

RIVER REACH



October 2019

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A message from Chief Executive, Phillip Glyde



The first month of spring has been a busy one, starting off with a tour of the southern Basin by Minister David Littleproud, the Inspector-General of Murray–Darling Basin Water Resources, Mick Keely and our MDBA representative Executive Director Andrew Reynolds. Making stops at numerous sites, agribusinesses and towns such as Renmark, Echuca, Swan Hill and Albury—and against a backdrop of a worsening drought—the group met with a diverse range of stakeholders from almond farmers and winegrape growers, to irrigators and members of the local community.

Hearing first-hand about the wide range of views and issues expressed by the people the group met, and about the challenges they expect to face as they come out of the driest winter since 1982, and the fourth driest on record—it's more important than ever that we engage with as many people in the Basin as possible.

We're going to continue to show up, answer questions and hear from locals. Kicking off this week, I was pleased to join with our colleagues from the Commonwealth Environmental Water Office, the Bureau of Meteorology and the Department of Agriculture, for the first two meetings in a series of Seasonal Outlook information sessions we're jointly holding across the southern Murray–Darling Basin.

The first session was held in Wentworth, New South Wales (NSW) on Monday and yesterday we were at Tailem Bend in South Australia (SA). Two more Seasonal Outlook sessions are planned for Friday next week (11 October) in the Victorian towns of Echuca–Moama and Shepparton. The sessions are intended for local residents to come along, find out about the climate outlook for the upcoming season, and get across what factors are

impacting the MDBA's operational decisions in the River Murray system this season. We'll also use this opportunity to outline how we'll continue to work with water holders to manage water for the environment, such as the coordinated pulse flow from the Goulburn River, and an increased release to the River Murray from Hume Dam—providing a timely and much needed 'spring fresh' along the length of the river.

The Authority also met in Taillem Bend this week, and given the South Australian location, the news that the Authority would be recommending both SA Eastern Mount Lofty Ranges and River Murray water resource plans (WRPs) to the Minister for an accreditation decision, is pleasing. The Authority, the MDBA's independent board, has also reaffirmed the role of water resource plans in setting sustainable diversion limits that allow for full allocation and use of water up to that limit. Following some recent feedback, yesterday we released a statement about this issue, particularly in the context of NSW's 20 draft WRPs for which NSW are currently seeking public comment.

We are always willing to shine the light on our work and in particular, we've reconfirmed our commitment to publicly publishing what it costs to run the River Murray system. The infrastructure on the Murray is worth around \$4 billion, and we spend in the order of \$70 million every year operating, maintaining, and renewing that infrastructure investment. It's therefore really important that people understand what that money delivers and we look forward to progressing our first report.

The Authority is currently seeking expressions of interest to fill two part-time positions, including the recently announced indigenous member. I encourage anyone interested in making an important and valuable contribution to the management of the Murray–Darling Basin's water resources, to [find out more](#). Applications close on Saturday 26 October.

More information

- [Minister Littleproud's media release](#) announcing the intention to publically release, every three years, the cost of operating the River Murray
- register to attend a [seasonal outlook information session](#)
- read the statement [providing clarity on water resource plans](#).

Keep up-to-date with our [MDBA media releases](#), and read the latest communiques:

- [Murray–Darling Basin Authority](#)
- [Basin Community Committee](#)
- our one-stop-shop for [water management 101](#) factsheets.

Water resource plan quarterly progress report has been released



Click on the image to watch a new video message about the progress of Basin state and territory water resource plans from MDBA spokesperson Dr Peta Derham.

The MDBA has just released the latest water resource plans (WRPs) quarterly report for the period up to 31 August, and speaking about the recent progress, Dr Peta Derham was pleased to report that four more plans have been accredited.

In August the Minister for Water Resources, David Littleproud accredited the South Australian Murray Region groundwater and surface water plan, and just in the last fortnight, has accredited a further four—Queensland’s Condamine–Balonne plan and Border Rivers–Moonie; and Victoria’s Wimmera–Mallee’s surface water and groundwater plans.

This means there are now six accredited WRPs, with Queensland’s Warrego–Paroo–Nebine accredited and in operation since June 2017. All Queensland plans are now accredited and in operation. These accredited water resource plans bring into effect new rules on how much water can be taken from the system to ensure all available water is shared fairly between communities, industries and the environment, on a region-by-region basis.

