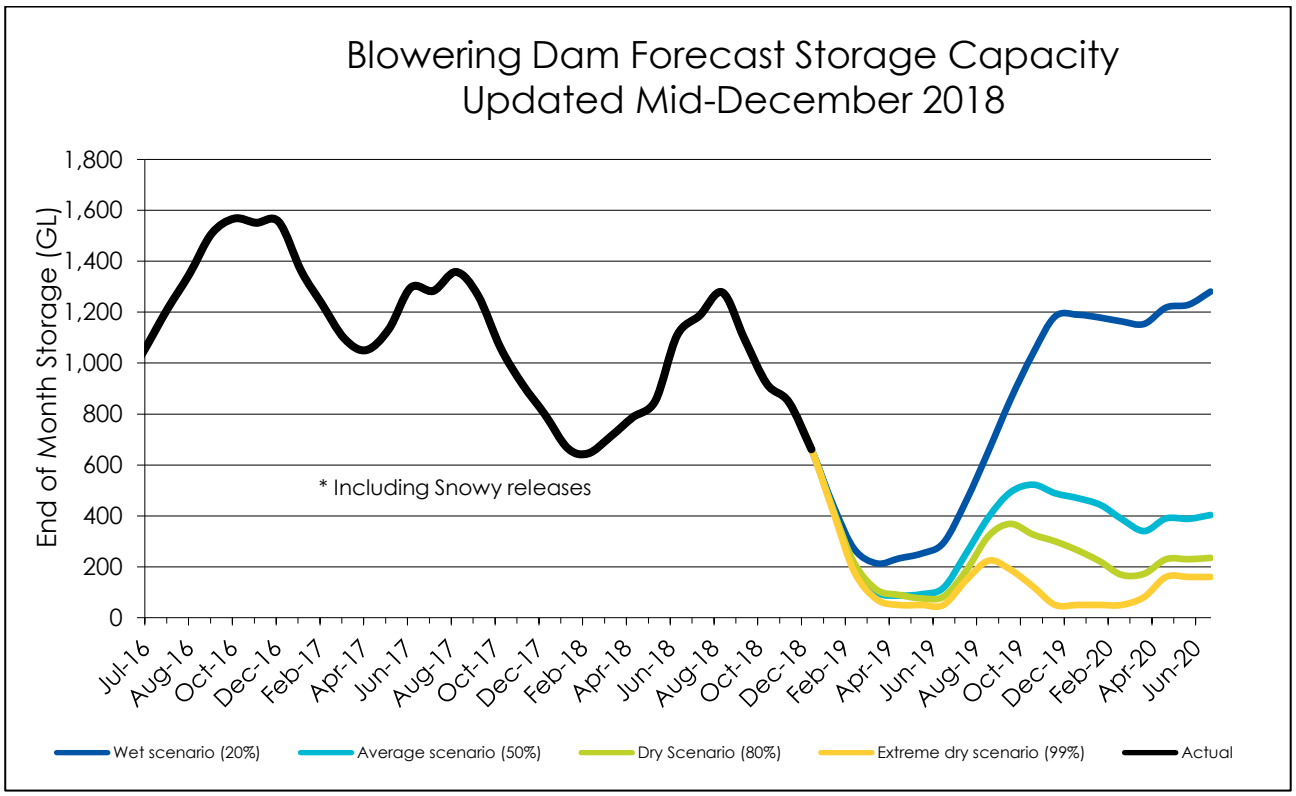
Water quality

- Potential Blue Green Algae issues:
  - Green alerts are current for Burrinjuck Dam at Woolgarlo and Burrinjuck Downstream sites.
  - Tombullen outlet upstream in weir, the whole of the Hay weir pool at Hay, Murrumbidgee River at Maude Weir Buoy and Murrumbidgee River at Redbank Weir Buoy have a Red alert status.
  - Lake Wyangan North in Griffith and Lake Albert in Wagga Wagga also have a Red alert status.
  - The Murrumbidgee River at Balranald has an amber alert status.
  - Other sites have no alerts.
  - For more information visit: Water Quality Algae.

Planned supply interruptions:

- Planning is underway for the maintenance of Tarabah Weir as the maintenance is team is awaiting a suitable window of low flows.
- Planning is underway for installation a new gate at Spillers Regulator at the Washpen Creek; awaiting a suitable low flow condition.


Burrinjuck Dam Forecast Storage Capacity
Updated Mid-December 2018
End of Month Storage (GL)
1,200
1,000
800
600
400
200
0
* Including Snowy releases
Jul-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
Oct-19
Dec-19
Feb-20
Apr-20
Jun-20
Wet scenario (20%)
Average scenario (50%)
Dry Scenario (80%)
Extreme dry scenario (99%)
Actual


Blowering Dam Forecast Storage Capacity
Updated Mid-December 2018
End of Month Storage (GL)
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
* Including Snowy releases
Jul-16
Aug-16
Oct-16
Dec-16
Feb-17
Apr-17
Jun-17
Aug-17
Oct-17
Dec-17
Feb-18
Apr-18
Jun-18
Aug-18
Oct-18
Dec-18
Feb-19
Apr-19
Jun-19
Aug-19
Oct-19
Dec-19
Feb-20
Apr-20
Jun-20
Wet scenario (20%)
Average scenario (50%)
Dry Scenario (80%)
Extreme dry scenario (99%)
Actual

5. Central valley based operational activities

5.1 Lachlan valley

Storage and release status

- Carcoar Dam is currently 36% of capacity and currently releasing only 10ML/d in response to some storms on Monday night. Releases are forecast to increase to between 70-90ML/d later in the week.
- Wyangala Dam is currently 39% of capacity and currently releasing 3,200ML/d. Releases are forecast to remain steady this week.
- Lake Cargelligo is currently 61% of capacity and the level is likely to remain between 40% and 80% during the irrigation season. Media release on Lake Cargelligo operation can be accessed at Link
- Releases downstream of Brewster Weir are currently 900ML/d. Releases are forecast to remain around 800-900Ml/d this week.

Environmental water operations

- The tributary inflows from the earlier rain totalled about 4,000 ML and this is being delivered as Environmental Water Allowance (Wyangala), supplemented by an additional 3,000 ML of releases from Wyangala Dam. This small fresh event, when in the Upper Lachlan consisted of about 7,000 ML over 10 days and will become a large fresh below Booligal of 18 to 20 days. This water is currently downstream of Booligal.
- As of 25 July 2018, Lake Brewster main storage is effectively empty. From the 27 September environmental water has been delivered into the outflow wetlands with the goal of building the seedbank through a full growth cycle of wetland vegetation.
- Currently WQA is being delivered to mitigate BGA bloom from forming in the lower Lachlan by breaking up stratification in weir and river pools by targeting a flow of 100ML/d at Booligal. Any flows in excess of operational target of 70 ML/d at Booligal will be accounted as WQA.
- Due to drought conditions, end of system daily environmental flow requirements in the Belubula River are being met intermittently.

Water Availability

- The 15 January Water Allocation Statement confirmed zero for general security and the initial Available Water Determinations (AWD) of 100% for towns, S&D and high security. Carryover into

2018-19 in Lachlan River is about 369GL, equivalent to about 62% of general security share components.

