



The effectiveness of Murray River Water flows

The Basics & Community Perspectives

By Friends of the Earth Melbourne



**Friends of
the Earth
Melbourne**



**RIVER
COUNTRY
CAMPAIGN**

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1. Background

The Murray-Darling Basin is the largest river system in Australia, covering more than one million square kilometres across the east of the continent. It spans from Southern Queensland, through New South Wales and the Australian Capital Territory, to Northern Victoria and across to South Australia, where the Murray Mouth opens to the sea.

Flows in the Murray River are an accumulation of the tributaries that traverse the vast landscape that makes up the Basin. There are 22 major water catchments in the Murray-Darling Basin, that are commonly divided into two sections; the Southern Basin and the Northern Basin. The Murray River originates in the high country of Victoria and New South Wales and flow out to the Murray mouth

in South Australia. The Southern Basin is made up of all rivers and tributaries that culminate in the Murray. The Northern Basin is made up of all the waters that flow into the Darling/Baaka. On the lower reaches of the Darling/Baaka in far west New South Wales are The Menindee Lakes, an altered natural lakes system that act as a water storage where the waters of the North culminate. Flows down the Darling/Baaka below the Menindee Lakes are controlled releases and included in the Southern Basin as they enter the Murray at Wentworth in South-West New South Wales. From there the Murray flows through to the Coorong in South Australia and into the Southern Ocean via the Murray Mouth, 100km to the South East of Adelaide.





The Murray-Darling Basin extends over the lands and waters of more than 40 Indigenous nations, who maintain a significant and ongoing connection to rivers as the lifeblood of their culture and critical food source, since time immemorial. The impact of colonisation on First Nations rights and access to water cannot be overstated. Successful river management must prioritise the knowledge, cultural practices and needs of First Nations people.

For over 20 years Friends of the Earth Melbourne has worked with people in the Murray-Darling Basin. Friends of the Earth are a global federation of grassroots activist communities in over 70 countries worldwide, held together by a fundamental belief that social and environmental issues are intrinsically linked. Our campaigns work towards the protection of the natural environment through empowering local communities. In the first decade of the 21st Century, we worked to support the Traditional Owners along the Murray River to protect over 185,000 ha of Red Gum Forests. In recent years we have worked with communities with drying river beds and degrading environments caused by excessive extraction from our rivers. We support grassroots action that call for cultural water allocations and a basin-wide focus to repair the environment and the health of river communities.

Defining effective Murray River flows is complex. Communities can have competing and divergent views, influenced by location, culture, social demographics, economic resilience during drought, and a deep history of water politics. This report explores the community perspectives of Murray River flows and provides a context for the relationship of Murray flows within the broader Murray-Darling Basin. This is a background document for individuals and groups looking to understand the community concerns and environmental issues related to Murray River flows.

Friends of the Earth Melbourne's River Country Campaign's vision is for "A flourishing Murray-Darling Basin, where Traditional Owners have sovereign rights to Country". This report focuses primarily on the effectiveness of flows through the lens of the Murray-Darling Basin Plan. The only First Nations objective in the Basin Plan is to "have regard" to the views of Traditional Owners. This omission in the Basin Plan is the reason First Nations outcomes, views and perspectives are not centred in section 2. Please see Section 3. River Connectivity and 4. Cultural Flows for First Nations perspectives.



2. Murray-Darling Basin Plan

Water management has reached a crisis point as the financial interests of large scale irrigation overpowers the needs of local communities and diverse ecosystems. The Murray-Darling Basin Plan was developed as a requirement of the Water Act (2007) and passed through parliament with bi-partisan support in 2012. It is a \$13 billion national policy to bring extraction in line with set limits by recovering water to maintain ecosystems and ecological processes, and improve environmental outcomes to ensure Australia meets its international obligations for the protection of internationally significant wetlands under the Ramsar Convention.

These limits are known as the Sustainable Diversion Limits (SDLs). When the Plan was developed the best available science said between 3,856 and 6,983 billion litres (or gigalitres, GL) of water needed to be recovered for the environment to have a high likelihood of restoring to rivers, wetland and floodplain ecosystems to health (MDBA, 2010). In order to bring all parties to the table, the Basin Plan was agreed to recover water and build infrastructure to recreate environmental outcomes equivalent to 3,200 GL. A starting point that compromised environmental outcomes from the beginning.