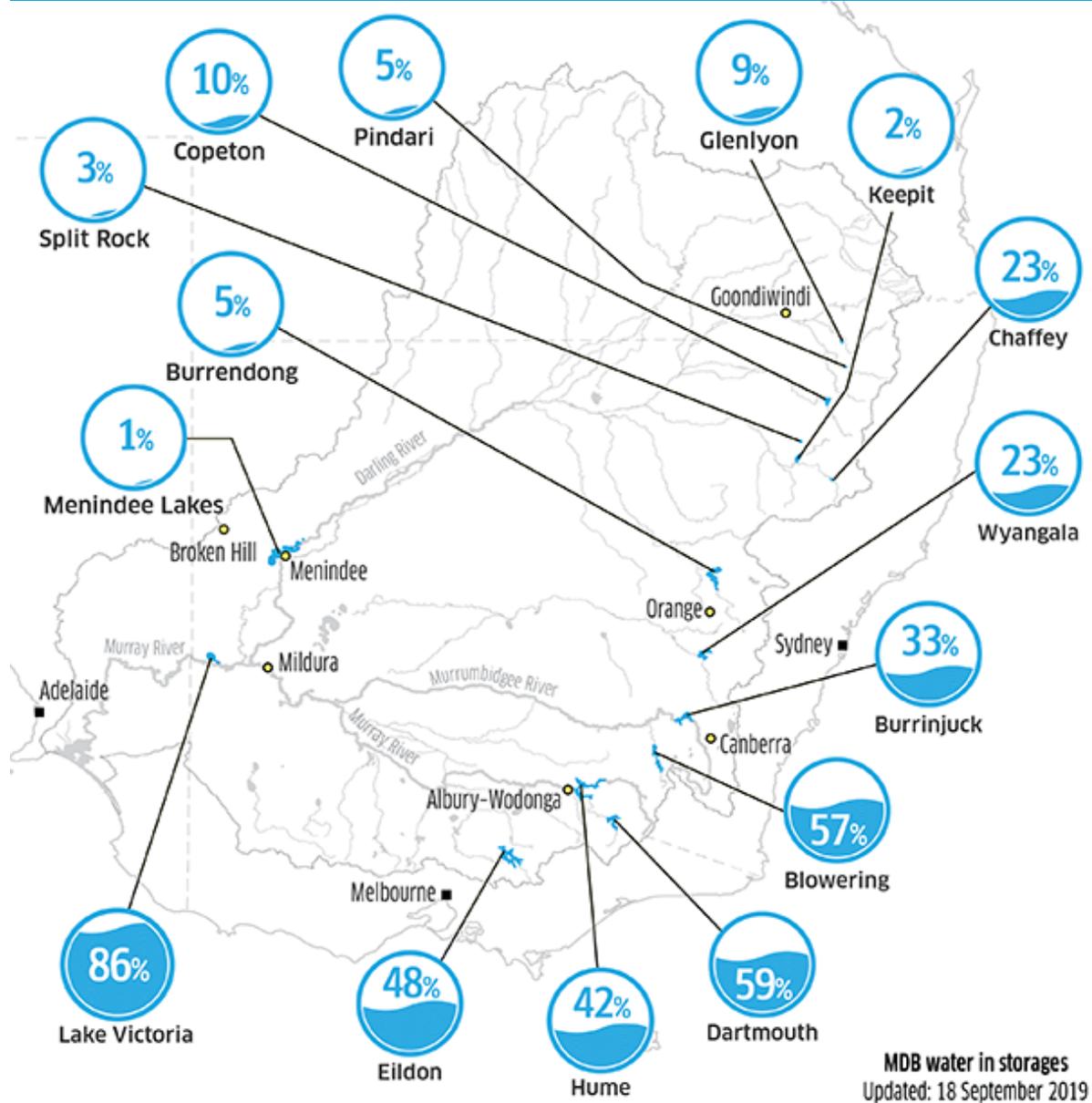
At this stage we are confident of recommending the remaining plans for South Australia and Victoria to the Minister according to schedule. We are providing assistance where we can to ensure the timely submission to the MDBA of high-quality plans by the New South Wales government, who are responsible for 20 of the 33 water resource plans.