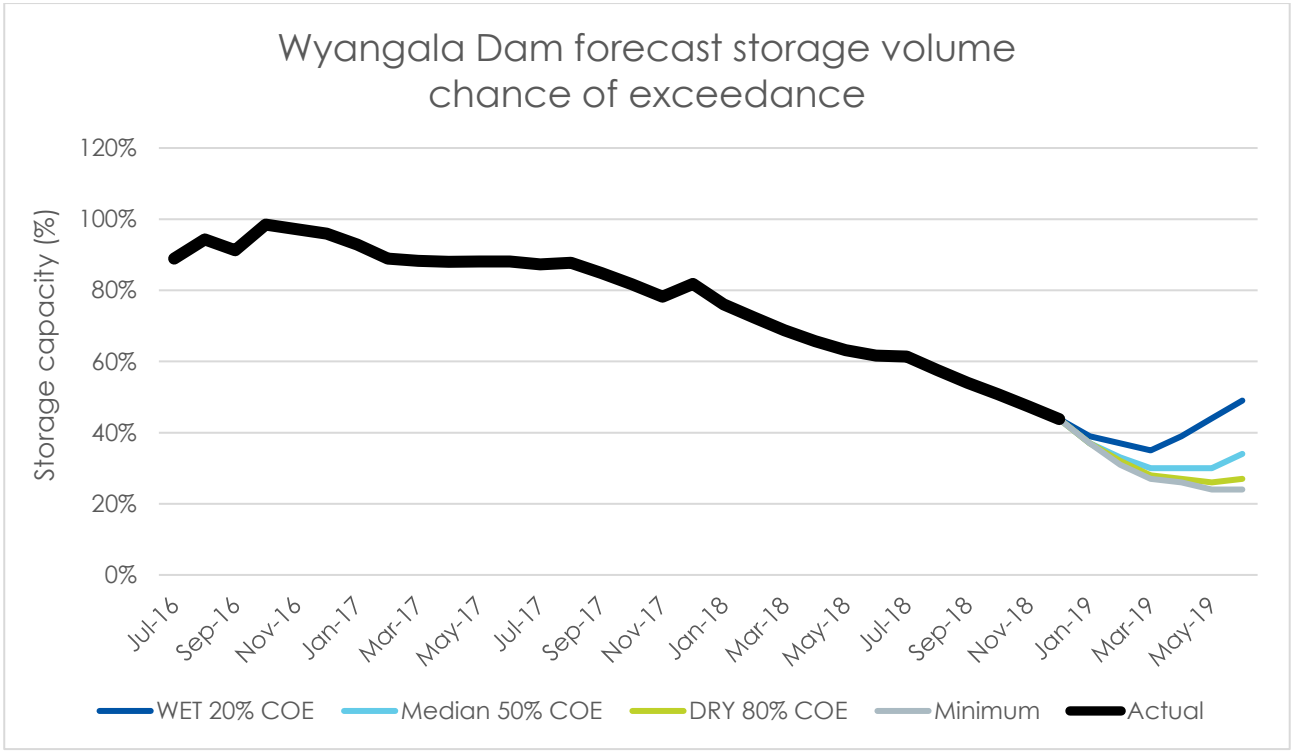
- It is estimated that a combined dam and tributary inflow volume of more than 224,000 ML is required in January before a further allocation could be made in the Lachlan River. Inflows received in January so far have been about 23,000ML.

Water Quality

- Latest BGA samples show that Willandra Weir, Lake Brewster outlet channel, Lake Brewster Regulator C, Lake Cargelligo Outlet and Boatshed are all on 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 10% of capacity and currently releasing 1,400ML/d. Releases are forecast to be between 1,200 to 1,500ML/d this week to meet irrigation demand.
- The level in Burrendong Dam is expected to drop steadily to about 7% by the end of summer. 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 36% of capacity and currently releasing 100ML/d. Releases for the bulk water transfer to Burrendong Dam have ceased from 25th Jan 2019. More info on WaterNSW website Link
- Recent rain has produced an inflow of about 21,000 ML into Burrendong Dam in January. The combination of 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 occur mid-year 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.
- Flows into Duck and Crooked Creeks at the offtake from Gunningbar Ck have been increased to restore flows in the creeks. On Wednesday 23 Jan the flows have reached Canonba Road bridge in the Duck Creek and u/s of Mumblebone Dam in the Crooked Creek. Flows from the Gunningbar Creek are also being directed via the Bena Billa Channel to restore the flows in the lower Duck Creek.

Environmental water operations

- Delivery of environmental flows commenced at Burrendong Dam on 12 July 2018 and have been completed from the dam with the recession ending the deliveries on 11 December at Marebone.

Water availability

- The timing of all S&D deliveries in 2019 will depend on rainfall events, dam inflows, and contributions from downstream tributaries.
- The initial Available Water Determinations (AWD) for 2018-19 are 100% for towns, S&D and high security, while general security is zero.

- Carryover into 2018-19 in the Macquarie River was about 316GL or 52% of general security share component. Carryover into 2018-19 in the Cudgegong River was about 102% of share component.
- The reduction for storage evaporation has been applied to accessible carryover balances as of 31 Dec 2018 in Macquarie and Cudgegong Rivers for the second quarter of 2018-19 (end Dec) on both General and High Security Licences and to accessible EWA accounts. Evaporation reduction is not applied to the suspended portion of the carryover accounts. Macquarie River at 4.2% and Cudgegong River at 1.5% of balances.
- It is estimated that inflows of around 317 GL are required in January before an increment in Available Water Determination could be made. Inflows received so far in January (aside from Windamere bulk water transfers) are around 21GL.

Drought operation measures

- The Temporary Water Restriction Order restricts access to 70 per cent of the 1 July 2018 balance of general security and environmental accounts (including EWA) in the Macquarie. The resources in Burrendong Dam plus minimum expected inflows, and planned bulk water transfer from Windamere Dam, only provide for this 70 per cent.
- The Order states that Macquarie regulated river (general security) access licences will be restricted to 70 per cent of the volume of water in the carryover sub-account account as at 1 July 2018. Cudgegong regulated river access licences, including general security, are not restricted.
- Deliveries in 2018-19 require water conservation initiatives to reduce losses. This involves implementation of water order debiting and, where feasible, block releases of irrigation orders in lower parts of the Macquarie River. Customers are reminded that those who repeatedly extract less water than indicated in their approved water order will have their account debited for the full amount ordered, rather than the amount extracted. Please view the approved water order debiting rules: Fact Sheet.
- DOI (Water) in their Water Allocation Statement (WAS) for January 2019 stated that dam Inflows in excess of 60,000 ML are required by the end of January 2019 to secure higher priority needs for the 2019/20 water year before the current restrictions on carryover will begin to be eased. The WAS has also referred to the NSW Extreme Events Policy, which introduces a staged approach to managing extreme events such as severe droughts or poor water quality events, and to the associated Incident Response Guides (IRGs). The Macquarie regulated river water source is assessed to be in Stage 3 of the drought stages with stage 4 the highest level under the Incident Response Guides.

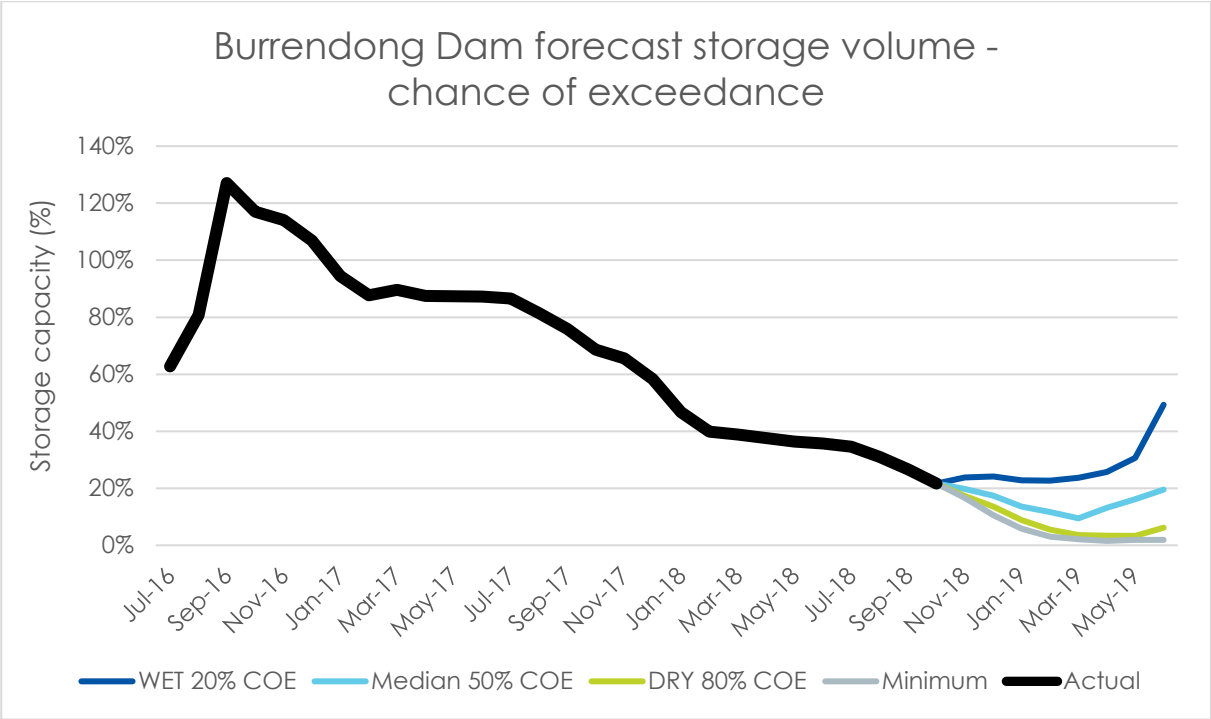
- Inflows in excess of 60,000 ML by the end of January 2019 is required to secure higher priority needs under Stage 4 drought management operations during the 2019/20 water year. Should this inflow volume arrive before February 2019, any additional resources will then be used to ease some of the current account restrictions on carryover and EWA active accounts. Further inflows will then 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 70 GL (to 29 Jan 2010). This is only 30% of the previous record low inflow of about 228 GL for the 18 months ending in January.
- 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 inflows will be important for planning next season's operations.