The Plan was to recover 2750 GL of water from irrigation and other human uses (town supply and industry) through government purchases of existing irrigation licences (buy backs) and 450 GL through upgrades to existing infrastructure or building new infrastructure to limit water loss. As of June 30, 2020 the Murray-Darling Basin Authority estimates that 2106.4 GL has been recovered. (MDBA-2, 2020)

The water recovered for the environment is held as entitlements by the Commonwealth Environmental Water Holder (CEWH). It can be used to increase in-channel flows or to mimic flood events by pumping water over the banks of river channels, onto floodplains and into lakes and wetlands to give the landscape a drink between natural floods.

“What environmental water is doing, in between floods, is trying to reintroduce the flows that have been taken out by dams. Sometimes we just want to shift salt out of the environment, and out of the system. Other times we’re focused on birds, or plants or fish”

David Papps, former Commonwealth Environmental Water Holder

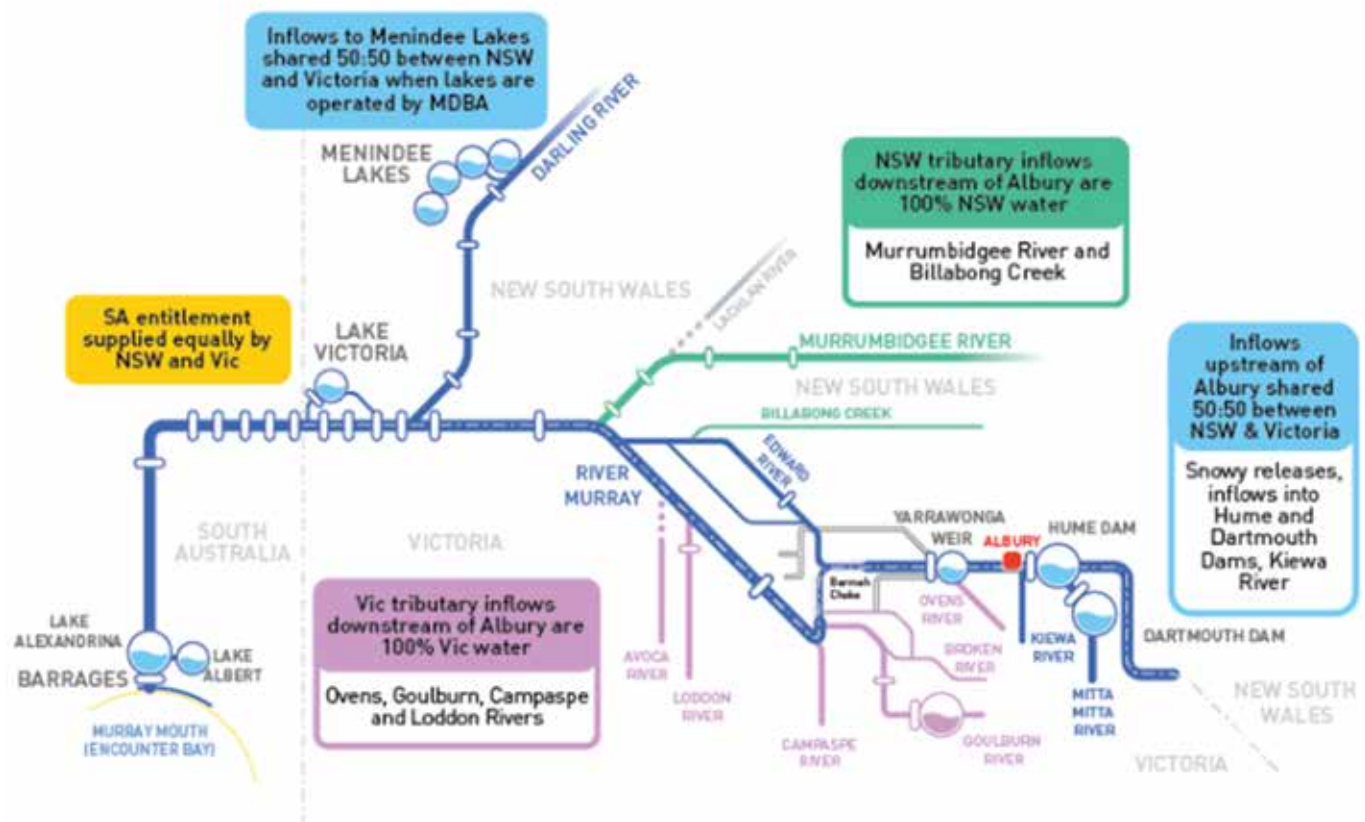
The Basin Plan operates in a paradigm of colonial command and control. River systems are utilised like plumbing infrastructure to transport water for industry, irrigation and human purposes. The construction of thousands of dams and weirs has turned the natural flow regime on its head, with flows now higher in summer than in winter, and small and medium sized flows are now captured by dams. Current thinking in water policy does not attempt to restore natural systems or First Nations sovereignty, but rather keep ecosystem services, internationally significant RAMSAR wetlands and other significant sites alive.

