



Water Amendment (Restoring Our Rivers) Bill 2023

Submission to Senate Standing Committees on Environment and Communications, October 2023

ACKNOWLEDGEMENT OF TRADITIONAL OWNERS

We acknowledge the Yorta Yorta peoples of the land which now comprises Greater Shepparton and we pay our respects to their tribal elders, we celebrate their continuing culture, and we acknowledge the memory of their ancestors.

EXTRACT - PURPOSE OF THE MURRAY-DARLING BASIN PLAN

Extract from Commonwealth Water Act 2007
Part 2—Management of Basin water resources
Division 1—Basin Plan
Subdivision B—Basin Plan, its purpose and contents

Purpose of Basin Plan

The purpose of the Basin Plan is to provide for the integrated management of the Basin water resources in a way that promotes the objects of this Act, in particular by providing for:

- a) giving effect to relevant international agreements (to the extent to which those agreements are relevant to the use and management of the Basin water resources); and
- b) the establishment and enforcement of environmentally sustainable limits on the quantities of surface water and ground water that may be taken from the Basin water resources (including by interception activities); and
- c) Basin-wide environmental objectives for water-dependent ecosystems of the Murray-Darling Basin and water quality and salinity objectives; and
- d) the use and management of the Basin water resources in a way that optimises economic, social, and environmental outcomes; and
- e) water to reach its most productive use through the development of an efficient water trading regime across the Murray-Darling Basin; and
- f) requirements that a water resource plan for a water resource plan area must meet if it is to be accredited or adopted under Division 2; and
- g) improved water security for all uses of Basin water resources.

Report cover image source:
<https://nationalmap.gov.au/>

THE COMMITTEE FOR GREATER SHEPPARTON

The Committee for Greater Shepparton (C4GS) welcomes the opportunity to comment on the proposed Water Amendments (Restoring our rivers) Bill 2023 (the Bill).

C4GS is a member funded not-for-profit organisation that represents almost 120 of Greater Shepparton's businesses, Government agencies and not for profit organisations. Our members represent all points of the food production manufacturing, logistics, warehousing, and export supply chains as well as their support industries and service providers.

C4GS is a member of the GMID Water Leadership Forum and works in partnership with the Forum to provide considered and constructive input into the design and delivery of water policy in and for our region

GREATER SHEPPARTON - ADDING VALUE ACROSS AUSTRALIA

Greater Shepparton is the largest city on Victoria's largest river, the Goulburn River. Greater Shepparton is located at the heart of the Goulburn Murray Irrigation District (GMID) - Australia's largest irrigation region - and is the southern gateway into the Murray Darling Basin and Australia's primary production corridor.

From its origins as a punt crossing between the northern Victorian goldfields, Greater Shepparton has grown to become one of eastern Australia's largest and most dynamic primary production, value-adding and logistics centres.

Primary production – Australia's food bowl

The Greater Shepparton region produces more than 40 agricultural commodities including highly perishable products and supermarket staples.

Greater Shepparton is Australia's second largest dairy production region accounting for 20% of Victoria's milk production worth more than \$2 billion. More than 40% of this production is exported and a further 25% is supplied into the NSW and Queensland fresh-milk markets where local supply is insufficient.

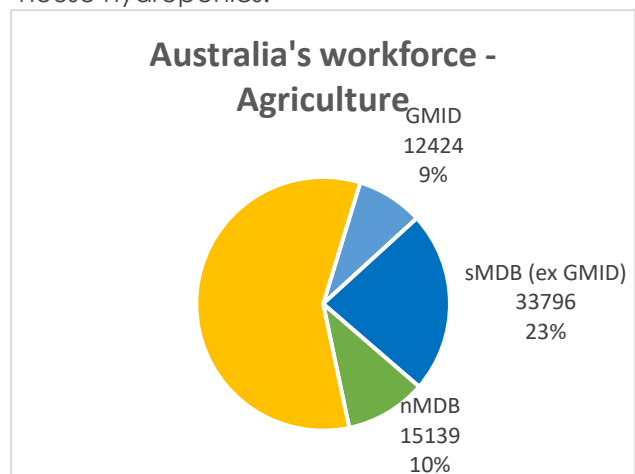
Source: ABS

The region grows more than 80% of Australia's pome and stone fruit that is destined for markets across Australia and into premium export markets across Asia, the Americas, and Europe.

Agriculture across the GMID employs more than 12,000 people with much greater numbers

employed during the various seasonal harvest periods.

The region continues to attract significant investment in traditional livestock, dairy and horticulture sectors as well as emerging sectors such as medicinal cannabis, almonds, and glass house hydroponics.



The region's fertiliser, seed, genetics, and plant-breeding industries are estimated to exceed \$2 billion in value.

Freight and logistics hub

More than a quarter of Victoria's heavy vehicles are registered in Shepparton and the region has seen more than \$100 million of investment in warehousing and storage. From highly sophisticated climate-controlled facilities with autonomous stock placement and retrieval, to bulk storage of commodities from across the MDB's primary production corridor, the region

plays a key role in enabling the efficient and rapid release of product to domestic and export markets and into value-adding processes.

This growth builds on Greater Shepparton's location as a critical intersection on the national freight network that runs like a spine through Australia's primary production heartland – from the Darling Downs and Brisbane through NSW and Victoria to the Port of Melbourne - Australia's busiest container port.

Shepparton also provides direct access to Adelaide and linkages across the Riverina and northern Victoria. These freight routes are vital to the movement of production out of, as well as the safe and efficient movement of inputs into Australia's primary production regions.

Manufacturing and value-adding centre

The Greater Shepparton region is home to almost 20% of regional Victoria's manufacturing capacity.

Annual production is valued at more than \$4.6 billion with more than 40 local food and fibre manufacturing and processing sites that range from niche operators to iconic Australian brands and world leading companies such as Noumi,

SPC, Unilever, Bega, Saputo, and Campbells.
Source: ABS

Built on irrigation.

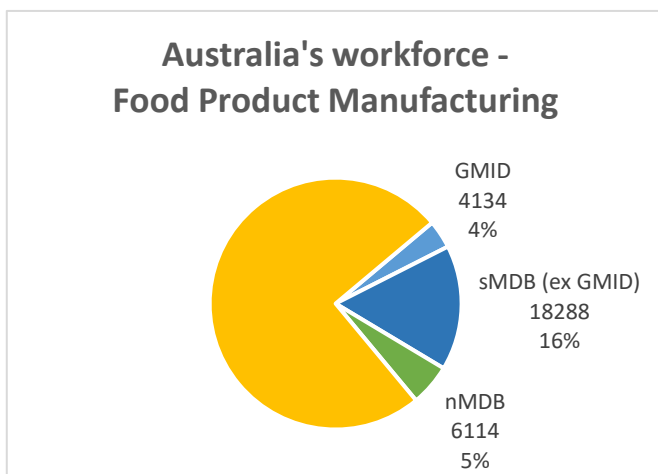
The Goulburn and Murray rivers are the major sources of supply into the Goulburn-Murray Irrigation District (GMID). The GMID comprises more than 6,000km of manmade channels that deliver water to more than 20 local towns, and thousands of individual farms and rural properties.

Following completion of the Connection Project in February 2022, 429 GL of annual water savings were shared with the environment, Traditional Owners and a small volume was returned to water users. The state-of-the-art irrigation network and reliable water entitlements have reinforced northern concentration of downstream value adding businesses in the region.

