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To the Murray-Darling Basin Authority

Lifeblood Alliance thanks you for the opportunity to make a submission to inform the 2026 Basin Plan Review, to help shape the recommendations in the Basin Plan Review report.

Who we are

Lifeblood Alliance (LBA) consists of environmental, First Nations and community groups committed to keeping the rivers, wetlands and aquifers of the Murray-Darling Basin healthy for the benefit of current and future generations.

Introductory Remarks

Lifeblood Alliance members are particularly concerned that this unique opportunity must be taken to implement the Basin Plan in full, with minimal delays, to reverse over-allocation and to ensure that its river systems are sustainable into the future.

Minister Watt has said that failing to act would:

'condemn the Basin to environmental decline, that would gradually strangle the industries and communities that rely on that environment for their livelihoods'.¹

Implementation of the Basin Plan so far has failed to achieve its primary function, which was to set extraction limits at an ecologically sustainable level of take (ESLT) and reverse over-allocation. This failure has been due to active obstruction, political lobbying and manipulation to minimise the volume of water returned to river systems. Political compromise at every stage has blocked the legal requirement to base implementation of the Plan on best available science.

It will take decisive action and political courage, along with strong and clear messaging, to achieve effective implementation and sustainable management of Basin water resources, in order to secure the future sustainability and resilience of all Basin communities.

There must be real consequences for jurisdictions that fail to deliver agreed actions and projects, and for failing to meet deadlines. There have been continuous delay and obfuscation on key tasks and commitments that were agreed when the Basin Plan was signed in 2012. The price for these failures and defaults is being paid by the Basin environment, with first effects being felt by downstream communities and First Nations, and in the longer term, by future generations.

We are at a critical point in Basin history and management, with this unique final opportunity to get this essential resource back into sustainable management. Failure to act decisively will have far-reaching, serious economic, cultural and social consequences for Basin industries and communities, as well as for the environment. Time is running out to re-set the levers which determine the health and sustainability of the environmental services in the Basin and to sustain Basin communities.

¹ Minister Watt at MDBA BP Review Leadership Summit Adelaide 12/11/2025

SUMMARY OF RECOMMENDED ACTIONS

Complete Implementation of Basin Plan as Agreed

- Accelerate delivery of agreed commitments under the 2012 Basin Plan
- Complete recovery of 450 GL/y LTDLE as fast as possible
- Accelerate action to relax constraints, starting with the package proposed in this submission to break the deadlock
- Negotiate new separate agreements with NSW and Victorian governments to complete offset projects at a faster pace, with penalties for any further failure to deliver on Plan commitments.

Accelerate Action to Halt Environmental Decline

- Facilitate coordinated action to ensure sufficient flows at right time for long enough to sustain breeding and maintain water quality through the system
- Facilitate action to prevent fish kills and poor water quality events through maintaining base flows and providing periodic seasonal flushes
- Extend and support Independent Expert Panels on Connectivity and Constraints for both Northern and Southern Basins
- Ensure ongoing funding to resource the native fish strategy, in addition to managing constraints.

Return Rhythm of the Rivers

- Coordinate action to deliver minimum flows through all river systems, with minimum end-of-system flows from sub-catchments, through Water Sharing Plans and Water Resources Plans
- Protect environmental water flows for the full length of river systems and across catchments
- Continue and support Southern Connected Basin Environmental Flows Working Group.

Produce Clearer Reporting on Ongoing State of the Basin

- Publish regular reports on Basin health against all elements of Plan targets
- Weekly flow reports should show natural flows vs current regulated flows, including contributions from environmental flows
- Expand dashboards for each sub-catchment to show trends that local communities can relate to, including areas not watered and declining, as well as watering successes
- Involve citizen scientists in monitoring key local populations such as bats, mussels and turtles.

Take Real Immediate Action to Adapt to Impacts of Climate Change

- Build resilience before the next drought, with minimum base flows and connectivity needs met
- Support adaptation, change and adjustment in Basin communities to live with less water and a hotter, more variable climate with more severe, more frequent droughts and/or floods.

Highlight Declining Water Quality as an Emerging Threat

- Water quality should be managed through secure designated flows and held reserves
- Secure minimum flows beyond the barrages to the Coorong, in addition to environmental allocations, in partnership with the Ngarrindjeri Regional Authority
- Work to reduce poor water quality following future significant floods
- Environmental water should not be diverted to fix water quality issues.

Make Governance Effective and Accountable

- Design a more effective over-arching cooperative governance arrangement to facilitate better interstate cooperation and accountability, with incentives to deliver and/or penalties for failure to meet deadlines
- Incorporate upstream responsibility for downstream impacts into forward agreements
- Ensure international treaty requirements are met for 16 Ramsar-listed wetlands in the Basin

- Upgrade water accounting and licensing systems to simplify reporting and improve transparency
- Require a general standard of efficiency and wise use from extractive water users
- Develop a separate, more flexible accounting system for environmental water to deliver more natural rhythms of flow, with seasonal pulses and variations in levels and flows
- Increase representation of environmental interests in consultation and management decisions
- Support expanded compliance and effective metering of water take
- Protect minimum sustainable diversion limits and maintain minimum base flows.

Build Political Capital to Support Bold Actions and Decisions

- Spell out extent of ecosystem decline and the consequences to the whole community
- Spell out benefits to communities from constraints relaxation, improved connectivity and more effective environmental watering to sustain health of river systems
- Express a wider range of lived experiences across the Basin, including the negative stories as well as the positive stories, environmental as well as human, and make sure the extent of decline is understood widely and effective action can be taken to limit further decline
- Provide short summaries of all detailed technical reports to build better community understanding.

Water Justice for First Nations

- Water rights must be legislated and made available to Basin Nations through their preferred self-determined institutions via amendments to the Water Act and Basin Plan
- Basin Nations are seeking more than engagement, they are seeking the activation of inherent rights, joint-decision making, agency via adequate and recurrent funding, self-determination and the realisation of relevant international agreements through legislative changes to the Water Act
- Funding must be allocated to provide secure, ongoing support so Basin Nations can be directly and appropriately resourced to participate independently and properly in water management, governance, legal processes and decision-making
- Cultural values of water should be embedded in all water planning, including Water Resource Plans.