“The Basin Plan is a compromised document, it’s not perfect, but it’s the only one we’ve got at the moment. So while we’re waiting and pushing hard for systematic change, we need to do some basic things.”

David Papps, Former Commonwealth Environmental Water Holder:

The Basin Plan is said to be the biggest environmental policy in Australia’s history, but its implementation has been fraught with controversy and its ability to deliver on its outcomes are severely compromised. It provides a framework to determine sustainable use of water, but even if successfully implemented it’s only a first step in recovering water for inland rivers of the Murray-Darling Basin. Community confidence in the Basin Plan is waning with scandals surrounding water theft, buybacks and corruption, but despite its shortcomings it remains the only policy mechanism on offer to restore health to our inland rivers, our water ways, our communities along the river and the landscape throughout the Basin.

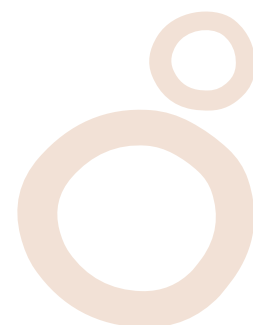




Source: MDBA-1, 2020

A. Pressure on the Murray River

Water is a finite and extremely valuable resource. For more than 100 years the share of water in the Murray has been governed by the Murray-Darling Basin Agreement which sets out how New South Wales, Victoria and South Australia share the water resource that flows through the Murray. Flows upstream of Albury are shared 50:50 between New South Wales and Victoria as are flows coming down from the Menindee Lakes on the Darling/Baaka when the lakes are above a designated threshold. Water from tributary flows are owned by the state from which those rivers are located. (MDBA-1, 2020)





What constitutes an “effective flow” in the Murray River can be greatly contested and in recent years it has been a hot topic. For farmers suffering or recovering from drought conditions, an effective flow might be one they are entitled to access for irrigation. In New South Wales between July 1 2018 and May 2020 general security irrigation licences on the Murray were at 0% allocation (NSW Department of Planning, Industry and Environment, 2020). In Victoria over this time period allocations were also reduced but not to the same extent. The differences between Victoria and New South Wales can be explained by how each state manages their water storages.

Over this period, Victoria and New South Wales were both in drought, which partially explains the reduced allocation, but for a drought the Murray river was running unusually fast, and unusually high. The sight of a full river flowing downstream caused great angst for irrigators who were not allowed to pump water from the river and were

suffering under drought conditions. This led to widespread proliferation of community myths about environmental water being prioritised over farming needs, anger towards South Australia that has mandated flow targets and blame towards environmental water and the Basin Plan broadly. To hold environmental water responsible for the woes of general security water holders on the Murray is an unfair assessment on behalf of the environment. The pain suffered by Southern irrigators is indicative of a much larger problem in the Murray-Darling, one that deeply impacts environments and communities right across the Basin.

The Darling/Baaka historically has supplied up to 39% of river flows in the Murray (MDBA, 2012), but in the past 5 years there have been two extended periods of no flow. The Darling/Baaka stopped flowing between April 2015 and August 2016 and again from December 2018 to April 2020. In total there were over 900 days in the past 5 years where no water came down the Darling/Baaka River to



supplement Murray River flows. These are much longer periods than any other in recorded history. With the Darling/Baaka out of action, water from major water storages on the Murray like Hume and Dartmouth Dams is needed to flow the full length of the river to supply irrigation demand and human needs in South Australia. This meant the river appeared high to communities from Albury to Mildura, even though allocations were moderately reduced in Victoria and severely reduced in New South Wales. Lack of flows in the Darling/Baaka have very obvious social and environmental implications for local areas on the Darling/Baaka, such as the mass fish kills seen in Menindee in 2019 and shortage of fresh drinking water for communities. It also has far reaching impacts on the Murray River, putting strain on the environment and communities.

