Australian Government

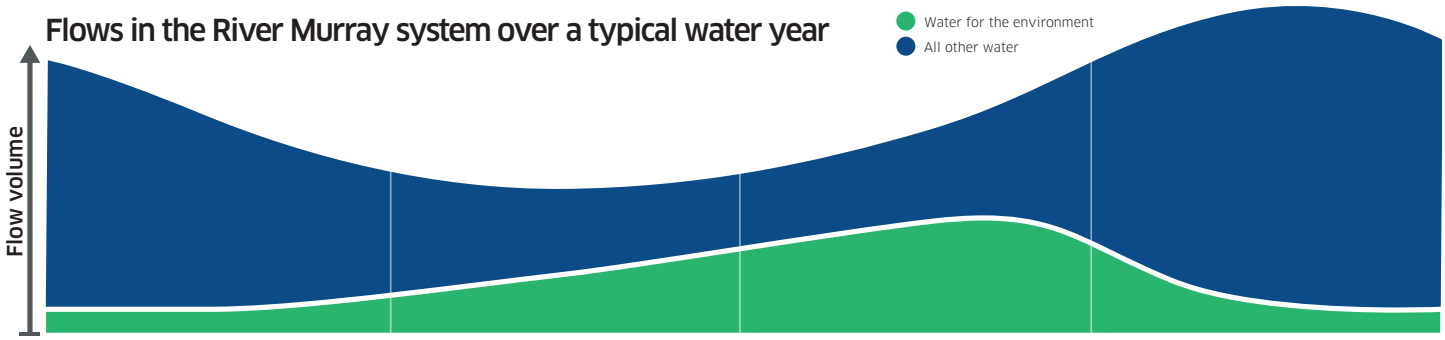
MURRAY–DARLING BASIN AUTHORITY

Flows in the River Murray System – December 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.



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

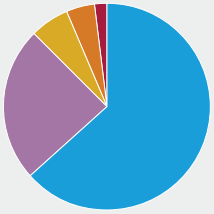
Water for the environment

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.

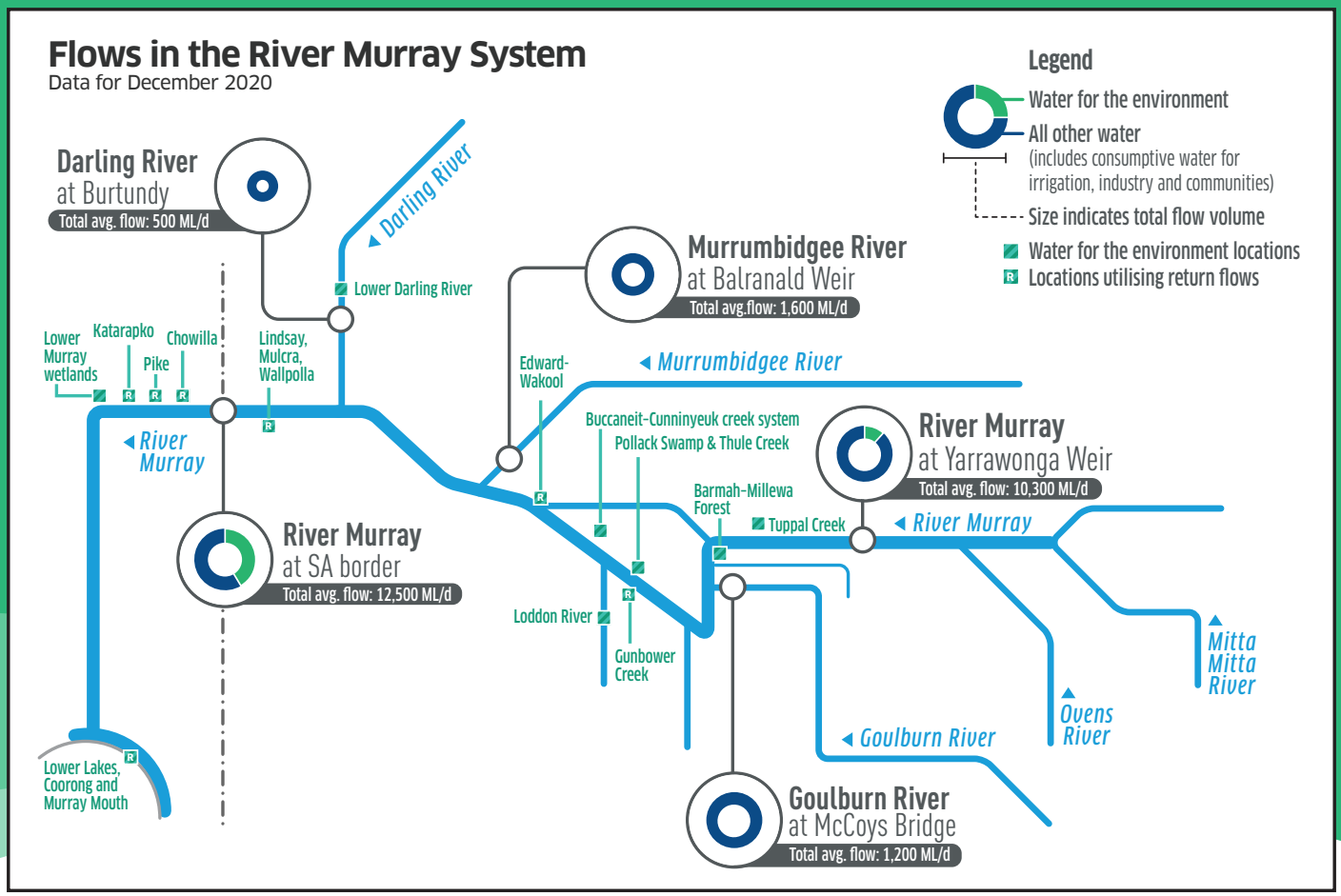
Importantly, water held for the environment uses the same entitlement framework as consumptive users. In any given year the amount of water available for delivery to key environmental sites is determined based on the same rules that apply to all other consumptive water uses.

