Australian Government

MURRAY–DARLING BASIN AUTHORITY

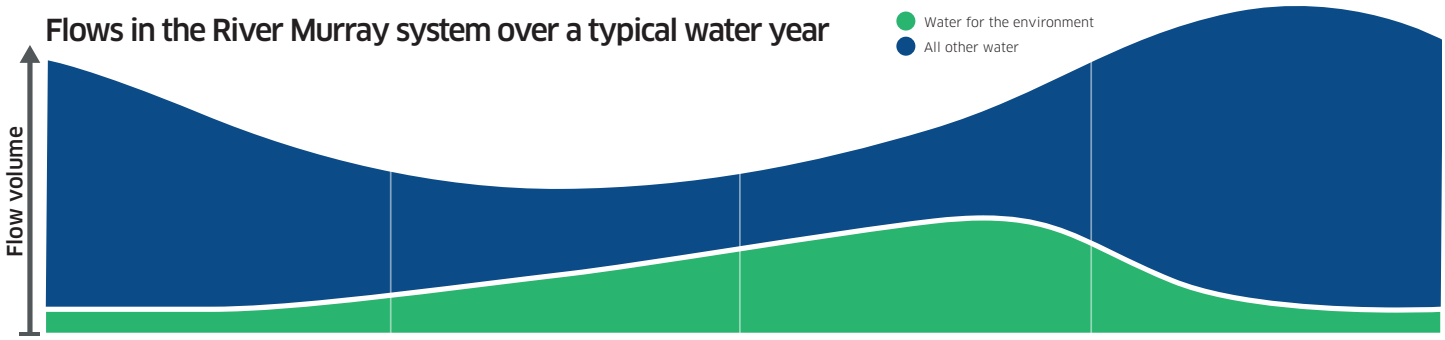
Flows in the River Murray System – September 2020

Flows in the River Murray System vary widely depending on a range of factors, including rainfall, inflows, evaporation, and demand for water for human use.

At any given time, water flowing through the river is destined for various uses, including irrigation, industry, communities, the environment, and meeting South Australia's flow entitlement. The exact mix of these flow components is determined by demand and water availability, amongst other factors.

The graphic below is indicative of how water flow is managed throughout the seasons across a typical year.

Flows in the River Murray system over a typical water year



Autumn
- River operations focus on managing dam storage levels and river system for the following water year
- River flows are relatively stable
- Medium demand for consumptive use (irrigation, industry, communities)
- Water for the environment flows are low
- Dam storage levels decline

Winter
- River operations focus on capturing inflows from tributaries and meeting early season demand*
- River flows are highly variable
- Lowest demand for consumptive water (irrigation, industry, communities)
- Water for the environment flows increase
- Dam storage levels increase

Spring
- River operations aim to capture water inflows and manage dam storage levels for summer demand*
- Increasing demand for consumptive water (irrigation, industry, communities)
- River flows are highly variable
- Water for the environment flows are highest
- Dam storage levels increase due to higher inflows

Summer
- River operations focus on managing water supply to meet large system demand*
- River flows are relatively stable
- Highest demand for consumptive water (irrigation, industry, communities)
- Water for the environment flows decrease
- Dam storage levels decline

* including meeting South Australia's flow entitlement

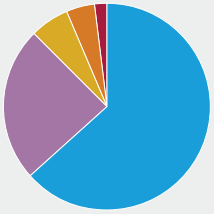
Water for the environment

Overall, water for the environment is a small percentage of the total water used in the Murray–Darling Basin.

The volume of water for the environment used over the past five years increased slightly as more water became available. The average use over this period was 20.4% of the total water used in the Basin.