WRPs are developed by Basin state governments, assessed by the MDBA who then provide a recommendation to the Commonwealth Minister responsible for water, for an accreditation decision.

Plans will continue to evolve and be adapted over time as new information becomes available. They may need to be re-accredited in the future as they are adjusted and improved.

- read the [MDBA media release](#) and [Minister Littleproud's release](#)
- for the status (as at 31 August) of all 33 Basin plans, read the [MDBA WRP quarterly report](#)
- visit the MDBA's [water resource plans](#) page for more information.

Murray River operations – an update on water storage levels & priorities during dry times ahead



Water in storages across the Murray–Darling Basin, as at 18 September.

As climatic conditions are expected to remain dry and system inflows remain low, the focus for river operators across the Basin is making the most of the water we have in storages. Operating rivers in drought is challenging and operators are preparing for a hot and dry summer.

In parts of the northern and central Basin, state water agencies are working hard to secure critical drinking supplies for towns and communities. Further south, although it is dry, there are still sufficient supplies to allow states to make an allocation against high reliability entitlements.

This means for the River Murray System, the priority for river operations remains focused on delivering water to users as efficiently as possible—within the bounds set by governments. Water users include towns, industry, irrigation, and the environment. All of these water users are important. This includes delivering water for the environment and this year deliveries aim to build resilience in the river system ecology for future dry times.

Water in storages across the entire Basin are currently at 37% of capacity (as at 18 September). In the southern Basin, the MDBA manages water in Hume Dam, Dartmouth Dam and Lake Victoria, and you can find out more about River Murray system water storage levels along with the latest flows, salinity and more on the [River Murray Data website](#).

The MDBA operates the River Murray on behalf of the New South Wales, Victorian and South Australian governments as set out in the Murray–Darling Basin Agreement.

Operating the River Murray is a complex and challenging task. As announced by Commonwealth Minister for water resources David Littleproud in a [media release](#) earlier this month, we will be reporting every three years on the costs of operating the River Murray and managing the \$4 billion of major infrastructure that helps control the flow and protects the quality of water in the River Murray system. The first report will be published in December. Irrigators will have access to information about how money is being spent and communities will know they are benefitting from a well-managed river system.

While the MDBA is responsible for running the River Murray in the southern Basin, the New South Wales and Queensland Governments are responsible for managing the system in the north, Victoria is responsible for the southern Victorian tributaries such as the Goulburn and the Campaspe, and South Australia is responsible for the Murray downstream of the South Australian border. It's important the MDBA has a whole-of-Basin view and we keep across what is happening in the northern Basin where the system is drier and there is less capacity to store water.

Find out more about managing water in the north by visiting:

- [New South Wales Department of Planning, Industry and Environment](#)
- [Queensland Government – Business Queensland](#).

And for further information about the MDBA's operation of the River Murray:

- sign-up to receive our [weekly update](#).

River Operations update – Andrew Reynolds



Murray-Darling Basin Authority

Interview with Andrew Reynolds – General Manager, MDBA River Operations

5:02



Click on the image above to hear our interview.

As we continue to experience the effects of the drought, hear from Andrew Reynolds, Executive Director of River Management about how the Murray–Darling Basin Authority manages the Basin’s water resources and the River Murray.



Each fortnight we publish a drought update which includes rainfall and water quality information from across the Basin.



View and bookmark the drought update.

More detailed and accessible water trade data – key to confidence in the Basin’s water trade market



Part of the MDBA’s role is to coordinate the trade of water entitlements and allocations between states and valleys within the southern connected system. Visit www.mdba.gov.au/interstate-water-trade to access this interactive map where you can hone in on each trading zone and find out the rules that apply.

It is estimated that 8.5 million megalitres of water, valued at approximately \$2 billion was traded in the Murray–Darling Basin during the 2017–18 water year. These markets and the trading policies behind them, are one of the key mechanisms for managing water scarcity in the Basin. Providing market participants with accurate and timely price information is critical to the operation of a well-functioning and sustainable water market.

Since undertaking a two-part audit of water trade price reporting in 2018–19 the MDBA continues to work with Basin state governments to improve water tracking between accounts, and put in place arrangements that ensure well-informed water price data is collected.

With an increasing number of brokers also providing market information into various online water trading portals, governments need to ensure that public data sources are accurate, usable and accessible for all market participants.