Water quality

- Burrendong algal results for the 11th Dec show no presence of potentially toxic species. Assemblage at Station 1 has a minor benign cyanobacterial presence. Mookerawa was dominated by flood alga, whereas the Cudgegong showed flood alga, diatoms and green alga. Storage is now at Green alert. However weekly sampling will continue as part of the curtain reinstatement.
- Windamere algal results for the 8th Jan shows High concentrations of potentially toxic species present at station 4, as a result Windamere is on Red Alert.
- A second trash rack was installed at Windamere Dam for the bulk water transfer. The position of the trash racks is currently 8-14 m below the surface. As BWT is now ceased it is planned to maintain water releases through only one trash rack to achieve better water temperature in downstream.
- 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


Burrendong Dam forecast storage volume - chance of exceedance
Storage capacity (%)
140%
120%
100%
80%
60%
40%
20%
0%
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
WET 20% COE
Median 50% COE
DRY 80% COE
Minimum
Actual

6. Northern valley based operational activities

6.1 Namoi valley

Storage and release status

- Split Rock Dam is at 4% of active capacity and is currently releasing around 86 ML/d, as the recent bulk water transfer to Keepit Dam is complete.
- Keepit Dam is at less than 0.5% of active capacity and releases have ceased. Cease to flow conditions now extend downstream of the dam and for the majority of the Namoi River downstream to Walgett.
- Chaffey Dam is at 36% of active capacity and currently releasing 170ML/d.
- Flows from Keepit Dam and the Namoi weirs reached Walgett at a very low rate. Prior to this small flow arriving, no flow has been present in the Namoi River at Walgett (Station No 419091) since March 2018.
- 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.
- Supply on demand applies for the Upper Namoi and the Peel Valley.

Environmental water operations

- Environmental water was delivered as part of the lower Namoi block release. This water was ordered and delivered downstream of Gundigera Weir over the last two months.
- In the Peel valley there is currently 1.9GL of planned environmental water plus a small amount of held environmental water. There are not any current orders for the release of water from either of these accounts.

Water availability

- There is currently a shortfall of more than 80GL before there is likely to be an AWD increment in the Lower Namoi valley.
- The Available Water Determinations (AWD) for the Lower Namoi are 100% for towns and high security, while general security is zero. Carryover into 2018-19 was estimated to be approximately 19% of general security share components.

- The Available Water Determinations (AWD) for the Upper Namoi are 100% for towns, high security, and general security.
- The initial Available Water Determinations (AWD) for the Peel are 100% for towns and high security, while general security initially was 29%, with an increase in October to a total of 38%.

Drought operation measures

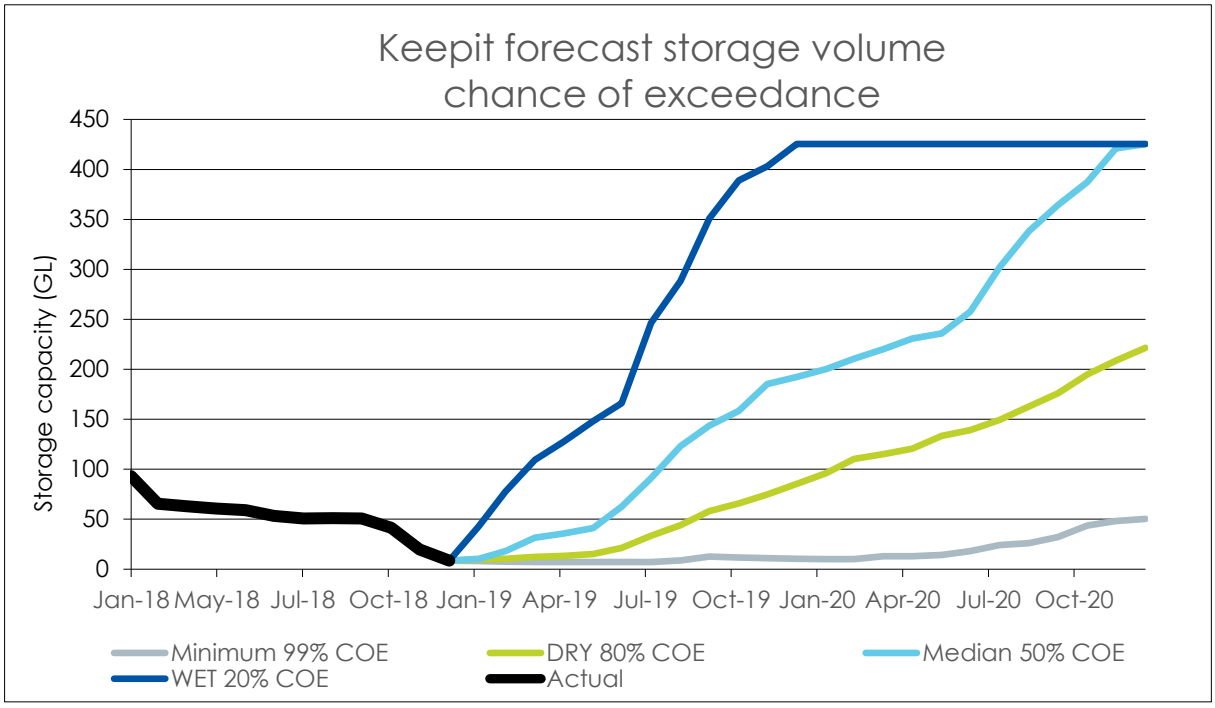
- No further block releases are planned for the Lower Namoi until inflows occur.