The question of why Barwon-Darling/Baaka flows have been reduced so dramatically in recent years is critical to restoring “effective” Murray River flows and balance across the whole Murray-Darling system. However, this question will not be addressed in this report. Put simply, floodplain harvesting, over allocation, water theft, poor policy implementation and climate change are all important factors leading to reduced flows on the Darling/Baaka. An end of system flow target on the Darling/Baaka River and accountability from the NSW Government would go a long way to reducing pressure on the Murray system.



B. Constraints

There are physical limits to how much water can flow in a river channel. Heavy rain, big releases from major water storages or a combination of both, increase the volume of water flowing downstream and causes the water level in the channel to rise. The amount of water that the river can carry is not consistent across its full course, for example a narrowing of the river channel or a low lying bridge will limit the capacity of a whole section of a river. These barriers that create limits are called constraints, they restrict how much water can travel from one end of the river to the other and how much water is available for extraction as the water travels downstream. That means that when demand for water in South Australia is high, and Murray River flows aren't supplemented by the Darling/Baaka, water from upstream storages like Hume Dam and Dartmouth need to flow the full course of the river, and cannot be extracted on its way downstream.

On the Murray, a narrowing of the river channel in the Barmah-Millewa forest, known as the 'Barmah Choke' is the most restrictive natural feature. Only 7,000 ML (MDBA, 2020) per day can flow through this section of river. The spectacular floodplain in the Barmah-Millewa forest formed

in part because of the regular flooding that occurred due to this narrowing. However, flooding at natural constraints like this isn't always good. Irrigation demand is highest when it is hot and dry, but under natural conditions the rivers would run lower in summer and highest in winter and spring due to variations in temperature, rainfall, and snow melt. Fast flows or overbank flooding at the wrong time of year and cause bank erosion and damage trees and ecosystems. Sale of irrigation water from above the Barmah Choke downstream is sometimes restricted to manage the capacity of the choke (MDBA, 2020). Ultimately the Murray River will always be running high to meet flow targets at the South Australian border if flows from the Darling/Baaka river aren't restored.

"We need to fix the physical constraints in the system, and we need to get the States to make sure that their water sharing plans protect the environment as well as they did before the Basin Plan."

David Papps, Former Commonwealth Environmental Water Holder



C. Infrastructure

Other constraints are easier to manage. The Victorian Government has a policy not to flood private land without permission from the land holder. While this may be reasonable when a crop is almost ready for harvest, the floodplain is a natural system that needs regular inundation to thrive. Connecting the floodplains with the river through overbank flows is not only natural but necessary for floodplain ecosystems. Prior to colonial occupation and mass water extraction, overbank flows would flood vast areas; watering trees, creating habitat for fish, frogs, birds to breed, supporting aquatic plants and a food web of microorganisms, insects, molluscs and invertebrates; watering trees, and purifying river water. Without flooding, landscapes dry up, soils acidify, and salinity becomes an issue. Easing constraints is a primary objective under the Basin Plan, but it has been neglected by the Victorian Government in favour of infrastructure works. This limits how much water can reach low and medium level floodplains in forest and regional parks such as Nyah-Vinifera, near Swan Hill.

There are two main groupings of infrastructure projects within the Murray-Darling Basin Plan: supply measures and efficiency measures. Building infrastructure is an expensive and questionable method for recovering water. Despite this, it has become the preferred option for water recovery by State and Federal Governments.

