Murray Valley snapshot

2017 2020 Drought

Was this the worst drought on record?

From 2017 to 2020, NSW experienced record-breaking drought that affected the whole state. Between January 2017 and December 2019, NSW temperatures were the warmest and rainfall was the lowest on record.

This drought was not the worst on record for the Murray Valley in terms of storage inflows. Both 24 month and 36 month inflows were the second lowest of any consecutive periods for Hume Dam over the historical record from the 1890s until now.

The Millennium Drought from 2002 to 2010 remains the longest and most severe recorded drought for the Murray River, with the lowest annual inflows on record occurring in 2006.

The drought was the worst on record for the Lower Darling and no water was available from Menindee Lakes during this period to assist River Murray supplies.

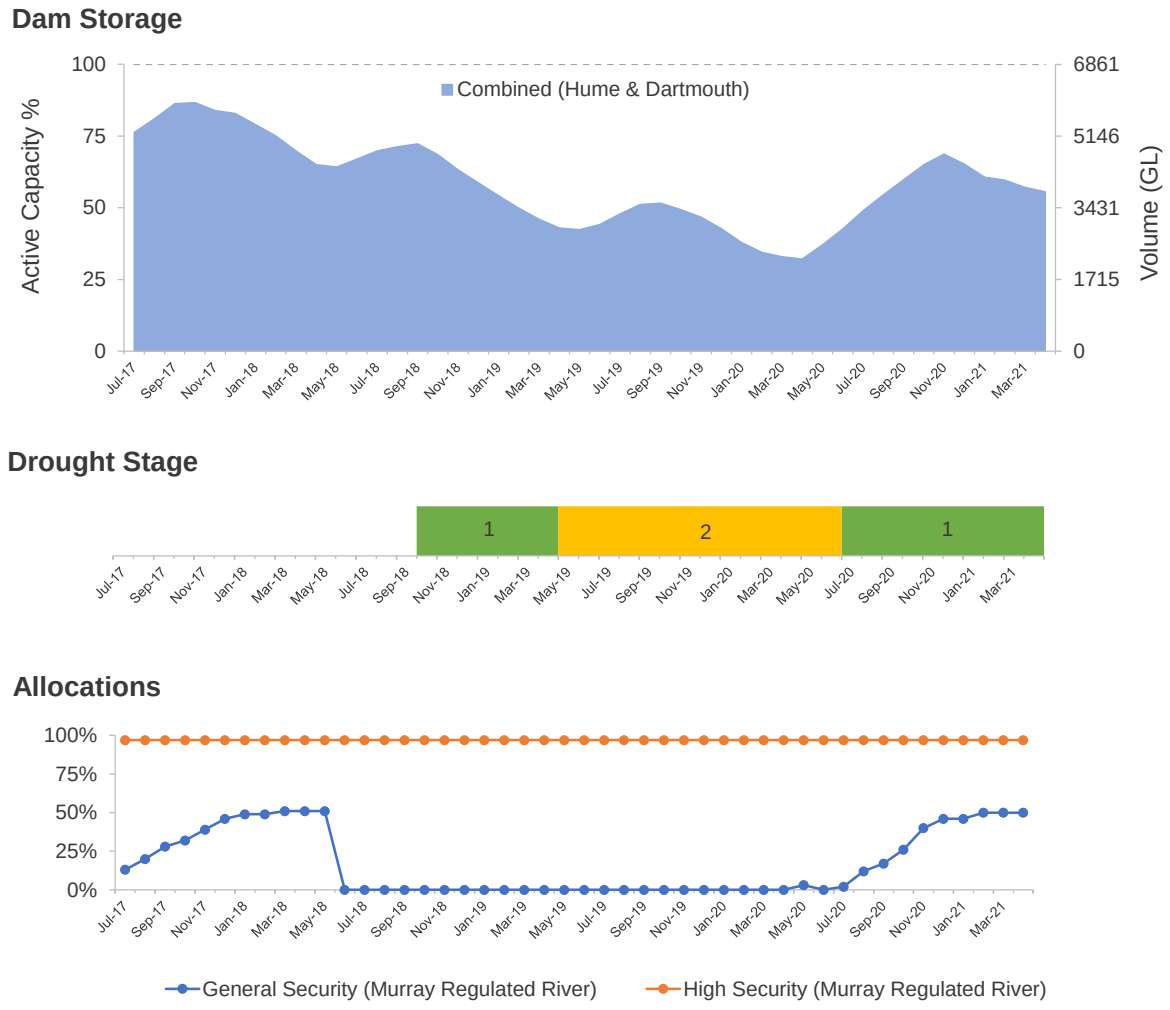

Figure 1 - Monthly storage, drought stage and water allocations for the Murray Valley

Measures implemented July 2017 to July 2018

July 2017
Dartmouth Dam was at 78% capacity and Hume Dam was at 73% capacity. High security licence holders received their normal allocation of 97% and this continued for the rest of the drought period. General security licence holders received an 11% allocation.

The delivery of 334 gigalitres (GL) of environmental water commenced. During the 2017/18 water year, this was delivered over 18 events to support the threatened southern bell frog and to connect the river system with floodplain wetlands.