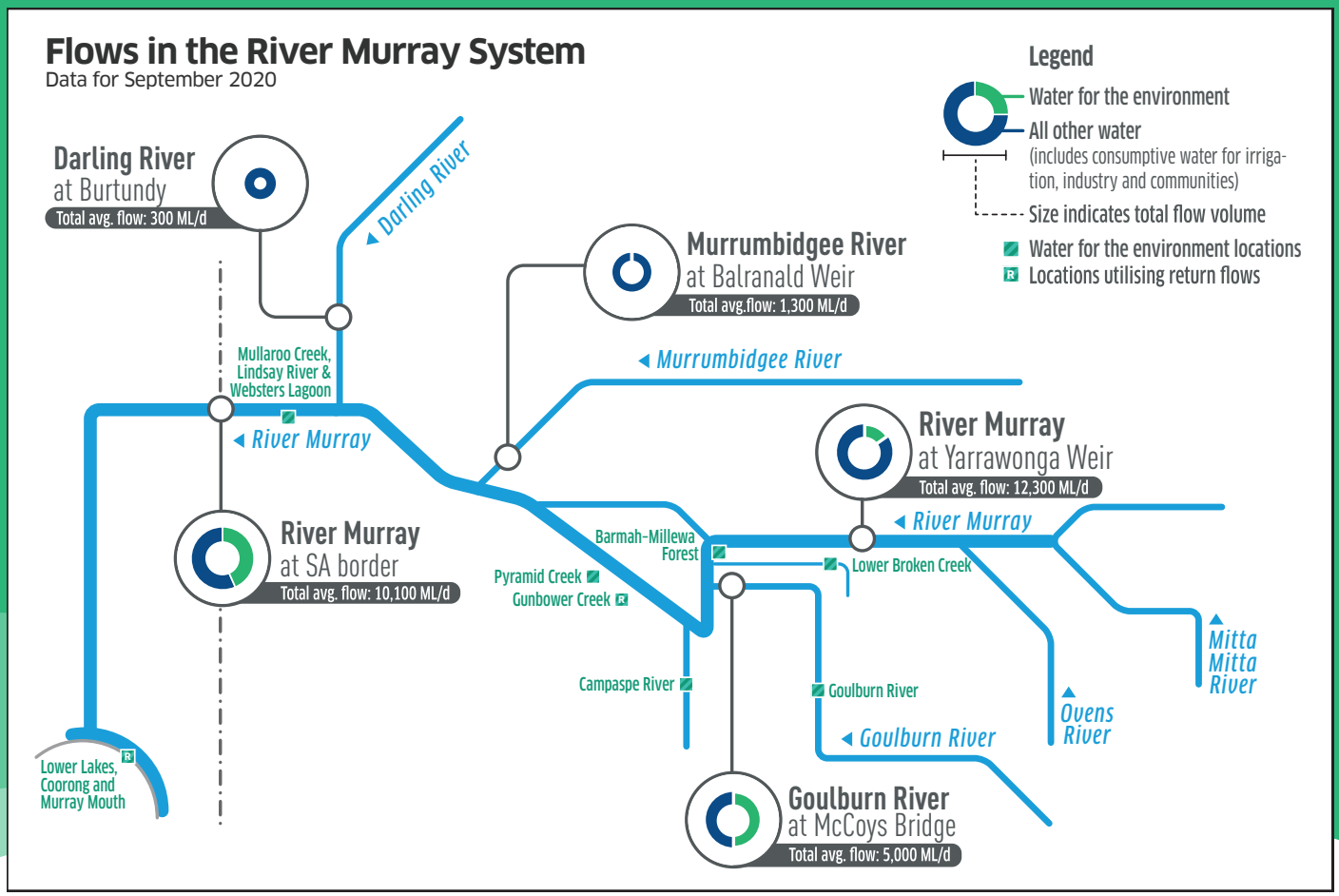
Importantly, water held for the environment uses the same entitlement framework as consumptive users. In any given year the amount of water available for delivery to key environmental sites is determined based on the same rules that apply to all other consumptive water uses.

