

Australian Capital Territory Narrative to accompany the 2019-20 s71 report

Summary

The ACT's annual regional rainfall in 2019-20 was below average across the region. The 2017-2019 period was the lowest three years of rainfall on record. The ACT's net water diversion of 22.5 GL for 2019-20 was slightly below the 23.1 GL recorded in 2018-19. This represented roughly half of the water available to the ACT under the 42.7 GL Sustainable Diversion Limit net take from watercourses. There were only small changes to entitlements and only one internal trade during the 2019-20 period.

2019-20 Conditions

Based on Canberra Airport rainfall readings, the ACT experienced below average rainfall of 446.6 mm for the period 2019-20. The ACT's rainfall for this period was 169 mm below the 615 mm long-term average recorded at the Canberra Airport. The total area-averaged rainfall across the whole territory for the year was 596 mm; i.e. below the mean value of 791 mm. Rainfall was very low during the latter half of 2019. The below-average rainfall throughout July–December 2019 was due to a positive phase of the Indian Ocean Dipole, one of the strongest on record, which influenced Australia's climate during this period. There was some rainfall relief during the early part of 2020 as tropical moisture from warmer-than-average sea surface temperature off the coast of Australia produced higher rainfall across the region. A large rainfall event occurred in January/February when a coastal trough produced well-above-average rainfall for those months.

Evapotranspiration and soil moisture were well below average across the entire ACT region due to low water availability across 2017 to 2019. In the later part of 2019, the root-zone soil moisture was well below average and the lowest on record over almost the entire region.

The low rainfall, evapotranspiration and soil moisture conditions resulted in below average streamflow for most of 2019-20. For example, the total annual flow in the Queanbeyan River upstream of Googong Dam was just 9 GL compared to the average value of 40 GL. 2019-20 was the third consecutive year of low streamflow in the ACT and region throughout most of the year.

Entitlements

The ACT's Access Canberra (previously Environment Protection Authority) has been responsible for the management of all entitlements, including those for the National Capital Authority, since responsibilities were transferred in 2014-15. There was no change in the number or volume of entitlements held by Icon Water and for all other entitlements there was a small increase for surface water and groundwater.

Entitlements		Entitlements held for 2019-20	Entitlement volume GL
Surface water	Icon Water entitlements	7	71.0
	All other entitlements	312	8.5
	Total Entitlements	319	79.5
Groundwater	Icon Water entitlements	0	0
	All other entitlements	191	2.1
	Total Entitlements	191	2.1
SW/GW	All other entitlements	31	2.1
	Total Entitlements	31	2.1

There are no further surviving allocations entitlements (combined surface water/groundwater) to be issued. These entitlements are being phased out on the transfer or sale of property.

Diversions and Returns

The ACT recorded a total net surface water diversion of 22.56 GL during 2019-20. This result provides a small decrease in water use within the Territory of 0.573 GL as compared to 2018-19. The 22.56 GL net consumed represents roughly half of the water available to the ACT under the current 42.70 GL net take from watercourses.

Surface Water		Annual Entitlement GL	Annual Diversion GL	%
Diversions	Icon Water diversions	71.0	55.33	78
	Private diversions	8.5	0.94	11
	Total Diversion	79.5	56.27	71
Returns	LMWQCC return		30.75	
	QSTP return		2.95	
	Total Returns		33.71	
Net Diversion	(Diversions – Returns)	42.70	22.56	53
Interceptions	Runoff dams	4.64	2.32	50
	Commercial plantations	11.00	6.50	59
Baseline Diversion Limit		53.44	53.44	

The table above shows the ACT's SDL of 53.44 GL to account for the 2.0 GL contributed to The Living Murray Initiative and the 4.9 GL of Shared Reduction Amount. This adjustment results in an annual permitted take of 58.34 GL.

The ACT recorded a total net groundwater diversion of 0.341 GL consumed during the 2019-20 period. This result provides a decrease in groundwater use within the Territory of 0.74 GL as compared to 2019-20. The 0.34 GL consumed reflects the ACT's good management practices to control the consumption of available water in the ACT to 10% under the 3.16 GL Sustainable Diversion Limit.

Groundwater		Annual Entitlement	Annual Diversion	%
		GL	GL	
Diversions	Private diversions		2.19	15
	Icon Water diversions		0	0
	Total Diversion		2.19	0.34
Baseline Diversion Limit		1.70		
Sustainable Diversion Limit		3.16	0.34	10

Trade

The ACT had one surface water trade within the ACT and no groundwater entitlements or interstate trades were traded during 2019-20.

Trade (within ACT)		Entitlements exchanged	Entitlement volume
		2019-20	GL
Surface water	Icon Water	0	0
	All other SW entitlements	1	0.00016599
	Entitlements exchanged	0	0
Groundwater	Icon Water	0	0
	All other GW entitlements	0	0
	Entitlements exchanged	0	0

There were no interstate entitlements traded during the 2019-20 period.

Interstate Trade		Entitlements exchanged	Entitlement volume
		2019-20	GL
Surface water	Icon Water	0	0
	All other SW entitlements	0	0
	Entitlements exchanged	0	0
Groundwater	Icon Water	0	0
	All other GW entitlements	0	0
	Entitlements exchanged	0	0

ACT Model

The development of the ACT's Source model integrates local planning, operations and governance from urban, catchment and river influences, and is calibrated to local conditions. The output from the ACT Source model shows the permitted net annual take for the 2019-20 year as 48.09 GL.

Water restrictions have not been imposed throughout the period 2011-2019 and there were no water restrictions imposed during 2019-20 period. Therefore, the ACT's mandatory regime of permanent water conservation measures continues to apply.

The model output, climate adjusted cap, and net abstraction have been reliable throughout the last six reporting cycles. This demonstrates that the ACT continues the practice of good water planning and water management by using only 56% of surface water against the Sustainable Diversion Limit within the ACT. It also demonstrates some change in behaviours or adaptation by the ACT community in drying conditions under climate change.

Held Environmental Water

The ACT did not hold any environmental water during the period 2019-20.

Planned Environmental Water

Riffle maintenance flows are environmental flows that are mandatory requirements under the entitlement licence held by Icon Water in the Cotter catchment. They enable flushing of sediment from pools between Corin Dam and Bendora Dam and between Bendora Dam and the Cotter Dam. All requirements for the Corin, Bendora, Cotter and Googong Reservoirs were achieved for 2019-20.

Similarly, Icon Water is required under licence to provide environmental baseflows from the four dams to replicate natural flows throughout the year. The Icon Water licence stipulated that 9.5 GL of environmental flow be released from Corin Dam during 2019-20 to maintain and improve river health, 14.5 GL from Bendora Dam, 8.7 GL from Cotter Dam and 2.9 GL from Googong Dam. For 2019-20, Icon Water met and exceeded all environmental watering requirements under licence by providing 49.3 GL of total environmental flow against the 35.6 GL of required environmental flow under licence.