

Operational scenarios for the delivery of

WATER FOR THE ENVIRONMENT

River Murray 2023-24



Australian Government



We acknowledge and pay respect to the First Nations of the River Murray, connected waters and surrounding lands, and recognise them as traditional custodians and occupants of these land and waters. Further, we acknowledge the spiritual, cultural, social, environmental and economic practices are of continuing importance to First Nations today. We recognise the important traditional knowledge and cultural values that have been shared in natural resource management and will continue to work closely with First Nations to heal country.

Healthy Rivers - Healthy Communities

Water for the Environment





Planning for river health outcomes in 2023-24




Every year, environmental water holders work with river operators and communities to plan for all weather and climate scenarios. Water for the environment is used and reused many times as it flows along the River Murray, targeting multiple sites.




This map reflects the volume of water for the environment potentially available to support environmental outcomes at key sites along the River Murray in 2023-24.





The volume identified at each site is represented as a range. The scale of actual watering is determined by conditions and limits on delivery throughout the year. Natural flows can support environmental objectives at sites, meaning less is needed from a water for the environment allocation.





NOTE: This is not a complete list of watering actions or sites where water for the environment will be delivered in 2023-24.





L	Lower Darling / Baaka and the Great Darling Anabranch: 167 – 283 GL
	Support recruitment and dispersal following breeding
	Improve wetland and fringing vegetation
	Improve habitat condition to support breeding events
	Improve connectivity between floodplains and river and provide refuge habitat



I	Chowilla Floodplain: up to 8 GL
	Maintain viable native tree populations; Improve wetland vegetation condition
	Support breeding, population abundance and diversity
	Improve habitat conditions to support native animals




J	River Murray – Lower reaches: 320 – 672 GL
	Increase availability of faster flowing habitats; Support spawning and development of golden and silver perch
	Improve condition of riverbank and wetland vegetation
	Better regulate temperature ranges in weirs to help alleviate harmful algae blooms



K	Lower Lakes, Coorong and Murray Mouth: 871 – 2,466 GL
	Support species migration and recruitment
	Maintain or improve aquatic vegetation condition including <i>Ruppia tuberosa</i>
	Maintain habitat to support waterbird populations
	Support aquatic habitat through variable salinity regimes




H	Lindsay, Mulcra and Wallpolla Islands: 2 – 3 GL
	Maintain fast-flowing water to cue movement and spawning; Improve fish passage and dispersal
	Maintain habitat for aquatic vegetation
	Provide feeding habitat for native waterbirds
	Improve connectivity between Murray River and Lindsay, Mulcra and Wallpolla Islands




G	Hattah Lakes: up to 11 GL
	Maintain small- and large-bodied native fish populations
	Improve vegetation condition and improve wetland species richness and abundance
	Support conditions for breeding and fledging
	Improve productivity linkages between river and floodplain



C	Murrumbidgee River flows into the River Murray: 300 – 600 GL
	Support native fish breeding and movement
	Improve wetland and fringing vegetation

D	River Murray – Upper to mid reaches: 460 – 600 GL
	Support native fish habitat, breeding and movement
	Improve riverbank vegetation
	Connect the River Murray from headwater storages to the river mouth; Improve system productivity and ecosystem health

E	Koondrook-Perricoota Forest: up to 95 GL
	Improve the extent and condition of floodplain communities including river red gum forests
	Improve key habitat and increase population

F	Gunbower Forest: up to 86 GL
	Support access to breeding habitat for small-bodied native fish
	Improve condition of river red gums and other flood-dependent vegetation species; support the growth and recruitment of wetland and floodplain species
	Provide foraging and breeding habitat for native waterbirds

B	Barmah-Millewa Forest: 38 – 170 GL
	Maintain native fish habitat and increase movement
	Maintain and Improve wetland vegetation condition; Support and Improve the condition of floodplain marsh and low-level river red gum trees
	Support waterbird breeding and wetland habitat for feeding

A	Goulburn River flows into the River Murray: 163 – 609 GL
	Support native fish breeding and movement
	Recover riverbank vegetation

Tributary environmental flows from the Goulburn, Murrumbidgee, and Lower Darling rivers are coordinated with flows from the River Murray to improve system-wide outcomes for native fish, vegetation, and waterbirds.

2023-24 Outlook for Held Environmental Water	Extreme dry 99%	Very dry 90%	Moderate 75%	Near average 50%	Wet 25%
Water for the environment availability	2,450 GL	2,800 GL	2,840 GL	2,900 GL	2,960 GL

Note: Percentages reflect estimates (annual exceedance probability) for River Murray System inflows.

Water is often used and reused across sites. Therefore, volumes for sites cannot be added up to determine the total volume of water for the environment available. An increase in planned volume for a site is often associated with wetter conditions.