Next Basin Plan

- Set more specific, measurable, enforceable targets for measuring environmental health, with independent scientific oversight and regular reporting
- Implement a flow response monitoring program with public reporting
- Incorporate specific monitoring against Plan targets into the next well-funded Sustainable Rivers Audit with regular public reporting
- Implement coordinated Basin-wide monitoring and improved, more flexible flow management
- Water resources must be shared fairly, including with Traditional Owners, and this includes allowing flows to reach downstream sections of rivers.

Urgent Tasks

- Review the system of allocation of floodplain harvesting licensing in the upper Northern Basin which currently extracts ~300GL/y from the upper Barwon-Darling ephemeral catchment, with serious impacts on management of the Menindee Lakes and flows to the Lower Darling, including town water supplies upstream of Menindee and water quality downstream
- Re-negotiate the Menindee Lakes Operating Agreement to take into account altered current conditions and predicted future conditions, whole-of-Basin impacts and interactions, such as critical fish-breeding habitat in the Lower Darling and prevention of serious impacts on water quality, water supply and quality of aquatic habitats

- Revise operating rules to allow delivery of more natural flow pulses, to restore the ‘rhythm of the rivers’ and longitudinal and lateral connectivity.

Future Maintenance of Infrastructure

- Call for appropriate forward and ongoing funding in budgets to maintain and improve water infrastructure and modifications required for improved flows and water quality.

Separate and Document Impacts of Water Trading

- The effects of the Water Market on transfers, location and timing of demand, and increasing requirements for maturing crops need to be included in forward forecasts of water availability
- Recommend limits to water trading based on capacity to deliver water in different sub-catchments with varying flow reliability
 - Water resources must be shared fairly, including with Traditional Owners, and this includes allowing flows to reach downstream sections of rivers.

Define Highest Value Use of Water

- The unbundling of land and water rights was based on the premise that water would go to the highest value use. The outcome has been that it has gone to the highest economic value use, causing very significant third-party impacts for rivers and communities
- There should be a formal and agreed definition of highest value use of water for future trading rules, including the quadruple bottom line - economic, social, environmental and First Nations cultural matters.

Stronger Messages Going Forward

Much stronger messages in the recommendations to the Basin Plan review should include:

- There is only a finite amount of water, we can’t get more water by taking it from other catchments or from declining groundwater sources, more dams won’t create more water – so we all have to manage more efficiently with less water in future and share the limited and declining resource fairly and equitably
- Existing diversions must be used more efficiently to maintain agricultural production (as was seen in the Millenium Drought, when production was maintained on <35% of normal allocations)
- More water needs to be recovered to sustain a minimum level of Basin health and be managed more efficiently for broader environmental, social, cultural and economic outcomes. Buy-backs from willing sellers have been demonstrated to be the most effective and efficient method, in value for money and volume of water recovered
- The continuing over-allocation to extractive uses needs to be reassessed and reduced further, with consideration given to retirement of less secure entitlements which are unlikely to receive viable allocations in a drying future
- The compromised minimum recovery target in the Basin Plan has not been reached, and even if reached, would still leave significant areas of the Basin beyond recovery, particularly in lower reaches.
- Basin ecosystems overall are still in decline – especially native fish, waterbirds, vegetation communities (particularly black box woodlands), turtles and mussels – with the overall target of reversing decline in ecosystems still very far from being met
- Basin rivers are declining from the bottom up, with assessments of the Sustainable Rivers Audit showing all lower reaches in decline
- The assessment of Sustainable Diversion Limits showed all lower valleys were not meeting targets due to failures of upstream reaches to provide minimum end-of-system flows.

Messages to the Minister responsible for the Murray-Darling Basin

We urge the Minister to make every possible effort to encourage greater cooperation by state governments to deliver the intent of the Basin Plan, to reverse the over-allocation of water resources and to halt the decline of Basin ecosystems. The viability of Basin communities depends on completing implementation of the Basin Plan as intended, in full if not on time, but as expeditiously as possible.

Difficult decisions need to be made urgently, as the Basin could be facing another Tinderbox drought, with a strong El Niño forecast for later in 2026 and likely to result in very dry conditions in the Southern Basin. Opening irrigation allocations for South Australian irrigators with high security licences are only 62%, based on upstream storage volumes. It is urgent and vital to improve resilience in Basin ecosystems and prepare rivers, communities and industries to adjust to life with significantly less water.

LIFEBLOOD ALLIANCE RESPONSE TO DISCUSSION PAPER

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What do you think of the issues and options presented?

While the Discussion Paper presents a comprehensive overview of a substantial and complex effort of more than 12 years to document and investigate all aspects of integrated and sustainable management of Basin resources, it fails to articulate clearly the substantial shortfalls in achieving stated goals and targets in the Basin Plan. It seriously understates the urgent need to speed up action to bring the Basin to a sustainable state before it faces the coming serious challenges of climate change.

The Basin Plan has not achieved its primary goal, to reverse over-allocation of water resources. It has not arrived at an ecologically sustainable level of take, as required in the legislation. Implementation has not been based on best available science².

The same resistance to reform and change, the same misinformation and lobbying from elements of Basin communities as occurred in the initial stages all the way back to the release of the *Guide to the Basin Plan* in 2010, are continuing in the current consultation process³. As before, those opposing the required changes are aiming to stall any further action to achieve the intent of the original Basin Plan or any measures to accelerate future action to reach the goals of halting decline and accelerating recovery to a sustainable state of health in river ecosystems. The Minister is being lobbied on all sides by communities claiming their 'needs' must be met, but without those communities having any regard to the impacts on the ecological health of the river systems or the impacts on downstream communities.

The Minister said 'the rivers have been over-allocated to death'⁴ and he is right! There is not enough water to continue to meet those multiple demands into the future. A line in the sand needs to be drawn, communicated loudly and enforced, that no additional water is available and there will be less to share in the future. Without more conservative management of water resources, the Basin will indeed continue to decline and gradually strangle its dependent industries and communities. The downstream reaches and communities are paying the price first, on the Barwon-Darling, the Gwydir, the Lachlan, the Goulburn and the Murray, particularly the Lower Lakes, Mouth and Coorong.

The Discussion Paper needed to present much stronger, blunt messages about the current overall poor condition of sections of the Basin, the future threats from climate change and the failure to return sufficient water, and the need for decisive action to reduce take and increase resilience. There is over-emphasis on success stories, including positive outcomes from environmental watering, without clearly identifying the significant declines caused by unresolved constraints or clear descriptions of the areas of the Basin not receiving water and continuing to decline.