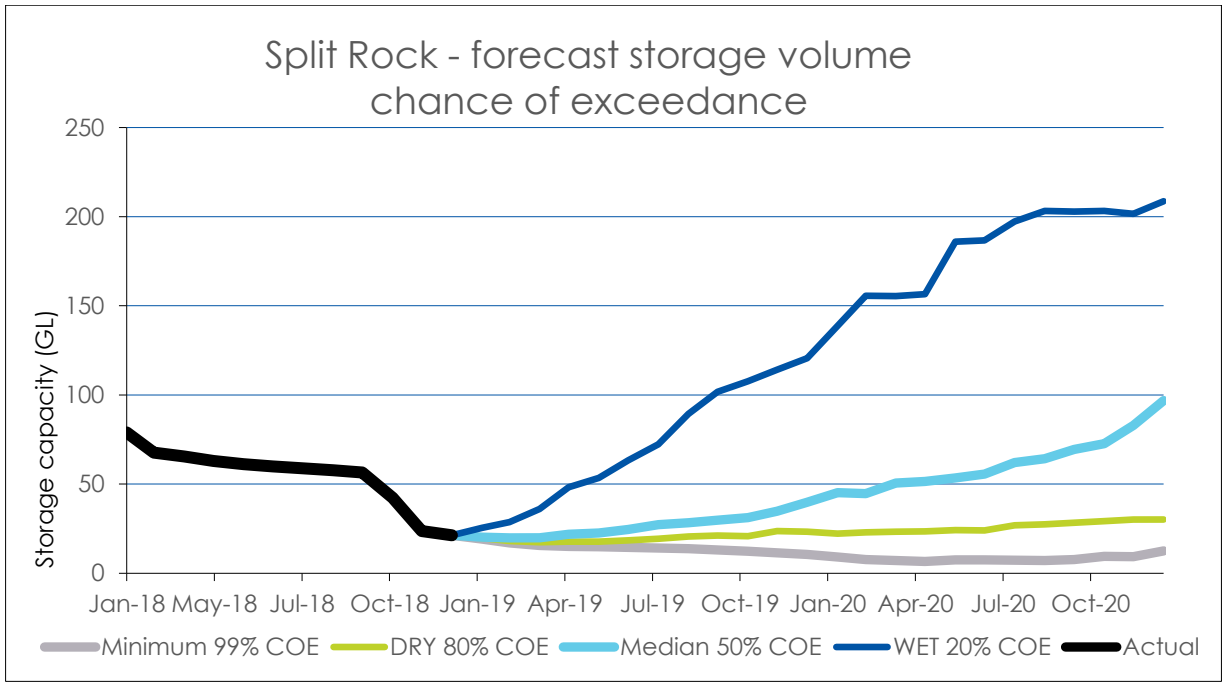
Water quality

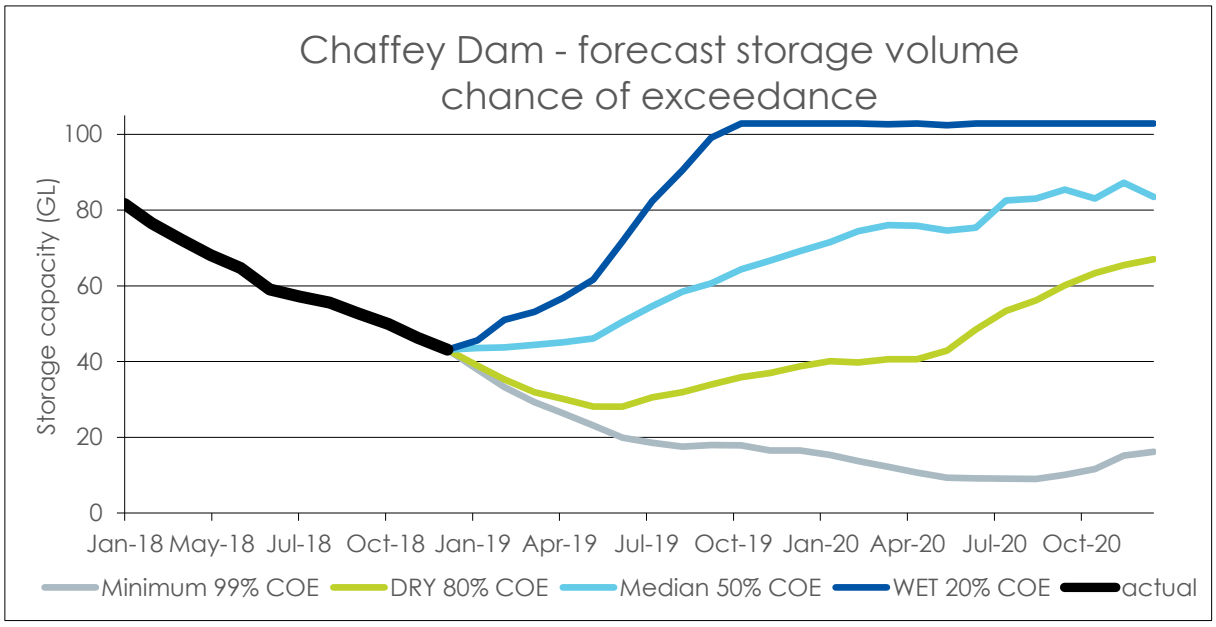
- Recent sampling for BGA indicates that Keepit Dam and Chaffey Dam are on a green alert while Split Rock Dam is on amber alert.

Planned supply interruptions:

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




Split Rock - forecast storage volume chance of exceedance
Storage capacity (GL)
250
200
150
100
50
0
Jan-18 May-18 Jul-18 Oct-18 Jan-19 Apr-19 Jul-19 Oct-19 Jan-20 Apr-20 Jul-20 Oct-20
Minimum 99% COE
DRY 80% COE
Median 50% COE
WET 20% COE
Actual


Chaffey Dam - forecast storage volume chance of exceedance
Storage capacity (GL)
100
80
60
40
20
0
Jan-18 May-18 Jul-18 Oct-18 Jan-19 Apr-19 Jul-19 Oct-19 Jan-20 Apr-20 Jul-20 Oct-20
Minimum 99% COE
DRY 80% COE
Median 50% COE
WET 20% COE
actual

6.2 Gwydir valley

Storage and release status

- Copeton Dam is at 13% of active capacity and is currently releasing around 1,000 ML/d.
- Block releases for the western effluent streams are now complete.

Environmental water operations

- Around 60 GL (in total) of environmental water is being delivered to the Gwydir and Gingham, with the final 10 GL currently being delivered to the Gingham.
- Of this 60 GL of environmental water, about half is being supplied from the ECA and half from the CEWO (Commonwealth Environmental Water Office)
- In the Mallowa Creek, the delivery of the second batch of 10GL of CEWO's environmental water is underway and flow has reached the targets at the end of system.

Water availability

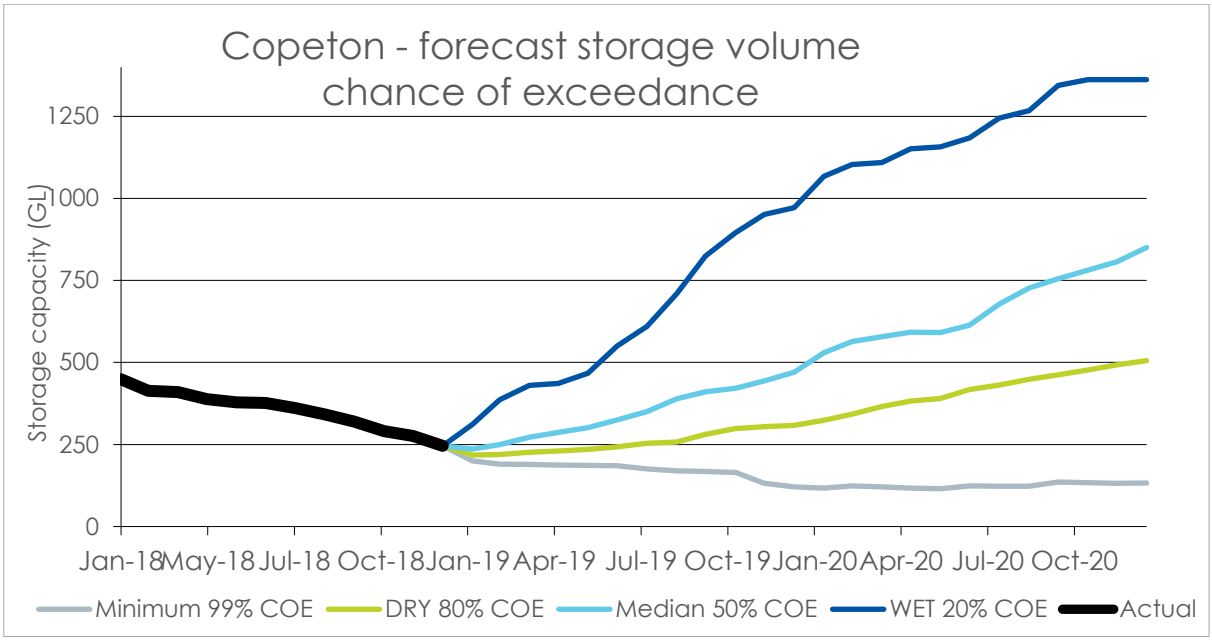
- The initial Available Water Determinations (AWD) are 100% for towns and high security, while general security is zero. Total carryover into 2018-19 was estimated to be up to 22% of general security share components.
- Carryover of general security for industry production was limited to roughly 40 GL (about 8% of all general security share components).
- Carryover of general security for environmental use is roughly 71 GL (about 14 % of all general security share components), in addition roughly 45 GL is still available in the Environmental Contingency Allowance (ECA).
- Recent Blue Green Algae (BGA) sampling at Copeton shows Copeton at amber alert level.

Drought operation measures

- Block releases for the western effluent streams are now complete.

Planned supply interruptions:

- No supply interruptions are expected.