Supply Measures

Supply measures are projects that deliver water for the environment to natural floodplains, like red gum forests, lakes and wetlands. The sustainable diversion limit in the Basin Plan was adjusted in 2018 to reduce water recovery efforts by 605 GL and instead build 36 supply measure projects across the Southern Basin. The aim of this suite of projects is to deliver equivalent environmental outcomes (offsets) with less water by building levee banks, flow regulators and pumps at natural sites. The infrastructure planned is said to either save water, create environmental outcomes, or both. The SDL adjustment means that projects are being built instead of recovering 605 GL for the environment from irrigation. Some elements of proposed projects are good, such as removing blockbanks and re-grading roads and removing structures to allow water to flow more freely onto the floodplain, but the majority of works fail to satisfy conditions set by independent scientists (WGCS, 2018).

“The aim of supply measures was to test whether environmental outcomes could be achieved with less water, thereby reducing the socioeconomic impacts of water recovery on communities in the Basin.”

Productivity Commission Inquiry Report- Murray-Darling Basin Plan 5 Year assessment, 2018 (Productivity Commission, 2018)

In Victoria there are 9 projects being administered by the Victorian Murray Floodplain Restoration Projects:

1. Gunbower
2. Guttrum and Benwell Forests
3. Vinifera
4. Nyah
5. Burra Creek
6. Belsar-Yungera
7. Hattah Lakes
8. Wallpolla Island
9. Lindsay Island

Under the Basin Plan the aim of these projects is to achieve ecological outcomes with less water than a natural flood. Sites have been selected for their high ecological value but building infrastructure in exchange for an environmental water holding means there is less water available to flood the environment. The motivation behind these projects is not to achieve optimal environmental outcomes, but to have more water available for extraction.



“we’ve got a problem, we’re going to have less water, so what do we do? Mechanise the river and extract more. ... It’s not the way to address a drying future.”

Mel Gray, Convenor of Healthy Rivers Dubbo

Natural floods are becoming increasingly uncommon due to climate change, holding water upstream in public or private dams and over-extraction. Environmental water is pumped on to floodplains to mimic pre-extraction flows in specific areas. It is better than no water, and really valuable under drought conditions, but benefits are limited in comparison to a natural flood. By selecting high value sites for new infrastructure to manually inundate isolated areas State and Federal Governments have accepted that more of the floodplain will be dry more often. In effect, it is an act of triage, selecting one site over another to receive a limited amount of water. The benefits of additional water are limited to just the selected sites, unlike a natural flood where the benefits of additional water occur along the length of the river system.

These projects will be built on floodplains totalling 62,000 ha, but only 23% of this area will be flooded with the projects, and 2.1% or less of the Basin watering targets. This area will be flooded at a cost of \$8,000 - \$30,000 per hectare, which is an exorbitant sum of money. (Pittock, 2020)

“The so-called “Sustainable Diversion Limit Adjustment Projects” were part of a compromise to get the support of some state governments for the Basin Plan. They came up with this idea that these engineering projects could enable the same or more flora and fauna to be conserved with less water, and have reduced the water to be reallocated to the environment by a further 22%. “

Prof. Jamie Pittock, Researcher at Australian National University and member of the Wentworth Group of Concerned Scientists

Across Australia, all activities, including new developments, take place on Aboriginal land. Developing engineering works in site-specific locations to replicate environmental objectives in lieu of full and free flowing river, is quintessential colonial thinking. The adjustment of the SDL and the development of the infrastructure projects were publicly opposed by The Murray Lower Darling Rivers Indigenous Nations (MLDRIN), the confederation of sovereign First Nations from the Southern part of the Murray-Darling Basin. The SDL adjustment passed through Parliament in 2018 mandated the development of these infrastructure works, without seeking free, prior or informed consent from Traditional Owners.





“We need to work out a proper format, we’ve got to work out better ways to work with governments. Our heritage seems to be coming last on the agenda. Our science is in our sites, our science is in our spirituality.”

Doug Nicholls

The Basin Plan was intended to see the Murray-Darling Basin as a dynamic system of many parts, but by selecting specific sites to offset degradation of the wider environment demonstrates a failure to see the river as a whole. Each Victorian project has been referred for State and Federal approval individually, despite the program being administered as a whole and the full 605 GL SDL adjustment approved as one. Project approvals only consider local impacts of earthworks and construction, a major oversight, as the suite of projects will significantly change hydrology and ecology across the Southern Basin.

