

## Critical water planning for the Murray Valley and Lower Darling

Issue 35 | 15 June 2010

### Current water availability

Inflows into the Murray River system (excluding Snowy diversions and flows into the Menindee Lakes) was 165 GL in May. This is 70 GL more than for the same period last year, but 220 GL less than the long-term average inflow for May. However, including inflows to the Menindee Lakes, the total inflow into the Murray River system was 570 GL.

There is sufficient water available to NSW in the Murray system to meet critical human needs, system losses, private carryover and the minimum needs of water use industries.

After two relatively small flood events in the Darling River during the last six months, the volume in the Menindee Lakes system has risen to 1,470 GL (85 per cent of capacity). Flows into the Darling River are now mainly from the Paroo catchment upstream of Wilcannia and, at less than 4 GL/day, the inflows to the Menindee Lakes are barely keeping pace with evaporation and seepage losses.

Regulated flow from Menindee into the Lower Darling and Murray Rivers is currently at seasonal minimums and management of releases is now under the direction of the Murray Darling Basin Authority.

Rainfall summary for May 2010

Location	May Total (mm)	Proportion of Long-term May average	Total rainfall for the 2009/10 June – May (mm)	Long-term annual average rainfall (mm)	Proportion of Long-term annual average
Thredbo Village	189	152%	2160	1745	124%
Albury (Hume Dam)	54.9	59%	696	690	101%
Deniliquin	52.8	38%	470	405	116%
Mildura (airport)	54	26%	314	283	111%
Menindee	21.7	95%	282	242	116%

There has been some good rainfall across the Murray Valley in late May and early June, particularly in the upper catchments. Moderate flows were recorded in response to the

rainfall indicating improved soil moisture levels generating runoff. The year to the end of May finished with above average rainfall across most centres for the first time in nearly a decade.

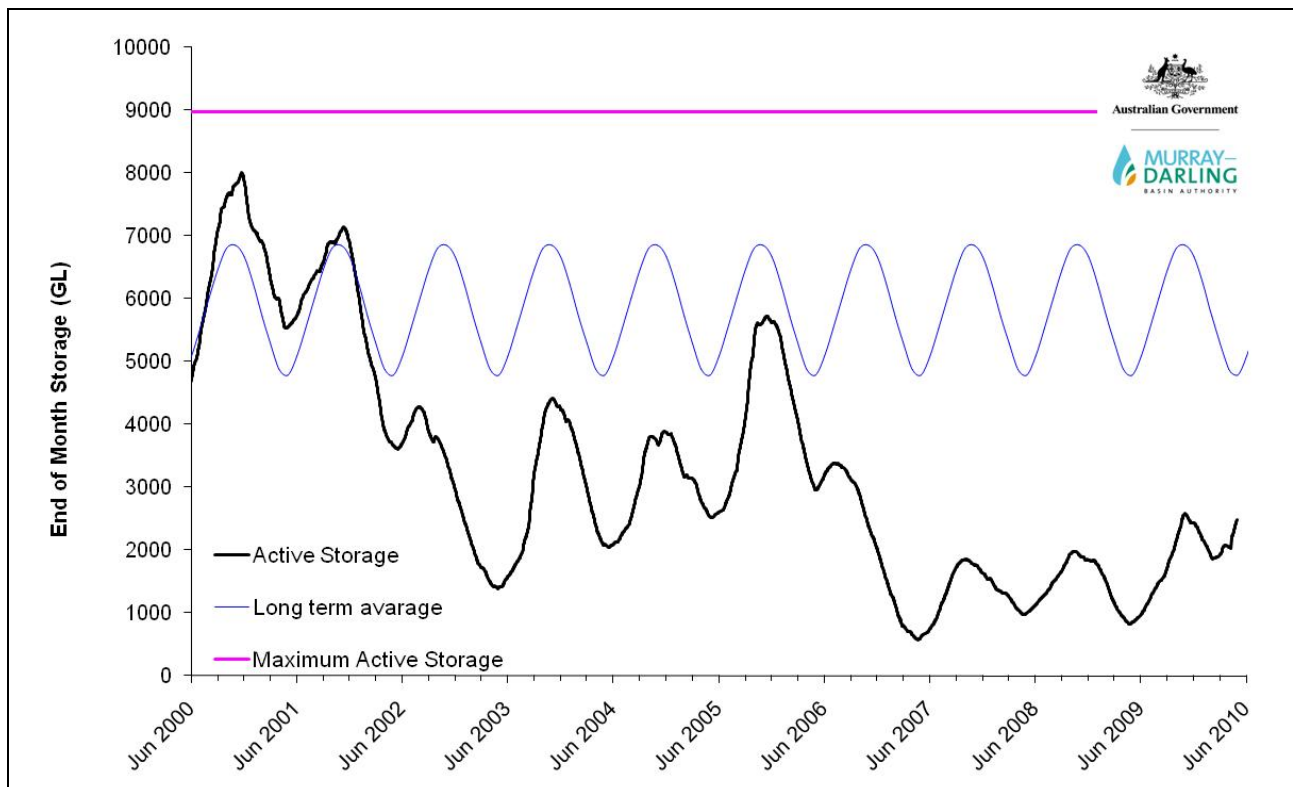
The Bureau of Meteorology has indicated that drier winter conditions can be expected with the chance of exceeding the median rainfall over the winter months being less than 40 per cent for the Murray and Lower Darling valleys. It is mainly the higher than average sea temperatures in both the Pacific and Indian Oceans that is influencing the drier rainfall outlook in the south of NSW.