With channels best suited to larger volume water delivery, any decrease in water delivery through the system triggers significant operational challenges and shifts the burden onto fewer and fewer residents and users – including regional towns. For this reason, the region is extremely vulnerable to water entitlements relocated from the channel network to rivers.

A legacy of water recovery to restore the health of rivers and environmental sites.

For northern Victorian communities, the Plan represents the next stage in Victoria's progress to rebalance the needs and interests of all water users including the environment and other jurisdictions and builds on the successful delivery of the Living Murray. For more than 30 years, Victoria has progressively improved the policies, practices and ultimately the footprint and operation of irrigation across the region.



MURRAY-DARLING BASIN

 Major Wetland
 Irrigation District



RESTORING OUR RIVERS - FROM THE CULGOA TO THE COORONG

Since 2012 the Murray-Darling Basin Plan (MDBP) has made progress to redress more than 100 years of water management policies and practices across a system that spans five jurisdictions, comprises 23 individual rivers and tributaries, and at a time when floods, fires and drought have underscored the urgent need for action.

There are many examples of major projects 'blowing out' in the final stages of their delivery because the easy stages have been delivered and the more difficult final stages often require much greater creativity, problem solving, trust and collaboration.

Now is not the time for scatter gun efforts. It is time to weave the many strands of progress from across the basin into a program of activity that targets the critical priorities that will ensure the plan's success continues beyond 2027.

More water does not achieve this outcome – the right water in the right location, with the right supporting infrastructure, operating rules and landowner agreements and with the right measurement, monitoring and compliance oversight can.

The Water Amendments (Restoring our rivers) Bill 2023 redefines the next steps at a critical point in the delivery of the Plan. The Bill will define the Plan's legacy and future operational effectiveness.

For this reason, the final stages of the Plan must be defined by more than simply a ML target. The Restoring the Rivers bill must focus on the outcomes for the entire river system from the Culgoa River in Queensland to the Coorong in South Australia.

More time

C4GS supports the extended timelines, continued funding for delivery of the Basin Plan and the new timeframes for the MDBA's reconciliation of

progress but would like to see project by project deadlines to optimise delivery.

The extended timelines represent a logical step after more than two years of Covid disruption followed by floods and for projects that are often in remote locations, require specialist skills and depend on seasonal access.

More accountability

C4GS supports the strengthened role and powers of the Inspector General of Water Compliance, that can help restore community confidence in the integrity of the Plan's implementation and its ongoing operation.

The expanded powers must enable the Inspector General to enforce the completion and accreditation of all outstanding Water Resource Plans and compliance with SDLs. The Plans and SDLs underpin the agreed baseline for monitoring and measuring the progress by basin states, and the operating rules to protect and shepherd environmental flows through the system to target sites.

More funding

C4GS is seeking much greater clarity on the proposal to allow funds in the Water for the Environment Special Account (WESA) to be used for *making any other payments to address any detrimental social or economic impact on the wellbeing of any community in the Murray-Darling Basin that is associated with a project or purchase referred to in paragraph (a) or (b) so as to offset any such impact.*

The proposal not only acknowledges but also anticipates that *amending the Water Act so that more options are available to deliver the 450 GL target, including on-farm and off-farm efficiency projects, voluntary buybacks and land and water packages¹* will cause negative social and economic impacts. In doing so this dispels the myth that water buybacks are the most efficient

¹ [DCEEW, Water Amendment \(Restoring our Rivers\) Bill](#)

[2023 Fact Sheet](#)

and effective mechanism for recovering water for the environment.

The assistance criteria, funding and the risks to recovery, delivery, remaining water users and communities must be calculated and considered in advance - not after implementation of on-farm and off-farm efficiency projects, voluntary buybacks and land and water packages. This will ensure the cost-benefit assessment properly compared with alternative works and projects.

More options

C4GS does not support the amendments that will allow the expanded use of voluntary (non-strategic) water buybacks, including.

- removing the 1500GL cap on Commonwealth water purchases
- removing the socio-economic neutrality test
- enabling water buybacks to recover the 450GL water efficiency target.

With more than 2,100 GL of environmental water already secured, non-strategic voluntary buybacks may achieve a number, but they are not a prudent or reliable way lock in the legacy of the Plan and ensure its successful future operations in a changing climate.

Specifically, C4GS strongly opposes voluntary buybacks in the sMDB where most water users do not extract their water directly from rivers and instead rely on the network of man-made irrigation channels that underpin intensive food and fibre production and manufacturing.

Voluntary buybacks would scatter the purchases across the approx. 6000 km channel network with no opportunity to plan the reconfiguration or decommissioning of redundant or underutilised infrastructure to defray the costs for remaining water users or to optimise system efficiency. These impacts will also escalate the funds required for structural adjustment and compensation payments and simultaneously limit the opportunities for communities and businesses to plan their adjustment and transition.

Furthermore, the over reliance on the sMDB to restore the health of the entire system is already

compromising the health of our local rivers, has recovered volumes of water that cannot be delivered even with further works, agreements with private landowners and changed operating rules, and cannot address the critically endangered areas of the basin. Water buybacks in the sMDB cannot address the repeated fish kills in the Menindee lakes and 400 days of no flow in the lower Darling-Baaka.

The overreliance on sMDB fails to spread the risk for environmental water in a rapidly changing climate. A more balanced approach across the entire system can deliver the promised environmental benefits for individual rivers and for the system as a whole – from the Culgoa to the Coorong.

HOW TO MOVE FORWARD

C4GS, like the community of northern Victoria, recognises the significant progress and outcomes the Murray-Darling Basin Plan has delivered to date, and the challenges that remain.

More accountability

1. Empower the Inspector General to bring all states to the agreed SDL 'starting line' by enforcing completion of outstanding Water Resource Plans that imbed the 2019 SDLs and establish operating rules to protect and shepherd environmental flows through the system to target sites.
2. The works, measures and infrastructure that can enable environmental water to be delivered where, when and for as long as it is required must be prioritised and operational - before further volume-only recovery initiatives (e.g., buybacks) are contemplated.

More options

3. Reactivate previously agreed projects that have been halted because their works cannot be completed by the June 2024 deadline.
4. Allow jurisdictions to review the lists of projects proposed over the life of the Murray-Darling Basin Plan – including projects submitted to the most recent DCCCEW consultation process - to confirm projects that may now have access to the technology, skills, and capabilities to enable delivery.

More time

5. Extend delivery deadlines for all projects and works to allow for the disruptions to supply chains, workforce, seasonal access and works delivery caused by the pandemic and 2022 floods.
6. Adopt reasonable timelines for the delivery of each project, rather than the blanket approach to all projects. Deadlines beyond June 2026 must be considered where there is confidence in the project's progress and timely completion.

More funding

7. A transparent, equitable and fully funded adjustment framework, developed in collaboration with Basin stakeholders and communities must be available before WESA funded water recovery can be considered.
8. Fossil fuel town transitions provide a model to understand and quantify the cost to communities and the effort and time required to design and support an effective transition. These equivalent compensation and adjustment costs and timelines should be added to the anticipated cost of buybacks to provide a genuine comparison between the various options available to complete the Plan.

The costs need to recognise the overall impact on consumers across Australia, infrastructure investments to address reduced flows and efficiency of the channel deliver networks, and the loss of high value professional employment and industries from regional areas– not simply the 'redundancy payment' to individual water entitlement owners.

And more engagement with stakeholders and communities

9. Shepparton is the gateway into the GMID, home to key Victorian rural water and resource management agencies, along with significant downstream processing and manufacturing industries that service and rely on produce from the MDB - and yet no MDBA or federal government water representatives or offices are located in Greater Shepparton.