Copeton - forecast storage volume chance of exceedance
Storage capacity (GL)
1250
1000
750
500
250
0
Jan-18
May-18
Jul-18
Oct-18
Jan-19
Apr-19
Jul-19
Oct-19
Jan-20
Apr-20
Jul-20
Oct-20
Minimum 99% COE
DRY 80% COE
Median 50% COE
WET 20% COE
Actual

6.3 Border rivers

Storage status

- Pindari Dam is at 14% of capacity and releasing 1,470ML/d. Releases are forecast to increase later this week.
- Glenlyon Dam is at 21% of capacity and releasing 600ML/d. Releases are also forecast to increase later this week.
- Releases from Boggabilla Weir are currently around 1,800ML/d. Releases are forecast to change frequently depending on orders.

Environmental water operations

- No current held environmental water orders, nor triggers for planned environmental water releases.
- Boomi replenishment flow is currently ongoing.

Water availability

- The Available Water Determinations (AWD) are 100% for towns and high security, while general security A-class is 32.8% and general security B-class is zero. Total carryover into 2018-19 was around 53% of general security share components.

Drought operation measures

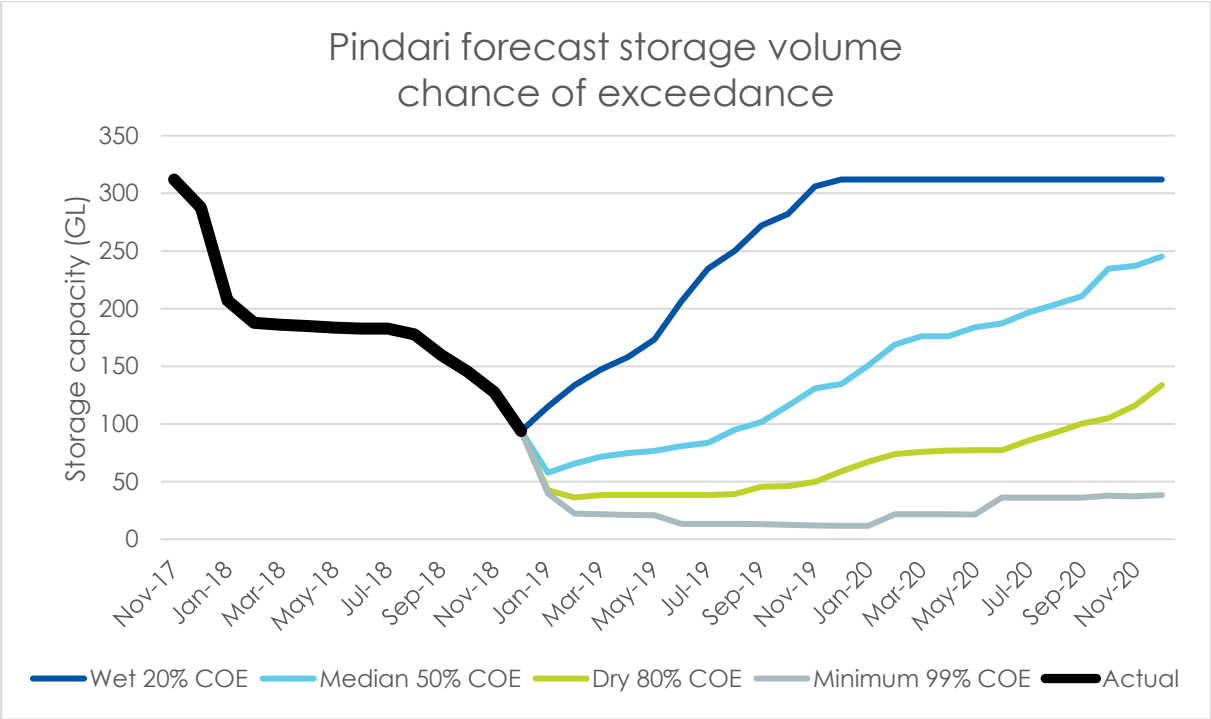
- Deliveries west of Boomi will be grouped together and undertaken in distinct blocks throughout the 2018/19 growing season.

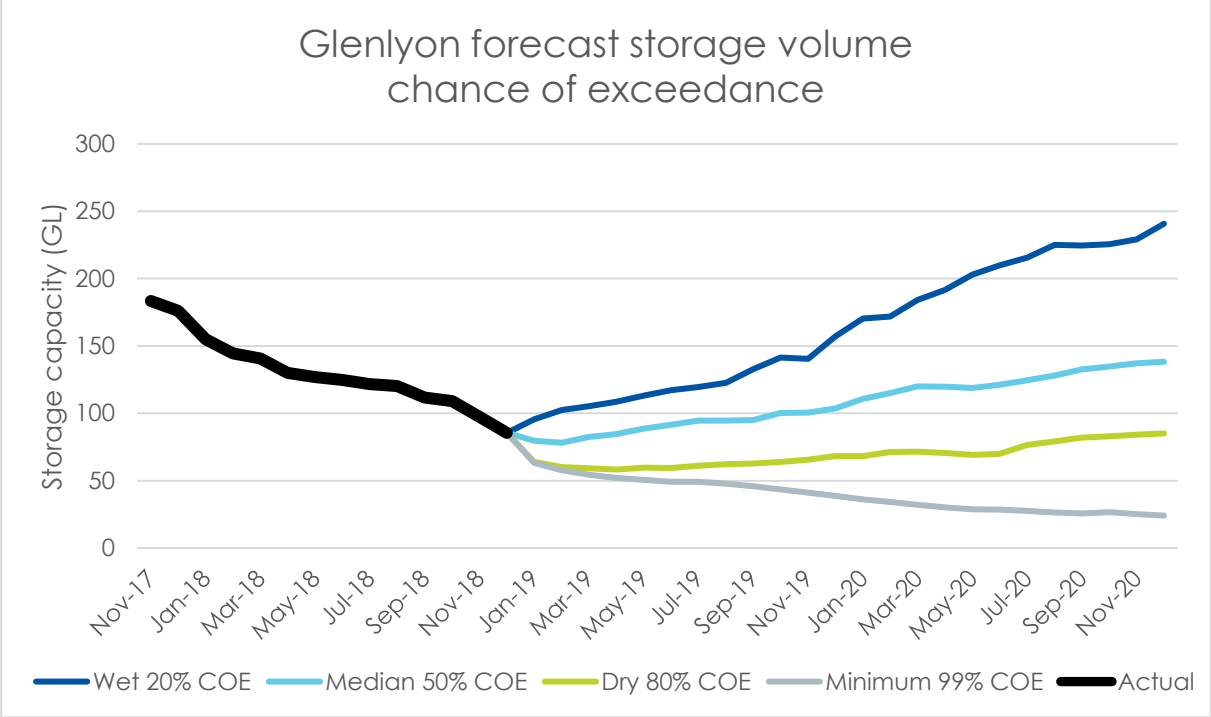
Water quality

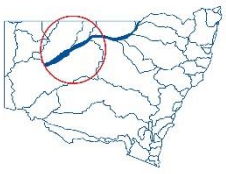
- Recent Blue Green Algae (BGA) sampling at Pindari shows Pindari is at amber alert level.

Planned supply interruptions:

- No supply interruptions are currently forecast.


Pindari forecast storage volume
chance of exceedance
Storage capacity (GL)
350
300
250
200
150
100
50
0
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20
Mar-20
May-20
Jul-20
Sep-20
Nov-20
Wet 20% COE
Median 50% COE
Dry 80% COE
Minimum 99% COE
Actual


Glenlyon forecast storage volume
chance of exceedance
Storage capacity (GL)
300
250
200
150
100
50
0
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20
Mar-20
May-20
Jul-20
Sep-20
Nov-20
Wet 20% COE
Median 50% COE
Dry 80% COE
Minimum 99% COE
Actual



6.4 Barwon-Darling River system

River flow status

- The river system from Mungindi to Wilcannia is currently at cease to flow condition and is forecast to remain this way until there is a significant rainfall event.
- Some recent minor flows at Mungindi and Presbury were from operational surplus flows in the Border Rivers.
- Weir pool levels are expected to continue to fall due to evaporation, town water use and Basic Landholder Rights extractions.

Environmental water operations

- There are no current Held Environmental Water (HEW) flows in the Barwon Darling system.
- Planned Environmental Water (PEW) is water in the system that is below the commence to pump conditions for access licences.