## Storages

### Murray Valley Storage Levels

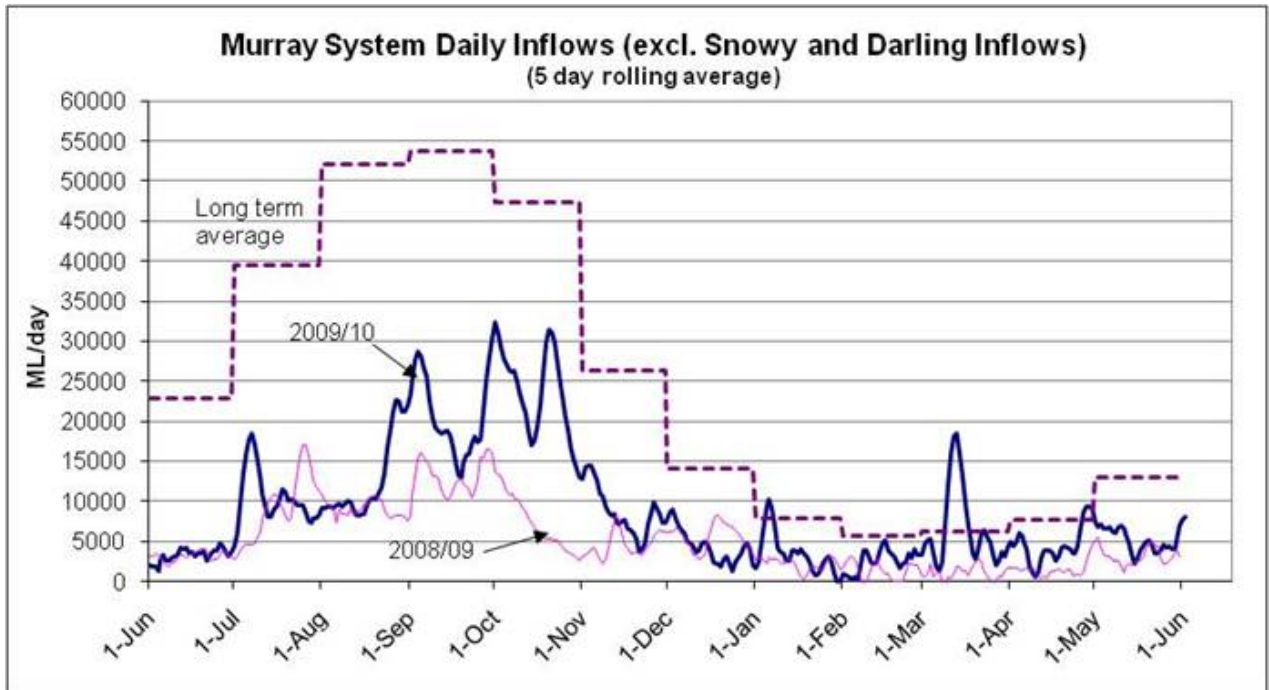
Storage @ 8 June 2010	Volume (GL)	Percent of capacity	Change in Volume since 8 May 2010 (GL)	Approximate volume at this time last year
Hume Dam	680	22.4%	+179	225 (7.4%)
Dartmouth Dam	1249	31.9%	+17	829 (22.3%)
Menindee Lakes	1470	84.9%	+274	220 (12.7%)
Lake Victoria	378	56.0%	-73	171 (25.0%)
<b>Total Volume</b>	<b>3,777</b>	<b>40%</b>	<b>+397</b>	<b>1,445</b>