Many projects face local opposition due to lack of communication from government departments. Local opposition is most vocal at the Menindee Lakes project in New South Wales, where locals have refused to negotiate

on government proposals until floodplain harvesting, over-extraction and mismanagement are addressed and river connectivity is returned to the Darling/Baaka. The Menindee Lakes are an important wetland for migratory birds and native fish, however the SDL adjustment project, which is the largest of all of the 36 projects in the Basin, will supply 105 GL of the water savings, with no local environmental offsets. With extended periods of no flow in the Darling/Baaka and no water in the largest lakes at Menindee, new infrastructure will do nothing to save water, given there is no water in the lakes to “save”.

Building infrastructure for environmental offsets is an experiment that cannot be easily undone. It requires earthworks that will disrupt surface sediments, which could impact sacred sites like burials, middens and scar trees as well as the hydrology and ecology on site at project locations and those downstream. It is a big risk to rely on infrastructure to mimic or recreate natural environmental outcomes. The Productivity Commission in 2018 reported that projects are unlikely to be complete by their 2024 deadline (Productivity Commission, 2018). Rather than push the deadlines out, unjustified projects should be discontinued and alternatives sought to deliver on the environmental objectives of the Basin Plan.



Efficiency Measures

Efficiency measures are projects that stop water leaking back into the environment from old pipes, irrigation channels and paddocks, and town and industry water supply. They are intended to provide equivalent or better social and economic outcomes using less water, and to enable 450 GL to be added to the account of the Commonwealth Environmental Water Holder. This water is not yet available to the environment, a double standard given that the 605 GL is already available for irrigation when supply projects, which are questionable at best, have not been built to offset environmental losses.

Efficiency measures have opened up previously non-irrigated farmland to new irrigation schemes, and it remains unknown whether this style of infrastructure has returned any environmental benefit to date. It's counter-intuitive but when irrigation infrastructure is upgraded to reduce water loss, it's possible this has a negative impact on the environment. When water leaks from irrigation infrastructure it does not simply disappear, it leaks into groundwater, local environments or back into the river. Past efficiency programs have permitted irrigation to share in

the accounted water saving, making more water available to irrigation. Improving efficiency in water delivery is important, but correctly accounting for losses is equally important.

Efficiency projects have been used to justify deepening private dam storages because water evaporates more quickly from shallow dams. In principle, deepening a dam can reduce evaporation and therefore enhance efficiency, but increasing dam storage runs the risk that more water will be taken and stored for irrigation.

Overall, infrastructure as a means to recover water is expensive and the promised environmental outcomes may never eventuate. In addition, if irrigation is expanded as a result of new irrigation infrastructure, this will exacerbate the issue of over extraction.

“Before implementation, projects need to be independently reviewed to give confidence that they will deliver the predicted environmental outcomes and offer value for money.”



D. Buybacks

Over the past 150 years, water licences have been issued to permit landholders, mines and industry to extract large volumes of water from rivers or groundwater. The Water Act 2007 acknowledges in law that the resources of the Murray-Darling are over allocated. Too much water is extracted, diverted and consumed for the river system to sustain life, the way it has for millenia. Under the Murray-Darling Basin Plan, the State and Federal Governments bought back a range of water licences totalling 2,106.4 GL/y as a long term average.

In August 2020 Federal Water Minister Pitt announced that buybacks will not be continued under the current government. But with the outcomes of proposed infrastructure works incredibly uncertain, and the health of the Murray-Darling in critical condition, buybacks remain the cheapest and most effective way to put water back into the rivers.

There remains 46.7 GL of water still to be recovered under the Basin Plan, assuming the supply measures

and efficiency measures return all expected water. While this represents only 2% of the original target, it remains a significant volume of water that has real world benefits to river, wetland and floodplain ecosystems.

Voluntary, open tender water buybacks, coupled with investment in local communities have significantly better outcomes than the same investment in water saving infrastructure. (Grafton & Wheeler, 2018)

Purchase of A-Class water licences in the Barwon-Darling/Baaka will increase protection of low-medium flows required for river connectivity between the Northern Basin and the Southern Basin, which come together where the Darling/Baaka meets the Murray at Wentworth.

Buybacks must remain on the table should any of the planned infrastructure fail to meet its objective or be denied by Traditional Owners or local communities.