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 December 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

The December flow to South Australia comprised of water for South Australia's entitlement, as well as traded volumes and water for the environment.

Delivery of water for the environment continued during the month, with water delivered from the Lower Darling and Loddon Rivers, as well as Hume Dam.

For the latest information on water for the environment see the River Murray weekly report.

Intended environmental outcomes

Location	Return flows used	Intended environmental outcome(s)
River Murray Channel multi-site delivery	N/A	• provide flows that connect the River Murray from the source to the mouth • nourish wetlands, creeks and billabongs • slowly decreasing flows through the month to support Golden perch and Murray cod breeding, and providing opportunity for fish to move from floodplain creeks back into the main stem of the River Murray
Barmah-Millewa Forest	N/A	• provide flows in forest waterways to maintain habitat for native fish and turtles • encourage movement of native fish between creeks and the river • flush organic matter from the forest waterways to cycle carbon and boost food production in the River Murray • support wetland habitat and waterbird nesting including ibis, spoonbills and the threatened Australasian bitterns
Edward-Wakool	Yes	• provide higher flows through the creek system to support native fish and fringing vegetation

Location	Return flows used	Intended environmental outcome(s)
Gunbower Creek	Yes	• maintain breeding habitats and food resources for native fish such as Murray cod
Pollack Swamp	No	• provide critical wetland refuge habitat for a range of native plants and animals
Thule Creek	No	• provide habitats to help protect and increase populations of native fish and maintain river red gum health • provide habitat for colonial nesting waterbird breeding
Buccaneit-Cunninyeuk creek system	No	• provide habitat to increase native fish numbers • maintain river red gum health
Tuppal Creek	No	• provide habitat to increase native fish numbers • maintain river red gum health
Loddon River	No	• maintain an adequate depth in pools for aquatic plants and to provide habitat for waterbugs, fish and rakali (water rats) • provide continuous flow through the reach, to maintain water quality
Lower Darling River	N/A	• small increase to baseflows to improve the condition of the Lower Darling (Baaka) • assist native fish recovery by supporting Murray cod breeding (and potentially golden perch and silver perch breeding)
Lindsay, Mulcra, Wallpolla	Yes	• provide healthy wetland refuge habitat for a range of native plants and animals supporting foraging and breeding of native waterbirds, fish, frogs and turtles
Chowilla floodplain	Yes	• provide healthy wetland refuge habitat for a range of native plants and animals
Pike and Katarapko floodplains	Yes	• operate new environmental regulators to inundate floodplain areas to support the health and resilience of native vegetation, wetland and anabranch habitats
Lower Murray wetlands	No	• provide healthy wetland refuge habitat for a range of native plants and animals
Lower Lakes, Coorong and Murray Mouth	Yes	• early summer barrage releases for fish migration and black bream recruitment • improve water quality and diversity of habitat in the Coorong

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