C4GS believes this is a missed opportunity to be part of community and conversations that extend well beyond immediate ag and farming to include the many and significant upstream and downstream supply chain implications of water policy in general, and the Murray-Darling Basin Plan in particular.

10. As the Plan has matured, so has the knowledge and experience of communities and interests impacted by its delivery. There

has been significant growth in the understanding of the Plan and ways it could successfully be delivered in partnership with communities. As we move through the next stages of the Plan increased local presence coupled with open ongoing conversations can elicit opportunities and ways forward that would otherwise be unknown or overlooked.

CONCLUSION

The Committee for Greater Shepparton welcomes the opportunity to share these perspectives and ideas outlined in our submission. We also welcome the opportunity to work with our members and wider community to further scope and define proposals that may emerge from the consultation process.

The Murray-Darling Basin Plan is an ambitious undertaking that warrants genuine and continuous engagement to ensure it is learning and adapting to a changing landscape, communities and, importantly, changing knowledge and possibilities.

Invitation to visit

Our breadth of membership provides a valuable insight into the impact of the Murray-Darling Basin Plan on the full supply chain – that extends well beyond regional areas.

We also invite the Committee and individual members to visit our region to see and hear firsthand the strong support for the objectives of the Plan – and the experience available to guide its completion.

Opportunity to present to the Committee

We look forward to future opportunities to discuss these proposals and to present to the Senate Committee to further explain and explore the ideas presented in our submission.

Linda Nieuwenhuizen
CEO
Committee for Greater Shepparton

October 2023

SPECIFIC FOCUS AREAS

Inspector General of Water Compliance

C4GS supports the expanded powers of the Inspector General of Water Compliance however we fear a toothless regulator if the 2019 SDL 'starting line' is allowed to slide.

Since 2012 the commitment and pace of delivering the Plan has not been consistent across the five state jurisdictions, nor has it been consistent for each of the 23 connected rivers that make up the Murray-Darling Basin.

Since 2012,

- Victoria has exceeded the water recovery target (2100GL),
- Victoria's works (SDL and constraints) are/were on track for completion by December 2026,
- all of Victoria's water resource plans are approved, operational and as a result are enforceable by the Inspector General, and
- Victoria has committed 68% of the volumes to date against the 450GL target.

These outcomes have been achieved through a decade of structural adjustment that has included:

- the shut-down of entire irrigation districts,
- construction of infrastructure and operating rules to deliver water to priority environmental sites in years of low supply,
- redefining water access, entitlements, and governance,
- sustained compliance including metering, monitoring, enforcement, and reporting, and

- ongoing adaptation by thousands of individual farmers, businesses, supply chains and communities.

The impact is profound

- for the past 5 years, irrigation water deliveries in the Goulburn-Murray Irrigation District (GMID) have been around half the 2,100 GL delivered 20 years earlier
- over the same period environmental water deliveries have increased to almost 800GL and we are proud to see the reward for these efforts².

However, the changes have elevated the risks to individual enterprises, to the ongoing operation and affordability of irrigation in the GMID³, and to the critical mass and investor confidence that underpins Greater Shepparton's manufacturing and value adding industries. The region is at a tipping point with no scope to support further water recovery.

Over the same period other jurisdictions have enabled increased irrigation water licences⁴, repeatedly failed to comply with limits on water extraction⁵, experienced multiple fish kills that have been attributed to failure of policy implementation⁶, and avoided the oversight and enforcement by the Inspector General⁷.

Furthermore, these actions have obscured the opportunities to restore the environmental health of the northern basin including the Darling-Baaka and have misrepresented the northern basin's capacity to contribute to the health and flows in the lower Murray to South Australia.⁸

² <https://www.water.vic.gov.au/our-programs/murray-darling-basin/environmental-benefits>

³ [Frontier Economics - Social and economic impacts of the Basin Plan in Victoria 2022](#)

⁴ Appendix 1 – Slattery and Johnson, Matters relevant to the Water Amendment (Restoring our Rivers) Bill 2023, October 2023

⁵ [Inspector-General of Water Compliance, Sustainable Diversion Limit Compliance Statement for 2021-](#)

[2022, September 2023](#)

⁶ [NSW Chief Engineer and Scientist, Independent review into the 2023 fish deaths in the Darling-Baaka River at Menindee, September 2023](#)

⁷ [Inspector-General of Water Compliance, Sustainable Diversion Limit Compliance Statement for 2021-](#)

[2022, September 2023](#)

⁸ Appendix 1 – Slattery and Johnson, Matters relevant to the Water Amendment (Restoring our Rivers) Bill 2023,

For this reason, the final stages of the Basin Plan must prioritise completion of all outstanding Water Resource Plans and compliance with the agreed 2019 Sustainable Diversion Limits.

Through this process the compliance and impact of policy and practices can be addressed including those identified by the Inspector General's submission to this inquiry, water recovery options properly understood and targeted, and importantly, the responsibility for restoring the health of the entire system from top to bottom is shared equitably.

This step is also fundamental to ensuring the Inspector General's expanded role and powers have the confidence of communities and stakeholders across the Basin into the future.

Voluntary water buybacks

C4GS does not support the amendments that will allow the expanded use of voluntary (non-strategic) water buybacks, including:

- removing the 1500GL cap on Commonwealth water purchases
- removing the socio-economic neutrality test
- enabling water buybacks to recover the 450GL water efficiency target.

Relying on voluntary water buybacks to underwrite the Plan:

- Assumes water purchases deliver equivalent benefits to the project they replace.
- Ignores the lessons learned in delivering the plan to date and the more than 1000GL of alternative works and projects submitted during the recent consultation process,⁹
- Fails to correct the inconsistent pace of delivery across the jurisdictions,
- Underestimates the true cost of structural adjustment that will need to be met by Australian taxpayers,
- Ignores the advice of river managers

including MDBA who continue to support delivery of supply measures because of their immediate benefits to system management and environmental water delivery, and the increased flexibility they will provide in the system to meet future challenges brought on by climate change.¹⁰

- Provides no certainty of future water supply for food producers, and the more than 1 million employees and thousands of small, medium, and large businesses across regional and metropolitan Australia that are part of Australia's food production, manufacturing, logistics and marketing industries,
- Provides no certainty for Australian families and consumers that they will have access to or be able to afford Australian grown produce, and,
- Provides no certainty that water will be secured in the individual rivers and at locations in the Murray-Darling system where it can achieve environmental benefits,

C4GS strongly opposes voluntary buybacks in the sMDB where most water users do not extract their water directly from rivers and instead rely on the network of man-made irrigation channels that underpin intensive food and fibre production and processing.

Voluntary buybacks would scatter the purchases across the approx. 6000 km channel network (the entire Murray-Darling River is 3,375 km) with no opportunity to plan the reconfiguration or decommissioning of redundant or underutilised infrastructure to defray the costs for remaining water users or to optimise system efficiency. Structural adjustment funding and compensation payments after the fact is a poor use of the available funds.

Furthermore, the over reliance on the sMDB to restore the health of the entire system is already compromising the health of our local rivers, has

October 2023

⁹ [DCCEEW Delivering the Murray Darling Basin Plan –](#)

[Consultation Submissions, 2023](#)

¹⁰ [MDBA report card June 2023](#)

recovered volumes of water that cannot be delivered even with further works, agreements with private landowners and changed operating rules, and cannot address the critically endangered areas of the basin.

