

Victorian Government Submission to the Productivity Commission's Inquiry into the Murray-Darling Basin Plan: Implementation Review 2023

Victoria welcomes the opportunity to provide this submission on the Murray-Darling Basin Plan Implementation Review 2023, and one of our most significant environmental, economic, social, and cultural landscapes. An economic powerhouse of regional Australia, the Goulburn and Murray valleys and their catchments provide a place to live and work for over 600,000 Victorians, with nearly 40,000 of those employed in agriculture. The communities of the Basin are at the heart of Victoria's Basin Plan implementation and are keen to see the outcomes they were promised in 2012. The ecology of these areas is unique in its own right, with significant forests, wetlands and floodplains, and supports the health of the Basin overall by acting as breeding grounds and nurseries for fish, turtles, frogs and birds which migrate into other tributaries.

Victoria has worked with a sense of urgency and purpose to implement the Basin Plan since the establishment of water extraction caps in 1992, and the Plan presents our biggest opportunity in decades to make a significant and enduring difference in our river rehabilitation work across the southern connected Basin. As the second step to the Living Murray Program, the Basin Plan allows us to accelerate our own local catchment improvement work and support the community to achieve medium to long-term environmental enhancements across the Basin landscape.

The acceleration of this work is significant for the Basin community and for Basin jurisdictions and requires a collaborative and concerted effort to improve the health of the Murray Darling Basin. Critical to our collective success is not just 'what' we implement, but 'how' we implement the various components of this ambitious plan to rehabilitate a highly modified catchment with urban and agricultural systems built around waterways and on the floodplain.

Victoria's investment in improving river health since 2004 is approaching \$1 billion, and demonstrates a clear commitment to improving the condition and resilience of high-value catchments and waterways beyond the river channel. The health of the Murray River and its tributaries depends on the improved condition and reconnection of some of Victoria's most important riverine and wetland environments. For instance, Victoria's tributaries such as the unregulated rivers of the Ovens and Kiewa are some of the most important to providing habitat and rehabilitating flow patterns for the water-dependent ecosystems across the southern connected Basin, as the unregulated systems support aspects of the ecosystem like native fish populations.

We have 'learnt by doing', that we need a multi-pronged approach to achieve environmental outcomes, including enhancing connections between the river, creeks, and wetlands to encourage populations of frogs, waterbirds and small fish, providing reliable breeding grounds for waterbirds in wetlands, and supporting healthy red gum and black box habitats on floodplains.

Victoria is a strong advocate for the water interests of First Nations communities, and has invested \$34.6 million since 2016 in Aboriginal Water Programs, as well as directly investing in Traditional Owner organisations' waterway health activities, and increasing representation on decision-making bodies including water portfolio boards. Victoria has committed to better partner with Traditional Owners across the state in managing River Country towards meeting their aspirations. We now have a better understanding from listening to First Nations people about their deep knowledge of water and Country, that the condition of Country impacts on community health and protection of significant sites across the Cultural Landscape is paramount.

These transformative changes don't happen if active management is not a part of the Plan. This requires consistent, timely, and evidence-based investment and efforts, as well as monitoring at

local and regional levels. Evidence of the benefits and outcomes to date is encouraging, with clear benefits reported for native fish, waterbirds, frog and turtles and vegetation (see pages 4-5 for more detail on these). Further action to build on these successes will deliver the environmental benefits targeted by the Plan.

The previous Productivity Commission report in 2018 identified good progress in implementing the Basin Plan with worthwhile projects that needed more time to complete, particularly to create the localised social licence around major changes to existing practices and thinking around how we improve environmental outcomes. The Commission also acknowledged that we are in relatively early stages of environmental water use and that environmental works projects and system operating changes need to be carefully discussed and worked through with local communities. These statements were made before the pandemic and major floods in October 2022, that were bigger than previous flood levels in Mildura and Echuca, and at unprecedented levels for communities along parts of the Goulburn.

We do not understate the impact these floods continue to have on Basin communities and their recovery. These events also demonstrate the environmental impact of floodplain watering. For example, flooding at Living Murray sites such as Hattah has resulted in significant breeding events. Victoria's approach, of using proven and established works and measures means these observed environmental benefits can continue to be achieved – in a targeted way - in periods of drier conditions and without putting our floodplain communities under significant risk.

It is Victoria's position that order to finalise the Basin Plan, Basin Plan jurisdictions need to:

1. **Give an extension to projects where there is high confidence in delivery to high value ecosystems.** The Commonwealth Environmental Water Holder's office have previously told Senate committees that the existing water now recovered for the environment in the Basin Plan can only be delivered to significant places on the floodplain in the frequency or duration required with implementation of works and operational rule changes. The inclusion of these projects was agreed to in 2012, but the specific projects were not agreed until 2017. Modelling and investment have only been finalised since then. While moving as quickly as possible since, these projects have been delivered during the pandemic years, as well as through the October 2022 floods in the Goulburn and the Murray. This has reduced the speed under which all projects can be delivered.
2. **Greenlight projects previously part of the Basin Plan but not previously prioritised.** There are meritorious projects developed by the states and notified as part of the SDLAM that will help deliver significant volumes of water through the modified, regulated system and recognise the changes in volumes and patterns of water delivery from irrigation and urban to the environment.
3. **Finalise all outstanding Basin water resource plans and follow up commitments to monitoring and metering.** Strong compliance will provide confidence that environmental water is protected through the system, and that we are getting the environmental outcomes for waterways and wetlands in which we invested. Large variability in water planning, monitoring and compliance and enforcement across jurisdictions means that there are big gaps in our ability to manage water and this undermines community confidence.
4. **Recover significantly more water in the Northern Basin to address long-standing and increasingly urgent problems in the Darling River and address the most pressing environmental issues across the Basin.** Water sharing plans with rules that improve connectivity and ensure compliance will be important for achieving environmental outcomes in the Darling and lower Murray rivers.

5. **Where water recovery is required, seek further progress through system projects aligned with the Basin Plan's current socio-economic requirements.** There are still potential water recovery projects across the Basin that can be community driven and may realise opportunities to change how water is delivered and used through regional systems with benefits for waterways and communities. It does not make sense to reach for the blunt instrument of buybacks that are well documented to harm communities when alternatives are available.

Why aren't buybacks the way forward?

It is Victoria's long-standing view that buybacks do not automatically deliver environmental benefits - they are simply one of several mechanisms for transferring entitlements from the consumptive pool to environmental water holders. The way that water is used depends heavily on the management options available to water holders, and increasing the amount they hold significantly above the 2,107 GL already held is not going to expand those options in the way that management changes will.

Rivers now run lower in winter when water is collected in reservoirs and storages, and higher in summer when water is delivered through rivers and creeks to farms and towns for irrigation and urban use. Environmental water holders use their portfolio of water to return some of this water to the places, at the right times.

However, the fact that natural overbank flows don't happen as often as our water dependent ecosystems need has very little to do with how much water is held by Environmental Water Holders. Rather, it correlates more directly to the infrastructure used to help move water – including weirs, locks, and irrigation districts – as well as the big dams that capture most of the flows in the wettest parts of the catchment.

Our remnant Blackbox, Lignum and Redgum habitats, particularly in the west of the state, need longer floods of greater magnitude more often than even a very large environmental water portfolio could deliver to thrive. It is well understood that works can deliver benefits that more water alone cannot. For example, the independent Standing Inquiry and Advisory Committee appointed by the Victorian Minister for Planning has agreed that the impacts of construction and operation of works to deliver environmental water at Hattah and Belsar-Yungera are insignificant, and the works are anticipated on the whole to benefit the majority of threatened flora. The assessments also highlights the importance of floodplain condition for the presence and condition of terrestrial species such as silver wattle or chenopod woodland and the birds and other animals relying on this terrestrial habitat.

Water needs to be delivered in a pattern that has been disrupted - increasing the frequency and duration of inundation are the key to changes in biodiversity at a landscape-scale. Doing nothing to support active water delivery will lead to stressed and dying water-dependent ecosystems, as experienced during the Millennium Drought, when emergency watering efforts could target only a few hundred hectares. Environmental works are critical to target higher parts of the floodplain and protect these vital ecosystems at a greater scale to be effective, particularly in a drier future.

Changing operational rules about how water can be delivered will be important to work through from a system-wide perspective. This must be combined with continuing the program of floodplain works that has been delivering water for the environment since 2006. Simply put, floodplain vegetation with active management delivering more frequent, regular flows is in better condition than areas that receive unregulated flooding only.

The huge efforts in water recovery and innovative water delivery in the regulated Murray is building on previous work before and during the Millennium Drought. Lessons we learnt through the challenges of extended dry conditions and its impact on local landscapes including our communities are the key to our approach. Current changes in rainfall and inflows because of climate change will only make this more important.

How do we improve the condition of the Murray River and its tributaries?

Victoria has pioneered recovery of water for environmental and cultural needs. Before the Basin Plan, Victoria completed environmental flow studies to identify how best to get responses in water dependent ecosystems, the gaps between current and ideal water regimes, and what opportunities were to either restrict flow or recover more water to meet that gap. Victoria now has Aboriginal Water Assessments that Traditional Owners can use to assert their cultural water needs. We also worked on how we would do this in ways that were effective, reliable and can be delivered through long-modified systems.