MDBA Active Storage, June 2000 to end of May 2010 (excludes Snowy and Menindee).

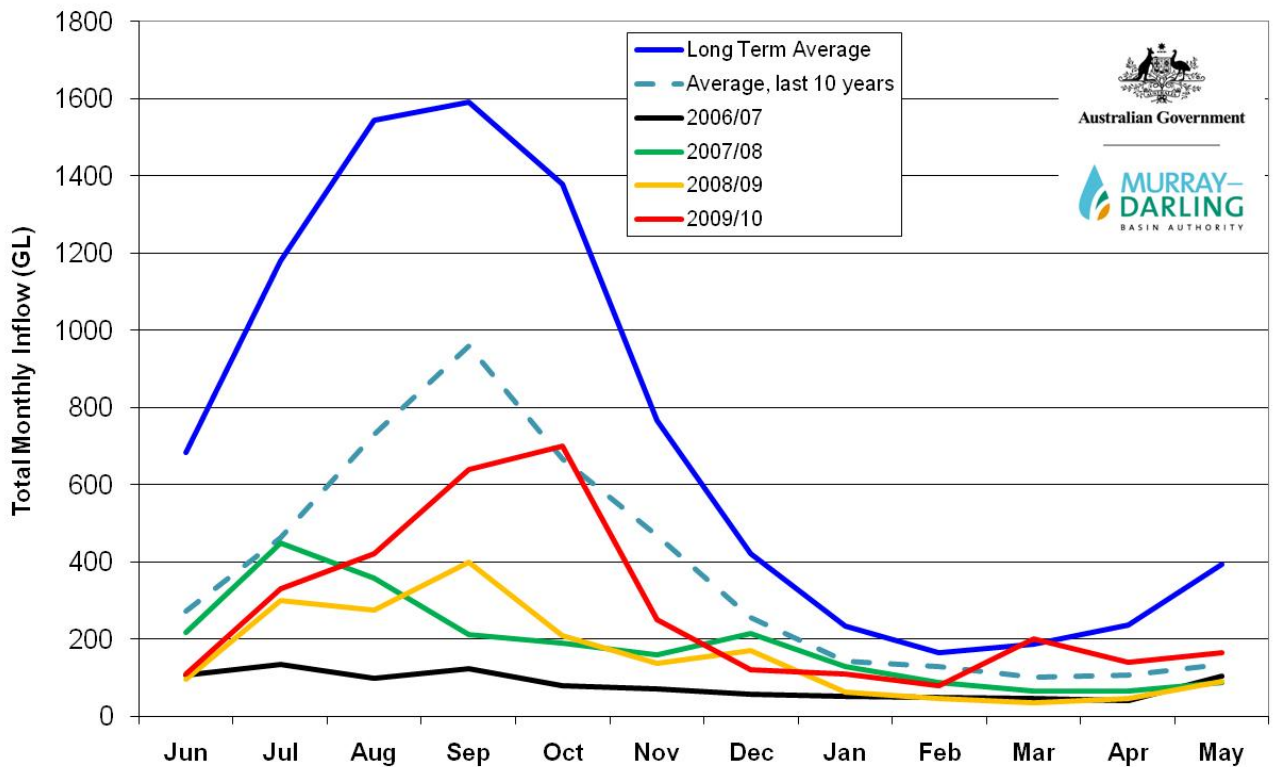


## Inflows

Seasonal Average Daily Inflow for 2005/06 – 2009/10



Murray System Monthly Inflow Volumes



Murray System Inflows (excluding Snowy and Menindee inflows)

	<b>2009-10</b>	<b>2008-09</b>	<b>Historic Minimum (2006/07)</b>	<b>Long term average</b>
Water year (June to May)	3,210GL	1,870GL	970GL	8,790GL

Murray Valley inflows (excluding Snowy and Menindee) were 3,210 GL for the water year and a significant improvement on last year's 1,870 GL. However, to put this into perspective, it is 40 per cent below the long term average of 8,790 GL and the 13th lowest annual inflow on record.