The calls to switch focus to 'more than adding water' which are meant to highlight the need for supplementary actions in land management, are being interpreted by anti-buy-back groups as silent code for 'no more water recovery'. Fierce resistance continues to any further buy-backs for water recovery, for any reason, including covering the projected significant shortfall from SDLAM projects.

The continued existence of constraints which prevent effective delivery of environmental water is being used as an excuse not to recover any more water. Complementary measures are just that, additional to water recovery, not substitutes for completing full water recovery. Controlling carp numbers will not create more water and could create a bigger problem with millions of carcasses.

² Government of South Australia (2019). Report of Murray-Darling Basin Royal Commission

³ Wheeler S, Zuo, A & Pickersgill J, Journal of Rural Studies 109 (2024)

⁴ ABC news report, Shepparton

It was clear from the beginning of the Basin Plan that 3200 GL/y was not enough to maintain the health of Basin rivers⁵. Yet, that volume was allowed to be reduced even further by theoretical substitutions down to only 2075 GL/y, with extended and ongoing delays on delivery of a further 450 GL/y. There was no reference to the ‘best available science’, as required in the Water Act 2007. Early work by the MDBA had shown that the absolute minimum volume of water recovery should be 4000 GL/y and that even 4000 GL/y with all constraints relaxed would not deliver all the environmental targets in the Plan⁶.

Many of the SDLAM ‘offset’ projects which were intended to deliver ‘equivalent environmental outcomes’ have either not been constructed or have failed to demonstrate the promised environmental benefits. Now facing a shortfall against the advanced credits in water take, with a shortfall between 190 and 315 GL⁷, strenuous efforts are again being made by water licence holders to avoid any recovery of real water to balance the failure to deliver the promised offset projects. The concept of ‘environmental equivalence’ is not proven, and has been questioned by many ecologists, since delivery of water by engineering means does not include the critical functions of connectivity which occur during natural overbank flows and filling and draining of wetlands. The claimed outcomes of environmental equivalence have not been documented and published⁸.

Unsubstantiated claims of economic and social harm from the Basin Plan and water recovery continue, in spite of investigations published by the MDBA and DCCEEW which found that less than 2% of harm could be attributed to buy-backs, with the bulk of negative impacts coming from a range of drivers which affect all regional communities, such as fluctuating commodity prices and shifting market demand. Trends in the movement of water through the water market, trade liberalisation, global commodity prices, advances in agricultural technology, deregulation, climate and drought, competition for labour and broader demographic trends are the sources of significant and variable impacts on regional communities. These different influences should not be attributed to the effects of water recovery. New research for the 2025 Basin Plan Evaluation found that change in southern Basin agriculture sector turnover was predominantly (greater than 95%) driven by factors other than Basin Plan water reforms⁹

ABARES statistics show that agricultural production value has barely decreased despite the recovery of environmental water, with only 1.8 % reduction in a baseline GVIAP of \$6.9 billion¹⁰. Even these impacts are short-run, and will be offset in the longer term by increased dryland production and enhanced water use efficiency. In fact, production will reach its target of \$100 billion annual production ahead of its 2030 target. Agriculture consumes 68.3% of water diverted in Australia, most of it in the Murray-Darling Basin. Horticulture has increased by 27% from 2020. Almonds have nearly

⁵ Gibbs MS, Higham JS, Bloss C, Bald M, Maxwell S, Steggles T, Montazeri M, Quin R and Souter N, 2012, Science Review of MDBA Modelling of Relaxing Constraints for Basin Plan Scenarios, DEWNR Technical Note 2012/01, Department of Environment, Water and Natural Resources, Adelaide.

⁶ Murray-Darling Basin Authority 2011, *The proposed ‘environmentally sustainable level of take’ for surface water of the Murray-Darling Basin: Methods and outcomes*. MDBA publication no: 226/11, Murray-Darling Basin Authority, Canberra.

⁷ MDBA (2025). Sustainable Diversion Limit Adjustment Mechanism: 2025 Assurance Report.

⁸ MDBA (2021). Sustainable Diversion Limit Adjustment Mechanism Reconciliation Framework. MDBA publication no: 11/21.

⁹ Marsden Jacobs Associates (2025). Social and economic conditions of Murray-Darling Basin communities and the contribution of Basin Plan activities.

¹⁰DCCEEW (2025). Socio-economic considerations of a purchase program arising from the 2024-25 Expression of Interest processes. Department of Climate Change, Energy, the Environment and Water, Canberra, October. CC BY 4.0.

tripled in area, with a concurrent increase in water use. Grapes have declined in area but maintained their level of production. In 2024–25 average farm incomes are estimated to have rebounded across cropping and dairy farms, driven by improved prices and favourable seasonal conditions in key regions¹¹. It is of concern to note that, in the context of declining water availability, 61% of rice products and 27% of fruit and nuts are exported¹². This data counters the frequently heard claim from irrigators that water is needed to grow crops for food security in Australia.

In spite of all these failures to deliver the Basin Plan as intended, there is a false impression among many delegates in current forums and meetings that the Basin is in good condition. Those who hold this view are often from upstream communities which are receiving plenty of water to sustain river landscapes and wetlands connected under regulated conditions. Many of the stressed environments are out of sight, or not obvious to most Basin residents. Downstream communities continue to feel the effects, with drying and salinizing floodplains, stressed and dying floodplain woodlands, failed survival of seedlings after floods, increased episodes of poor-quality water leading to algal blooms and fish kills, and extremely poor-quality water from the first flush of any flood flows which inundate parched floodplains.

The CEWH already noted the poor state of lower floodplains in 2019 and their critical need for watering to prevent very serious decline¹³. With the natural pattern of inundation of floodplains prevented by river regulation, ~30% of floodplains are drying out in the Lower Murray Valley, which was recently designated as a Threatened Ecological Community¹⁴. Icon Ramsar sites such as the Chowilla-Lindsay-Walpolla floodplain complex are only partly recovered and the Coorong remains in declining condition, only surviving on environmental water during regulated flow conditions. However, environmental water alone does not have the capacity to deliver the required overbank flows, these must come from opportunistic management of higher river flows and releases from storages.