Victoria's catchment management authorities and Victorian Environmental Water Holder have a strong track record of planning and delivering water for the environment and targeting threatened species through dry and wet times. This has supported the objectives of both the *EPBC Act* (Cth) and the *FFG Act* (Vic) to support threatened species. For example, delivering water for Murray hardyhead, where reduced flow is one of the key threats that need to be addressed for their recovery.

At Barmah Forest, a Ramsar-listed wetland, water for the environment delivered over consecutive years has improved overall health, protecting, and improving habitat and conditions for fish, waterbirds, frog and turtle species. Recent monitoring shows:

- the site supports 30% of the national population of the endangered Australasian Bittern
- a reversal of the dramatic decline in the large open areas that characterised the Barmah wetlands, by using a combination of fencing and water for the environment, with a 2000% increase of Moira grass habitat observed within fenced areas.
- While continued focus on fox control is needed, turtle populations are recovering since the Millennium Drought and are considered 'stable' in 2022. This is directly linked to with significant movement of specimens (in at least one case more than 100 kilometres over a two year period) and dispersal throughout the forest detected in response to high flows.

At the Ramsar-listed Hattah Lakes, environmental watering combined with natural floods has resulted in a huge increase in waterbird breeding. Specifically:

- Monitoring after environmental watering in late 2021 found 1900 nests and more than 6500 chicks of colonial nesting waterbird species as well as 800 chicks of other waterbird species such as grebe and duck. Three threatened species were also recorded as breeding, including blue-billed duck, musk duck and white-bellied sea-eagle.
- During 2022 flooding, monitoring detected 10 species of colonial nesting waterbird species using 7000 nests for over 25,500 chicks, with a further 18 water bird species detected breeding for an additional 1700 chicks.

After signing funding agreements in 2019, Victoria has proactively worked to implement projects critical to delivering water at a frequency and duration that is not possible in this highly modified Basin. Improved condition of the Basin relies on improving the condition of the many tributaries and remnant water-dependent landscapes. This is a challenge facing all governments since the first locks

and dams were built to capture and store large volumes of water, as well as the towns that grew into cities such as Mildura, Swan Hill, Echuca, Shepparton, and Seymour.

Victoria's 2020 Environmental Report Card reported that since 2012, we have delivered water to more than 120 waterways across northern Victoria, to benefit fish, waterbirds, frogs, turtles and vegetation, and benefits are clear. By way of example:

- Native fish show increased abundance and distribution at 90% of sites monitored; maintained or increased the number of native fish species in all systems monitored; and the successful triggering of significant breeding responses in native fish nursery habitat.
- Waterbirds show increasing waterbird abundance, diversity, habitat and breeding; protected, maintained or restored numbers and variety of waterbirds at almost 90% of sites monitored; and safeguarding the habitat of migratory waterbird species protected under international treaties at most sites.
- Native vegetation shows improved or maintained condition (health) at more than 90% of monitored wetlands; improved or maintained condition at almost 90% of monitored rivers; and increased resilience to drought and flood.

A Basin scale ecological response comes from localised, on-ground work

Victoria's catchment framework outlines the program logic of our approach in achieving improvements in river and catchment health. We are acting to target change at a reach-by-reach level across key indicators of river health in all tributaries to our mighty rivers. We have learnt that success is achieved by localised, consistent effort across land tenure, social landscape, and over long periods of time.

And then at a regional level, together with our communities, we have developed regionally focused, holistic, landscape-based strategies. In 2005 we started our journey in explicitly considering environmental, social, cultural, and economic values in one planning process where historically they had been separately considered. In Northern Victoria, we finalised this strategy five years before the Basin Plan, documenting water recovery targets aligned with the Basin Plan.

For these reasons, Victoria's priorities remain water recovery projects that minimise negative regional economic impacts, and support communities to transition to reduced and varied water availability. The environment is provided with a reliable water product for environmental water uses to deliver in periods of drought. Social licence has been carefully built for on environmental water provided for local use without increasing water market prices or reducing water availability and minimise the stranded assets of previous public investments.

More time is justified

Water resources and catchment management presents a range of complex, long-standing, and far-reaching challenges. They require all levels of government, landholders, Traditional Owners, and communities to contribute to reducing the impacts of resource use. Approaches that have community ownership and buy-in, such as the successful approach to manage salinity in the Basin, or work done with irrigators to reduce nutrient runoff, are routinely more effective, accepted, and enduring in natural resource management. Legislated, prescriptive approaches with set timelines are fit for some challenges. However, without closed loop adaptive mechanisms, perverse and unintended outcomes can undo the original positive intent.

Partnerships with Traditional Owners require time and demonstrated commitment – in building relationships, and shared trust and knowledge building to enable free, prior and informed consent

and government processes are often not flexible enough for this. This is an area the Victorian Government is making efforts to address. In some cases, this has extended the originally proposed timeline for Basin Plan work. This is just one example of how delivery may be a little slower and is acknowledging and respecting the time required to ensure works and activities on River Country is done in a culturally sensitive way.

Climate change is observable now

Climate change has been incorporated into water resource policies since 2004 after seeing the “step change” of rainfall and flows. Over the years, Victoria’s entitlements have been converted to water shares that reflect changes in flow rates that help all users to secure a realistic share of real water, rather than the diminishing reliability of some water products. This is helped by changes in Victoria’s allocations in the Goulburn and Murray where water is put aside for the following year to share between parties and manage the impact of ever more frequent dry periods. Importantly for rehabilitating water-dependent ecosystems, the environmental water holders have access to largely Victorian high reliability products in dry years that have ensured water is delivered into drought-resilient habitats and refugia.

Rehabilitating water-dependent landscapes

Victoria’s approach to restoring hydrological patterns into water-dependent landscapes has had a significant and positive impact on the condition of critical aquatic Ecological Vegetation Classes (EVC’s), in turn improving the survival of critical species including many protected under Commonwealth and Victorian legislation.

Recovering water alone does not achieve these outcomes in a working river. For this reason Victoria’s catchment management authorities have continued the Living Murray’s approach to building and using proven infrastructure to deliver water when and for as long as need at our most valuable environmental and cultural sites. This system of delivery enables water to gently spread, remain on the floodplain, and then recede in ways that mimic natural flows. By investing in well-established works and delivery measures water can be pumped and held at important sites while also avoiding community flood risk. These works are also enabling consistent, effective and effective watering events of anticipated duration, that rehabilitate landscapes and continue to build resilience and adaptation.

Making sure flows are in waterways

Victoria is demonstrably committed to a clear and consistent approach to metering and compliance because of the benefits to better flows in the river and secure, reliable water shares for all users. Victoria’s water users back increased vigilance and penalties for an even playing field that reflects the increased value of water. Moreover, they benefit from a robust system of oversight, corrections of breach and, where necessary, prosecution. Victoria’s nation-leading approach to compliance is maintaining confidence and transparency that water sharing arrangements are being respected and can be relied upon. Staying the course with implementation of the Basin Plan is important to maintain this confidence and compliance.

Next steps

Victoria’s position is clear on what is needed to deliver the improved and agreed environmental outcomes set out in the Basin Plan.

This submission details the steps necessary for implementation of the Basin Plan and the consistent approach that is required. Through an approach grounded in respect, equity, and transparency we can continue to build and secure the social licence needed to implement and achieve the agreed outcomes of the Basin Plan.

Improving the condition of our waterways and catchments is vital. As is anticipating future challenges and demands on our water, environments, communities and on Country requires a commitment to ongoing engagement and shared decisions.

To that end, our commitment stands firm, and we look forward to continuing this work in the interests of the Basin and its communities and environment, now and into the future.

26 July 2023

GMW response to the Murray-Darling Basin Plan: Implementation Plan Review 2023

Goulburn-Murray Water's submission to this review will stress the necessity for future water savings to come from efficiency projects outside of the consumptive pool. If they do not, the Basin's largest irrigation district faces a critical threat, along with the channel network delivering environmental water, and the future wellbeing of irrigators, their communities, and the regional economies.

Goulburn-Murray Water is Australia's largest rural water corporation, managing water resources across the Murray Darling Basin's biggest irrigated agriculture region. We operate 24 Victorian water storages that can hold approximately 11,400 GL of water.

We manage, store and deliver water through approximately 10,000km of delivery and drainage infrastructure to more than 25,000 active customers in northern Victoria, and manage more than 100,000ha of public land.

Our region spans 68,000 square kilometres, bordered by the Great Dividing Range in the south and the River Murray in the north, stretching from Corryong in the east down river to Nyah. This area supports diverse agricultural commodities including dairy, cropping, horticulture, beef and sheep. We manage water for domestic use, to grow food and fibre, to protect flora and fauna and provide recreation. We service and supply a diverse range of Urban Water Authorities, Environmental Water Holders, Catchment Management Authorities (CMA) and the Murray-Darling Basin Authority (MDBA).

As the constructing Authority for the MDBA and the Catchment Management Authority, GMW undertakes investigations, design, construction, operation, maintenance, and implementation. Key examples include in the past 4 years we have constructed 3 fishways (Koondrook, Cohuna, Tea Garden) for the Catchment Management Authority. For the MDBA this includes assets such as Dartmouth, Torrumbarry, Yarrawonga, Mildura weir and salt interception schemes.

The irrigated agriculture sector in northern Victoria alone generates more than \$6 billion of production value annually and directly supports over 10,000 jobs in the Goulburn-Murray Irrigation District (GMID).