Water buybacks in the sMDB cannot address the repeated fish kills in the Menindee lakes and 400 days of no flow in the lower Darling-Baaka.

Structural Adjustment

The further extraction of water from regional communities has many parallels with the closure of fossil fuel energy generation in towns across regional Australia. The similarities include:

- The loss of high-value professional and skilled technical roles across the supply chain and their economic and social impact in regional communities
- Cost increases for consumers of essential products and services (e.g., everyday food and fibre staples),
- Downstream and upstream impacts on employment and industry in metropolitan and regional centres, and
- The loss of a way of life that is knitted into regional and suburban communities' identity and success.

The stark difference is that fossil fuel communities have enjoyed considerably greater financial support, extended horizons to plan and move through transition, and certainty regarding when, how and where the transition will take effect.

In comparative terms, therefore, government support to the Latrobe Valley in response to the Hazelwood Power Station closure is approximately ten times that provided to GMID communities in response to direct job losses associated with the implementation of the Basin Plan.¹¹

¹¹ Essential Economics – Basin Plan Economic Impacts on the GMID and comparison with Hazelwood Power station closure, November 2016

Individual payments to farmers via water buybacks are equivalent to the redundancy payments received by individual employees. These payments in no way compensate the broader community and they do not provide resources to support identifying, incubating, and growing new industries and employment, adjusting service infrastructure (for example replacing channel supply) and planning for the economic and social needs of a different future. In fact, anecdotal reports indicate only a portion of the buyback funds are spent locally as recipients seek alternate employment and opportunities outside the region.

In the Latrobe Valley, Gladstone and the Hunter, governments have never doubted the additional funding and time required to support the entire region's transition – including the social, economic, and broader community.

It is estimated water buybacks to secure the remaining balance of 750GL would cost Australian taxpayers at least \$6 billion. However, this is just the payment to the entitlement owner, it does not recognise the broader transition funding that is required to ensure MDB communities receive support equivalent to that enjoyed by communities and towns impacted by the transition away from fossil fuels.

For example, structural adjustment in the GMID to support recovery of 750GL would need to take account of the following:

- A 1 ML reduction in irrigation water equates to slightly more than \$1000 of lost production every year. In aggregate, 750GL would equate to more than \$850 mln of annual foregone production.¹²
- The loss of up to 1500 local agricultural jobs, with potentially greater job losses in processing and manufacturing as the cumulative impacts trigger the closure and consolidation of downstream activity in the region.

¹² [Frontier Economics - Social and economic impacts of the Basin Plan in Victoria 2022](#)

- The smaller milk pool has resulted in factory closures (such as Rochester and Leitchville) as well as under-utilised milk processing capacity (as there is significant processing capacity to be filled) which has significantly impacted productivity and costs. Further reductions would likely push processors past the viable threshold and trigger closures with the resulting impact on food manufacturing, logistics, service industries.
- ABARES' analysis finds that recovering water through buybacks or on-farm irrigation efficiency projects puts upward pressure on water prices, adding an estimated \$72 per ML per year to water allocation prices in the southern MDB and *We find impacts on price have increased over the period as the cumulative volume of water recovered has increased*¹³
- Channel performance and efficiency is enhanced by larger-volume water delivery – In 21/22 GMW delivered 1053GL with a system efficiency of 86.2%, in contrast 595GL was delivered in 2019/20 and system efficiency dropped to only 77.0%.¹⁴ requiring more water into the channel system to deliver the same volume at the property meter.
- The impact on affordability, efficiency, and the reliability of supply to more than 20 regional towns supplied from the channel network.
- The increased competition for irrigation supplies will increase water prices and as a result water will shift to commodities able to generate the greatest returns – this generally means a move out of supermarket staples such as vegetables, potatoes, milk, apples, and oranges. While there is a risk of increased prices, a more likely outcome is production of staples will cease and will be replaced by imports.

With fossil fuel town transitions underway, they provide a model to better understand the true cost to communities and the effort and time required to design and support an effective transition.

These equivalent costs and timelines should be added to the anticipated cost of buybacks to provide a more accurate comparison of the various options available to complete the Plan.

The costs need to recognise the overall impact on consumers across Australia, infrastructure investments to address reduced flows and efficiency of the channel deliver networks, and the loss of high value professional employment, industries, and supply chains from regional areas – not simply the 'redundancy payment' to individual water entitlement owners.

¹³ [ABARES Insights, 2020](#)

¹⁴ [GMW Annual Report](#)

**APPENDIX 1 - SLATTERY AND JOHNSON, MATTERS RELEVANT TO THE WATER
AMENDMENT (RESTORING OUR RIVERS) BILL 2023, OCTOBER 2023**

Matters relevant to the Water Amendment (Restoring our Rivers) Bill 2023

1. Introduction

For at least 15,000 years pre colonisation, the Barwon-Baaka provided about a quarter of the flows to the River Murray, and to the Coorong in South Australia. This remained the case until the 1990s.

Since the 1990s there has been a major and rapid reduction in the volume and reliability of flows from the Northern Basin to South Australia. This is stated clearly by the Murray-Darling Basin Authority:

The total inflows to the Barwon–Darling system are estimated to be 4,402 GL/y under without-development conditions. Under without-development conditions, 70% of the total inflows reach the Menindee Lakes. Under baseline conditions the inflows have decreased to 37% of without-development inflows.¹

This means that of the 4,400 gigalitres per year of inflows to the Barwon-Baaka system, about 3,000 gigalitres reached Menindee Lakes, only 350 kilometres from the South Australian border. Under current river operations, most additional water reaching Menindee Lakes will flow into the Murray River.

The cause of the decrease in flows is excess diversions in the Northern Basin, coupled with a failure by NSW to comply with its own environmental targets and laws.

The 450 gigalitres is likely to be the last of the water to be recovered for the environment under the Basin Plan. It should be purchased where it will bring the greatest benefits. The Barwon-Baaka offers the biggest opportunity in the Basin for environmental gains from this water. It also provides substantial additional benefits on the Murray River, and restores flows to South Australia.

Recovery of the full 450 gigalitres in the Northern Basin, combined with NSW moving to comply with its obligations, will have a transformative effect on the Basin.

The new NSW Government is already indicating a change in water management. It commissioned the NSW Chief Scientist and Engineer's report into fish kills at Menindee and is committed to acting on his recommendations. It has also announced an independent Connectivity Expert Panel.²

¹ MDBA. 2011. *Water resource assessments for without-development and baseline conditions: Supporting information for the preparation of proposed Basin Plan*. MDBA, Canberra. <https://www.mdba.gov.au/sites/default/files/publications/1111-bpkid-water-resource-assessments-development-baseline.pdf>

² NSW Government. (2023). *Connectivity Expert Panel*. <https://water.dpie.nsw.gov.au/plans-and-programs/regional-water-strategies/final/western-regional-water-strategy/connectivity-expert-panel>

The combination of:

- NSW moving into measuring all water take and enforcing compliance,
- a more active Federal Government,
- 450 gigalitres of recovery in the Northern Basin, and
- finalising the shepherding of environmental water from Queensland to South Australia;

will result in:

- significant improvements to river health for the Barwon-Baaka and the people that live on it,
- improved environmental outcomes for the whole Basin,
- increased quantity and reliability of flows to South Australia,
- benefits to South Australia from a river system better able to deliver water when required.

If the full 450GL of water is recovered in the Southern Basin will result in:

- continuing decline of the Barwon-Baaka, including more fish kills, and
- South Australia struggling to get the additional water delivered when required.