In support of this, funding has recently been made available to put in place online platforms that consolidate data from a number of sources and enhance water literacy and access.

The Bureau of Meteorology has received \$5 million in funding to develop a tool that for the first time will standardise, combine and generate the data they have from several sources, displaying it in real-time so that communities understand exactly how much water is available for irrigators, communities and the environment.

Two other online data portal initiatives have also recently gone live:

- the Victorian Department of Environment, Land, Water and Planning has launched 'Water Market Watch'—a tool particularly useful for market participants operating across the southern-connected Basin
- 'Waterflow' is a new web-based portal (with its mobile app version available shortly) where water market users will be able to access aggregated live buy and sell listings and near real time pricing.

The MDBA's role is to facilitate fair, consistent and transparent water trade across the Murray–Darling system. The MDBA regulates trade restrictions across the whole Basin including regulating state trading rules and Irrigation Infrastructure Operator trading rules. We also have powers to investigate allegations related to transparent water pricing and other matters including referring allegations of water theft to state governments.

For more information

- [audit results from the MDBA's recent assessment](#) of water traders' reporting compliance and the findings into state water trade price information
- MDBA's [audit and assurance work](#)
- [Basin Plan water trading rules](#)
- for more about Waterflow visit www.waterflow.io

Barrages – in for the long haul



The barrage at Goolwa, South Australia with very low water levels during the Millennium Drought, 2008.

A barrage sounds like footy fans letting off steam at half time but at the journey's end for the rivers of the Murray–Darling Basin, a barrage means something quite different.

If you visit the bottom of the Murray River, close to the river's mouth, you'd see a series of large concrete structures, the longest stretching more than three and half kilometres and which are collectively known as the barrages.

Their purpose is to separate the freshwater of the River Murray and lakes Alexandrina and Albert—both listed as internationally significant for their wetlands under the United Nations Ramsar convention—from the salty seawater of the Southern Ocean and the Coorong.

The barrages protect 250 kilometres of river system from potential inundation by salt water which would make the river water unusable for agriculture or human consumption, which is particularly important during times of drought when the amount of water available for consumption is reduced.

The barriers were built in the 1930s, along with a number of weirs and locks, to support the growing irrigation developments along the length of the Murray from South Australia to Yarrowonga.

With development came increased pumping of water from the river, which started to reduce the flows making it to the end of the system. When less water flows out, more saltwater can flow in and back-up into the river.

Despite this critical function, the barrages remain at the centre of ongoing debate about the historic nature of the Lower Lakes and whether they were always fresh water. Historic records from before the creation of dams, locks, weirs and the introduction of large scale irrigation, point to the Lower Lakes varying between fresh water and periods of estuarine conditions when river flows were low.

Without the barrages, that upstream movement of seawater would affect communities and the environment all the way to Lock One at Blanchetown, 275 kilometres from the river mouth.

These critical pieces of complex infrastructure are maintained and upgraded by the SA government and the MDBA, and just recently SA Water has been awarded the annual JS Collings trophy for having the best maintained piece of river infrastructure.

For more about the history of the barrages

- read a longer article posted on the MDBA's Chief Executive Phillip Glyde's [LinkedIn page](#) post.



The banner features a dark blue background with a white outline of Australia on the left. A hand icon with a glowing cursor points to the southern coast of Australia. The text 'Southern Basin Tour' is written in white on a dark red background at the top right. Below the map, the Australian Government coat of arms is displayed, followed by the names of the Australian Government, Department of Agriculture, Bureau of Meteorology, Murray-Darling Basin Authority, and Commonwealth Environmental Water Office, each on a separate line with a horizontal separator. At the bottom, a black bar contains the text 'Click here for more information about the two upcoming Victorian sessions on Friday 11 October' in white.

Southern Basin Tour

Australian Government
Department of Agriculture
Bureau of Meteorology
Murray-Darling Basin Authority
Commonwealth Environmental Water Office

Click here for more information about the two upcoming Victorian sessions on Friday 11 October

Modernising the River Murray



Click on the image to watch a video about the project made by the South Australian Department for Environment and Water.

The mighty River Murray has been regulated for more than 100 years. Since 1914, the Commonwealth, New South Wales, Victoria and the South Australian governments have been sharing the water across the southern Basin.