Goulburn-Murray Water is the Northern Victorian Resource Manager appointed by the Minister for Water. Victoria's Department of Energy, Environment and Climate Action (DEECA) develops water allocation policy and each season GMW announces seasonal determinations for all northern Victorian declared water systems. We are a partner in the Victorian Water Register, which manages more than \$7 billion of water entitlements and over \$300 million in water share and allocation trade for Victoria.

Question 1. What needs to change to ensure water recovery targets are met and that supply and efficiency measures are delivered? What lessons can be learnt from past experiences?

In the 11 years since the Murray-Darling Basin Plan was established, there has been significant progress toward securing the long-term future of the Basin while supporting the prosperity of the region's agriculture industry. The achievements within a relatively short time span are even more



significant given the impact of COVID-19 and extreme weather events including record-breaking bushfires and floods.

Goulburn-Murray Water is immensely proud to have contributed toward the water recovery achievements through the projects targeting water outside of the consumptive pool, such as the Connections Project and the Water Efficiency Project. The Connections Project delivered 433 GL of long-term average annual water savings and remains the Victorian Government's largest irrigation infrastructure project. The Water Efficiency Project is now expanding on the success of the Connections Project, providing another 15.9 GL of water savings. The success of these projects exemplifies the benefits of investing in long-term water recovery projects with consideration to generating positive socioeconomic outcomes and strong customer support.

The Connections Project was a significant commitment for stakeholders, including state and federal government and Goulburn-Murray Water. This commitment proved to be of immense benefit, as the Goulburn-Murray Irrigation District now has a world-class water delivery system that supports irrigator productivity, helps communities thrive, and fosters healthy waterways and wetlands.

The Connections Project has demonstrated that wide scale investment in modern water delivery infrastructure provides both economic and environmental security. Similar opportunities to provide this security across the Murray-Darling Basin, seeking water efficiencies outside of the consumptive pool, should be supported wholeheartedly. These opportunities often require a high level of commitment – this is the commitment that is needed to ensure the long-term health of the Basin.

Buybacks Key Learnings

Buybacks were used extensively in the early period of Murray-Darling Basin Plan implementation. The timing of the most intense period of buyback coincided with the Millennium drought, when irrigators were financially vulnerable. The buybacks had two serious negative consequences: adverse socio-economic impacts and a patchwork of stranded assets.

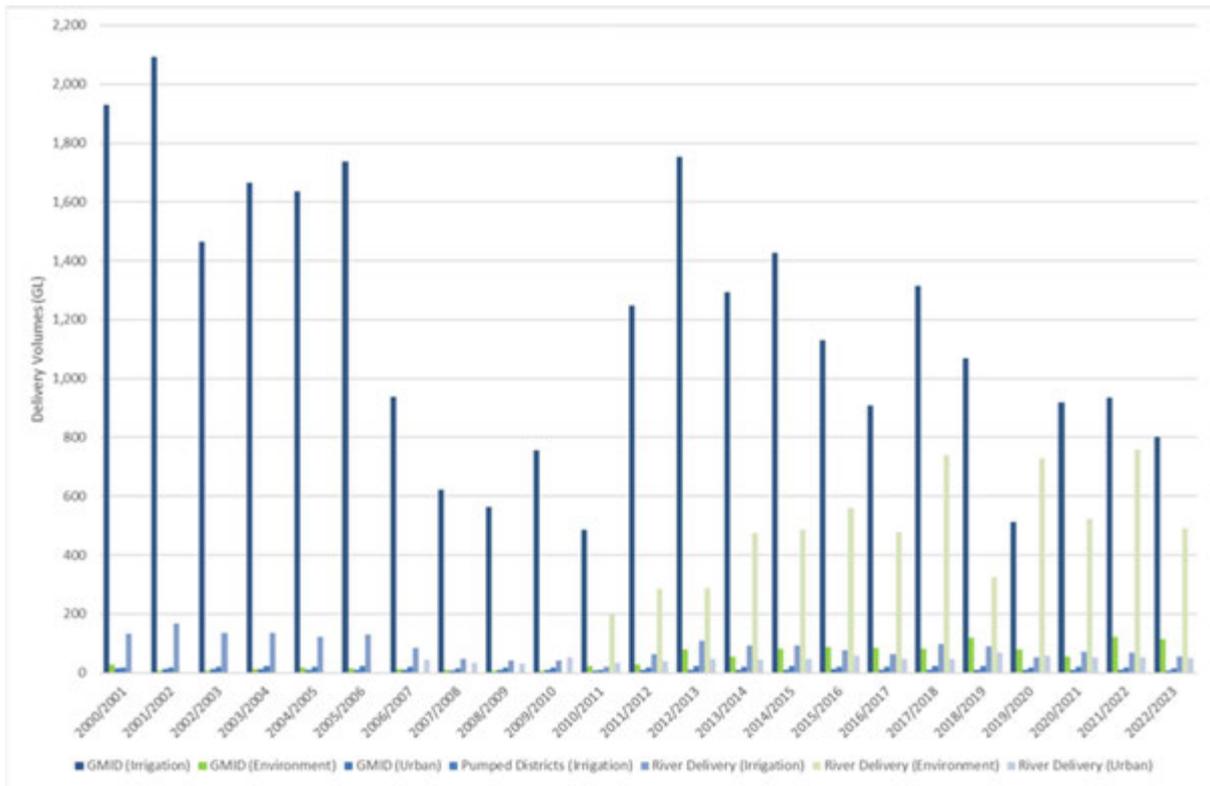
Many of the wider communities experienced adverse socioeconomic impacts where water was bought. Economic activity reduced, there were less jobs, outward migration, reduced access to services and, ultimately, a fraying of the social fabric of these communities. Recognising this failing, governments responded by limiting the total volume of water that could be bought-back, and introduced strengthened socioeconomic tests, including for on-farm investment in return for transfer of water to the funder. These responses had an impact and should continue and be strengthened.

The buybacks also saw a reduction in the integrity and cost-efficiency of the irrigation districts. As the buybacks focussed on recovering water at the lowest cost, the sellers came from dispersed locations. This resulted in the emergence of a patchwork of unirrigated land scattered amongst land that continued to be irrigated offering a limited ability to rationalise a fixed asset base.

When the irrigators who sold their water were located at the ends of the networks or in discrete clusters, there was an opportunity for infrastructure re-configuration and increased efficiency in water delivery. In 2010/11, the Campaspe Irrigation District was decommissioned returning 14GL. This project was an example of a partnership approach between irrigators, community and government to transition a whole irrigation district, allowing for strategies that considered socioeconomic outcomes and a viable reduction of the infrastructure footprint. However, this approach was rare.

As demonstrated in the following chart: *Water Use Delivery Segments*, water deliveries to the GMID irrigation district have dropped from a peak of 2,100GL in 2001/02 to approximately 800GL in 2022/23. The Connections and WEP projects envisaged a future with less water. They provided a modern irrigation system that enabled productive water use on farms while ensuring the consumptive pool of water was maintained and the environment benefited.

Chart 1: Water Use Delivery Segments



Further buybacks would have a serious impact on the productivity of the GMID, the communities within it and the overall operation of the water delivery network. The future focus must be firmly on water efficiency projects outside of the consumptive pool.

Question 6: How well has community consultation and engagement been conducted? How can this be improved?

The opportunity for future community consultation and engagement is to build trust in new and additional consultation processes. It will be important that future community engagement demonstrate an appreciation of previous community input and messaging.

When the findings and insights gathered from community consultations are effectively implemented, it strengthens the bond between the community and the decision-making process in remarkable ways. Goulburn-Murray Water experienced this in the delivery of the Water Efficiency Project and Connections Project. To achieve these complex projects, we partnered with our customers and community. We set the rules together, demonstrating a genuine respect for all perspectives and a willingness to act upon the collective wisdom. This inclusive approach fostered a sense of ownership and empowerment within the community, as individuals saw their ideas and concerns being transformed into tangible outcomes. As a result, the community developed a stronger sense of trust and confidence in the decision-making process. The boundaries were set together, and when there was disagreement, we held firm. These projects had the potential to be controversial and contested, but the engagement approach ensured we achieved the targets together, relatively smoothly and strengthening the community.

The approach to implementing agreed recommendations needs to be responsive to the changing context over time, and able to adapt to unprecedented events. This needs to be communicated and understood, to stay fast on the course to achieve a target. Consistency in approach demonstrates a genuine commitment to valuing the voices and perspectives of the community.

If future Murray-Darling Basin Plan conversations are consistent and continue to value transparency, open communication, and proactive follow-up, community participation will be revitalised, and community input will be seen to be valued.

Question 7: What lessons should be learned from programs aimed at helping communities adjust to the Plan?

Programs aimed at helping communities adjust to the Plan need to clearly demonstrate benefits to their respective communities and acknowledge the possible shortcomings. This was demonstrated through the delivery of the Water Efficiency Project and Connections Project.

When the Connections Project began there was some scepticism about the changes it would bring across the Goulburn-Murray Irrigation District. Goulburn-Murray Water adopted a partnership engagement approach to the Project, ensuring that the people who were impacted were able to share their insights and influence decision-making. Crucially, the Project did not divert from the decisions that were made in partnership with customers. This meant that even when there was disagreement or parties felt they were negatively impacted, there was minimal push back, as people understood the reasoning behind what was taking place.