The Barwon-Baaka is more than 2,700kms long, its catchment represents two-thirds of the Basin. Yet, delivering water to the Coorong at the Murray Mouth, is often portrayed as the ultimate indicator for the Basin's health.

If the additional water recovery is all recovered in the Southern Basin an opportunity will be missed to restore flows from the Northern Basin, through the Barwon-Baaka, to the River Murray and South Australia.

2. Background

The Basin Plan provides for 450 gigalitres of water to be recovered for the environment through improving irrigation efficiency.

The recent agreement between The Commonwealth Government, the ACT, and the Basin states except Victoria, allows for this water to be recovered through purchases as well as efficiency projects.³

This requires amendments to the *Water Act 2007 2012 (Commonwealth)* and the *Basin Plan 2012*. The *Water Amendment (Restoring our Rivers) Bill 2023* proposes:

- removing the 1,500 gigalitre limit on water purchases for the environment,
- a mechanism to adjust Sustainable Diversion Limits for any new water purchased for the environment, and

³ Plibersek. (2023). *Agreement of Murray-Darling Basin Ministers to deliver the Basin Plan in full*. <https://www.dcceew.gov.au/sites/default/files/documents/agreement-mdbp-delivery-full.pdf>

- changing the rules of the Water for the Environment Special Account to allow funding for community adjustment assistance.⁴

The Australian Greens proposed an amendment seeking a guarantee that the 450 gigalitres would be acquired in the Southern Basin.

Although the Northern Basin accounts for 32 percent of the Basin Sustainable Diversion Limit, it contributes only 15 percent of water recovered. The Southern Basin accounts for 63 percent of the Basin Sustainable Diversion Limit, yet contributes 82 percent of the water recovered.^{5, 6}

Because of growth in extractions the Barwon-Baaka and its tributaries are increasingly degraded,⁷ threatening ecologic collapse in large parts of the Northern Basin, and damaging the environmental integrity of the Basin.

This focus on the Southern Basin moves away from the Basin-wide perspective explicit in the Water Act 2007.

3. Environmental values of the Barwon-Baaka

The rivers of the Northern Basin flow from high rainfall regions of the eastern and northern Great Dividing Range. The Barwon-Baaka provides vital flowing water habitat for more than 2,700 kilometres, from upstream of Goondiwindi to where the Baaka flows into the Murray at Wentworth. It was, and remains, the centre of life and culture for many Aboriginal people.

The ecology of the Barwon-Baaka has been shaped by three defining features: 1) near-constant flows, 2) flowing water habitats associated with these flows, and 3) frequent flow pulses with far-reaching effects for the whole river.⁸

Base-flows and small freshes are fundamental to the health of the Barwon-Baaka. The river has flowed consistently for many thousands of years. Before the tributaries were heavily regulated, flows of more than 100 megalitres per day were sustained for years, and were present more than 75 percent of the time even in extreme drought. Flowing water habitats were an almost permanent feature of the river.⁹

⁴ Commonwealth. (2023). *Water Amendment (Restoring our Rivers) Bill 2023*.

<https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p?page=0;query=BillId:r7076%20Recstruct;billhome>
⁵ MDBA. (2023). *Current diversion limits for the Basin*. <https://www.mdba.gov.au/water-use/water-limits/current-diversion-limits-basin>

⁶ Department of Climate Change, Energy, the Environment and Water. (2023). *Surface water recovery required under the Basin Plan including Sustainable Diversion Limit Adjustment Mechanism as at 30 June 2023*.
<https://www.dcceew.gov.au/sites/default/files/documents/surface-water-recovery-including-sdlam.pdf>

⁷ Durrant-Whyte. (2023). *Independent review into the 2023 mass fish deaths in the Darling-Baaka River at Menindee: Findings and recommendations*.

https://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0005/580658/Menindee-Fish-Deaths-Report-Findings-and-Recommendations.pdf

⁸ Mallen-Cooper, M, and Zampatti, BP. 2020. Restoring the ecological integrity of a dryland river: Why low flows in the Barwon–Darling River must flow, *Ecological Management and Restoration*.

⁹ Mallen-Cooper, M, and Zampatti, BP. 2020. Restoring the ecological integrity of a dryland river: Why low flows in the Barwon–Darling River must flow, *Ecological Management and Restoration*.

A study that examined 220 Aboriginal middens along the Baaka found mussel shells dating back 15,000 years, with consistent remains found since then.¹⁰ This provided firm evidence of the long-term presence of the flowing water habitats necessary for mussels and other riverine species.

The Northern Basin provides vital Basin-wide, national and international ecological services. Internationally and nationally important wetlands include the Macquarie Marshes, the Gwydir Wetlands, the Lower Balonne floodplain (including Narran Lake), the Talyawalka Anabranche, and Menindee Lakes.

Longitudinal connectivity is essential for a healthy river. It supports movement for fish, replenishes and freshens pools and waterholes, maintains riparian vegetation and water quality for downstream communities.

The river provides refuge habitat and travel pathways between the Murray and the rivers of the Northern Basin, especially for fish such as golden perch.¹¹ The Barwon-Baaka provides vital habitat for the Basin-wide population of golden perch. Protecting flows to, and through, the nursery habitat of the Menindee Lakes will support dispersal into the Southern Connected Basin and upstream into tributaries.¹²

The Northern Basin supports vulnerable and endangered species such as the olive perchlet, Murray cod, silver perch and freshwater catfish. The listing of the Darling River Ecological Community as endangered under NSW legislation acknowledges the threats to native fish and aquatic invertebrates. Native mussels and the Darling River Snail depend on flowing water to breed and sustain healthy populations.

The Barwon-Darling is experiencing a shift from a connected, near-perennial flowing water ecosystem to a fragmented system. This is caused by river regulation and over-extraction.^{13, 14, 15, 16}

Re-introducing traditional Aboriginal custodial practises and restoring critical elements of natural flows will allow for the restoration of healthy ecosystems in the Murray-Darling Basin.¹⁷

¹⁰ Balme J. and Hope J. (1990) Radiocarbon dates from midden sites in the lower Darling River area of western New South Wales. *Archaeology in Oceania* 25,85–101.

¹¹ Zampatti et al. (2022). *Population demographics of golden perch (Macquaria ambigua) in the Darling River prior to a major fish kill: a guide for rehabilitation*. <https://www.publish.csiro.au/mf/pdf/MF21033>

¹² Mullen-Cooper, M, and Zampatti, BP. 2020. Restoring the ecological integrity of a dryland river: Why low flows in the Barwon–Darling River must flow, *Ecological Management and Restoration*.

¹³ Durrant-Whyte. (2023). *Independent review into the 2023 mass fish deaths in the Darling-Baaka River at Menindee: Findings and recommendations*.

https://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0005/580658/Menindee-Fish-Deaths-Report-Findings-and-Recommendations.pdf

¹⁴ MDBA. (2017). Observed Flows in the Barwon-Darling 1990-2017: A Hydrological Investigation – Technical Report. Obtained through FOI.

¹⁵ Grafton et al. (2022). *Resilience to hydrological droughts in the northern Murray-Darling Basin, Australia*. <https://royalsocietypublishing.org/doi/full/10.1098/rsta.2021.0296>

¹⁶ Australian Academy of Science. (2019). *Investigation of the causes of mass fish kills in the Menindee Region NSW over the summer of 2018-19*. <https://www.science.org.au/supporting-science/science-policy-and-sector-analysis/reports-and-publications/fish-kills-report>

¹⁷ Mullen-Cooper, M, and Zampatti, BP. 2020. Restoring the ecological integrity of a dryland river: Why low flows in the Barwon–Darling River must flow, *Ecological Management and Restoration*.