The Discussion Paper highlights the serious finding that native fish populations are in poor condition. That conclusion should be a massive alarm bell, that the supporting ecological systems of the Basin are also in poor condition, unable to support healthy populations of apex species. The decline in the health of native fish populations is alarming, given the significant investment in fish passage structures, re-snagging and installation of fish hotels of recent years. This major concern has been highlighted in the Discussion Paper, and should lead to urgent recommendations for more effective action to ensure survival of these key species. Actions to support native fish survival will also support many other plant and animal groups.

The Discussion Paper does not draw attention to other key populations under threat, including waterbirds, turtles, mussels and black box woodlands. As noted above, in January 2026 the Lower Murray below Wentworth, including three Ramsar wetlands, was declared a Threatened Ecological Community at extremely high risk of collapse in the next 10 years. At the same time, the Macquarie

¹¹ ABARES (2025b). Australian Farm Productivity – Broadacre and Dairy Estimates, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

¹² ABARES (2025a). Agricultural Commodities: December quarter 2025, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, DOI: <https://doi.org/10.25814/seg6-pk47>.

¹³ Basin Watering Strategy (2019)

¹⁴ <https://www.dcceew.gov.au/sites/default/files/documents/guide-river-murray-darling-to-sea-threatened-ec.pdf>

Marshes were classified as a Critically Endangered Ecosystem, with a very high risk of extinctions within 20 years¹⁵.

If this consultation process does not produce strong recommendations to implement the Basin Plan in full and as intended, the condition of the Basin water resources and ecosystems will just continue to decline, with downstream valleys, such as the Gwydir wetlands, 14 other Ramsar wetlands through the Basin, and the Coorong and the Murray Mouth, and their dependent communities, paying the price.

In April 2026, there is the shocking example of mature gravid female turtles being dug out of the mud in the drying Gwydir wetlands as a desperate survival measure to save as many females and their eggs as possible¹⁶. Their wetlands are drying up because a downstream landholder threatened legal action if the water released for the wetlands flowed over his floodplain land, blocking environmental flows which would have sustained water in the wetlands during this critical breeding period. The low flows have also caused a fish kill. The New South Wales government have allowed a single individual to block life-sustaining flows being passed through the Gwydir wetlands and further downstream, giving a very timely and disturbing demonstration of the massive economic and environmental costs to the wider community from a decision allowing a constraint imposed by a single landholder to override public good.



Native turtles being rescued from Gwydir wetlands in April 2026 after environmental flows were stopped due to a complaint by an individual landholder who refused to allow his floodplain land to be flooded

There will be a significant economic, cultural and social price, as well as environmental impacts, as industries and livelihoods which are dependent on the ecosystem services of a Basin environment in declining health begin to fail themselves. A sobering example of the highly destructive social and economic consequences of environmental collapse has been seen in South Australian coastal communities during the recent marine algal bloom, which is still persisting beyond 12 months. The

¹⁵ <http://dcceew.gov.au/sites/default/files/documents/guide-wetlands-inner-floodplains-macquarie-marshes-threatened-ec.pdf>

¹⁶ <https://www.abc.net.au/news/2026-04-21/mud-turtle-rescue-at-gwydir-wetlands/106577116>

state government has offered a \$28 million dollar package to assist communities and businesses to recover, and acknowledges that it will take more funding to support ongoing adjustment to changed conditions in the damaged marine environment¹⁷.

Strong messages in the recommendations to the Basin Plan review should include:

- There is only a finite amount of water, we can't get more water by taking it from other catchments or from declining groundwater sources, more dams won't create more water – so we all have to manage more efficiently with less water in future and share the limited and declining resource fairly and equitably
- Existing diversions must be used more efficiently to maintain agricultural production (as was seen in the Millennium Drought, when production was maintained on <35% of normal allocations)
- More water needs to be recovered to sustain a minimum level of Basin health and be managed more efficiently for broader environmental, social, cultural and economic outcomes. Buy-backs from willing sellers have been demonstrated to be the most effective and efficient method, in value for money and volume of water recovered
- The continuing over-allocation to extractive uses needs to be reassessed and reduced further, with consideration given to retirement of less secure entitlements which are unlikely to receive viable allocations in a drying future
- The compromised minimum recovery target in the Basin Plan has not been reached, and even if reached, would still leave significant areas of the Basin beyond recovery, particularly in lower reaches.
- Basin ecosystems overall are still in decline – especially native fish, waterbirds, vegetation communities (particularly black box woodlands), turtles and mussels – with the overall target of reversing decline in ecosystems still very far from being met
- Basin rivers are declining from the bottom up, with assessments of the Sustainable Rivers Audit showing all lower reaches in decline. The assessment of Sustainable Diversion Limits showed all lower valleys were not meeting targets, due to failures of upstream reaches to provide minimum end-of-system flows.

We note that the Discussion Paper explores particularly:

- initial assessment of sustainable diversion limits
- water for the environment
- river connectivity in the northern Basin
- floodplain and wetland health
- native fish decline
- water quality
- water infrastructure and critical human water needs
- regulatory design
- improving science and knowledge.

¹⁷ <https://www.premier.sa.gov.au/media-releases/news-archive/state-government-reveals-next-stage-of-algal-bloom-support-package>

We suggest that there are other broader, inter-connected issues which need to be considered and would add the following topics to this list:

- clearer accounting against the targets set in the Basin Plan, highlighting continuing decline in key parameters which should have been improving since 2019, and outlining actions to reverse the decline¹⁸
- how to achieve longitudinal and lateral connectivity in all river reaches
- identified threats to the ecosystems at Ramsar sites, particularly those listed as threatened or endangered, the failure to supply sufficient water to these sites and the need for urgent action to maintain these wetlands at the standard required by international treaty obligations
- developing practical solutions to counter deliberate obstruction and delay by upstream jurisdictions and vested interests to delay resolution of constraints and effective delivery of environmental flows
- the need to restore (at least partially) the natural rhythms of the rivers, in timing of flushes and minor overbank flows to support regeneration and breeding, in addition to returning sufficient volumes of water
- an objective assessment of the net benefits of water for the environment to shift focus away from perceived negative impacts on the irrigation industry
- the need to accelerate adaptation to the effects of climate change, with the threat of a strong El Nino forming in spring 2026 which could replicate the conditions which led to the catastrophic Tinderbox drought of 2017-19.