Sentiment towards the Project improved as people started to see the results of the works. In fact, sentiment shifted so significantly that when engagement for the Water Efficiency Project began, there was a huge uptake from farmers and local landholders to provide input and advice on the proposed works.

This highlights not only the importance of communicating the benefits of such projects to the community, but also the importance of being consistent in the delivery of these programs. It is difficult for the community to buy in to a program if the scope of the project is continually changing or if existing programs are too readily replaced with new ones. Being consistent ensures people have the chance to see the program develop and enables them to gain a deeper understanding of the program.

The Connections Project was a large undertaking that took a number of years to complete. It showed the value of persisting with programs that have evident merit.

Yours sincerely,

Charmaine Quick
MANAGING DIRECTOR

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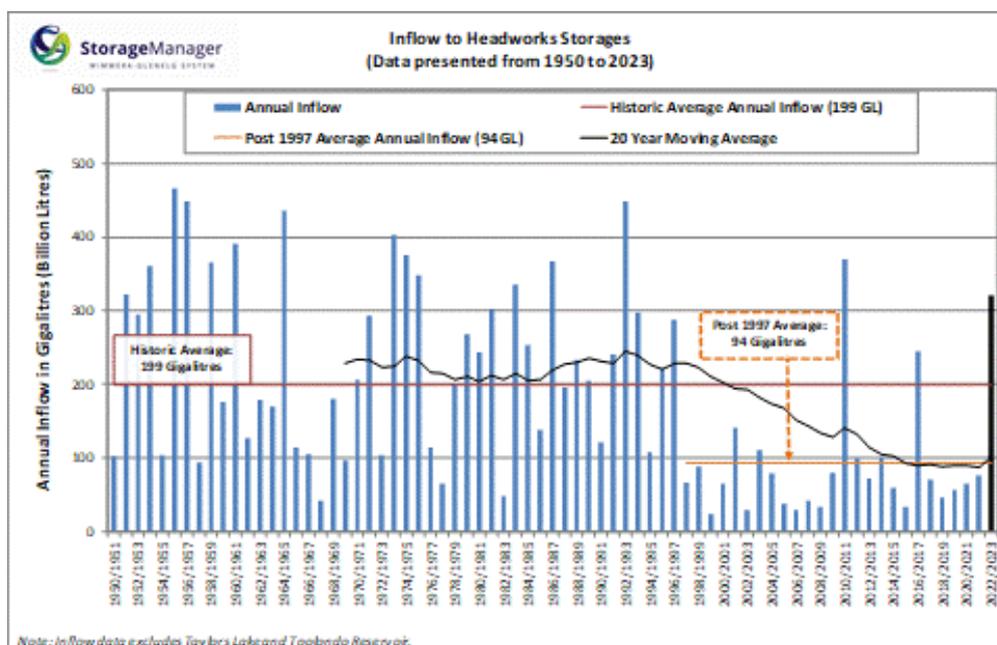
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Dear Ms Chong

Murray-Darling Basin Plan - Implementation review 2023

Thank you for the opportunity to comment on the experience of the Wimmera Mallee in implementing the Murray Darling Basin Plan.

Investments in water efficiency have significantly improved the natural environment as well as improving the liveability of the region. Water savings from the Northern Mallee Pipeline, Wimmera Mallee Pipeline and the buyout and subsequent closure of the Wimmera Irrigation System by the Commonwealth under the Wimmera Irrigators Association Irrigator Led Group Proposal have transformed the region. The Wimmera River is in its best environmental health since the early 1990's. Lake Hindmarsh remains at around 50% of capacity. The Glenelg River, which is not in the Wimmera Avoca basin but a beneficiary of the pipeline is in the best environmental condition since Rocklands Reservoir was constructed in the 1950's. This has been achieved in a period where there has been a step change in rainfall and inflow in the two periods, post 1975 and post 1997.



The water efficiency investments have released water to enhance the productivity of the region. Within the footprint of the pipeline network there has been an expansion of intensive agriculture, water used for viticulture and water provisioned to small recreation lakes across the footprint of the pipeline to enhance the liveability of the region.

The value of the water for recreation in the recreational lakes and the more reliable access to water in the headworks storages for recreation have been the subject of a socio economic study conducted over the past five years. The study has quantified the economic value of water for recreation in the region to be \$25 Million per annum. A copy of the most recent socio economic study in relation to the value of recreation water is attached for information of the Productivity Commission.

The value the community places on the improved quality and reliability of water is significant and matches the expected outcomes of the business case for the Wimmera Mallee pipeline. The improved agricultural productivity of cereal and pulse cropping from the better more reliable water as an input to applications to manage weeds and pests has been significant. The improved water quality and reliability has also enhanced livestock productivity.

The value of having a reticulated water supply to support domestic and stock water has been observed by most communities in North West Victoria. Areas in North West Victoria outside the footprint of the reticulated water network are seeking to have a reticulated water supply. The business cases for these extensions are enhanced where there is demonstrated environmental benefit. This environmental benefit is premised on the expectation that rural landowners will abandon farm dams as the confidence in the reticulated supply grows. As the farm dams are abandoned rainfall will find its way into the natural water courses as opposed to being harvested and held in inefficient farm storages.

Climate change/variability combined with changed farming practices make the extension of the water grid in Western Victoria even more of an imperative. The introduction of no till farming systems in cropping areas and perennial pastures in grazing areas reduces run off. The reduced 'on farm yield' leads to poorer quality water where this has been locally harvested. Water savings released from the water efficiency investments and structural changes made from pipelines is being made available for these rural pipeline to improve agricultural productivity. To the extent it also leads to landowners abandoning local catchment storages, it will enhance water for the environment from increased natural run off.

The Wimmera-Mallee Water Resource Plan, which covers the Wimmera and Avoca Basins, was the first Victorian Water Resource Plan to be submitted and accredited by the MDBA. Reports against the Wimmera Avoca Water Resource Plan since it was accredited in 2019 demonstrate that the Wimmera system has consistently met the Sustainable Diversion Limit (SDL) identified by the Plan.

The 'closed' nature of the Wimmera and Avoca Basins provide a very good example of what could be achieved across the broader basin. The 2018-2020 period in the Wimmera Mallee would have been similar to those experienced by New South Wales and Queensland had it not been for the initiatives undertaken in the Wimmera

Avoca basin. The impact in North West Victoria was much more isolated to communities without a reticulated water supply. The water efficiency achievements in the Wimmera Mallee system reflect the extent Victoria embraced the principles of the original National Water Initiative agreed by COAG in the early 1990's.

To the extent that the Murray Darling Basin deals with groundwater issues, there are challenges in the South Australia/Victoria border zones of Murrayville and West Wimmera. There is a need to have consistent practices specific to licencing, measurement and metering specific to extraction to ensure the long term sustainability of the aquifers.

A more detailed response to the specific questions asked by the Productivity Commission is summarised below.

Should there be any questions about the detail of this submission GWMWater in conjunction with the Minister for Water would be happy to elaborate on the detail of this submission.

Yours Sincerely

Mark Williams
Managing Director

Responses to Specific Questions Asked

1. What needs to change to ensure water recovery targets are met and that supply and efficiency measures are delivered? What lessons can be learnt from past experiences?

Any recovery targets need to be understood in the context of the socio economic impacts as well as the environmental impacts on any particular region. In the context of the Wimmera Avoca basin this was supported by a comprehensive Business Case that advocated the merits of the water savings project. This business case was the subject of 'significant public exposure' and rigorous governance oversight at all levels of government.

2. Are the current arrangements for implementing the Murray-Darling Basin Plan operating effectively? How could the arrangements be improved? The Commission is particularly interested in the effectiveness of the arrangements for:

- developing, accrediting and reporting on water resource plans

The plans will only be effective to the extent there is reliable data to underpin the plan supported by 'best appropriate practice' measurement and metering arrangements.

- water quality

Water quality outcomes are important and wherever possible should be articulated in a Water Resource Plan.

- critical human water needs

Critical human water needs need to be clearly defined and understood. In the more arid areas this will include 'communal watering' that will underpin the social fabric of communities in extended dry periods.

In the case of the Wimmera Mallee this includes provision of water that supports the irrigation of sporting fields and 'watering holes' that provide respite in dry periods.

- environmental water planning and management.

The objectives of environmental plans and programs need to be well understood by communities. Where these environmental watering programs are using regulated water the watering objectives need to be well communicated and understood.

3. Have the governance and institutional arrangements for the Plan – including the arrangements for compliance and monitoring, evaluation and reporting – proved effective? What changes would you recommend?

We are not in a position to talk to the broader governance arrangements across the basin.

The governance arrangements in Victoria and more particularly the Wimmera Avoca Basin are ‘fit for purpose’ supported by the very robust water accounting and measurement framework of Victoria.

The very strong water accounting and measurement in Victoria provides a strong evidence based framework for planning and decision making.

4. How well is the Plan responding to a changing climate? How should this be improved?

GWMWater cannot comment in the context of the broader plan but can comment in the context of the Wimmera Avoca Basin.

In Victoria there is a framework of Sustainable Water Strategies that are broadly catchment based. To the extent there are challenges in water supply and waterway management in Western Victoria (including climate) are managed through the Western Sustainable Water Strategy.

5. How well is the Plan addressing the interests of Aboriginal people?

Only Traditional Owners can answer this question and the following is provided to contextualise the issues of the Wimmera.

The Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagalk peoples of the Wimmera region have been granted rights over the Wimmera River. In December 2005, the Federal Court recognised native title for the first time through consent determinations. The Court recognised the claimants’ traditional, non-exclusive native title rights to hunt, fish, gather and camp in Crown reserves totalling 269 sq km along the banks of the Wimmera River.

Building on the recovery of water for the environment, CMAs and GWMWater have been working more closely with traditional owners on environmental watering programs to integrate cultural watering objectives.

Environmental watering programs have matured to better accommodate cultural watering objectives particularly in relation to the watering of flood plains that fill billabongs. Initiatives are also being undertaken to establish drought refuges along the river through supplementary watering with connections from the Wimmera Mallee Pipeline.

6. How well has community consultation and engagement been conducted? How can this be improved?

There has been very little active engagement in the Wimmera Avoca Basin since the execution of the Wimmera Irrigator Association Irrigator Led Group Proposal (ILGP) in 2013.

7. What lessons should be learned from programs aimed at helping communities adjust to the Plan?

There are significant learnings from the implementation of the initiatives in the Wimmera Avoca basin. The Sustainable Diversion Limits have been achieved and significant community understanding of how the Wimmera Mallee water system works.

8. Does the implementation of the Plan reflect a commitment to the best available scientific knowledge? How well is this knowledge communicated? What improvements should be made?

The climate performance of the North West Victoria is referenced back to the best available projections and Victoria subscribes to the work of the CSIRO.

The challenge relates to having a better understanding of how changes in rainfall and temperature impacts catchment yield.

9. Are there any other issues with Plan implementation that you wish to raise?

25 July 2023

Murray Darling Basin Plan: Implementation Review
Productivity Commission
GPO Box 1428
Canberra City ACT 2601

Dear Sir/Madam,

Re: Murray Darling Basin Plan (MDBP): Implementation Review 2023 - Call for Submissions

Thank you for the opportunity to provide a written submission to the 5-year assessment of the effectiveness of the implementation of the Murray Darling Basin Plan (MDBP Implementation Review 2023).

GB CMA provides the following submission, reflecting on experiences of the organisation based on 25 years embedded in Northern Victoria in the Goulburn Broken Region, working with community for a healthy catchment and resilient community, and delivering many Basin Plan functions.

Section 1 of the submission provides comment on the

- The Victorian Planning framework the GBCMA operates within, and the regional delivery approach
- Environmental Outcomes
- River management complexity to consider in decision making
- What we are hearing from the community
- Comment on the findings of the initial five-year assessment (Murray Darling Basin Plan: Five-year assessment Productivity Commission Inquiry Report Overview, No. 90, 19 December 2018)

Section 2 is response to the key questions within the Call for Submissions paper.

SECTION 1 GENERAL COMMENTS

Background

The Goulburn Broken Catchment Management Authority (GB CMA) is a regionally based natural resource management statutory authority with a community Board that has been consistently delivering for 25 years. The GB CMA works within the Victorian Water and Catchments planning framework. This is a comprehensive framework which ensures that our approach to natural resource management is bottom up, starting with people and the environment, and bringing in science and information to build holistic community led programs for impactful individual, agency and government investment of money and time.

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The Planning framework in Victoria

We consider the planning framework in Victoria, which provides the platform for our contribution to the Basin Plan, to be very effective and enabling for the delivery of the objectives and outcomes in section 5.02 of the Basin Plan and the objects of the Water Act 2007 (Cth) (Water Act). The holistic planning approach we have, and the linkages to the Basin Plan specific components are described below to provide supporting evidence and context for that comment.

Suite of related water and land management functions in one regional agency: The GB CMA is responsible for a suite of natural resource management functions including environmental water delivery, river management, biodiversity, sustainable agriculture (irrigated and dryland), floodplain management and community capacity building and engagement. Each function is planned based on community input, science and data, and then brought together at a range of scales through a systems approach.

Our functions include responsibilities for the health of the Goulburn and Broken Rivers - significant rivers to Victoria and in the context of the Basin Plan - with our management area also including responsibilities and connections across the Goulburn Murray Irrigation District – Australia’s largest irrigation district and a district significantly impacted, from a social and economic perspective, by changes in water ownership.

Cascading from our Regional Waterway Strategy and in consultation with partner agencies, scientists, interest groups, and regional communities including First Nations organisations, we prepare Seasonal Watering Proposals each year that describe regional priorities for environmental water use. These cover many significant sites in the Goulburn Broken Catchment including Barmah Forest which is one of six Living Murray ‘Icon Sites’ and a Ramsar wetland. We oversee environmental water deliveries and comprehensive monitoring programs to assess outcomes, adapt management decisions, refine objectives and inform future plans. We work closely with First Nations organisations to deliver on the Victorian Governments self-determination strategy including Water is Life which aims to support First Nations access to, and management of water.

Through partnerships we deliver projects that add to the effectiveness of Environmental Water delivery. We do this through delivering complementary measures, working with public and private land managers in actions such riparian fencing, weed control, revegetation and in stream habitat projects, mostly from State based fund sources. We also support delivery of infrastructure programs that regulate or enable flows to priority areas.

Importantly, we are responsible for ensuring **Integrated Catchment Management**, which means integrated planning and coordination of land, water and biodiversity management across private and public land. We have a resilience based Regional Catchment Strategy with 38 partners signed up and committed to working collaboratively for the health of the catchment’s environment and community. We are structured to maximise community involvement in decision-making. We have more than 50 separate forums to engage, consult and support the capacity of community to truly participate in caring for our land and water.

The development, delivery and monitoring of the *‘Shepparton Irrigation Region Land and Water Management Plan’*, a 30-year community led plan for managing the regions natural resources for the long-term wellbeing of the environment and people. It manages for water quality, water tables/soil health, native vegetation, farm and regional prosperity, community resilience and water for agriculture and the environment. An example of successful resilience based integrated catchment management with an extraordinary figure of \$650 million dollars has been invested by

government through this plan to protect nature, with a further \$2 billion estimated contribution from community, primarily the land manager/ stewards of the land.

More than 4,400 whole farm plans have been completed to reflect the needs of the area's natural resources and we can confidently say that this region is truly committed and collectively doing its bit to support a healthy Murray Darling Basin. We have worked with farmers and water delivery partners to improve and modernise the effective use of water across our region to respond to changing water availability and affordability and to ensure the continued adoption of best practice and technology across the industries. The water recovered from this region of Victoria is in excess of 650 GL through various means of direct buyback, on farm efficiency projects through Farmwater and public systems savings such as the GMID Connections Project. The collective regional effort has been significant

There have been a myriad of initiatives driven from this area to consider the changes, opportunities and proactive efforts to support the region to respond and prepare for a different future, several of these have provided insightful and innovative approaches to adjustment. The Irrigation Futures Project, the Salt and Water Balance Project, the Land and Water Use Mapping of the irrigated landscape, the GMID Resilience Strategy and the Our Water Futures Project are just a few of the significant projects that have helped guide the regions approach and build its collective capacity. The MDB Plan has driven some of this work, but much has been accomplished by this region and Victoria over the last thirty years.

In summary there is a comprehensive long term planning framework, and a continuity of agency and land manager involvement, that has supported a strong and effective nature-based contribution to the health of the Basin in the Goulburn Broken catchment and across the GMID. This planning framework is replicated across northern Victoria ensuring the environment and responsible water management is front and centre across public and private land.

Environmental Outcomes

What has been achieved for the environment is considerable. The improvements in environmental health over the last 10 years of environmental water delivery are many. They include increased abundance and distribution of threatened native fish, improved health and cover of riparian and wetland vegetation, improved water quality, protected cultural values and landscape, and increased habitat and breeding opportunities for waterbirds and fogs. This has been documented and communicated in our community and beyond, for example the monitoring, evaluation and research program: [Lower Goulburn River | Flow-MER Program](#) and the MDBA publication ' Rivers, the veins of our Country' - [rivers-the-veins-of-our-country-2020-21.pdf \(mdba.gov.au\)](#).. That said environmental change is slow and over time our knowledge and partnerships in delivery and impact will continue to grow.

Monitoring results and scientific advice are used to adaptively manage environmental water in the region to maximise ecological outcomes. Seasonally, environmental watering actions are prioritised based on the previous years monitoring results. The timing of watering actions is also adjusted in response to changing seasonal conditions. At a longer time scale monitoring results and scientific advice have been used to refine environmental watering actions including the timing, magnitude and duration of freshes to stimulate Golden perch spawning and the migration of native fish into the Goulburn River from the Murray River. In addition, bank condition monitoring has informed rates of rise and fall used to deliver environmental water. This has contributed to improvements in bank condition and vegetation cover.

The adaptive approach that we work through with our regional communities has seen a continuous improvement approach also being adopted with the broader work delivered to contribute to Basin Health . As an example a shift in drainage construction (delivering environmental outcomes associated with water quality and soil health) has been put in place in response to climate changes and changes in intensity of irrigation, with a less intrusive approach now delivered. This provides drainage services by utilising the natural flow paths of the region, restoring flows by removal of obstructions and the protection of the flow paths through legislation. The natural progression of this project is to consider “rewilding” the crucial areas of these flow paths to extend the benefits of the programs for the environment. The partnership approach to this delivery has seen, Goulburn-Murray Water, AgVic, GB CMA, Local Governments and the community working together to achieve environmental outcomes.

