



Department of Planning, Industry and Environment

Murray and Lower Darling Baaka Catchments

Water for the Environment: Annual Priorities 2021-22



Water for rivers and wetlands



In 2021-22, water managers will continue to build on the gains of previous years through the effective and efficient management of water for the environment.

During 2020-21, the Department of Planning Industry and Environment (the Department) partnered with Murray Irrigation, private landholders and the Commonwealth Environmental Water Office to deliver water into the Tuppal, Thule, Jimaringle-Cockran, Buccaneit, Yarrein and Murrain-Yarrein creeks to support in-stream vegetation, waterbirds, native fish and water quality.

The Department continued to deliver water into several private property wetlands in the central Murray and lower Murray to support recovery efforts for the endangered southern bell frog, one of the NSW Government's Saving Our Species projects.

A spring environmental flow and elevated winter flow was delivered into the Lower Darling Baaka River using Commonwealth and The Living Murray allocations. Spawning of Murray cod and golden perch was supported by the spring flow, while survival of juvenile fish was supported by the elevated winter flows and contributed to restoring the river's native fish populations.

In 2021-22, managed water will target a range of outcomes, including flow regimes that support the nationally threatened Australasian bittern, improved conditions for small-bodied native fish, connectivity, refuge and dispersal flows for large-bodied native fish, and support for river red gum forest ecosystems.



Weather and water forecast



In April 2021, the Bureau of Meteorology confirmed the 2020–21 La Niña has now passed. Climate model outlooks indicate the El Niño–Southern Oscillation (ENSO¹) is now neutral with no sign of either La Niña or El Niño developing at least until September 2021. Rainfall was below average and temperatures warmer than average in May and June for eastern mainland Australia, and this will continue in July. Therefore, the availability of planned and licenced water is expected to be limited in the Murray catchment early in the 2021–22 water year.

Water managers have prepared watering plans that consider a range of weather and water availability scenarios. This is known as resource availability scenario planning. As at April 2021, dry conditions are forecast for the Murray and Lower Darling Baaka catchments in 2021–22.

Resource availability scenario



Very dry

Main aim: Protect

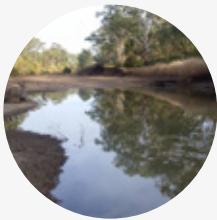
- Avoid critical loss
- Maintain key refuges
- Avoid catastrophic events



Dry

Main aim: Maintain

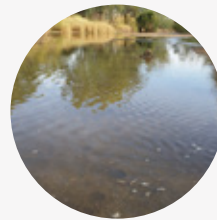
- Maintain river functioning
- Maintain key functions of high priority wetlands



Moderate

Main aim: Recover

- Improve ecological health and resilience
- Improve opportunities for plants and animals to breed, move and thrive



Wet to very wet

Main aim: Enhance

- Restore key floodplain and wetland linkages
- Enhance opportunities for plants and animals to breed, move and thrive

¹ENSO: The interaction between the sea surface and atmosphere over the Pacific Ocean which results in dryer or wetter conditions (El Niño or La Niña).

Key planned actions for 2021-22



Waterbirds

Watering events (18 gigalitres) are planned for the Murray Valley national and regional parks to support sites that contain nesting Australasian bitterns and other native birds. Australasian bitterns are an important story telling species for Aboriginal people.

Deliveries of up to 1 gigalitre for Lake Agnes are planned to promote waterbird breeding for species such as blue-billed ducks.

Deliveries up to 3 gigalitres are planned for Pollack Swamp which is a breeding site for egrets, herons and little bitterns.



Native fish

Murray River multi-site flows (up to 150 gigalitres) are planned from Hume Dam to South Australia to support native fish and instream productivity.

Fish flows (up to 60 gigalitres) in the Edward- Wakool system will provide benefits for native fisheries, instream vegetation and food webs.

Water will be delivered via the Murray Irrigation system to provide refuge habitat for native fish if an oxygen depleted blackwater event occurs.

A spring flow is planned for the Lower Darling Baaka River to help restore native fish populations. There may be potential for a flow down the Great Darling Baaka Anabranh, water volumes permitting. The Darling Baaka River is significant to the Barkandji people and regional communities and is a major source population for golden perch in the southern basin rivers.