July 2018
Dartmouth Dam was at 89% capacity and Hume Dam was at 46% capacity. General security licence holders received 0% allocations. The delivery of 142.7 GL of environmental water commenced. During the 2018/19 water year, this was delivered over ten events providing flows through the Murray system and its floodplains. This comprised of environmental water allowance (Murray Additional Allowance), plus Held Environmental Water as general security carryover and high security allocations.

In accordance with the *Water Sharing Plan*, the Barmah-Millewa Forest Environmental Water Allowance was borrowed in full to assist consumptive water users. This was to be repaid when general security allocations reached 30% entitlement.

January 2018
With Dartmouth Dam now holding 89% and Hume Dam holding 66%, general security licence holders received a 49% allocation.

Murray Valley snapshot

2017 2020 Drought

Measures implemented May 2019 to February 2021

May 2019
The Murray Valley was declared to be in Stage 2 – Emerging Drought.

January 2020
Inflows were in the lowest 5% of historical record.

July 2020
Dartmouth Dam was at 51% capacity and Hume Dam was at 40% capacity. The opening general security allocation was 0%, however this increased to 2% later in the month.

The Murray Valley was eased to Stage 1 – Normal Operations.

The delivery of 325 GL of environmental water from Hume Dam commenced. Releases watered multiple sites and environmental assets on the way to the RAMSAR listed Lower Lakes. This comprised of environmental water allowance (Murray Additional Allowance), plus Held Environmental Water as general security carryover and high security allocations.

July 2019
Dartmouth Dam was at 62% capacity and Hume Dam was at 24%.
General security licence holders again received a 0% allocation.
Following two years of 0% general security allocations, the Department created temporary specific purpose access licences to provide conveyance water to some small joint water supply schemes that could not fill their supply channels. This access was to provide for stock and domestic needs only and was to be ceased when general security allocations reached 15%.
135.6 GL of environmental water was delivered over 17 events for the year. Releases included the watering of the Barmah-Millewa and Koondook Perricoota Forests, the delivery of cultural flows to Fletcher Creek and watering 500 hectares of black box and lignum floodplain at Bottle Bend Reserve. This comprised of environmental water allowance (Murray Additional Allowance), plus Held Environmental Water as general security carryover and high security allocations.

May 2020
Rainfall resulted in Dartmouth Dam reaching 49% capacity and Hume Dam reaching 21%. A 3% general security allocation was made. This was the first since March 2018.

February 2021
38 crayfish were rescued from poor quality water below Hume Dam and relocated to Charles Sturt University. The poor water quality was a result of low dissolved oxygen and the presence of iron and manganese, linked to run off into storage from bushfire affected areas.
General security allocations increased to 50%.

Government assistance and funding

The following government assistance and funding was provided:

- The Commonwealth provided funding to the South Australian Government to increase production of desalinated water at the Adelaide Desalination Plant. In return, an equivalent volume of water was offered for purchase by Murray water users in 50 megalitres (ML) lots to grow pasture and fodder to maintain breeding stock. A total of 282 of the allocations were sold to NSW farmers.
- Fixed water charges for general security, unregulated rivers and aquifer access licences were waived from July 2018 to June 2021.

Drought information sessions

Drought information sessions were in held in Wentworth in May 2019, Finley in June 2019 and Deniliquin in June and November 2019. Webinars were held in December 2019 and May 2020. Further information can be found at: www.industry.nsw.gov.au/water/allocations-availability/droughts-floods/drought-update/information-sessions

Lessons learnt

Changes being implemented

- The NSW Government is committed to earlier communication with communities when conditions indicate that we may be approaching drought. Clear and early communication will allow landholders and water users to better prepare for potential restrictions and ensure that applications for groundwater approvals and drought infrastructure are in place early.
- To better identify when we are moving into drought (or flood), WaterNSW is developing a framework for measuring risk. This framework will use a variety of indicators such as rainfall deficit, soil moisture and streamflow conditions to provide an early warning of drought or flood to enable the community to be better prepared.
- During the drought, the WaterNSW Insights Portal was launched to provide more specific information to water users on allocations, notices and measures in their area. This is being further updated to include groundwater. Further information at: waterinsights.waternsw.com.au/
- The department is developing Regional Water Strategies that use climatic modelling to understand the risks associated with more severe climate conditions. These long-term strategies will assess and prioritise policy, operational and infrastructure options that will ensure regions are better prepared for future droughts and a more variable climate. Further information at: www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies
- The NSW Water Strategy sets the strategic direction for water service delivery and resource management in NSW over the long-term. Actions for improving drought planning, preparation and resilience are set out in the NSW Water Strategy Implementation Plan. Further information at: www.dpie.nsw.gov.au/water/plans-and-programs/nsw-water-strategy
- The individual valley Incident Response Guides and the Extreme Events Policy are being updated by reviewing the measures that were applied during the drought, this will improve our future response to drought.

- The Town Water Risk Reduction Program has been developed to enable Local Water Utilities to manage town water risks more effectively. The program will reduce water quality, water security and environmental risks in town water systems in regional NSW. More information can be found at: www.industry.nsw.gov.au/water/plans-programs/risk-reduction
- The department, WaterNSW and the Natural Resource Access Regulator are working together to align the licencing and approvals process to make it easier, quicker and consistent for applicants.