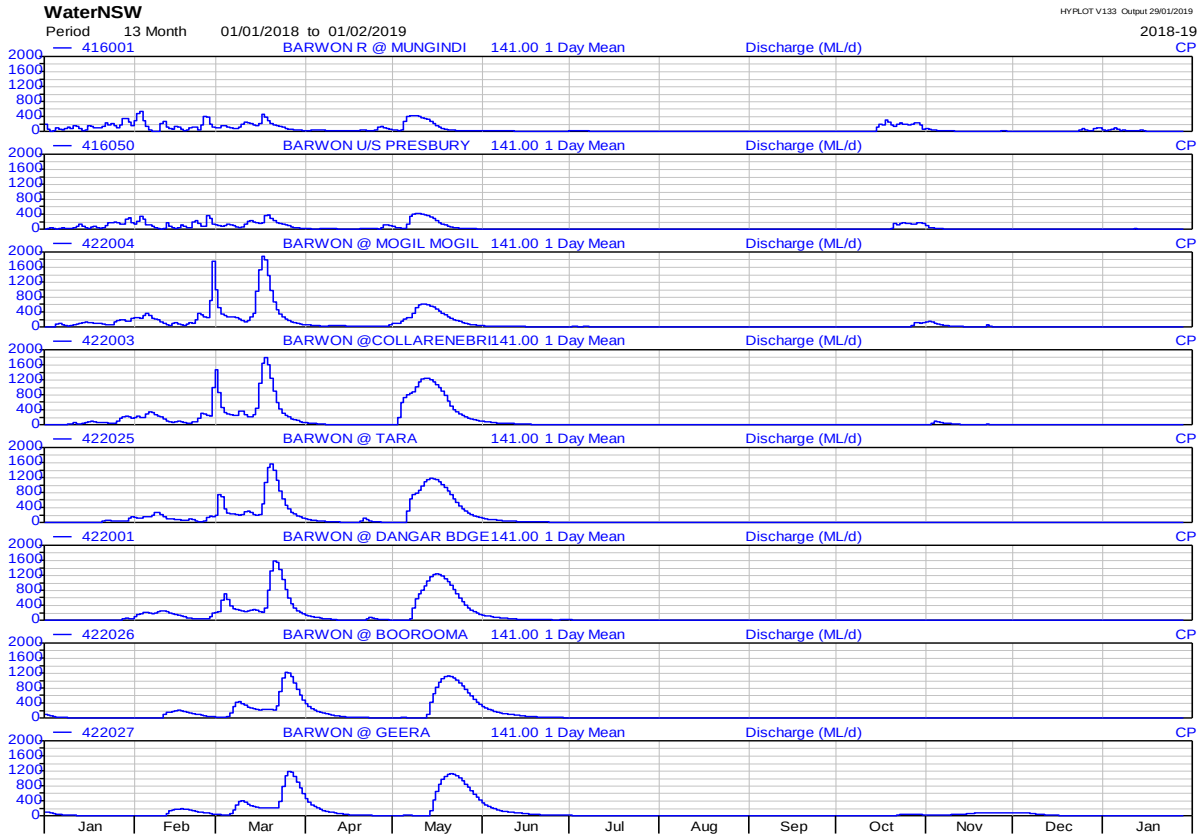
Water Availability

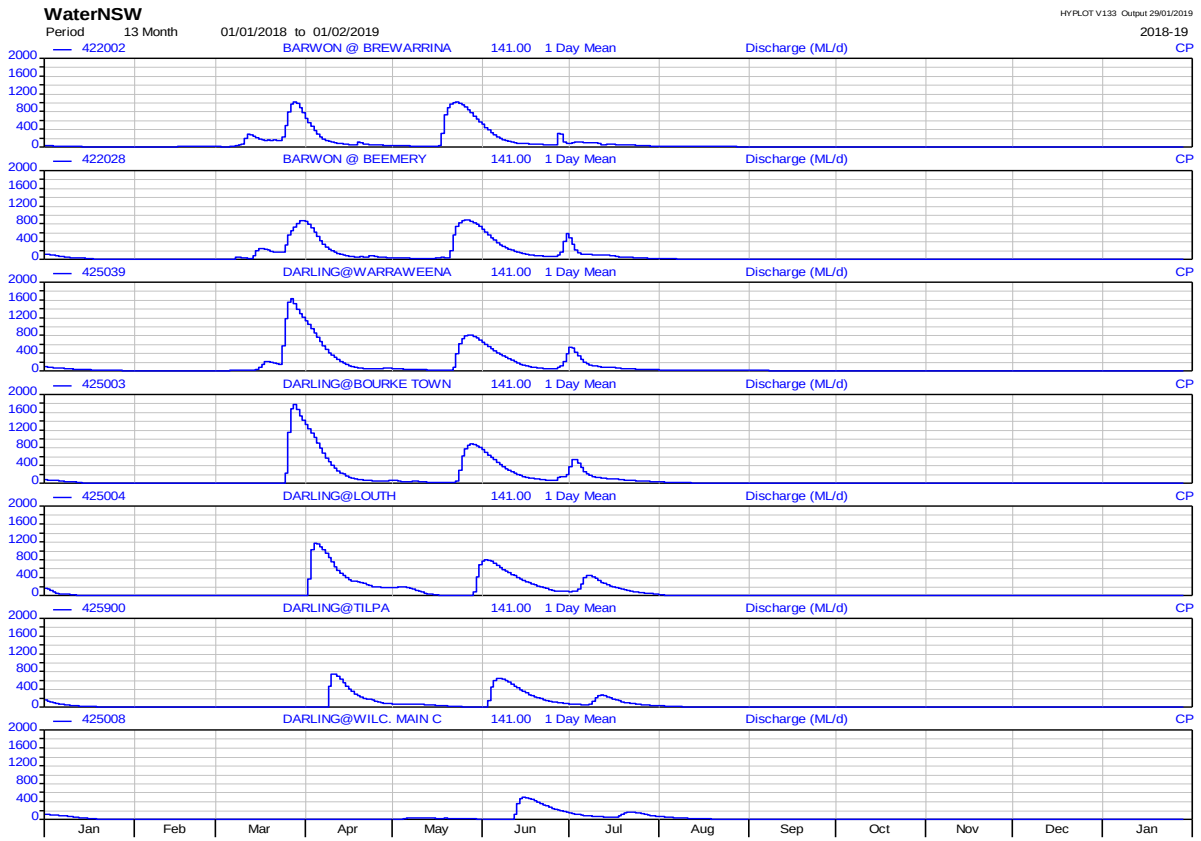
- The table below sets out the river management zones and access availability using daily average data to 6 am, these are provided as an indication only and access may have changed during the 24-hour period.

Drought operation measures

- As per the NSW Extreme Events Policy for all surface and ground water sources in the NSW Murray Darling Basin, the Barwon Darling unregulated river water source is assessed to be in Stage 3. Temporary water restrictions may be required to ensure critical water needs.

River section	Gauging station	Classification						
		21-01-19	22-01-19	23-01-19	24-01-19	25-01-19	26-01-19	27-01-19
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 Mogil Weir	416050 - 422004	No access	No access	No access	No access	No access	No access	No access
Mogil Mogil Weir	422004	No access	No access	No access	No access	No access	No access	No access
D/S Mogil 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


WaterNSW
HYPLOT V133 Output 29/01/2019
Period 13 Month 01/01/2018 to 01/02/2019
2018-19
416001 BARWON R @ MUNGINDI 141.00 1 Day Mean Discharge (ML/d) CP
416050 BARWON U/S PRESBURY 141.00 1 Day Mean Discharge (ML/d) CP
422004 BARWON @ MOGIL MOGIL 141.00 1 Day Mean Discharge (ML/d) CP
422003 BARWON @COLLARENEBRI 141.00 1 Day Mean Discharge (ML/d) CP
422025 BARWON @ TARA 141.00 1 Day Mean Discharge (ML/d) CP
422001 BARWON @ DANGAR BDGE 141.00 1 Day Mean Discharge (ML/d) CP
422026 BARWON @ BOOROOMA 141.00 1 Day Mean Discharge (ML/d) CP
422027 BARWON @ GEERA 141.00 1 Day Mean Discharge (ML/d) CP
2000
1600
1200
800
400
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan


WaterNSW
HYPLOT V133 Output 29/01/2019
Period 13 Month 01/01/2018 to 01/02/2019
2018-19
422002 BARWON @ BREWARRINA 141.00 1 Day Mean Discharge (ML/d) CP
422028 BARWON @ BEEMERY 141.00 1 Day Mean Discharge (ML/d) CP
425039 DARLING@WARRAWEENA 141.00 1 Day Mean Discharge (ML/d) CP
425003 DARLING@BOURKE TOWN 141.00 1 Day Mean Discharge (ML/d) CP
425004 DARLING@LOUTH 141.00 1 Day Mean Discharge (ML/d) CP
425900 DARLING@TILPA 141.00 1 Day Mean Discharge (ML/d) CP
425008 DARLING@WILC. MAIN C 141.00 1 Day Mean Discharge (ML/d) CP
2000
1600
1200
800
400
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan

7. Coastal valley based operational activities

7.1 Bega river

Storage and release status

- Brogo Dam is at 85% of capacity and currently releasing 25ML/d. Releases are forecast to remain around this rate this week.
- Regulated conditions are present throughout the system.