4. Hydrological connectivity between the Northern Basin with South Australia

The main tributaries of the Barwon-Baaka are regulated by large headwater storages. The NSW Government has managed significant holdings of environmental water in the Macquarie since 1980 and the Gwydir since 1995. NSW and Commonwealth environmental water managers co-ordinate environmental flows to the Barwon-Baaka and Menindee Lakes.

The Barwon-Baaka and Menindee Lakes are integral to providing regulated flows to the Murray, and especially South Australia. The Menindee Lakes are the closest major headwater storage to South Australia, improve reliability for Southern Basin water users, and relieve delivery pressures on the River Murray channel.

Strategic water purchases in the Northern Basin, especially those that restore base flows, will provide substantial flows to Menindee Lakes and South Australia.

5. Water recovery in the Basin

As a proportion of Sustainable Diversion Limits, far less water has been recovered in the Northern Basin than the Southern Basin

Table 1 shows the contribution of the Northern and Southern Basins. Water recovery by valley is shown at **Attachment A**.

Table 1: Water recovery relative to Sustainable Diversion Limits between the Northern and Southern Basin

Region	Current SDL (GL)	Proportion of SDL	Current Water Recovery Targets (GL)	Proportion of water recovery
Northern Basin	3,814	32%	320	15%
Southern Basin	7,476	63%	1,707	82%
Lachlan	570	5%	48	2%
Total	11,860	100%	2,075	100%

Although the Northern Basin accounts for 32 percent of the Basin Sustainable Diversion Limit, it contributes only 15 percent of water recovered. The Southern Basin accounts for 63 percent of the Basin Sustainable Diversion Limit, yet contributes 82 percent of water recovered.

When Sustainable Diversion Limits are increased to reflect floodplain harvesting in northern NSW (up to 410 gigalitres) and if the additional 450 gigalitres is acquired only from the Southern Basin, this inequity is exaggerated.

6. Reasons given to buy 450 gigalitres from the Southern Basin

Reasons given to buy 450 gigalitres from the Southern Basin are based mostly on:

- Schedule 5 of the Basin Plan,
- Basin Plan modelling, and
- misrepresentations of the Northern Basin.

Schedule 5 of the Basin Plan

There is a view that buying all 450 gigalitres in the Southern Basin is

...consistent with Schedule 5 of the Basin Plan. The environmental outcomes sought under Schedule 5 are all in the Southern Basin, and there is limited ability to deliver environmental water from the northern to the southern system.¹⁸

Schedule 5 does not direct that 450 gigalitres be bought in the Southern Basin.

Most of the outcomes identified in Schedule 5 are downstream of the confluence of the Baaka and the Murray. Improving environmental outcomes in the Northern Basin will also improve outcomes in the Southern Basin, particularly for fish and waterbirds.

The ability to deliver flows from Menindee Lakes to South Australia provides flexibility for river operations.

Basin Plan modelling

The Basin Plan modelling is out of date.

Most of the modelling for the development of the Basin Plan is at least 20 years old. The modelling undertaken before 2012 included assumptions relevant at the time. However, those assumptions no longer apply because of changes in river operations. These changes include:

- increased extractions in the Murrumbidgee and Barwon-Baaka, leading to lower real flows than modelled flows,^{19, 20}
- increased irrigation demand in the Lower Murray, leading to changed river operations in the Goulburn and Murray rivers,

¹⁸ Government of South Australia. (2023). *Response to the Murray-Darling Basin Royal Commission Report*. <https://cdn.environment.sa.gov.au/environment/docs/Murray-Darling-Basin-Royal-Commission-response-report-for-online-viewing.pdf>

¹⁹ This has been attributed widely to climate change. However, increased extractions upstream are also a major contributing factor. This is summarised briefly in a submission to the 2023 Basin Plan implementation review by the Productivity Commission by [Slattery & Johnson](#).

²⁰ Slattery & Johnson. (2023). *Submission to the Murray-Darling Basin Plan: Implementation review 2023* https://www.pc.gov.au/_data/assets/pdf_file/0004/366700/sub090-basin-plan-2023.pdf

- decreased channel capacity through the Barmah Choke and the related proposal to bypass the Barmah Choke, and
- increased Sustainable Diversion Limits since the original modelling.

The Basin Plan modelling no longer provides a strong justification for deciding where water should be recovered.

Misrepresentations of the Northern Basin

The Barwon-Baaka is misrepresented as unregulated and unreliable, 'disconnected' from its tributaries, and poorly connected to the Murray River. It is claimed that water purchased in the Northern Basin cannot be measured, cannot be protected from extraction, and will not flow reliably to the Murray. Whilst none of these perceptions are grounded in fact, ignoring the Northern Basin in this amendment will ensure they become the new reality.

The base and low flows that are the foundations of the ecology of the Barwon-Baaka are ignored.

7. Restoring flows in the Northern Basin

There is abundant evidence for the environmental, cultural and social importance of base flows in the river. The following measures, implemented as a package, will begin the restoration of these flows:

- buying water,
- measurement of water use and evaporation,
- compliance with Sustainable Diversion Limits,
- ensuring Sustainable Diversion Limits can only be changed with Parliamentary authority, and
- protecting environmental water.

Buying water

Buy A and B Class licences in the Barwon-Baaka

Restoring base and low flows must be the starting point for restoring the Barwon-Baaka.^{21, 22, 23}

²¹ MDBA. (2018). *Ecological needs of low flows in the Barwon-Darling: Technical report.*

<https://www.mdba.gov.au/sites/default/files/publications/ecological-needs-low-flows-barwon-darling.pdf>

²² Sheldon. (2017). *Characterising the ecological effects of changes in the 'low-flow hydrology' of the Barwon-Darling river: Advice to the Commonwealth Environmental Water Holder Office.*

<https://www.dceew.gov.au/sites/default/files/documents/characterising-eco-effects-changes-low-flow-barwon-darling.pdf>

²³ Carlile. (2017). *Hydrological impacts of water management arrangements on low flows in the Barwon-darling River system.* <https://www.dceew.gov.au/sites/default/files/documents/hydrological-impacts-water-management-arrangements-low-flows-barwon-darling-river-system.pdf>

Base flows below 1,250 megalitres a day at Bourke can be restored by purchasing all A Class licences.^{24, 25}

Flows between 1,250 and 11,000 megalitres a day at Bourke can be protected by purchasing all B Class licences.²⁶

Buy water at strategic locations

Water purchases should concentrate on holdings that are strategically placed for delivery to the Barwon-Baaka. This includes buying water where tributaries join the Barwon-Baaka would be valuable.

Measurement of water evaporation and use

It is relatively straightforward to find out how much water is taken from rivers and streams in the Northern Basin. All water use must be metered, evaporation from storages measured, and total water use calculated.

Ensure compliance with Sustainable Diversion Limits

There are several major concerns relating to the implementation of Sustainable Diversion Limits. They are that:

- increases in Sustainable Diversion Limits have eroded water recovery,
- Sustainable Diversion Limits are being changed outside the legislated process, and
- there are no numeric valley limits in NSW.

There is a long history of non-compliance with valley extraction limits in the Barwon-Baaka.²⁷

There will be more water in the Barwon-Baaka if NSW complies with valley limits. This may require changes to the current Sustainable Diversion Limit compliance framework, including giving more powers to the Inspector General of Water Compliance.

