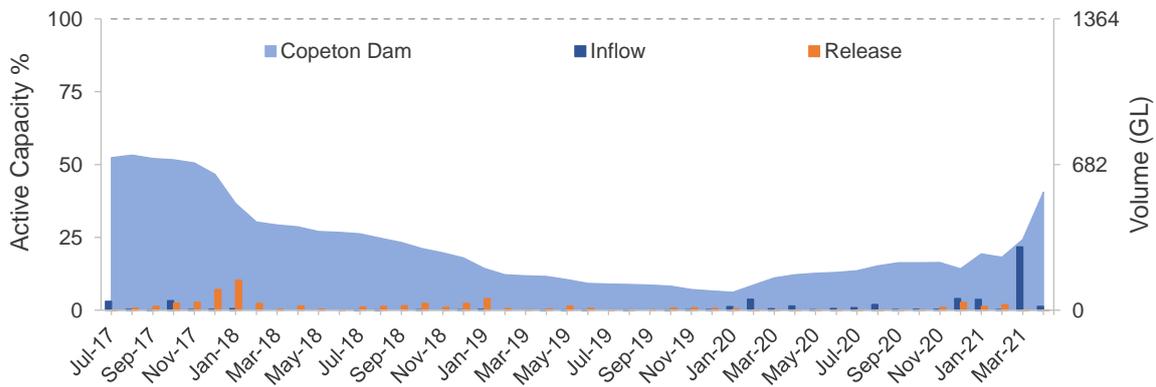


### Was this the worst drought on record?

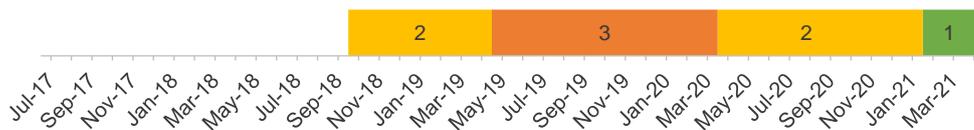
From 2017 to 2020, NSW experienced a record-breaking drought that affected the whole state. Between January 2017 and December 2019, NSW temperatures were the warmest and rainfall was the lowest on record.

This drought was the worst in terms of storage inflows for any 24 month consecutive period for Copeton Dam over the historical record from the 1890's until now. The 24 month inflows for the period January 2018 to December 2019 were 14% less than the previous worst recorded period May 1918 to April 1920.

#### Dam Storage



#### Drought Stage



#### Allocations

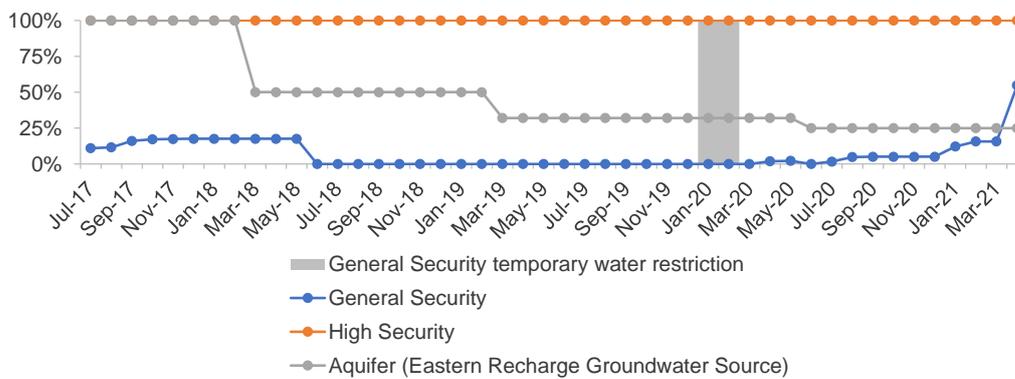


Figure 1 - Monthly storage, drought stage and water allocations for the Gwydir Valley

### Measures implemented – April 2018 to November 2019

#### July 2018

No new general security allocations were made.

A reduced 50% allocation was made for the Eastern Recharge zone of the Great Artesian Basin as extractions were exceeding the long-term compliance limit. This was further reduced in 2019 and 2020.

A block release strategy was implemented to deliver water in the lower distributary system. However, in the upper sections of the Gwydir deliveries and environmental orders were still made on demand

#### April 2019

The Northern Fish Flow Event saw a further release of environmental water from Copeton Dam, with a small volume reaching upstream of Bourke along the Barwon-Darling.