3. River Connectivity

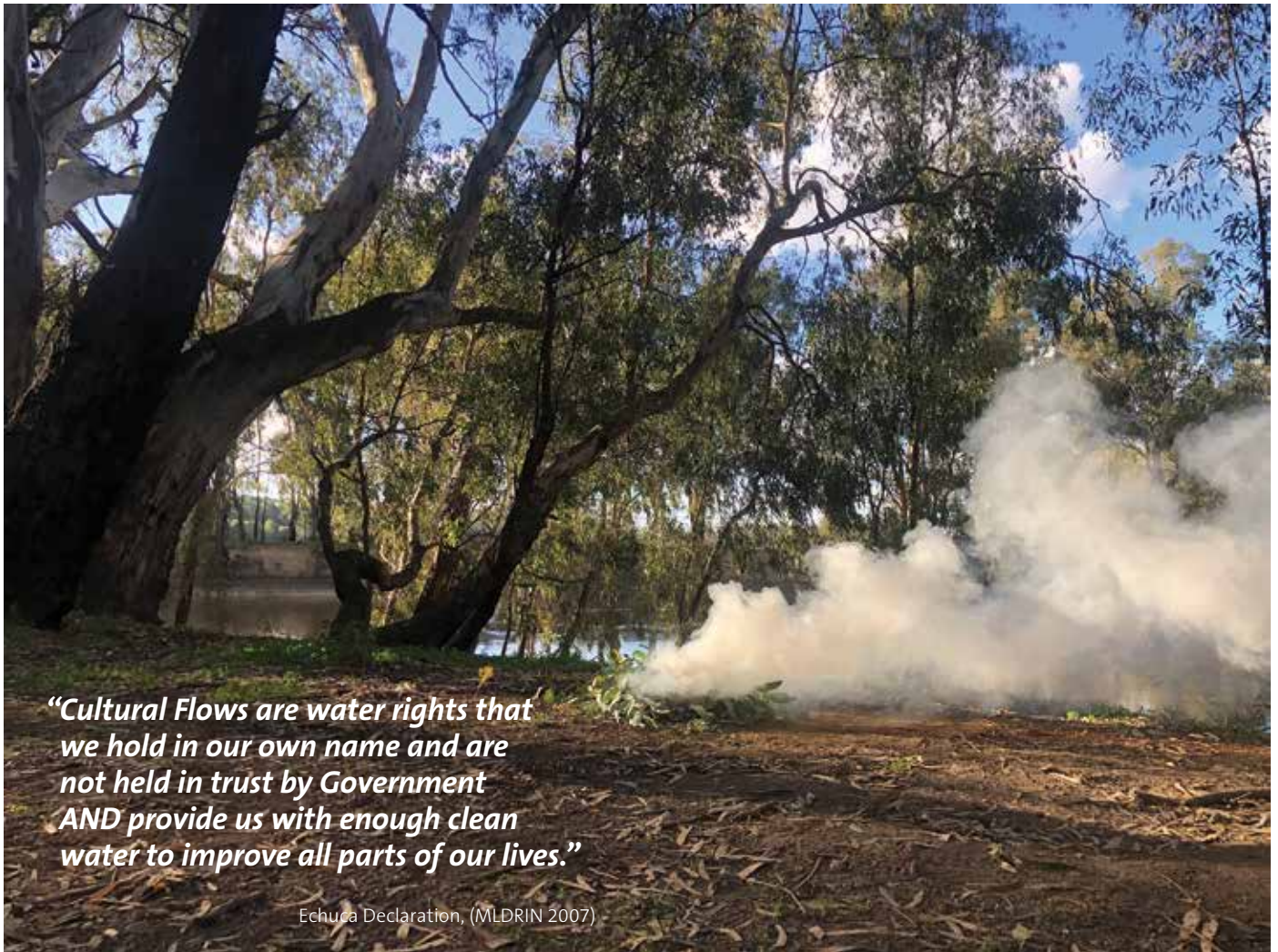
River connectivity is the ability for rivers to flow from their origin all the way to the sea. The mouth of the Murray River opens to the sea approximately 80 km South east of Adelaide in South Australia. Prior to colonial development the Murray Mouth would have remained open almost all of the time, which was an important function in flushing salt, sediments and nutrients from the rivers. The Basin Plan defined a goal to keep the Murray Mouth open 95% of the time without requiring dredging (Landscape South Australia, 2020), but at present the Murray Mouth is dredged 24 hours a day, 7 days a week.