Who holds and manages water for the environment (based on entitlement volume at June 2018)



Water manager	% of total
Commonwealth Environmental Water Holder	63%
Jointly held	24%
New South Wales	6%
Victoria	5%
South Australia	2%

Source: Southern Connected Basin Environmental Watering Committee Annual Report



Information in the figure above is for the month of September 2020 and may not include recent rainfall or delivery of water for the environment in the Murray system. Information in this figure is an average estimate over the past month and formal accounts from Basin state governments may vary. Water for the environment in the figure above represents water that is held by environmental water holders, through entitlements. Other water that flows through the river can also achieve environmental outcomes.

River flow information

Up until late September, the flow across the South Australian border was unregulated as flows generated by rainfall downstream of major storages in the Upper Murray (Hume & Dartmouth) could not be stored in Lake Victoria. Once the unregulated flow event concluded, the flow to South Australia returned to the normal delivery of Entitlement plus traded volumes and water for the environment.

Delivery of water for the environment continued during the month, with volumes from the Lower Broken Creek, Campaspe River and Goulburn Rivers as well as Hume Dam.

Intended environmental outcomes

Location	Return flows used	Intended environmental outcome(s)
River Murray Channel multi-site delivery	N/A	Provide stable water levels that support Murray cod nesting. Increase connectivity between the River Murray and the Barmah-Millewa Forest to increase productivity in the river and supports plants and animals in the forest, and deliver water to downstream sites connecting the length of the River Murray.
Barmah-Millewa Forest	N/A	Provide flows in forest waterways to maintain habitat for native fish and turtles, facilitate movement of native fish between creeks and the river and remove accumulated organic matter from the waterways to cycle carbon to the river.
Lower Broken Creek	N/A	Protect and increase native fish populations and avoid excessive build-up of azolla fern.

Location	Return flows used	Intended environmental outcome(s)
Goulburn River	N/A	Protect and boost populations of native fish, maintain abundant and diverse waterbugs and increase water dependent plants in the river channel and banks.
Campaspe River	N/A	Provide habitat to help protect and increase populations of native fish and maintain resident platypus populations.
Gunbower Creek	Yes	Maintain breeding habitat and food resources for native fish (such as Murray cod).
Gunbower Forest - Reedy Lagoon and Black Swamp	Yes	Maintain wetland water depth and extent to support growth and recruitment of plants and provide feeding and refuge habitat for waterbirds, turtles, frogs and native fish.
Pollack Swamp	No	Provide critical wetland refuge habitat for a range of native plants and animals.
Thule Creek	No	Provide habitat to help protect and increase populations of native fish, maintain River Red gum health and provide habitat for colonial nesting waterbird breeding.
Buccaneit-Cunninyeuk creek system	No	Provide habitat to increase populations of native fish and maintain River Red gum health.
Cockrans-Jimaringle creek system	No	Provide habitat to increase populations of native fish and southern bell frogs, and maintain River Red gum health.
Pyramid Creek	No	Maintain connectivity between pools and provide habitat for fish and waterbugs.
Lower Darling River	No	Small increase to baseflows to improve the condition of the Lower Darling (Baaka) and assist native fish population recovery by supporting breeding opportunities of primarily Murray cod (and potentially golden perch and silver perch) this spring.
Mullaroo Creek and Lindsay River	No	Provide flows for fish to swim, feed and breed, increase abundance of wetland plants and provide feeding and breeding habitat for waterbirds.
Pike and Katarapko floodplains	Yes	Support the health and resilience of key wetlands using the new environmental regulators to get water from the Murray River up and out onto the floodplains to create more natural wetting and drying cycles in the creeks and wetlands.
Lower Lakes, Coorong and Murray Mouth	Yes	Spring barrage releases for fish migration and to improve water quality and diversity of habitat in the Coorong and manage lake levels.

More information on river flows and water for the environment

Live River Data
riverdata.mdba.gov.au

River Murray Weekly Report
mdba.gov.au/river-information/weekly-reports

Water sharing in the River Murray
www.mdba.gov.au/river-information/water-sharing

Water use in catchments
www.environment.gov.au/water/cewo/catchment

FLOW Monitoring, Evaluation and Research
flow-mer.org.au

Delivering water for the environment
mdba.gov.au/managing-water/water-for-environment/water-over-time