Ensure Sustainable Diversion Limits can only be changed under Parliamentary authority

Sustainable Diversion Limits were originally able to be changed only by amending the Basin Plan. They were increased this way for the Northern Basin Review (70 gigalitres) and the Supply Measure adjustments (605 gigalitres).

²⁴ The total volume of A Class licences is 9,856 megalitres. These licences were originally given to all riparian landholders, and many of them were not used for irrigation. Accounting rules allow unlimited carryover have resulted in very large account balances in A Class accounts, which has permitted significant extractions in the A Class window.

²⁵ Paul Simpson Consulting Pty Ltd. (2017). *Barwon-Darling: Low flow environmental watering impediments and opportunities*. <https://www.dcceew.gov.au/sites/default/files/documents/barwon-darling-low-flow-environmental-watering-impediments-opportunities.pdf>

²⁶ There are approximately 117,000 megalitres of B class licences held by irrigators in the Barwon-Darling. 80 percent of the licences are held by less than 10 people.

²⁷ Inspector General of Water Compliance. (2023). *Sustainable Diversion Limit Compliance Statement for 2021-2022*. <https://www.igwc.gov.au/sites/default/files/2023-09/igwc-2021-22-sdl-compliance-statement.pdf>

MDBA has since stated that Sustainable Diversion Limits can also be changed without amending the Basin Plan.²⁸ This means that they can be changed at any time by governments, without scientific basis, public consultation, or Parliamentary authority.²⁹

It is the opinion of Bret Walker SC that changing the Sustainable Diversion Limits this way is unlawful and could be subject to state and Federal legal challenge.³⁰ The Environmental Defenders Office also questions the lawfulness of this approach.³¹

Sustainable Diversion Limits have increased by 986 gigalitres since the Basin Plan was made. Of this increase, 311 gigalitres have been without Parliamentary authority, even accounting for a 136 gigalitre decrease in Victoria. The changes in the Sustainable Diversion Limits are shown in **Attachment B**.

Sustainable Diversion Limits in NSW have yet to include floodplain harvesting licences. Sustainable Diversion Limits are expected to increase in NSW when this happens.³²

Changes to Sustainable Diversion Limits must only be made through the legislative process, subject to Parliamentary authority.

Floodplain harvesting in northern NSW

The Basin Plan estimated floodplain harvesting of 46 gigalitres in NSW.

In 2022 and 2023 NSW granted 270 gigalitres of floodplain harvesting licences on four of the five major tributaries of the Barwon-Baaka.³³ When licences are granted on the Namoi River the total will be 410 gigalitres on these five rivers.³⁴

The NSW Government maintains that the water taken by floodplain harvesting is within the Cap. This is incorrect. The Cap is meant to limit development to that in place in 1995.³⁵ However, development has not been limited. For example, the capacity of on-farm storages, critical for floodplain harvesting, has increased by 2.4 times since 1995.^{36, 37}

²⁸ Slattery & Johnson. (2021). *Licensing floodplain harvesting in Northern NSW: analysis and implications*.

<https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-submission-details.aspx?pk=76066>

²⁹ Slattery & Johnson. (2021). *Licensing floodplain harvesting in Northern NSW: analysis and implications*.

<https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-submission-details.aspx?pk=76066>

³⁰ Walker and Hartford-Davis. (2021). Joint memorandum of advice.

<https://www.parliament.nsw.gov.au/lcdocs/submissions/76500/Southern%20Riverina%20Irrigators.pdf>

³¹ Environmental Defenders Office. (2023). *Murray-darling basin Plan: Implementation Review 2023 (Productivity Commission)*. https://www.pc.gov.au/_data/assets/pdf_file/0011/545609/report-to-assist-community-consultation.pdf

³² The MDBA maintains that the Baseline Diversion Limits and the Sustainable Diversion Limits expressed in Schedules 2 and 3 of the Basin Plan are not binding because they are notes in the Regulation.

³³ WaterNSW. (2023). NSW Water Register: Information about a water source – Total number of water access licences and water usage for a water source. <https://waterregister.watarnsw.com.au/water-register-frame>

³⁴ Department of Planning and Environment. (2022). *Namoi: Floodplain harvesting in water sharing plans*.

https://www.industry.nsw.gov.au/_data/assets/pdf_file/0011/545609/report-to-assist-community-consultation.pdf

³⁵ Slattery & Johnson. (2021). *Licensing floodplain harvesting in Northern NSW: analysis and implications*.

<https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-submission-details.aspx?pk=76066>

³⁶ Brown et. Al. (2021). An unsustainable level of take: on-farm storages and floodplain water harvesting in the northern Murray-Darling Basin, Australia. <https://www.tandfonline.com/doi/abs/10.1080/13241583.2022.2042061>

³⁷ Slattery & Johnson, (2021). *Floodplain water harvesting in the Northern New South Wales Murray-Darling Basin*. <https://irnsw.files.wordpress.com/2021/02/21022-fph-final-report.pdf>

Floodplain harvesting was not included in the information that led to Sustainable Diversion Limits being increased by 70 gigalitres in the Northern Basin Review.

This can be resolved by returning Sustainable Diversion Limits to levels that are within the Murray-Darling Basin Cap.

The ownership of floodplain harvesting licences is concentrated. Of the 228 licences so far issued, amounting to 270 gigalitres, eight licences account for a quarter of the total volume (66 gigalitres) and 29 for half (134 gigalitres). Two beneficial entities hold at least 15 percent of floodplain harvesting licences issued.^{38, 39} Trade is expected to lead to a greater concentration of ownership.

Protecting environmental water in the Northern Basin

NSW Active Management in Unregulated Rivers policy

The Commonwealth Environmental Water Holder and NSW have made significant progress protecting environmental water from extraction in NSW.

NSW has an Active Management in Unregulated Rivers policy to protect environmental water from extraction.

The NSW and Commonwealth environmental water managers now track environmental water flows along the length of the Barwon-Baaka into Menindee Lakes, providing accurate measures of volume and timing.

Protecting environmental water from Queensland into NSW

Currently, environmental water that flows from Queensland into NSW is available for extraction by NSW irrigators.

The protection of that water from extraction could be achieved through changes to the Water Sharing Plan for the Intersecting Streams when it is updated to reflect the Basin Plan.

Event-based mechanisms

The Commonwealth Environmental Water Holder has been using event-based mechanisms in Queensland for several years. These are commercial arrangements with landholders for either a temporary purchase of water, or to allow environmental water to flow past a property.

Shepherding environmental water through Menindee Lakes

Currently, Held Environmental Water delivered to Menindee Lakes is re-regulated, loses its as environmental water status, and becomes part of the NSW general

³⁸ WaterNSW. (2023). *NSW Water Register: Information about a water source: Water access licences (including conditions) for a water source*. <https://waterregister.watnsw.com.au/water-register-frame>

³⁹ NSW Land Registry Services. (2023). *NSW LRS Online*. https://online.nswlrs.com.au/wps/portal/six/home!/ut/p/z1/04_Sj9CPyKssy0xPLMnMz0vMAfIjo8ziLQMMLOydLIv8D_AwtLAWcvQOdTIKM3AwN3M30wwwkpiAJKG-AAjqZA_VFqJc7ujh4m5j5AQRMliwNPFycPF3NLXwMDTzOoAjxmFORGGGQ6KioCAFRqNvU!/dz/d5/L2dBISEvZ0FBIS9nQSEh/

supply, or the supply shared between NSW and Victoria, depending on the volume in the Lakes.⁴⁰

This could be remedied by an agreement between the Commonwealth, NSW and Victorian governments to recognise that Held Environmental Water entering Menindee Lakes maintains its environmental status in Menindee Lakes and downstream.