Vegetation

Flows (5 gigalitres) will be delivered to private wetlands providing critical habitat for southern bell frogs and promoting vegetation and other wildlife.



Connectivity

Flows (up to 30 gigalitres total) will provide connectivity between Tuppal Creek and the Edward River, Cunninyeuk, Murrain Yarrein and Cockran-Jimaringle creeks and the Niemur, Wakool rivers and Yarrein Creek. These flows provide in-stream vegetation, water quality, waterbird and native fish breeding, and carbon exchange (food web) outcomes.

A cultural flow of 30 gigalitres is planned in the Koondrook-Pericoota Forest. This will also benefit vegetation, birds and connectivity (with floodplain).

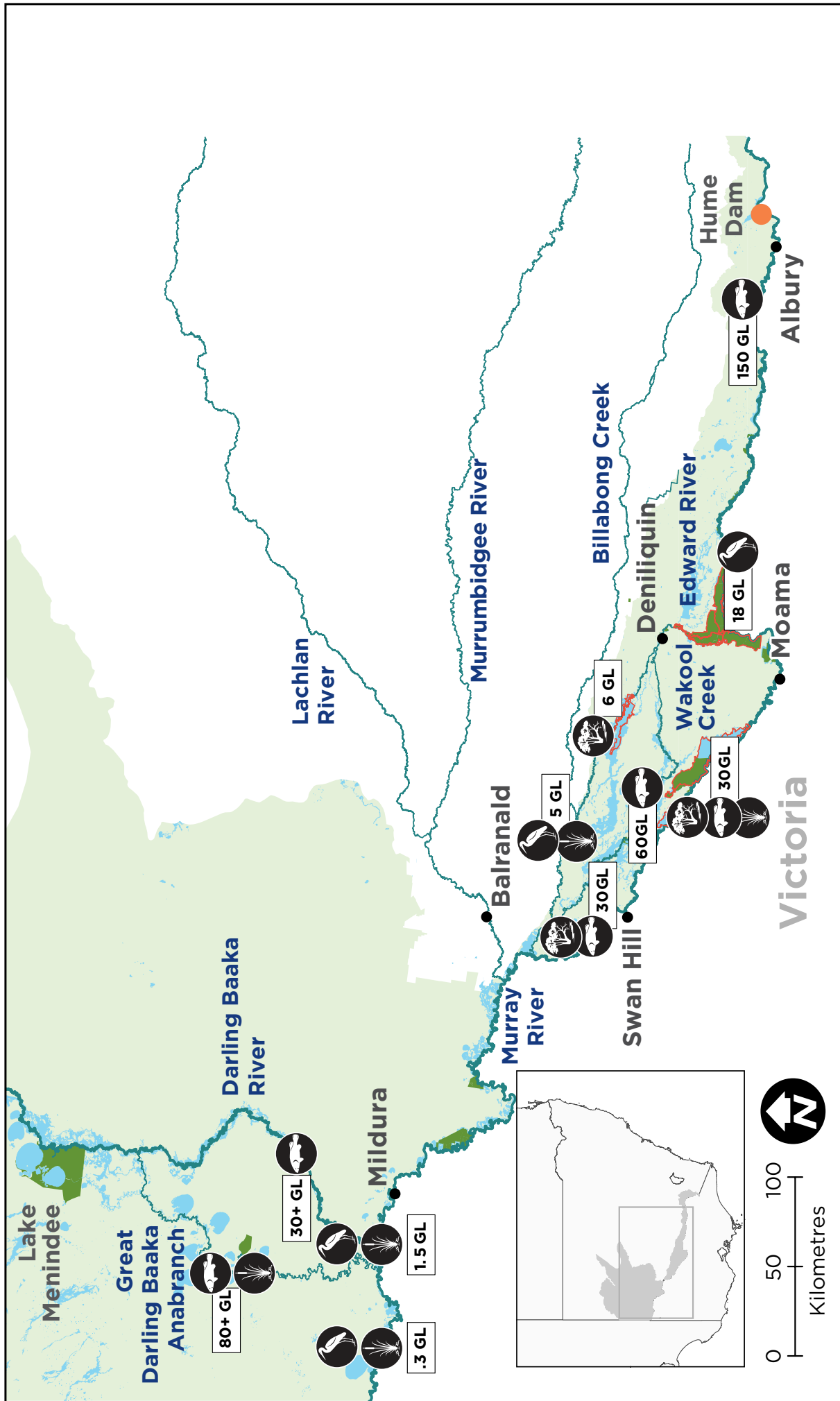


Figure 1 Map of proposed annual priority targets in the Murray and Lower Darling Baaka Water Resource Plan area 2021-22.