We note that relaxation of Constraints is not discussed as a separate topic but integrated into other issues. It remains a primary concern underpinning other issues and a top priority for urgent action, as it is impeding full benefit of water recovery. We do not support the recommendations in the Roadmap¹⁹ to allow a further 10 years to (maybe) complete the necessary actions. We have developed a proposal to accelerate progress in key reaches, discussed below and given in detail in Appendix 2.

¹⁸ Colloff, Matthew J, *et al.* (2024). 'Murky waters running clearer? Monitoring, reporting and evaluation of the state of the Murray-Darling Basin after more than three decades of policy reform.' *Marine and Freshwater Research*, 75.18 (2024): MF24193.

¹⁹ MDBA (2024). Constraints Relaxation Implementation Roadmap - A guide for governments to progress constraints relaxation projects.

Topics of Concern to Lifeblood Alliance

Basin Plan 2012 is not complete with significant unfinished business

- The primary aim was to reverse over-allocation, to halt decline in ecosystem condition and promote recovery (target date was 30 June 2019) – at Feb 2026, water resources are still over-allocated, ecosystem health is still declining and very few wetlands are receiving sufficient water
- Water has been recovered and is held by the Commonwealth Environmental Water Holder (3124 GL of entitlements of varying security have been recovered to June 2025, which have a long term Diversion Limit Equivalent (LTDLE) of 2150 GL/y)
- However, effective recovery of consistently deliverable 3200 GL/y has not yet been reached, with a minimum of 375 GL/y LTDLE to recover and outcomes from existing held environmental water are not as good as predicted (because of constraints limiting effective delivery)
- Resistance to implementation of the original Basin Plan, especially the constraints package, has limited effective delivery of recovered water and reduced the scale of positive outcomes. Big wins are possible if constraints can be resolved and water recovered can be delivered more effectively for much better environmental outcomes and community benefits
- Some more rapid elements of constraints could be resolved by rule changes to be negotiated between state governments to allow controlled flushes to create limited overbank flows, such as proposed in the Enhanced Environmental Flows supply project which has been shelved without explanation
- Deliberate obstruction by vested interests and state governments has meant that existing environmental water cannot be delivered for maximum ecological benefit until constraints are fixed. The Constraints Roadmap proposes extending the deadline for another 10 years but the environment is stressed now and cannot wait that long
- A significant number of off-set projects and toolkit projects have not been completed, so there will be a large shortfall against off-set credits already allowed²⁰. This gap is legally required to be recovered, and voluntary buybacks are the best option to do that, in spite of strident opposition to that method from some sectors
- Absolute resistance to buybacks continues, with unchallenged, unsubstantiated misinformation still being repeated about impacts on Basin communities²¹ – the Authority and the Minister will need to put forward the compelling argument that everyone will lose if we don't continue to recover water, preferably through voluntary buybacks as the most cost-effective, efficient means²²
- Better information is needed to help communities to understand the losses as well as the gains in ecological health and community well-being, to highlight what has not been watered and what are the costs to communities in failure of domestic water supplies, lost amenity and landscape condition, and links to potential tourism losses.

²⁰ Inspector-General of Water Compliance Northern Basin Toolkit Inquiry Report, the Australian Government, Canberra, April 2026. CC BY 4.0

²¹ Wheeler S, Zuo, A and Pickersgill J (2024). Journal of Rural Studies, 109.

Basin Plan Targets have not been Met

The Basin Plan included:

- 7 intermediate targets (to 30 June 2019) – requiring no further loss or degradation in flows, connectivity, assets, functions, the Coorong, Lower Lakes and Murray Mouth regime, condition and recruitment of native species after that date
- 7 long term targets in the same parameters requiring improvement in condition from 1 July 2019.²³

These targets included specified areas of vegetation communities to be maintained in good condition, improved rates of flow in rivers, the maintenance diversity and abundance in key birds, fish and animals, and other condition indicators (Appendix 1). Two specific targets required maintenance of the current extent of about 360,000 hectares of river red gum and 409,000 ha of black box in good condition, and maintenance of base flows at least 60% of natural levels. Other targets required improvements to overall flow by 10% more into the Barwon–Darling system, 30% more into the River Murray and 30–40% more to the Murray mouth, keeping it open to the sea 90% of the time.

An assessment by the Wentworth Group of Concerned Scientists found that, while economic indicators were mostly improving, environmental indicators were mostly not achieved²⁴. The Murray Mouth has been dredged ~90% of the time, owing to the lack of flows to the downstream end of the system.

In addition, 7 targets were set for delivery of the agreed additional volume of 450 GL/y, including floodplain and habitats in Southern Basin, flows to Lower Lakes, Coorong & Murray Mouth, plus salt export target of 2 million tonnes annually through the Murray Mouth²⁵.

The intermediate targets which required no loss or degradation to 30 June 2019 have already failed, with significant consequences:

- the health of Coorong continues to decline with algal blooms in the Southern Lagoon. The number of migratory waders visiting the Coorong is decreasing significantly²⁶ even though coordinated flows to the Northern Lagoon were intended to provide critical feeding habitat at this internationally recognised site
- site and reach improvement has occurred but is varied and patchy. Decline and stress is continuing in ecosystems at the wider scale, with an ongoing need for follow up watering to support regeneration post-2011 and 2022 floods

²³ Basin Plan Section 7 (2012)

²⁴ Colloff, Matthew J, *et al.* (2024). 'Murky waters running clearer? Monitoring, reporting and evaluation of the state of the Murray-Darling Basin after more than three decades of policy reform.' *Marine and Freshwater Research*, 75.18 (2024): MF24193.

²⁵ Basin Plan Section 5 (2012)

²⁶ Paton, DC, Paton, FL, Whittaker, DA & Markos, DG (2024). Condition Monitoring of the Coorong, Lower Lakes and Murray Mouth Icon Site: Waterbirds in the Coorong and Lower Lakes. Bio-R, The University of Adelaide and Department for Environment and Water

- significant continued decline of waterbirds at Basin scale since 1983, in spite of large floods in 2010-12, limited floods in 2016 and massive floods in 2022-23. Overall numbers are about half of the starting numbers in the 1980s when consistent surveys began²⁷
- concerns for threatened species of small native fish, with emergency rescue measures in place for some threatened species²⁸.