River management complexity to consider in Basin Plan decision making

Management of the river and environmental flows is complex and that complexity, and the impacts of that for deliverability, are important to consider in decision making. The health and productivity of the river and wetland environments and its dependent biota, require seasonal flow variability and wetting and drying cycles. However much of our river system is highly modified and regulated to provide water for irrigation, industry and towns. This means despite the best environmental planning:

- For a range of reasons it is not always possible to deliver held environmental water at the quantity and time that best suits the regions environment.
- There is a limit to how much water can move through the Goulburn River and Broken Creek without causing environmental damage, particularly with current delivery constraints.
- The delivery of water to downstream systems can have a negative impact on local river health, particularly unseasonal high and consistent flows.

In our region these are ongoing challenges for the health of the Goulburn River, Broken Creek and Barmah Forest. The Goulburn to Murray Trade Rule Review is helping to address these challenges in the Goulburn River. Delivery of Victorian and NSW Constraints program will also help address these challenges in the Goulburn River, and Barmah Forest, however there are still many factors not addressed associated with whole of Basin prioritisation.

What we are hearing from our community

We have worked with our community closely for 25 years and we are seeing a slow and insidious erosion in community resilience and confidence. The socio-economic impact of water buybacks in the GMID has been well documented and is irrefutable. We have seen the changes, that are documented through numerous studies, reflected in the GMID land and water use mapping that we complete, and through our lived experience. Despite the impact the community has really worked hard to respond and adapt.

Our lived experience is that the return of water to the environment has come at a high socio-economic cost to the region’s farmers, who also value and care for the environment, and despite, and perhaps because of this, they are strongly supportive and invested in ensuring that our regional environment benefits from those water returns.

The latest round of uncertainty about the Basin Plan, the lack of recognition of the contributions already made and the sense of not being heard, or, being heard but recommendations not being acted upon, is wearing everyone down. That despondency can result in lack of engagement in current issues which may be misread as tacit support for decisions. It is not.

The community feel frustrated that the many recommendations of the 2018 Productivity Commission Review have not been implemented. Those recommendations are still valid and even more pertinent today at this critical juncture in the Basin Plan.

The community is well aware there are some Water Resource Plans (WRPs) within other States or Territories that are still awaiting approval or have been withdrawn whereas all Victorian WRPs are operational. The inconsistency in this area has eroded the level of trust in the proposed reporting against WRPs and the consistency of maintaining control or oversight.

As simply stated by many at the June 2023 Productivity Commission workshop in our region, there are community concerns about 'destroying rivers and communities upstream for the benefit of water availability downstream'. This is an impression felt widely within the community of the Goulburn Broken region.

The 2018 Productivity Commission review report noted that the Australian Government should recover water in line with the ability to use it effectively.

We consider there are still considerable opportunities for greater efficiency and effectiveness in utilising existing Environmental Water holdings. This includes but is not limited to:

- improving the ability to divert water onto the floodplain and into streams and wetlands to maintain or restore their health and function. This could be by removing barriers to overland inundation, developing water management systems to support multi system watering events and coordinating regulated and unregulated flows, or by building artificial structures to deliver the water to where it is needed. Regardless of water ownership, water in storage at critical dry times (particularly factoring in climate change) may not be there to deliver to the extended inundation periods, and volumes of water required for ecosystem health and resilience, when depending on overland flow mechanisms to move water. (Point being that when it is dry, and water is scarce we need to be able to use it well). Further there is an interface with private landholders and assets that adds complexity to any consideration of natural inundation events as the solution. Efficient or effective mechanisms to move water to where it is needed are a critical part of achieving successful outcomes. There are many opportunities for building opportunities to move water to significant environmental values.
- Complementary measures to protect and improve instream and riparian habitats will also help maximise the effectiveness of existing environmental water holdings including re-snagging, pest control, native fish restocking, storm water management, managing floodplain development, controlling stock access and revegetation.
- More effective use of Water for the Environment by improving the system and allowing time to adjust the existing systems, improve monitoring and refocussed modelling of rain events, river flows and the requirements of the ecological system of the river.

SECTION 2 RESPONSE TO REVIEW QUESTIONS

1. *What needs to change to ensure water recovery targets are met and that supply and efficiency measures are delivered? What lessons can be learnt from past experiences?*

There are many important recommendations in the 2018 MDBP initial Five-Year assessment. These recommendations identified actions for better use and management, whilst considering the potential barriers and constraints for their implementation. We see value in these recommendations being revisited and responded to. There are many good initiatives partially delivered, reflecting the real time frames required to consult and plan in a meaningful way for the major environmental works being delivered under the Basin Plan.

There are still constraints to delivery which limit the ability to achieve environmental outcomes with existing environmental water holdings.

We would like to see the timelines for the delivery of important water delivery projects extended and further delivery opportunities identified and funded.

We are interested in achieving the environmental outcomes of the Basin Plan and look forward to the ability to deliver water to sites that will not otherwise receive water to the level required for their health. It would be disappointing if administrative time frames of the Basin Plan denied the environment of the water so desperately needed to restore its health.

It is important that the precious water we have at our disposal for the environment, can be delivered to our agreed priority sites. While understanding the preference for natural flows and a return to pre regulation water patterns, the reality is we operate in a highly modified and regulated water environment and in the foreseeable future the ability to move water efficiently to priority sites is going to be essential to save some sites. Given climate change modelling, a fully natural system may never deliver the flows the environment requires to maintain ecosystem function

We would like to see timelines extended for the completion of constraints programs

The Victorian Constraints Measures Program, is operating to a deliberate timeframe -and consultative manner to ensure community input based on solid technical information. As one of many agency and community participants in this program we consider it is neither achievable nor desirable to deliver the important Constraints initiative by June 30, 2024. It would be technically inappropriate and would not allow for adequate consultation in doing so (related to recommendation 4.1 and 4.2 from the 2018 report).

Our interactions would indicate that Partners, Traditional Owner Groups, scientists and many community members recognise the benefit of addressing constraints to the delivery of environmental water to maximise ecological outcomes including connecting floodplain environments. This was highlighted during the development of the Goulburn River environmental flows study in 2020.

We would like any further water recovery to be considered in the context of where water is needed and can be delivered, now and into the future as noted in the previous 2018 Productivity Commission report.

We noted in Section 1 current challenges to deliverability and impact of excess flows for maintaining environmental condition in the Goulburn and Broken Region. Environmental Water availability is not the current limiting factor.

We would like socio and economic impact factored into Basin Plan decisions particularly given the dot points above, and as described in Section 1, there are still considerable opportunities for greater efficiency and effectiveness in utilising existing Environmental Water holdings

Further and as noted at the time of the 2018 review, there is a need to consider the social and economic objectives and outcomes of the Basin Plan. Ultimately, the triple bottom aim of the Basin Plan is "...to optimise social, economic and environmental outcomes arising from the use of Basin water resources in the national interest."

As noted in Section , the Basin Plan has had a negative social and economic impact in the GMID – a critical food growing area and an important hub from which many allied industries and service providers have established around. Reports over the years using different methodologies and prepared by various stakeholders, have found that there are substantial and unevenly placed negative socio-economic impacts on some communities and the GMID is a case in point. There is a real risk of scale of impact in the GMID with land use change getting to the trigger point to cause unviability of associated agricultural manufacturing, processing and transport industries and flowing through to a range of service providers. This will result in cascading social and economic impact and reduce the ability of the area's agricultural enterprises to expand, contract and adapt in response to current circumstances. Given the importance of food security, the essential food products grown in the GMID, and the risks climate change poses to current downstream users, it would seem appropriate to consider the long-term agricultural requirements of the nation in Basin Plan decisions as well as the viability of important regional areas and communities at risk from decisions.

2. *Are the current arrangements for implementing the Murray-Darling Basin Plan operating effectively? How could the arrangements be improved? The Commission is particularly interested in the effectiveness of the arrangements for:*

- *developing, accrediting and reporting on water resource plans*
- *water quality*
- *critical human water needs*
- *environmental water planning and management.*

Water quality management is well established in the Goulburn Broken Region and is coordinated at the regional level through strong linkages and partnerships with community, local, statewide, and national agencies (including MDBA), and statewide through the Regional Water Monitoring Partnership and the General Environmental Duties under the Victorian Environmental Protection Act 2017.

There is risk of not meeting increasing demands for ongoing water quality information to measure effectiveness of implementation programs, which are constantly being stretched due to rising monitoring costs not sufficiently offset by equivalent funding increases.

There is also a gap in understanding local implications of issues such as climate and land use change on the region's water quality, its availability for beneficial uses, and its implication for downstream users and therefore, implementation of the plan.

The delivery of Environmental Water has, and can play, an important role in improving water quality and responding to water quality incidents such as hypoxic blackwater. This could be enhanced by addressing delivery constraints which limit when and how much environmental water can be delivered. Greater environmental water delivery flexibility could allow greater volumes of water to be delivered to prevent or reduce the impacts of such water quality issues.

The delivery of environmental water across connected waterways to maximise downstream and system-wide outcomes is required to deliver Basin Plan objectives. This will require improved environmental water delivery administrative and coordination processes, monitoring and evaluation programs at the appropriate scale and tools to support decision making.