Environmental water operations

- No current additional operations.

Water availability

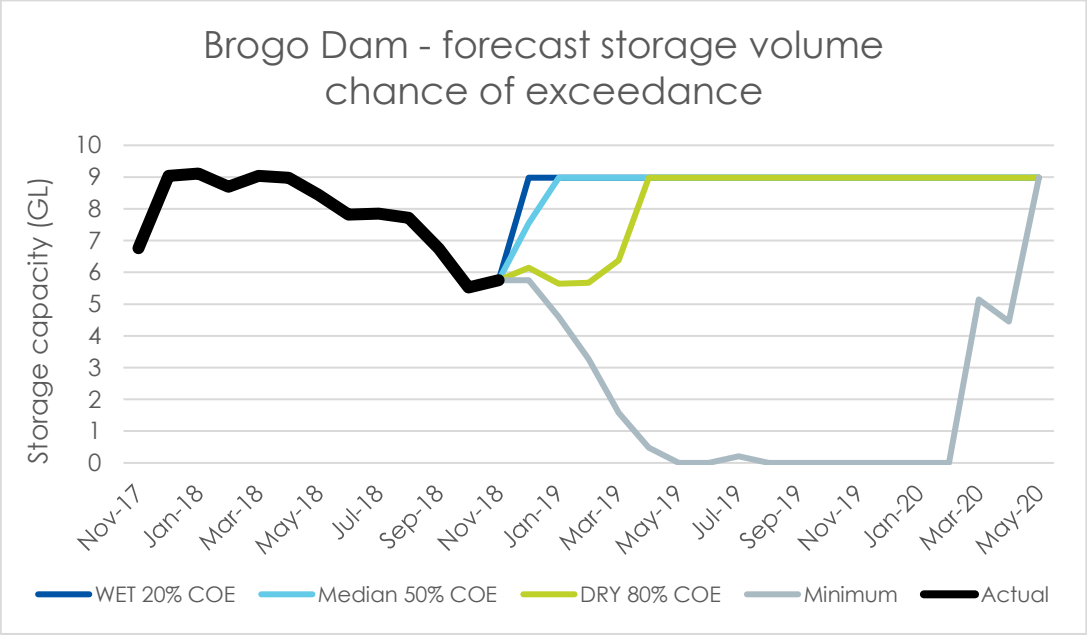
- An AWD increment of 10% announced on 16 Jan 2019 takes the total availability for the general security licences for the year to 45%.
- General security availability is likely to increase with further inflows to Brogo Dam.

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 57% of capacity and releasing around 250ML/d. Releases are forecast to remain around this rate during the week.
- Glennies Creek Dam is at 60% of capacity and releases are currently around 125 ML/d. Releases are forecast to remain around this rate during the week.
- Lostock Dam is at 92% of capacity and releasing 30 ML/d. Releases are forecast to remain around this rate.

Environmental water operations

- No current additional operations.

Water availability

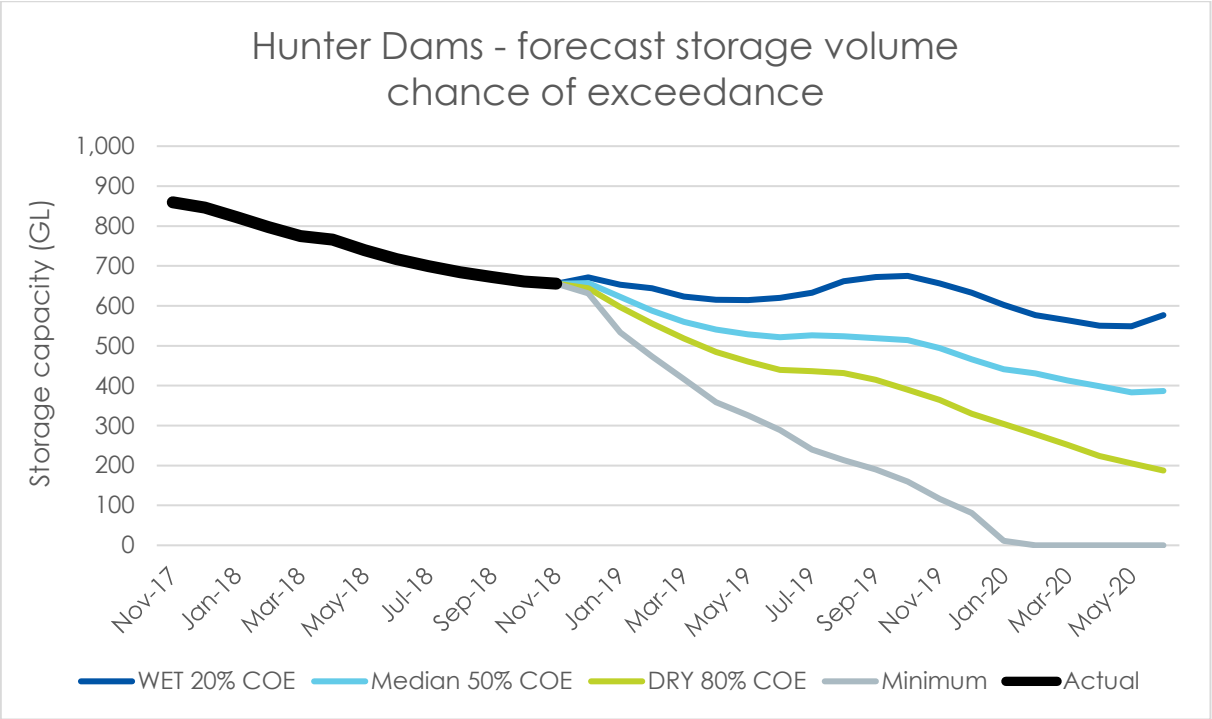
- All licence categories have 100% availability