The Basin Watering Strategy has a separate set of targets for recovered environmental water. These targets inform the environmental watering program of the CEWO which is maturing well, with cross-basin coordination of flows creating a spring pulse to water sites in seven tributaries through the Southern Basin and reach the Murray Mouth and Coorong. This involves re-use of e-flows at multiple sites, coordination of end-system flows and creating connectivity with floodplains. The CEWO is meeting many of the 16 environmental watering targets (Appendix 1) but is limited mostly to in-channel sites by physical and governance constraints, as well as the volume of water available.

Specific targets were not set for areas of wetlands to be watered. However, only 26% of environmental water requirements were met over the period 2012-2022. It has been found that environmental water requirements have been met in only 3% of wetlands, with 57% receiving sub-optimal delivery, and 40% of wetlands receiving no water at all in 36 years²⁹.

The Ramsar listing requires that Australia maintain ecological character in 16 sites across the MDB, with international treaty obligations to maintain ecological character in these wetlands. These sites need better managed flow regimes to sustain their condition to the required standard.

Declaration of the Lower Murray Valley as a Critically Endangered Ecological Community³⁰ highlights the urgent need to ensure minimum flows and suitable water regime to include flushes and small overbank flows to maintain the health of the ecosystem. The listing as critically endangered means this system faces an extremely high risk of collapse in the next ten years – before the Basin Plan is reviewed again. The wetlands and inner floodplains of the internationally significant Macquarie Marshes are also listed as endangered – which means that system faces a very high risk of extinction in the next 20 years³¹.

Basin assessments of the health of vegetation communities are too broadscale to detect more localised issues, such as salinisation, scalding, raised groundwater levels, blocked groundwater flow paths, failed regeneration, declining floodplain condition and resilience that have been observed, particularly in the downstream reaches. Semi-regular controlled overbank flows are needed to cleanse floodplains and reduce polluted outflows accumulating in the Lower Lakes and flowing out into the Southern Ocean.

²⁷ J.L. Porter, R.T. Kingsford, R. Francis, K. Brandis, A. Ahern, Y. Tidou & D. Simpson (2025). Eastern Australian Waterbird Aerial Survey - October 2025 Annual Summary Report. Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences, UNSW Sydney

²⁸ <https://natureglenelg.org.au/saving-the-miraculous-murray-hardyhead-sustaining-coordinated-species-level-recovery-actions-across-three-states/>

²⁹ Sheldon, F, Rocheta, E, Steinfeld, C, Colloff, MJ, Moggridge, B, Carmody, E, Hillman, T, Kingsford, R & Pittock, J (2024). Are environmental water requirements being met in the Murray-Darling Basin Australia? *Marine & Freshwater Research*, 75(8), p.MF23172.

³⁰ <https://www.dcceew.gov.au/sites/default/files/documents/guide-river-murray-darling-to-sea-threatened-ec.pdf>

³¹ <http://dcceew.gov.au/sites/default/files/documents/guide-wetlands-inner-floodplains-macquarie-marshes-threatened-ec.pdf>

Basin health matters to everyone, there are benefits for all in halting decline

The importance of maintaining Basin ecosystem health for everyone should be highlighted:

- a healthy ecosystem provides for adequate water quality and community well-being, as well as healthy riverscapes and ecosystem services to support local economies and industries, particularly recreation, tourism and eco-tourism
- promoting the 'One health' concept, that human health and well-being rely on healthy support systems, including healthy Basin ecosystems and rivers: healthy landscapes and riverscapes contribute to mental health and physical well-being
- Recommendations to maintain ecosystem health must include details of the social and economic benefits to communities, via improved water quality, amenity, eco-tourism resources, cultural economies and job and career opportunities
- A strong case should be made for the benefits of improving the health of Basin ecosystems through water recovery and removal of constraints to everyone, everywhere in the Basin. The case is needed to counter the strong resistance to water recovery and the adversarial attitudes from groups which see the environment as a competitor, instead of being the basis for all social and economic activities supporting towns, businesses, tourism, community well-being, agriculture and communities.

Rivers are more than a channel, they include floodplains, wetlands and groundwater

- Restoring the rhythm of river flows, with pulses, high and low flows, is critical to maintaining ecological health which will in turn secure water supplies, water quality and river landscapes to support communities.
- The natural flow regime has highs and lows, which have been replaced by constant regulated flows. Water managers need the ability to create more flexible flow regimes, such as spring pulses and managed small overbank flows to reach higher wetlands and floodplains. Rivers need the right amount of water at the right time to support breeding and regeneration and to maintain floodplain health, as well as to reduce poor quality run-off in floods
- Secure minimum base flows in all main river channels are essential to sustain river connectivity and health, and to maintain water quality, in a more natural rhythm of river flows
- Rivers die from the mouth up – Lower Darling, Lower Goulburn and Lower Murray are all listed as being at risk of SDLs not delivering their targets due to operating rules that prevent overbank flows reaching floodplains, as well as upstream reaches not delivering minimum end-of-system flows
- The long-term ecological health and resilience of the Basin's rivers and streams rely on regular inundation of lower parts of the floodplain and return flows delivering nutrients and carbon required to replenish the food source of all reliant species, and to filter water before it returns to the mainstream
- Change operating rules to restore the natural rhythm of the rivers, at least in part, with varied high and low flows, slower rises and falls in levels, spring flushes and occasional floods.

Act to Accelerate Relaxation of Constraints

A critical element of the Murray-Darling Basin Plan is the Constraints package of projects, which aims to facilitate effective and timely delivery of environmental flows. Relaxation of constraints is essential in order to deliver recovered water effectively and efficiently, and is required to achieve the environmental outcomes outlined in the Basin Plan.

Constraints consist of a mixture of:

- physical blockages to flows and limiting channel capacity, preventing or limiting delivery of sufficient volumes of environmental water at optimal times and for sufficient duration
- private landholder resistance to minor, short-term inundation of floodplain land along key flow paths, involving ~3000 landholders, mostly in NSW mid-Murray braided systems – this prevents/restricts through-flows to deliver environmental flows to target wetlands
- operating policies which actively reduce river flows and prevent flooding of floodplains, particularly affecting the Lower Murray and Lower Darling reaches, where the river channels are incised and higher flows are required to raise river levels to commence-to-flow thresholds into wetlands and floodplains
- Legal constraints such as being experienced in the NSW northern basin at present where Water NSW is refusing to release environmental flows which would inundate neighbouring private land.