In 1914, the three state governments and the Commonwealth signed the River Murray Waters Agreement. This agreement set out the need to develop infrastructure (locks and weirs) in the southern Basin, to store and share water between the three states. Over the coming decades infrastructure was built to regulate the rivers in the southern Basin.

The landscape has changed—now there are different market demands, different water practices and policies and we know we need to improve the delivery of water for the environment to deliver the outcomes of the Basin Plan.

In 2017, New South Wales, South Australian and Victoria nominated a suite of 36 projects to modernise the way rivers are run in the southern Basin. These projects will all be designed and implemented by 2024. The efficient delivery of water and the modernisation of infrastructure, means more water can remain in the consumptive pool for households, industry and irrigated agriculture.

So far 12 projects have been designed and implemented to improve river operations and water delivery—the Riverine Recovery Project in South Australia is one of these.

This project has returned a number of wetlands to a more natural wetting/drying regime and this has resulted in less evaporation. This has been achieved through engineering solutions, which have been used to bring back flow variations that existed before locks, weirs and causeways were built. The flows will benefit ecosystems along the River Murray between Wellington and the border of South Australia and Victoria such as the Pike, Katfish and Yatco Lagoon and wetland systems.

- Find out more about the suite of 36 [southern Basin projects](#) that will help deliver Basin Plan outcomes.

How does a fish climb a ladder?



Click on the image to watch an explanatory animation about fishways and how they work.

It sounds like the start to a bad joke, but fish really do climb ladders. And they do it quite well! Fish ladders, also known as fishways, are specially designed diversions to help fish overcome human-made barriers as they make their way upstream.

Since 2000, fish ladders have been installed in all locks, weirs and barrages in the Murray, ensuring fish have full connectivity along 2,225 kilometres of river from the Murray mouth and up to Hume Dam—the so-called ‘Sea to Hume Dam Fish Highway’.

They ensure fish have the ability to safely migrate. That, in turn, increases the overall health of native fish in the Murray, allowing them to complete their full life cycles. The success of the fish highway program is clear from data obtained from tagged fish, which have been recorded up and down the Murray.

Monitoring shows that as many as 10,000 native fish a day, across 13 species, use the fishways, including fish as small as three centimetres or up to a metre long.

The record for the greatest distance travelled goes to a tagged Silver Perch, which was recorded swimming 897 kilometres (km) from Lock 8 to Lock 26, over three months from October 2016. A Golden Perch also impressed, swimming 255 kilometres, from Lock 4 to Lock 9, over 21 days, averaging 12 kilometres a day.

Three types of fishway are in the Murray River system. The most common type of fish ladder in the Basin is the vertical-slot fishway. Usually at the side of locks/weirs, the fishway provides a gentle slope of running water that attracts fish and gives them a way of swimming up to the next level. Small areas of refuge are built-in so fish can take a break from swimming against the water flow, as they ascend.

Other types of fishways in the Murray System are the lock fishway, where fish enter a holding pool which is gradually filled with water to raise them to the new level, the rock-ramp fishway, which is well suited to low weirs, and denil fishway, which works as a type of riverine speed hump to slow down water flow for the fish.

The fishways have proven a major benefit to native fish, especially Murray cod, silver perch and golden perch. Some fishway sites also help with the management of carp, with special cages that stop carp from using the ladders.

Automated systems have also been installed to record the number of tagged fish that go through the fishways as they travel upstream. The Sea to Hume fishways project was part of the Living Murray Program, administered by the MDBA and funded by the Australian Government as well as New South Wales, Victoria and South Australia.

On the horizon

Survey open until the end of October: the Independent Panel want to hear about the current social and economic health of your community. A survey has [just opened](#).

Across spring: share your 'best memories in the Murray' – for more information check out [visit the Murray region](#) website.

4 October: nominations close for [2020 Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry](#)

11 October: the MDBA will co-host two southern Basin focused Seasonal Outlook information sessions in Echuca–Moama and Shepparton. [Find out more](#).

22–24 October: Murray–Darling Association [75th Annual Conference](#) Toowoomba, QLD.

26 October: applications close for the two vacant MDBA independent Authority board member positions – for more information [click here](#).

The Murray–Darling Basin



The MDBA has offices in Adelaide, Albury-Wodonga, Canberra, Goondiwindi, Toowoomba and regional engagement officers around the Basin

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