3. *Have the governance and institutional arrangements for the Plan – including the arrangements for compliance and monitoring, evaluation and reporting – proved effective? What changes would you recommend?*

The integration and understanding of the delivery of environmental water (e water) for multiple purposes and or codependent systems has grown over the last 10 years and needs more time and support to continue to improve. Research and knowledge projects that will allow even greater improvements need to be supported and encouraged including the Commonwealth funded Flow-MER Program and the Enhanced Environmental Water Delivery project. (Related to recommendation 11.1, 11.2 and 11.5 of previous report)

4. *How well is the Plan responding to a changing climate? How should this be improved?*

To date the Basin Plan has largely not reflected climate change science and modelling. We welcome the investment in climate change modelling that is now occurring and suggest that the impact of climate change on inflows, water availability, basin ecosystems and agricultural industries needs to be understood and considered in decision making and objective setting.

The impact of water availability and temperature will impact what agricultural industries and vulnerable ecosystems can be supported and at a range of scales. More work needs to be done to understand these impacts.

Climate Change modelling predicts there that there will be less water for all, which means we need to manage any environmental water well. Further information to understand the impact of climate change on the ecology of the existing system and to support consideration of what that may mean at a local and landscape scale for decision making is critical .

There are improvements needed in the way we incorporate climate science into decision making. The impact of climate change is not a static single path and there is a need to be adaptive and allow flexibility to support the resilience of the system.

5. *How well is the Plan addressing the interests of Aboriginal people?*

Only Traditional Owners can answer this question.

In practice we actively work with First Nations organisations in our catchment on land and water management. This includes on the development of the Regional Catchment Strategy, Seasonal Watering Plans, land and water management projects and the implementation of Victorian government self-determination initiatives through Water is Life.

The GB CMA delivers programs and projects that respond to the Joint Management Plan for Barmah National Park. We are supporting pilots for co management of e water deliveries including development of Traditional Owner led Seasonal Watering Proposals. This is not specifically a requirement of the Basin Plan however our approach supports First Nations people involvement in the Basin Plan and enriches the considerations and outcomes achieved.

6. *How well has community consultation and engagement been conducted? How can this be improved?*

Over the years there have been concerns raised regarding the timeliness and meaningfulness of Basin Plan consultation processes. There are established forums and mechanisms for information flow and engagement in our area that have been underutilised. There are many examples however a timely example relates to this review. The Shepparton workshop was only advertised a few days before the date (6 June) and there were many comments from participants noting how disappointing it was to be given such late notice. There was a feeling of distrust from the workshop participants by the lack of adequate notice and the perception generated that the consultation was a “tick-the-box” exercise where input would not result in any meaningful change.

There has been a sense of random development of advisory groups for Plan consultation with, at times, individuals that do not necessarily reflect the key stakeholder and community views, and who have not actively engaged at a regional level. This has disappointed members of the community that have allocated considerable time and effort to be informed, connect and contribute to the long-term interests and outcomes of the Basin Plan.

Suggestions on how to improve consultation and engagement include:

- Utilise existing forums and networks and build relationships through regular and ongoing visibility. Community people’s time is limited, and duplication and replication should be avoided if possible. We suggest working with regional organisations to link to existing communication opportunities and stakeholder groups such as the Shepparton Irrigation Region People & Planning Integration Committee (SIRPPIC).
- Feedback loops are important. There is a perception that recommendations from previous engagements are rarely acted on so creates a “why bother” response. When asking for input it is critical to actively listen or consider the responses and follow up with feedback.

7. *What lessons should be learned from programs aimed at helping communities adjust to the Plan?*

As part of the 30-year review of the SIR Land and Water Management Plan, there were significant lessons learnt that are also relevant to the MDB Plan implementation. They included the need for strong and resilient community and agency partnerships, strong community engagement advocacy and governance, rigorous and continuous adaptation and improvement processes, focus on on-ground actions and benefits, staying the course, and plans being underpinned by science and evidence.

The SIR LWMP review highlighted that an integrated catchment management approach driven by a committed community and government was a highly successful model and the model into the future will and should reflect the lessons learnt.

8. *Does the implementation of the Plan reflect a commitment to the best available scientific knowledge? How well is this knowledge communicated? What improvements should be made?*

We suggest the inclusion of integrated regional natural resource management in the Basin Plan. Water is just one component of a healthy functioning ecosystem, and the Basin Plan could benefit from a broader holistic approach, including allowing for regional solutions to emerge. There is considerable science and knowledge to inform holistic, systems-based solutions to basin health that would add value to decision making and environmental outcomes.

While the delivery of water for environmental outcomes has been occurring in our region longer than most, and our understanding of the impacts of those flows is developing rapidly, it is still in its infancy. To maximise the ecological benefits of these flows the basin Plan needs to better capture and utilise this on-ground experience.

Scientific knowledge, communities and the environment continue to change. Therefore, implementation of the Basin Plan requires capacity to adapt to these changes. Specifically as an example, the GB CMA welcomes the Flow- MER focus on the Goulburn River and the scientific knowledge and rigour in environmental water management it provides.

The Living Murray also provided a reasonable level of monitoring for the Barmah Forest but other areas such as the Broken River, the Broken Creek and wetlands that receive environmental water would benefit from more comprehensive monitoring to improve decision making and environmental outcomes. (Related to recommendation 13.3 of previous report)

9. *Are there any other issues with Plan implementation that you wish to raise?*

Events such as the global pandemic and the recent floods have impacted the progress of projects and the collective ability to meet timelines. Considering these impacts, and the greater knowledge we have of the system and potential climate change impact, *the timelines that were set 11 years ago when the Basin Plan was initiated should be reviewed along with the modelling, science and the assumptions that were developed during the Millennium drought.*

Although securing water for the environment has significantly improved river and wetland health, river regulation can limit these benefits. An example of this is unseasonal delivery of consumptive water in the Goulburn River adversely impacting its ecological condition. The Victorian State Government has reviewed and adjusted the rules governing the trade and delivery of water from the Goulburn River to the Murray River to reduce these impacts. Another example is static water levels in the Lower Broken Creek from both regulated flow management and the existence of weir pools. These factors need further consideration to meet environmental objectives on top of environmental water delivery.

Complementary measures to water recovery are needed to ensure ecological objectives are met applying an Integrated Catchment Management approach. i.e. in many cases it is not a case of simply adding water (related to recommendation 11.7 of previous report). These need assessment against objectives and could include policy or rule settings, measures to deliver water more effectively, or on ground works to achieve environmental outcomes including rebuilding connectivity between waterways and floodplains, protecting diverse riverine and wetland habitats, enhancing habitat for target species of flora and fauna, managing weeds and pests such as willows and foxes. Section 1 of our response details the value of delivering Basin health outcomes through application of an Integrated Catchment Management approach. We consider this is essential to achieve enduring outcomes across public and private land.

There is a focus on the volumes of water to be recovered when this method alone cannot achieve the environmental objectives of the Basin Plan, rather a multifaceted approach is required.

Thank you for the opportunity to provide feedback to this review. I look forward to the revised report to be produced by the Productivity Commission and welcome any opportunity to continue dialogue in this regard.

Yours Sincerely,

Helen Reynolds
Chair
Goulburn Broken Catchment Management Authority

Our Ref: JC;lc/CEO Outwards correspondence/ECM Ref ID: 37019

27 JULY 2023

To whom it may concern,

LETTER OF SUPPORT FOR THE VICTORIAN GOVERNMENT SUBMISSION: MURRAY DARLING BASIN PLAN FIVE YEAR REVIEW

Mallee Catchment Management Authority (CMA) supports the Victorian Government submission on the Murray Darling Basin Plan five-year review.

At Hattah Lakes, environmental infrastructure is making it possible to water ecologically significant stands of Black Box trees (*Eucalyptus largiflorens*). Research spanning more than seven years shows watered trees are in better condition, flower more, and produce more seedlings than unwatered trees.

Results collated from research at Hattah-Kulkyne National Park under The Living Murray program shows floods stimulate the overall health of Black Box trees, and also deliver important benefits to other flora and fauna living on the floodplain. The number of bush birds were 60% higher for up to three years after a flood event, which points to the lasting effects of watering on tree health and the food resources they provide.

The existing environmental infrastructure at Hattah Lakes has shown what it can do to save Black Box stands, now it's time to extend what has been proven to work!

Under the Victorian Murray Floodplain Restoration Project (VMFRP), additional infrastructure will help get water to reach the stands of Black Box, 1,050 hectares, at Hattah Lakes North, which can't be reached by the existing infrastructure and won't be watered under the increased river flows expected through implementation of the Basin Plan.

At Lake Powell, environmental watering with temporary infrastructure has kept Black Box and Red Gum trees alive, making it possible for the lake to support large scale colonial waterbird breeding following the 2022 floods, with over 450 nests recorded.

The VMFRP will provide permanent environmental infrastructure to the Belsar-Yungera floodplain making it possible to provide the required water regime to support waterbird breeding at Lake Powell and important benefits to other flora and fauna living on the floodplain.

Should you have any queries in relation to this matter, please contact the General Manager Operations and Community, James Kellerman,

Sincerely

Jenny Collins
Chief Executive Officer

Hattah-Kulkyne

Environmental works a lifeline for our floodplain Black Box

Environmental infrastructure is making it possible to water ecologically significant stands of Black Box trees (*Eucalyptus largiflorens*), with research spanning more than seven years showing watered trees are in better condition, flower more, and produce more seedlings than unwatered trees.