Although there have been some encouraging improvements, it will take a sustained period of average or higher than average rainfall to create conditions that will generate runoff consistently and for the catchments to recover from the continuing drought.

**Barwon Darling flows and Menindee**

The Christmas / New Year flooding in northern NSW together with follow-up rainfall in February produced a total flow volume through Bourke of 1,350 GL which corresponded to a total flow of 1,050 GL at Wilcannia. The inflows came predominantly from the Namoi (35 per cent), Castlereagh (30 per cent) and Culgoa (25 per cent) catchments, with the balance (10 per cent) from the Gwydir, Macintyre, Macquarie and Bogan Rivers.

The two smaller upper lakes in the Menindee System, Lakes Wetherell and Pamamaroo, were filled to surcharge capacity, about 615 GL, and the balance of floodwaters were released to the Lower Darling which enabled allocations to be increased to 100 per cent of entitlement in the Lower Darling, and an increase of seven per cent in general security allocation in the NSW Murray. Most importantly, the flows provided significant environmental benefits in the Lower Darling and in the Murray River as far as the Lower Lakes in South Australia.

Extensive and heavy rainfall in southern Queensland in early March produced autumn flooding throughout central and south-west Queensland. These flows passed into NSW mainly from the Warrego (and Paroo) and Culgoa Rivers. Some water also flowed to the Barwon River from the Moonie River catchment. This second flood event produced a total flow volume through Bourke of 1,140 GL and 1,200 GL at Wilcannia. The increased flow at Wilcannia relative to Bourke on this occasion was from inflows to the Darling River downstream of Bourke, from the Warrego and Paroo Rivers, 250 GL and 200 GL respectively.

The additional flows were diverted into the two larger downstream lakes in the Menindee System, Lakes Menindee and Cawndilla. While this incurred large seepage losses associated with initial wetting (these lakes had been dry since 2002), dead storage and evaporation, this was consistent with the NSW operating strategy of diverting water into these lakes when the projected volume exceeded 500 GL.

Inflows are now nearly finished and the lakes are steady at 1,470 GL and 85 per cent capacity.

Although large flow volumes were observed in Queensland at Wyandra (Warrego River) and St George (Balonne River) and extensive areas were flooded, the majority of the water was

absorbed into the ground and captured naturally along arid floodplains, filling many ephemeral creeks, lakes and billabongs, most of which had been dry for more than 10 years.

The floodwater has provided huge benefits to the environment and water-dependant ecosystems along thousands of kilometres of waterways.

## Water allocation announcements 2009/10

NSW Murray

<b>Date</b>	<b>General Security Allocations</b>	<b>High Security Allocations</b>	<b>Carryover</b>
1/07/2009	0%	0%	80% carryover accessible
15/07/2009	0%	3%	100% carryover accessible
3/08/2009	0%	8%	
17/08/2009	0%	8%	
1/09/2009	0%	20%	
15/09/2009	0%	50%	
1/10/2009	1%	97%	
15/10/2009	5%	97%	
23/10/2009	9%	97%	
2/11/2009	10%	97%	
30/11/2009	10%	97%	
15/01/2010	13%	97%	
15/02/2010	19%	97%	
01/03/2010	20%	97%	
15/03/2010	22%	97%	
01/04/2010	27%	97%	

Lower Darling

<b>Date</b>	<b>General Security Allocations</b>	<b>High Security Allocations</b>	<b>Carryover</b>
1/07/2009	0%	100%	100% carryover accessible
15/09/2009	25%		
15/01/2010	100%		

**Resumption of the water sharing plan**

The water sharing plan will only be recommenced when there is sufficient water available to meet all urban, stock and domestic and high security demands through the worst drought. This means that a 'guaranteed' supply of this water for the current year and following year, that is up to two years supply, is needed before the water sharing plan will be recommenced.