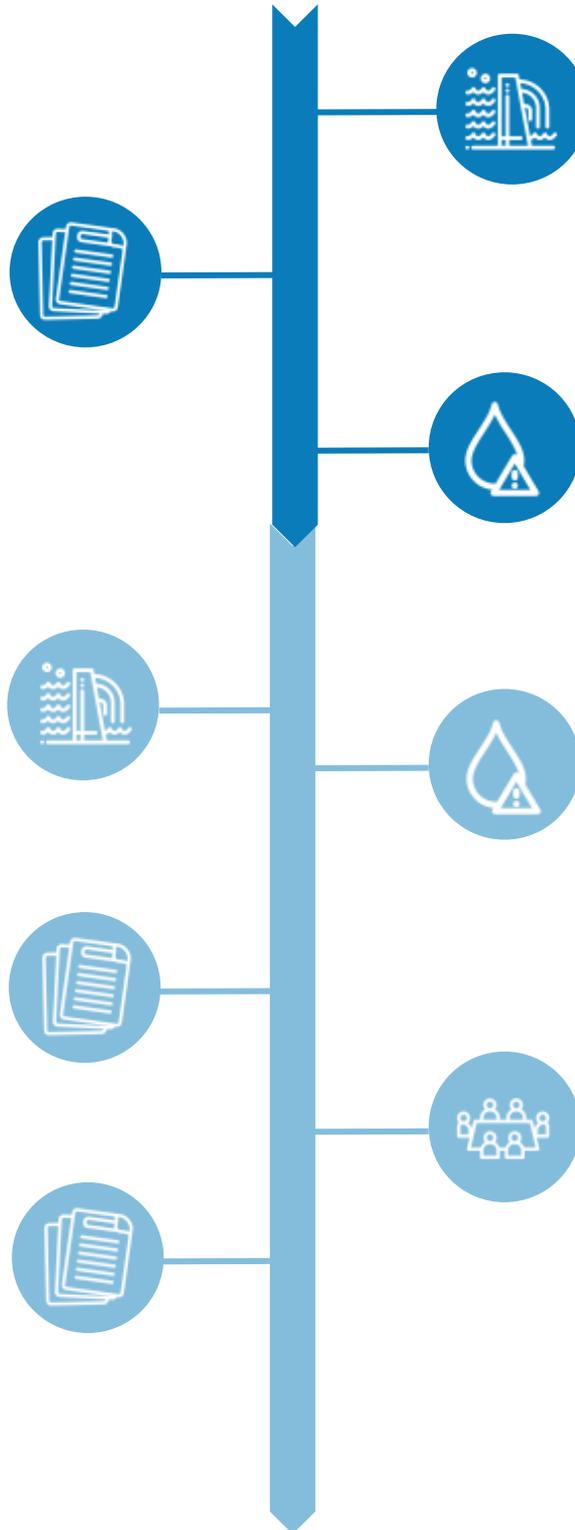
#### July 2019

All deliveries ordered were grouped and provided by block releases only.

#### November 2019

Following fish deaths downstream of Moree, as part of environmental releases some initial flows with the poorer quality water were diverted away from fish refuge areas and a weir was used to assist in pool water quality mixing.

Dam wall debiting was introduced for the remainder of the water year— general security holders and water ordered from the Environmental Water Account had additional water extracted from their accounts to cover the delivery of the water ordered.



#### April 2018

The Northern Connectivity Event saw environmental water released from Copeton Dam to support aquatic system health and provide connecting flows into the Barwon Darling.

#### October 2018

Drought stages were introduced, to signal when additional drought operations and management measures would occur. The Gwydir was rated as being in Stage 2 - Emerging Drought.

#### May 2019

With Copeton Dam at just 10% capacity, the Gwydir was escalated to Stage 3 - Severe Drought.

#### October 2019

The Gwydir Fish Valley Technical Advisory Group was established to identify and provide advice on key refuge areas and protection actions.

Over 100 native fish including Murray cod and golden perch were relocated to more secure water sources in the Gwydir River.

Threatened species including southern purple spotted gudgeon and freshwater catfish were rescued from drying refugia and transported to hatcheries across the state.

Environmental releases from Copeton Dam were made to maintain some remaining pools for fish survival.

## Measures implemented – January 2020 to January 2021

### February 2020

The restriction was extended to the Lower Gwydir Floodplain. Some temporary exemptions to this restriction were permitted to manage perceived risks to infrastructure assets located on the floodplains.

The temporary water restriction on river pumping and floodplain harvesting in the Gwydir ceased on 21 February.

### December 2020

The Northern Water Hole Top-up Event saw 5.1 gigalitres (GL) of environmental water released from Copeton Dam to the Barwon-Darling.

Block releases were again used for water orders.



### January 2020

Temporary water restriction on most commercial pumping was applied across all of the Northern Basin. This was to allow for replenishment of town, domestic and stock supplies, following widespread rain.

### August 2020

The first small general security allocation was announced.

### January 2021

On demand deliveries resumed for the Gwydir Regulated River.

General security allocations increased to 16.5%.

## Government assistance and funding

The following government assistance and funding was provided:

- \$1.27 million to assist with emergency infrastructure for water treatment and to provide the community with bottled water in Uralla, following water quality issues in November 2019.
- \$1.5 million was also provided to investigate groundwater supplies to improve water security in Uralla.
- \$480 000 was provided to Moree Shire Council to undertake an Integrated Water Cycle Management Strategy for Moree. This strategy includes a drought and emergency response contingency plan.
- 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 held in Moree in February, May 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](http://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.
- A review of targets and principles for restricting commercial access when first flows occur after a prolonged drought and improved communication processes is underway
- Providing more clarity on when block releases are applied.
- 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.watnsw.com.au/](http://waterinsights.watnsw.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](http://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](http://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](http://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.