River connectivity is more than connection to the sea; rivers flow into one another, providing important passages for native fish to travel and bringing balance through the system. As explained in section 2A, the Murray is compensating for the lack of flows coming down the

Darling/Baaka River. Floodplain harvesting, extraction of low to medium flows and lack of protection for environmental water in the Barwon-Darling/Baaka has meant flows often fail to make it to the Murray. An end of system flow target at Wentworth is needed to ensure the Darling/Baaka maintains a healthy flow into the Murray. This would relieve pressure on the Murray and support the movement of fish and improve water quality.

The Basin Plan lacks a holistic understanding of how ecological health and structure underpin life and society. Humans are part of the environment and outcomes for community and economy are intrinsically linked to outcomes for the environment. Policy levers in use at the moment rely too heavily on engineering works and fail to recognise the value of a natural and connected system.





“Cultural Flows are water rights that we hold in our own name and are not held in trust by Government AND provide us with enough clean water to improve all parts of our lives.”

Echuca Declaration, (MLDRIN 2007)

4. Cultural Flows

Cultural Flows are water entitlements that provide social, cultural and spiritual benefits to Traditional Owners. Before colonisation all water was cultural water, with spirit and life, managed by and for the Traditional Owners of the Land. Cultural allocations for all Indigenous Nations in the Murray-Darling Basin has been a request of peak groups like Murray Lower Darling Rivers Indigenous Nations (MLDRIN) and Northern Basin Aboriginal Nations (NBAN). They're best defined by the Echuca Declaration that was adopted by the MLDRIN in 2007 and NBAN in 2010.

“Cultural Flows” are water entitlements that are legally and beneficially owned by the Indigenous Nations of a sufficient and adequate quantity and quality to improve the spiritual, cultural, environmental, social and economic conditions of those Indigenous Nations. This is our inherent right.”

Echuca declaration, MLDRIN 2007

Cultural Flows have become a mainstream concept in recent years, but it's important to remember the concept has come from Traditional Owners and should be guided by Traditional Owners. While there are limitations in the Basin Plan to meet discreet objectives, the Echuca Declaration's definition of Cultural Flows is broad, seeks to improve the spiritual, physical and mental well being of First Nations people through agency and sovereignty.

Colonial limitations in policy have neglected the holistic needs of the river system and allowed greed to come before the rights of all life in the Basin. This is felt on the front line by Aboriginal communities right across the basin, who have little to no rights to water.

“We need to work out a proper format, we've got to work out better ways to work with governments. Our heritage seems to be coming last on the agenda. Our science is in our sites, our science is in our spirituality.”

Doug Nicholls, Watti Watti man and cultural educator.

5. Recommendations

1. Save the Darling/Baaka

- The Murray River cannot continue to compensate for the loss of flows down the Darling/Baaka. Victoria must pressure New South Wales to meet its obligations under the Basin Plan, legislate floodplain harvesting to legal limits, and mandate end of system flows on the Darling/Baaka river .

2. Support First Nations

- First Nations outcomes in the Basin Plan are shamefully limited. The Federal Government should create a cultural water account, to be managed by Sovereign Nations with allocations equal to or greater than environmental water holdings.
- Fulfill promised co-management agreements with Traditional Owners.
- Seek free, prior and informed consent from Traditional Owners before continuing any planned infrastructure works or conducting environmental watering programs.

3. Prioritise Constraints

- Address system constraints as a priority before building supply measures or efficiency measure projects.

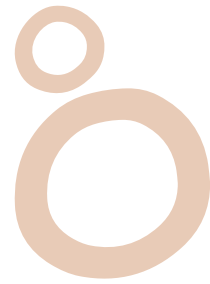
4. Review the Sustainable Diversion Limit (SDL) adjustment

- Assess the environmental impact of the Sustainable Diversion Limit Adjustment Infrastructure on the river system as a group of projects, with consideration to the impact on the whole system.
- Total volume of river extraction must align with science and accommodate for a changing climate.

5. Buy back more water

- 46.7 GL remains under the existing buy back caps. Voluntary, open tender buybacks are an important tool to address over extraction and must remain an option for water recovery to ensure Basin Plan plan targets can be met by 2024.





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