Practically, this means that until water availability in the Snowy Mountains Scheme recovers to the extent that it can supply the full Required Annual Release for two years with minimum inflows, the water sharing plan should not be recommenced. The probability of this occurring before 1 July 2010 is highly unlikely.

Should the water sharing plan be recommenced after the start of a water year, at least two rules will apply:

- Accounts will not be reduced because of the resumption of the plan
- Normal plan account limits will apply.

**Trade**

**Murrumbidgee to Murray Valley trades**

Following feedback from the Critical Water Advisory Group, the ballot system will not be used in 2010/11 water year unless it is determined that unrestricted trade results in inequitable access and/or uncertainty of delivery.

Trade from the Murrumbidgee Valley will re-open on 1 July 2010. It is intended that trade will not be restricted, however the NSW Office of Water will monitor volumes and will take action where necessary to ensure that the 'cost' of trades in terms of transmission losses is kept to acceptable levels to minimise any potential third party impacts.

**Intra-valley and interstate Murray trades**

Trades were allowed from upstream to downstream of the Barmah Choke in 2009/10. The current approval for this practise ceases on 30 June 2010. Announcements about trade from upstream to downstream of the Barmah Choke will depend on water availability and capacity to deliver in summer.

## Lower Darling

Trading into and out of the Lower Darling will commence on 1 July 2010. If drought conditions return and Menindee storage drops below 480 GL, then trading may be suspended.

## Carryover

In 2009/10 NSW Murray high and general security water users were permitted to carry over up to 100 per cent of entitlement. **This will also be the case for carry-over into 2010/11.** However, when the water sharing plan resumes carryover rules will revert to those in the plan namely nil for high security and 50 per cent for general security water users.

This table outlines the volumes of water made available in the 2009/10 water year.

Licence Class	Volume available (GL)
Carryover from 2008/09	190
Town water supply	27
Domestic and stock	24
High Security	178 (97%)
General Security	451 (27%)
Effluent Systems	48
Environmental	19
Conveyance	181
Critical reserve	75
Other*	97
Estimated Carryover into 2010/11	480

\* Includes SA paybacks and uncommitted water

## Urban water usage

Following advice from the Critical Water Advisory Group, the Murray and Murrumbidgee town water restrictions policy will be relaxed for the start of the 2010/11 water year. Water availability will be closely monitored thereafter with a view to implementing the water restrictions policy from 1 September 2010.

Under the policy, town water restriction levels are linked to High Security water allocations as follows:

<b>High Security water allocation</b> (as a percentage of the licensed entitlement)	<b>Level of town water restrictions</b>
Less than and up to 20 per cent	Level 4 – no outside watering
Greater than 20 per cent and up to 40 per cent	Level 3a – maximum of four hours watering per week. No lawn watering.
Greater than 40 per cent and up to 60 per cent	Level 3 – maximum of eight hours watering per week. No lawn watering.
Greater than 60 per cent and up to 80 per cent	Level 2a – maximum of eight hours watering per week, including restricted lawn watering
Greater than 80 per cent and all water for critical human needs for the next water year has been reserved	To be determined by council