Results collated from research at Hattah-Kulkyne National Park under The Living Murray program shows floods stimulate the overall health of Black Box trees, but also deliver important benefits to other flora and fauna living on the floodplain.

These results are important considerations as plans continue to develop a major environmental works project within the National Park to restore large extents of Black Box trees that cannot currently be watered. The project is one of nine being progressed under the Victorian Murray Floodplain Restoration Project (VMFRP).

Thriving Black Box trees underpin the health of our floodplains. Black Box trees can grow to more than 300 years old and, as they age, they develop broad branches, large hollows and deeply fissured bark. Beneath the trees the fallen logs and trunks accumulate in an understorey of shrubs and grasses. The name 'largiflorens' refers to the prolific flowers the trees produce.

Black box woodlands are important for canopy feeding bush birds such as superb fairy-wren, little friarbird and blue-faced Honeyeater. Black box woodlands also support insectivorous bats and the large hollows provided by these trees are used as nesting sites by regent parrots, sulphur crested cockatoos, mallee ringnecks, major mitchells cockatoo and barking owl. Common brushtail possums shelter in tree hollows and large reptiles such as the lace monitor and carpet python hide in the hollows and fallen logs.



**VICTORIAN MURRAY FLOODPLAIN
RESTORATION PROJECT**

HEALTHY LANDSCAPES, STRONG COMMUNITIES



Large old trees die without replacement, placing at risk all the fauna that depend on them.

The problem

Black Box trees are generally situated higher on the floodplain than red gums, which means they need and receive water less often. Black Box will grow in areas that typically get inundated (flooded) 1 to 4 times every 10 years for periods of 2 to 6 months (Johns et al. 2009; Roberts and Marston 2011).

Flood frequency and duration has decreased due river regulation and flow depletion. At Hattah Lakes a flow of 120,000 ML/d is required to inundate significant areas of Black Box Woodland. Under natural conditions these events would have occurred 40 times in 100 years, lasting for around 40 days each time. They now occur 10 times per 100 years and last around 30 days. As a consequence, intervals between floods has increased considerably. Other sites woodland sites along the Murray have experienced similar flood depletion.

Without floods the health of the trees deteriorates. Tree growth slows, flowering declines and seedlings fail to survive. The lack of seedlings means new trees are not added to the population. Large old trees die without replacement, placing at risk all the fauna that depend on them.

Watering our warriors

At Hattah Lakes, pumps and regulators have helped return water to 1,255 ha of Black Box trees, when they need it. This watering doesn't impact on other river users.

This environmental infrastructure package was installed as part of The Living Murray Program in 2012-13, with research into the condition of Black Box stands at Hattah Lakes commencing in 2014. Research tracked the growth, flowering and seed production of Black Box trees at watered sites (flooded in 2014, 2016 and 2017) and unwatered sites.

Results

Overall tree health was higher at the watered sites (Figure 1). The flooded trees had a broader crown with more leaves.

Flooding stimulated trees to produce more flowers (Figure 2). Flowers are a source of nectar for range of birds, and also for insects, which in turn provide prey for other fauna.

Black Box Woodlands at the watered sites had more seedlings and saplings than the unwatered sites (Figure 3). The lack of new trees is a significant threat to the long-term viability of Black Box Woodlands. New trees must be recruited to the population to replace old ones as they die, and without flooding the tree population will gradually be depleted along with the hollows and fauna habitat they provide.

The importance of Black Box flooding to the bush birds was also investigated at Hattah Lakes in a six year program that sampled up to 84 sites twice a year (Loyn et al. 2019). Data was collected from 2014 to 2019, and bird abundance and habitat use were measured in relation to the flooding history of woodland sites.

Bush bird abundance was higher in sites that had been recently flooded (Figure 4). The total numbers

of bush birds were 60% higher for up to 3 years after a flood event. This points to lasting effects of watering on tree health and the food resources they provide.

Black Box trees produce more flowers after they have been flooded and this contributed significantly to the increased abundance of bush birds. Tree measurements showed that when trees flower strongly (flowering index 5), bird abundance increases dramatically. Flowers and their nectar are consumed by a wide range of birds including Red-rumped Parrots, Australian Ringnecks and Yellow Rosellas.

Food resources in the understorey are also increased by flooding. Ruby Saltbush is a low-growing shrub that produces abundant bright red berries. These are eaten by Regent Parrot and other fruit-eating and seed-eating bush birds. The increased growth of this species after floods contributes to the abundance of these birds.

The effects of Black Box flooding extends through the food web. Birds that eat insects become more abundant in the years that follow flooding, indicating that increased leaf, flower and nectar production was contributing to the prey available to these birds.

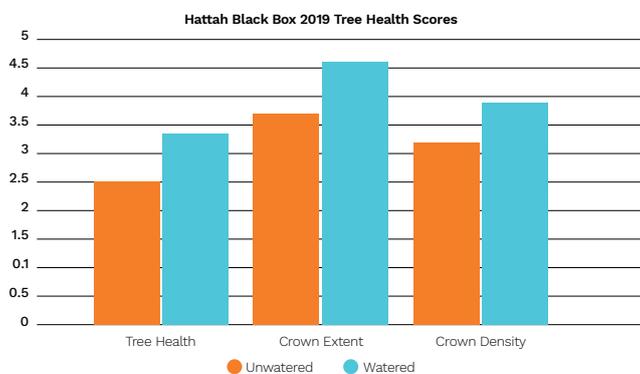


Figure 1. The number of dead adult trees was higher in sites that had not received recent watering

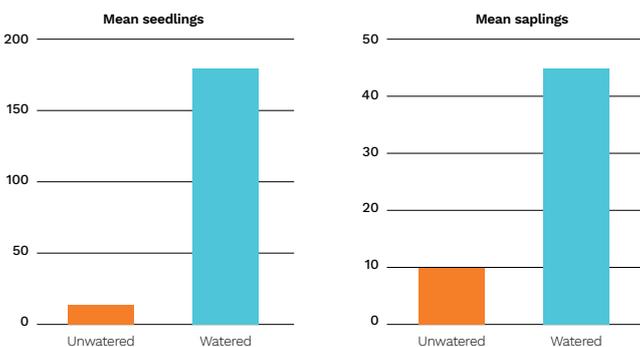


Figure 3. The abundance of seedlings and saplings increases when sites are watered.

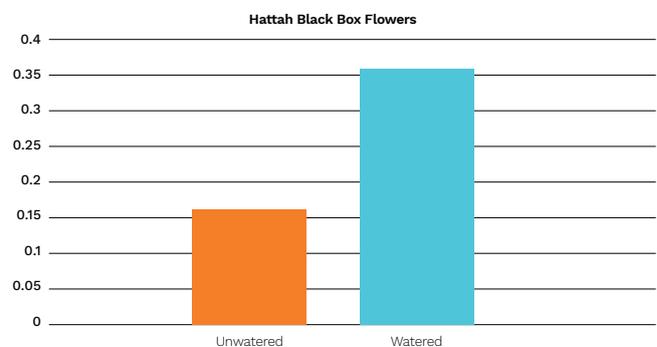


Figure 2. Black box trees produced more flowers when they are watered.

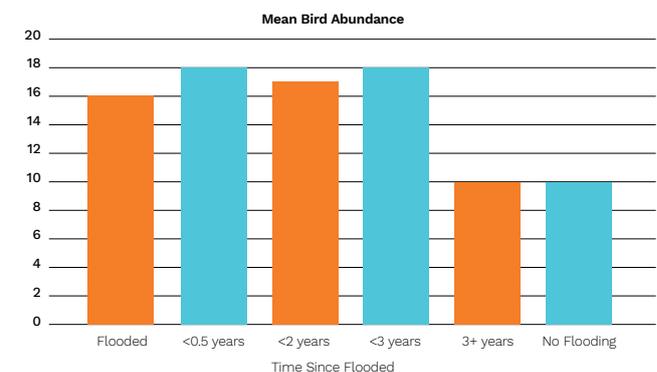


Figure 4. Bird abundance increases in Black Box woodlands for up to three years after flooding.

Discussion

Black Box trees can survive for decades without flooding, but current watering conditions are beyond their capacity to endure, let alone thrive. The research undertaken at Hattah Lakes shows that without flooding, we will lose these important trees and everything they support on the floodplain.

The health of Black Box Woodlands is a key part of the Murray Darling Basin Plan and a target of the Basin-wide Environmental Watering Strategy (MDBA 2019).

The existing environmental infrastructure installed under the Living Murray Project extends our capacity to get water to some of the Black Box at Hattah Lakes. Under the Victorian Murray Floodplain Restoration Project (VMFRP), new infrastructure will help get water to reach the stands of Black Box at Hattah Lakes North, which can't be reached by the existing infrastructure and won't be watered under the increased river flows expected through implementation of the Basin Plan.

The Hattah North project involves building three regulators, 1.3km of levees, and a causeway along with infrastructure to support temporary pumps to allow for the proposed inundation of 1,130 hectares of the floodplain.

Using environmental infrastructure to water these areas will mean less water will be used than natural flooding, and upstream communities won't be flooded for extended periods to get the volume of water needed to reach the higher parts of the floodplain where the Black Box grows.

The existing environmental infrastructure at Hattah Lakes has shown what it can do to save Black Box stands, now it's time to extend what has been proven to work.



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