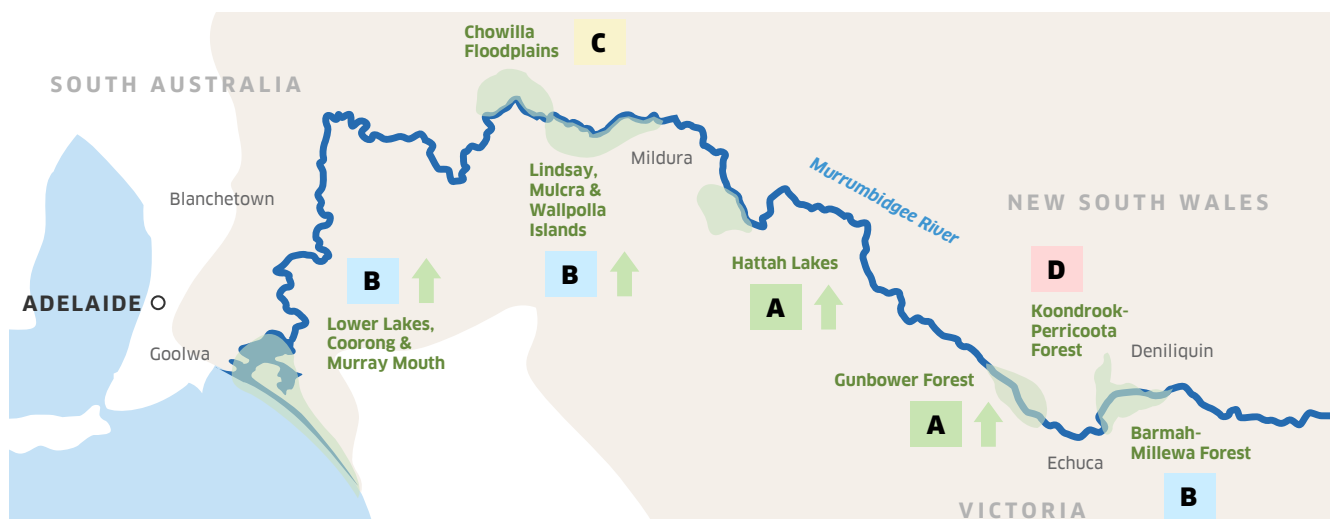
Monitoring at River Murray icon sites

Ecological monitoring tracks the environmental condition of sites over time and assesses the ecological response to water for the environment.

Below is a snapshot of monitoring outcomes from The Living Murray icon sites. These sites are locations along the River Murray selected for their high ecological and cultural significance.

Key outcomes recorded in 2021-22

This map reflects site condition based on 2021-22 monitoring results. Icon site grades, ranging from A-D, vary over-time and reflect changing environmental conditions and the recent delivery of water for the environment. Arrows represent where sites grades have improved or declined between 2020-21 and 2021-22. Monitoring results for 2022-23 are currently being analysed. See the [MDBA website](#) for more information.



Environmental outcomes over time

The last 16 years of ecological monitoring has demonstrated that where we have been able to deliver water for the environment and operate environmental works, the health of rivers, wetlands and floodplains has improved, despite variable weather conditions. See figure below.

Most of the icon sites have progressively improved their ecological condition, achieving more ecological outcomes, despite some dry weather conditions like the ones experienced from 2017-18 till 2020-21.

		Barmah Millewa Forest	Gunbower Forest	Koondrook Perricoota Forest	Hattah Lakes	Lindsay/Mulcra Wallpolla Islands	Chowilla	Lower Lakes, Coorong, Murray Mouth
	2021/22	B	A	D	A	B	B	B
	2020/21	B	B	D	A	B	C	C
	2019/20	B	B	D	A	B	C	C
	2018/19	B	A	D	B	B	B	C
	2017/18	A	B	D	A	B	B	C
	2016/17	A	B	C	A	B	A	B
	2015/16	B	B	D	A	B	C	C
	2014/15	B	B	D	A	-	C	B
	2013/14	C	B	D	B	C	C	B
	2012/13	C	B	D	C	C	C	B
	2011/12	C	C	D	B	B	C	B
	2010/11	B	B	D	C	C	B	D
	2009/10	C	C	D	D	D	C	D
	2008/09	D	C	D	D	D	C	D
	2007/08	D	D	D	D	D	-	D

Sites with environmental works/years where works used

A - Excellent	B - Good	C - Fair	D - Needs attention
Most (75-100%) of ecological objectives have been met.	More than half (50-74%) of ecological objectives have been met.	Fewer than half (25-49%) of ecological objectives have been met.	Few (0-24%) of ecological objectives have been met.

NOTE: Objectives vary between sites and therefore this table should be interpreted as how individual sites are faring over time as apposed to a comparison between sites.

Water for the Environment

Water for the environment is water allocated and managed to improve the health of the rivers, wetlands, and floodplains across the Murray-Darling Basin.

Priorities for coordination in 2023-24:

- Coordinate flows between the River Murray and its tributaries.
- Build flows and connectivity along the River Murray, from its headwater storages to the Lower Lakes, Coorong and Murray Mouth.
- Following a strong year of waterbird breeding in 2022-23, aim to boost habitat and food to support these youngsters through to juveniles.
- Continue to provide connectivity for native fish to improve available habitat and food.
- Deliver environmental water with other water in the river to achieve better outcomes.
- Improved engagement and involvement of First Nations in the planning and delivery of water for the environment.



Consolidation of Ecological Gains

The Australian climate is highly variable and punctuated by periods of drought and floods. Delivering water for the environment in wet years helps to restore and enhance the condition of our rivers, floodplains and the creatures that depend on them.

The southern Basin has experienced wetter conditions since 2020-21, including a particularly wet 2022-23 where flows inundated parts of the floodplain for the first time in 50 years. This sustained wet period has revitalised the landscape and on balance will see improvements in the health of many of our rivers in the long term.

With a drier forecast for 2023-24, environmental water holders are focusing on building upon and maintaining this improved condition where possible. This includes a focus on providing habitat and food for many of the juvenile waterbirds and other animals that were born during the wetter conditions.

Delivery of water for the environment will also help the landscape buffer against the next dry period. This provides a lifeline for the environment, so it can recover and rebuild when wetter conditions recommence.

We're in this together



For more information, go to the Southern Connected Basin Environmental Watering Committee's page at www.mdba.gov.au/about-us/governance-and-committees/environmental-watering-committees/southern-connected-basin or visit the website of the environmental water holder agencies.