How we make decisions



The Department is supporting the health and resilience of rivers and wetlands by delivering water for the environment where and when it is needed.

We use the best available science, management expertise and experience to manage water across the landscape.

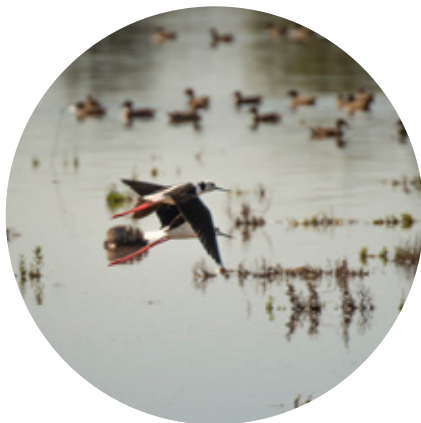
This statement of annual priorities identifies the waterways and wetlands that are likely to receive water.

Our decision-making process considers:

- expected availability of water in the coming year
- conditions of the previous year
- current health of the plants and animals in these ecosystems.

Community-based environmental water advisory groups provide feedback and advice to the Department on the management of water for the environment. Input from the relevant First Nations is also sought.

The NSW Government works with the Commonwealth Environmental Water Holder to manage water in the catchments. Jointly held water allocations are also managed in collaboration with partner agencies.



What is water for the environment?

Water for the environment is a share of the water in dams and rivers that is set aside to support the long-term health of local rivers, creeks and wetlands. Healthy rivers carry water to homes, farms, schools and businesses. The rivers and wetlands are important cultural and spiritual sites for Aboriginal people, as well as the broader community.

About the catchments



The Murray and Lower Darling Baaka catchments cover 98,300 square kilometres and include the world's largest stand of river red gums and Australia's longest river, the Murray. Ramsar-listed sites include the Millewa, Werai and Koondrook-Perricoota forests, Chowilla Floodplain and River Murray Channel.

Prior to the 2018-19 fish kills, the Lower Darling Baaka River supported one of the Basin's most robust Murray cod populations and was an important flow corridor for golden perch.

The Murray and Lower Darling Baaka catchments' wetlands and rivers also support important Aboriginal cultural heritage values, with more than 968 cultural heritage sites formally recorded. Aboriginal people continue to contribute important knowledge to inform the management of water for the environment.



Table 1 Expected environmental water volumes available at 1 July 2021.

Source	Maximum volume available (gigalitres – GL)	Volume expected 1 July under current conditions (gigalitres – GL)
Planned environment water		
Barmah–Millewa Forest environmental water allocation (BMF EWA)	700 GL (To 100 available annually to NSW and Victoria)	344 GL Current balance for the NSW portion of the BMF EWA.
Murray additional environmental water allowance (MAA)	29 GL Available to NSW only	5.7 GL
River Murray Increased Flow	Up to 70 GL Available annually to NSW and Victoria	No River Murray Increased Flow available at this stage.
Water licenced to NSW		
Murray – conveyance	30 GL	<15 GL
Murray – high security	2.8 GL	1.9 GL
Water licenced to the Commonwealth		
Murray – general security	369.6 GL	75.6* GL
Murray – high security	17.9 GL	17.3* GL
Murray – conveyance	20.2 GL	10.7* GL
Lower Darling – general security	21.6 GL	21.6* GL
Lower Darling – high security	4.2 GL	4.2 GL
NSW water licenced to The Living Murray (MDBA)		
Murray – general security	83.0 GL	39.1 GL
Murray – high security	5.1 GL	5.0 GL
Lower Darling – general security	47.8 GL	47.8 GL
Lower Darling – high security	0.5 GL	0.5 GL

* This is a combination of current allocations and future forecast allocations. **Note:** This is an indicative summary of expected volumes to be available. For further detail and information on available volumes, please contact the region via Department enquiries on 1300 361 967. 1 gigalitre = 1000 megalitres; 2.5 megalitre = 1 Olympic swimming pool