Current operating protocols for Basin rivers are designed to maximise irrigation allocations and prioritise maximising storage, optimising air space ahead of further inflows and minimising flooding of floodplains, and thus represent a major constraint on delivery of essential environmental flows.

During regulated flows and small floods, the Basin Plan aims to deliver 50,000 ML/d below Yarrowonga to provide environmental flows. Operational constraints are currently limiting flows to 13,500 ML/d, which greatly reduces the potential environmental benefits and the capacity to provide an effective inundation regime for the Barmah-Millewa red gum forest and wetlands of international importance.

During two years of high flows and high water availability in 2022-23, operating protocols actively prevented overbank flows to the stressed Lower Murray and Lower Darling floodplains, which had not been inundated since 2016. Releases from Menindee Lakes were limited to 18,000 ML/d, depriving the Lower Darling floodplains of much needed watering which occurs >25,000 ML/d. Flows only reached those floodplains once all upstream storages were over-topped, sending a destructive, swiftly flowing flood through the whole river system.

As noted, action has been extremely slow to resolve multiple major constraints and there are very significant impacts from this lack of progress. In regulated flows under average conditions, and especially during dry times and droughts, environmental water cannot be delivered effectively and efficiently to priority target wetlands and river reaches at optimal times.

To resolve constraints in the Southern Basin, coordinated releases from upstream and mid-stream storages could boost flows to reach target sites at higher elevations on floodplains, in wet times when flows are above normal regulated flows and in small floods. These actions, which are recommended in CEWO watering plans, are blocked by the MDBA operating policy not to flood floodplains. They would also create additional airspace in storages during wet times, reduce risks of floods and of black water events, and minimise erosion of river channels when delivering flows to downstream users.

It is important to counter the misinformation exaggerating the impact of Constraints projects, with facts that support environmental flows and relaxation of constraints:

- environmental water delivered by CEWO cannot ever create a flood, it can only boost natural high flows to enhance environmental benefits
- opposition to Constraints has resulted when two separate options have been blended erroneously, confusing operational management of high flows through the connected Southern Basin, with delivery of small volumes of CEWO environmental water to create small pulse flows and deliver water to target wetlands
- the call for management of natural high flows to generate 80,000 ML/d is related to more effective management of high flows before they become uncontrolled, to push water onto the Lower Murray and Lower Darling floodplains which miss out during regulated flows and small to medium floods
- environmental flows can never deliver such large flows or flood large areas, the CEWO does not hold sufficient water
- the 450 GL/y LTDLE would add to water available to CEWO to benefit all river systems and river communities in the Southern Basin, flowing in and out of multiple wetland systems before it finally reaches the Lower Lakes and Coorong.

As a possible solution, a three-tier proposal has been developed to break the deadlock on resolving Constraints, firstly to accelerate reach projects to remove constraints to environmental flows (<25,000 ML/d downstream of Yarrawonga); secondly, for two phased steps to develop support to combine tributary flows to achieve initially a 60,000 ML/d target at Wentworth and thirdly, and eventually combine tributary flows to reach the 80,000 ML/d target at Wentworth to benefit the whole Southern Connected Basin (see Appendix 2).

Other operating policies which need urgent review include management of through-flows and releases from the Menindee Lakes, to ensure that a minimum reserve volume is retained in the Lakes to support the fish nursery and that the flow regime is managed to support native fish and waterbird breeding, as well as healthy wetland environments and healthy river communities.

Yes, Australian environments are adapted to survive drought, but only if they can replenish water reserves during floods. The ecosystems of the lower reaches of the Murray-Darling Basin are still recovering from the Millenium Drought and have not been receiving sufficient flood waters frequently enough and for long enough to re-build their resilience for future droughts. They need action to ensure they receive more water in wet times and environmental flows during dry times.

The floods of 2022-23 were a major 'get-put-of-jail-free' card, which provided extended inundation of all floodplains. However, the benefits did not last for nearly as long as expected by ecologists, with downstream floodplains already starting to dry out again only three months after the flood receded. Over the past three years, the majority of seedlings germinated post-flood have dried out and died without further follow-up inundation and with regional rainfall much lower than average totals³².

Action is needed to sustain floodplain communities which are currently not receiving any inundation unless there are significant unregulated flows in the Basin system.

³² Jensen, A (2024). *Murbpook Lagoon: Response in Vegetation Health to Environmental Watering. Monitoring Report*. November 2024. Prepared for Nature Foundation: Adelaide, South Australia.

Support Essential Lateral and Longitudinal Connectivity

Issues relating to connectivity have been highlighted in the Northern Basin, with the Connectivity Expert Panel report³³ providing detailed, essential steps to improve health of rivers, but this issue also relates to the Southern Basin. Minimum base flows (planned environmental water) need to be created through changes in water sharing rules.

Longitudinal connectivity as recommended for Northern Basin rivers is an essential requirement, and lateral connectivity with floodplains in downstream valleys must also be included. Management of flows from the Upper Barwon-Darling is critical to sustaining native fish populations which migrate into all major Basin river systems.

The three most important parts of the Expert Panel Connectivity report recommendations for the northern Basin are:

1. Independent governance to secure and protect flows
2. Base flows created by water sharing plan rules (base flow most of time, small flush one a year and large flush every second year)
3. Expand resumption of flow rules from the Barwon-Darling into the tributaries.

Base-flows are Critical to Connectivity Reform

It is critical that connectivity reforms include the creation of base-flows through changes to NSW water sharing plans and water resource plans. Ensuring base-flow with proposed end-of-system flow targets is essential for maintaining river health, as the cumulative contribution of minimum flows leaving each tributary are needed to meet the base-flow requirements of the Barwon-Darling/Baaka.

Why Base-flows are Critical to Connectivity Reform

Continuation of the current scenario means assured ecological collapse for the Darling/Baaka River. The Connectivity Expert Panel developed a suite of recommended actions for the NSW Government to deliver essential minimum connectivity in Northern Basin rivers:

- Overall: All scenarios are expected to have positive, measurable, but relatively small short-term ecological outcomes, with significant benefits accruing over longer timeframes (30 years).
- Water Quality: Positive outcomes are anticipated across all scenarios, primarily due to increased baseflows preventing cease-to-flow events.
- Habitat: All scenarios are predicted to have positive impacts on the extent, availability, and quality of aquatic habitat.