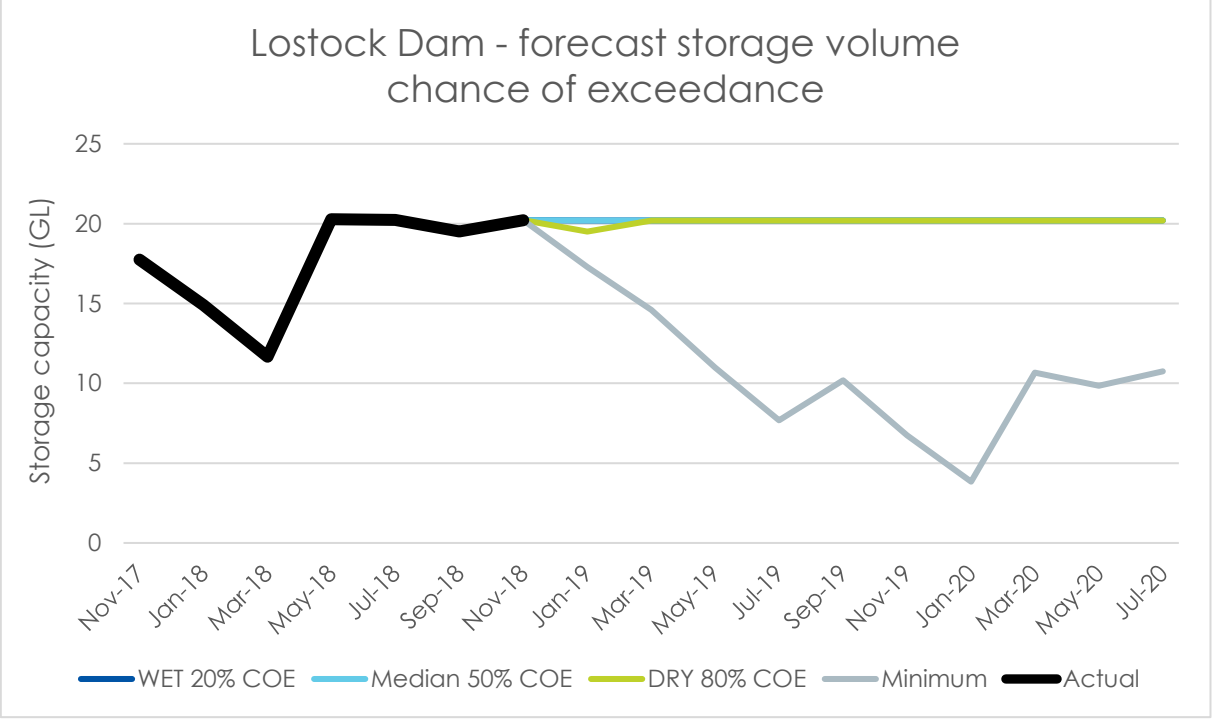
Water quality

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

Planned supply interruptions:

- Nil


Hunter Dams - forecast storage volume chance of exceedance
Storage capacity (GL)
1,000
900
800
700
600
500
400
300
200
100
0
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20
Mar-20
May-20
WET 20% COE
Median 50% COE
DRY 80% COE
Minimum
Actual


Lostock Dam - forecast storage volume chance of exceedance
Storage capacity (GL)
25
20
15
10
5
0
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20
Mar-20
May-20
Jul-20
WET 20% COE
Median 50% COE
DRY 80% COE
Minimum
Actual

7.3 Toonumbar Dam

Storage and release status

- Toonumbar Dam is at 86% of capacity and releasing 23 ML/d. Releases are forecast to remain steady for the week ahead.

Environmental water operations

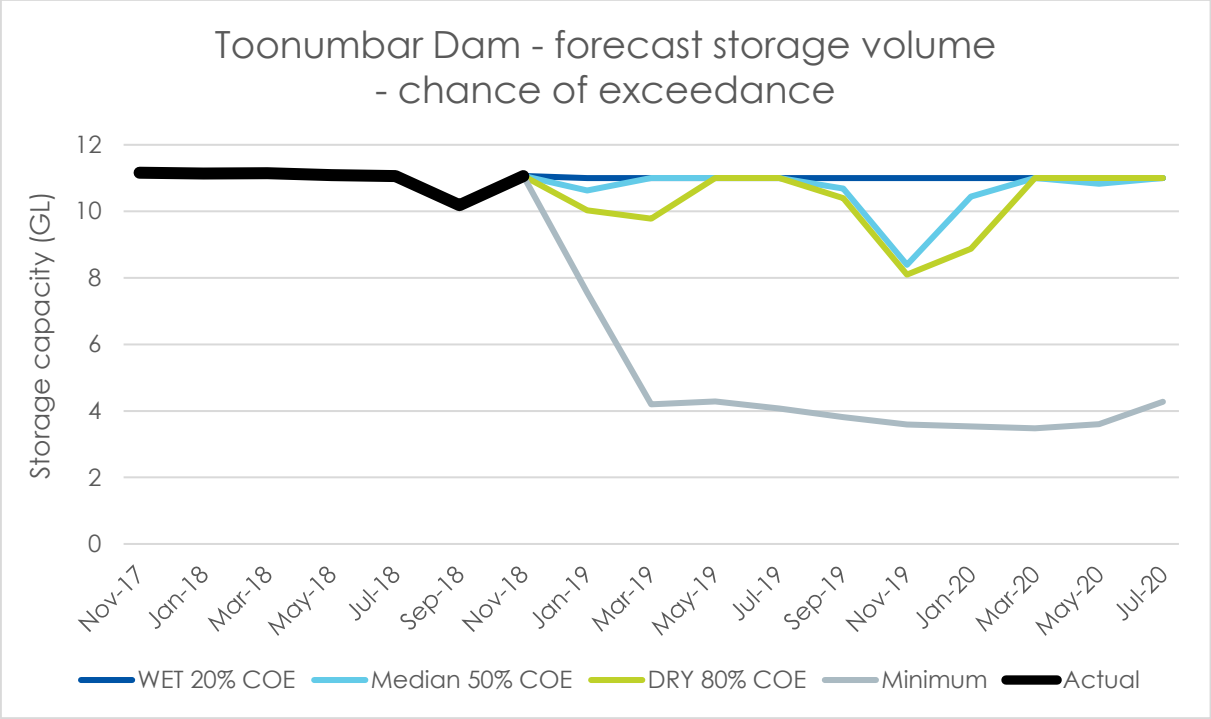
- No current additional operations.

Water availability

- All licence categories have 100% availability.

Water quality

- Recent BGA sampling at Toonumbar indicates that a green level is present.



Planned supply interruptions:

- Nil

Rural dam levels

The following table shows the status of water supplies at 28 January 2019.

River Valley	Cap-acity	Current Status		Weekly change (GL)	Comments	Likeli-hood of fill and spill	Allocations for 2018/19		
Storage Dam, Nearest Town	(GL)	% of active cap-acity	Active (GL)		Supply Issues		High Security	Gen. Security	Est Carry-over @ 1/7/18
Border Rivers									
Glenlyon Dam, Stanthorpe	254	21%	53	-6	Regulated releases	<20%	100%	2.7%	53%
Pindari Dam, Inverell	312	14%	44	-11	Regulated releases	<20%	100%	2.7%	53%
Gwydir Valley									
Copeton Dam, Inverell	1346	13%	173	-7	Regulated releases	<5%	100%	0%	22%
Namoi Valley									
Keepit Dam, Gunnedah	419	1%	2	0	Releases ceased	<20%	100%	0%	19%
Split Rock Dam, Manilla	394	4%	16	-1	Regulated releases	<5%	100%	100%	N/A
Chaffey Dam, Tamworth	98	36%	36	-1	Regulated releases	<50%	100%	38%	N/A
Macquarie Valley									
Burrendong Dam, Wellington	1155	10%	116	-1	Regulated releases, restricted c/over	<20%	100%	0%	52%
Windamere Dam, Mudgee	367	36%	132	0	Regulated releases. BWT ceased	<5%	100%	0%	102%
Lachlan Valley									
Wyangala Dam, Cowra	1216	39%	475	-20	Regulated releases	<20%	100%	0%	62%
Carcoar Dam, Carcoar	36	36%	13	-0	Regulated releases	10%	100%	0%	67%
Murrumbidgee Valley									
Burrinjuck Dam, Yass	1025	38%	393	-23	Irrigation & eWater	25%	95%	7%	22%
Blowering Dam, Tumut	1604	31%	504	-33	Irrigation & eWater	20%	95%	7%	22%
Murray Valley									
Dartmouth, Mitta Mitta (Vic)	3837	66%	2528	-38	Transfers to Hume	N/A	N/A	N/A	N/A
Hume Dam, Albury	2982	33%	969	-35	Irrigation, eWater & SA	<25%	97%	0%	31%
Lower Darling									
Menindee Lakes, Broken Hill	1684	1.6%	24	-3	Releases reducing	N/A	100%	0%	15%
Hunter Valley									
Glenbawn Dam, Scone	750	57%	429	-3	Regulated releases	20%	100%	100%	21%
Glennies Ck Dam, Singleton	282	60%	169	-1	Regulated releases	20%	100%	100%	21%
Lostock Dam, Gresford	20	92%	18	-0	Regulated releases	100%	100%	100%	N/A
Coastal Area									
Toonumbar Dam, Kyogle	11	86%	9	-0	Regulated releases	100%	100%	100%	N/A
Brogo Dam, Bega	9	84%	7	-0	Regulated releases	80%	100%	45%	N/A
TOTALS	**17,798**	34.3%	6111	-183					

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**.