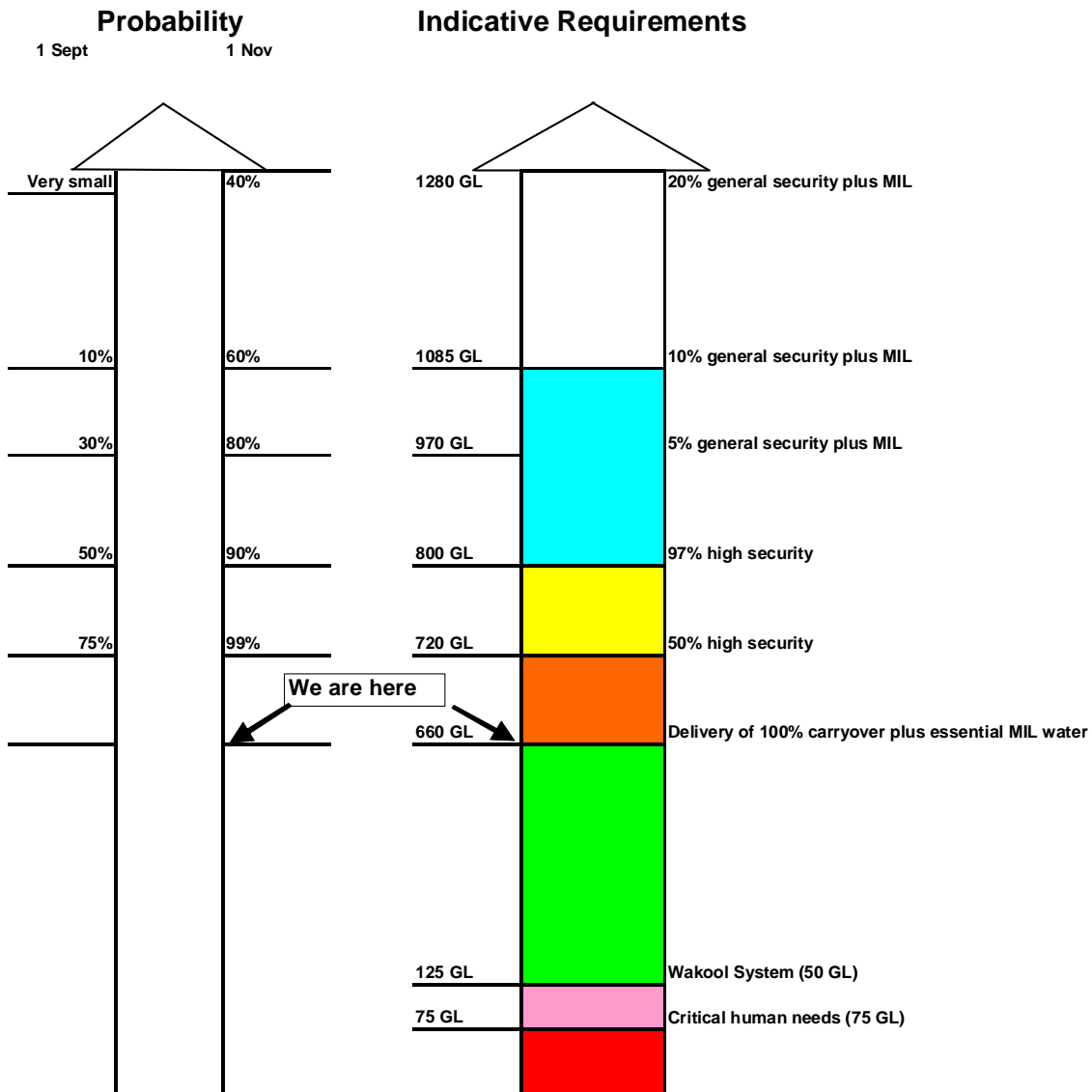
In addition to the trigger points, the following rules will apply:

- Councils may purchase water on the temporary market to allow town water restrictions to be eased from Level 4 up to Level 3 restrictions. However, this does not apply to groundwater in towns where water is being diverted from emergency bores that have been funded by the NSW Government to provide for critical human needs.
- Councils will be able to water parks, school grounds and sports fields within their town water supply allocation.
- Private diverters and domestic bore owners will be required to observe the same restrictions as their local council area.
- Town water supplies from aquifers are subject to same restrictions as surface water.

## Outlook and water availability for 2010/11

Although reserves are better than at this time last year, the lack of autumn rain and the forecast drier than median winter rainfall conditions will keep opening year general and high security water allocations low or zero. The likelihood of improved conditions as the year progresses is as follows:

### □ NSW Murray Valley Outlook As at 15 June 2010



NOTE: The volumes above are based on dry tercile, multi history modelling and are indicative only. They may change depending on when improvements occur and if they are accompanied by heavy local rain. Management of improved allocations will be discussed with the Critical Water Advisory Group.

## **COMPLIANCE**

The NSW Office of Water's Drought Contingency Planning Program will only work if everyone adheres to the restrictions and is careful with **all** water use. To ensure that the system is run fairly, the community should report any suspected breaches to the Office's Compliance Unit on 1800 633 362 or by email to [watercompliance@water.nsw.gov.au](mailto:watercompliance@water.nsw.gov.au). All reports are confidential.

**Contact: Anne Brook 02 6701 9662**

The NSW Office of Water is a separate office within the  
**Department of Environment, Climate Change and Water**

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