8. Conclusion

The causes of the catastrophe unfolding on the Barwon-Baaka are not complex or mysterious. The policies required have been agreed for decades.

Explicit environmental protections in existing water management legislation are neither enforced nor reflected in current policy and operations...This failure in policy implementation is the root cause of the decline in the river ecosystem...⁴¹

Major contributors include;

- NSW ignoring the Principles of its own Water Management Act
- inadequate water recovered for the environment under the Basin Plan,
- increased extractions in Northern tributaries,
- allowing large scale extraction of low flows in the Barwon-Baaka, and
- inadequate and ineffective end of system flows from the tributaries to Menindee Lakes, and
- unmeasured extractions and evaporation

The NSW Chief Scientist and Engineer released his report. In it he says:

...our findings and recommendations reflect an understanding of the 2023 event as symptomatic of broader degradation of ecosystem health and consequential long-term pressure on the Darling-Baaka River system. This observation is not new, having been the subject of numerous expert reviews and reports.

Data and expert advice...make clear that without substantive change...there will be further environmental degradation and recurrence of such events. Difficult decisions will need to be made. These are essentially social and not scientific in nature.⁴²

⁴⁰ Commonwealth. (2007). *Schedule 1 of the Water Act*. <https://www.legislation.gov.au/Details/C2021C00539>

⁴¹ Durrant-Whyte. (2023). *Independent review into the 2023 mass fish deaths in the Darling-Baaka River at Menindee: Findings and recommendations*. https://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0005/580658/Menindee-Fish-Deaths-Report-Findings-and-Recommendations.pdf

⁴² Durrant-Whyte. (2023). *Independent review into the 2023 mass fish deaths in the Darling-Baaka River at Menindee: Findings and recommendations*. https://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0005/580658/Menindee-Fish-Deaths-Report-Findings-and-Recommendations.pdf

The decline of the Barwon-Baaka is not a failure of understanding. It is a failure of political will and good faith. The legislative, policy and management changes needed are well known and could be brought about reasonably quickly. What will then be required will be a commitment to enforcing them.

The election of a Labor Government in NSW, and a more active Commonwealth Government, present an opportunity. After more than a decade of failing the Barwon-Baaka there are signs that the NSW Government is serious about reversing its decline and protecting its communities.

The NSW Chief Scientist and Engineer has made several recommendations to restore the Barwon-Baaka. These should be implemented in full and properly resourced.

Environmental water should be recovered from where it will deliver the best environmental outcomes in the Northern Basin. There is capacity to recover the full 450 gigalitres in the Northern Basin. Buying A and B Class licences in the Barwon Baaka will recover more than 120 gigalitres. Cubbie Station is on the Culgoa River and has good connectivity to the Barwon-Baaka. It has water licences and storage capacity of more than 500 gigalitres. New floodplain harvesting licences totalling 410 gigalitres are being issued on the five major rivers in the north, including the Barwon-Baaka.

Recovery of 450 gigalitres from these sources in the Northern Basin, combined with more active and sympathetic NSW and Federal Governments, can be expected to deliver about 300 gigalitres of water to South Australia.

This is not much different to the volume able to be delivered from 450 gigalitres of water recovered in the Southern Basin. For example, 450 gigalitres delivered through the Barmah-Millewa Forest will incur a 'loss' of 140 gigalitres.

Changes to Sustainable Diversion Limit compliance framework outside the legislated process should be reversed. All future changes should be made consistently with the legislated process and with Parliamentary authority. Compliance with them must be enforced. This will require a strengthening of powers of the Inspector General of Water Compliance.

The provision on Barwon-Baaka and floodplain harvesting licences that deems that when irrigators cannot take water because there is none in the river, they are 'owed' that water. Irrigators exercising this provision then have first call on water when rivers start flowing, up to five or ten times their licensed volume.

Good progress has been made delivering and protecting environmental water in the Northern Basin. Releases are well-coordinated to achieve the best outcomes for the Barwon-Baaka, and environmental water is tracked accurately to Menindee Lakes. However, two important measures remain to be taken. Environmental water from Queensland must be protected from extraction in NSW, and it must be protected through Menindee to the Murray and South Australia.

The Commonwealth Environmental Water Holder already employs a method, the 'event-based mechanism' to meet special contingencies in the Northern Basin.

Water needed is forecast and calculated and irrigators are paid to forgo pumping, or to release water already captured in storages. This could be expanded to other parts of the system, and used on a larger scale.

Water resource and water sharing plans must ensure that flows to the Barwon-Baaka are a priority, including changes to allocation policies where necessary, and guaranteeing flows from the tributaries into the Barwon-Baaka and into Menindee Lakes.

All take in the Northern Basin must be measured. All evaporation from on-farm storages must be accounted for.

The Barwon-Baaka and the Menindee Lakes are integral to providing water to the Southern Basin, and especially South Australia. The ecology of the Northern Basin is critical to the ecological health of the entire Basin. It is a system that is severely degraded, in far worse condition now than before the Basin Plan was made. The Basin Plan cannot be considered a success, or to be implemented in full, while allowing environmental decline caused by over-extraction in the Northern Basin.

Attachment A: Water recovery

The progress of water recovery towards the 2,075 gigalitre target at September 2023 are shown in the table below.⁴³

	Water recovery target	Progress towards water recovery	'Over-recovery' in individual valleys	Remaining water recovery per C/W	Remaining balance including 'over-recovery'
Queensland	140.00	127.20	1.10	14.00	12.80
Northern NSW	180.00	207.10	43.20	16.10	(27.10)
Northern Basin	320.00	334.30	44.30	30.10	(14.30)
Southern NSW	761.20	758.50	7.40	10.00	2.70
Victoria	809.10	826.20	17.00	-	(17.10)
South Australia	131.80	141.00	9.20	-	(9.20)
ACT	4.90	-	-	4.90	4.90
Southern Basin	1,707.00	1,725.70	33.60	14.90	(18.70)
Lachlan	48.00	47.10	-	0.90	0.90
Total	2,075.00	2,107.10	77.90	45.90	(32.10)

⁴³ Department of Climate Change, Energy, the Environment and Water. (2023). Surface water recovery required under the Basin Plan including Sustainable Diversion Limit Adjustment Mechanism as at 30 June 2023. <https://www.dcceew.gov.au/sites/default/files/documents/surface-water-recovery-including-sdlam.pdf>

Attachment B: Changes to Sustainable Diversion Limits

Changes to Sustainable Diversion Limits are shown in the table below.^{44, 45, 46}

Region	Original SDL (GL)	Legislated increases (GL)	Non legislated increases /(decreases) (GL)	Current SDL (GL)
Queensland	1,375.90	35.00	45.00	1,456.90
Northern NSW	2,092.90	35.00	229.20	2,357.10
Northern Basin	3,468.80	70.00	274.20	3,814.00
Southern NSW	3,325.30	286.80	106.30	3,718.40
Victoria	2,945.10	266.20	(135.50)	3,075.80
South Australia	515.90	52.00	60.70	628.60
ACT	47.60	0	5.80	53.40
Southern Basin	6,833.90	605.00	37.30	7,476.20
Lachlan	570.40	0	(0.40)	570.00
Total	10,873.10	675.00	311.10	11,860.20

⁴⁴ MDBA. (2023). *Current diversion limits for the Basin*. <https://www.mdba.gov.au/water-use/water-limits/current-diversion-limits-basin>