Reforms must focus heavily on the timing of flows, ensuring proactive rules maintain water within the system more often to keep it 'wetter' and build systemic resilience. Keeping the rivers wetter most of the time saves water, significantly reducing the need for large volumes of water just to 'restart' a dried-out system.

Where are the Pre-Development Base-flows?

A significant portion of pre-development base-flows is being diverted by floodplain harvesting levees capturing rainfall runoff. A massive 44% of floodplain harvesting diversions are rainfall runoff, and 61% of this water is exempt from licensing, meaning it is 'off the ledger'.

³³ Dula, A, Duncan, P, Sheldon, F, Smith, C, Southwell, M & Townsend, P (2024). *Connectivity Expert Panel Final Report*. NSW Department of Climate Change, Energy, the Environment and Water, Sydney.

The Connectivity Expert Panel recommends:

- access to floodplain harvesting be aligned with supplementary access
- rainfall runoff exemption be bought into the accounting framework as a priority.

Tributary Flows

Unregulated tributary inflows entering a regulated water source below the storage are used by WaterNSW to meet water orders, and are thus unavailable for base flows.

Public In-River Storages

All flows are captured completely by an in-river public storage. For many river systems, there are no provisions for passing flows or the interrupted base-flow to be provided below the storage. Pre-development base-flows are being taken from the environment (and have been for decades) with no compensation.

Low flows are essential to the health of the Barwon-Darling River system and its native fish populations³⁴ :

- The Barwon-Darling naturally maintained lotic (flowing water) habitats, ensuring continuity of aquatic life
- Prior to development the river flowed more than 90% of the time
- During extreme droughts such as the Federation Drought (1895–1903) and World War II Drought (1939–1945), the river maintained low but continuous flows 85% of the time
- Periods of zero flow were short-lived, typically lasting less than a month, and were followed by renewed flow pulses
- The claim that the Barwon-Darling River has historically dried up (ephemeral) is inaccurate
- The river's natural state was one of near-perennial flow shaped by consistent low flows and frequent pulses
- The modern-day occurrences of zero flow are artificially induced by excessive water regulation and extraction, rather than being a natural characteristic of the system
- Policy decisions must focus on restoring natural hydrological patterns by maintaining low flows and reducing excessive water extractions to protect this critical river system.

Act on urgent end-of-system environmental priorities

- Declaration of the Lower Murray Valley as a Threatened Ecological Community highlights the urgent need to ensure minimum flows and suitable water regime to include flushes and small overbank flows to maintain the health of the ecosystem in the Lower Murray Valley
- \$17m has been announced for shorebird wetlands projects around Coorong & Lower Lakes region, but no further wetland projects are proposed for the rest of the Lower Murray Valley, except for three established engineering projects watering sections of floodplain in the Riverland reach
- Priority requests for watering higher elevation wetlands and floodplains the Lower Murray Valley are not able to be met by CEWO because of constraints which prevent sufficient flow volumes to be delivered to these sites

³⁴ Mallen-Cooper, M & Zampatti, B P (2018). History, hydrology and hydraulics: Rethinking the ecological management of large rivers. *Ecohydrology*. 2018; e1965. <https://doi.org/10.1002/eco.1965>

- The Lower Murray Valley already has significant areas of floodplains in decline, with regeneration of black box communities at risk of failure after decades of no effective inundation to support germination and survival³⁵; this will get worse unless operating rules can be changed to allow intermittent short-term inundation of floodplains.

Climate Change adaptation must be incorporated now

To facilitate adaptation to climate change and to improve drought preparedness, a major engagement campaign is needed to shift attitudes towards reducing demand and conserving water, recycling and re-use, as well as shifting to crops, businesses and gardens with lower water requirements, especially in the Southern Basin.

Adaptation to climate change must include discussion about how reductions in available water will be shared amongst consumers, with particular attention to transitioning general security licence holders to reduced volumes of take.

There isn't time to wait 10 more years to address the impacts of climate change, it is here already.

- There will be even less water in future as climate change decreases run-off, this must be acknowledged and water resource plans and mechanisms adjusted to lower volumes
- The effects of climate change are already here, with increased rain in upstream catchments and increased drought in lowland reaches
- Reducing run-off is already threatening to reduce unregulated flows which support transmission through river reaches, maintain water quality and environmental health³⁶
- The current accounting system will take water from the environment first³⁷, so need to protect unregulated flows, and ensure minimum base flows through all river valleys to maintain water quality and transmission to downstream users
- Share the pain of reducing water availability fairly across all users
- General security licence holders will have less and less water and will be more and more unhappy, these will need targeted support to adapt and transition
- Need to encourage and assist adaptation or changing to crops which use less water, need support for agricultural communities to transition to sustainable farming
- Promote water recycling, re-use or re-purposing wherever possible, and alternative water sources for town supplies
- Alarming, predictions are now emerging for a strong El Niño developing, with BoM forecasting below average rainfall for the Southern Basin in coming months³⁸.

³⁵Jensen, A (2020). *Water For Nature: Monitoring of Vegetation Responses to Environmental Watering in the South Australian Murray River Valley 2015-19*. For Nature Foundation: Adelaide.

³⁶ Citation: Prosser, I.P.; Chiew, F.H.S.; Stafford Smith, M. (2021). Adapting Water Management to Climate Change in the Murray–Darling Basin, Australia. *Water* 2021, 13, 2504. <https://doi.org/10.3390/w13182504>

³⁷ Hart (2022) <https://goyderinstitute.org/policy-changes-are-needed-to-better-protect-environmental-water-from-climate-change-in-the-murray-darling-basin/>

³⁸ [Long-range forecast: First look – May to July 2026 | The Bureau of Meteorology](#)

Water Quality is the next big issue

Water quality in rivers and wetlands is of increasing concern for both town water supplies and ecological health. The impacts on water quality are becoming more obvious as river flows decrease, small floods are prevented and the chance of extreme rainfall events and flood events increases.

Water quality issues in the recommendations to the Basin Plan review should be broadened from salinity to include nutrients, dissolved oxygen, temperature, bushfire run-off and sedimentation, acid sulphate soils and PFAS in town water (such as in Narrabri³⁹). Conditions of particular concern include hypoxia, blackwater, stratification and algal blooms.

The filtration and cleansing benefits of more frequent, controlled small floods need to be explained, to strengthen the argument for expediting constraints projects. Provisions for minimum base flows should be included, as well as provisions for base flows and end-of-system flows in Water Resource Plans to flush algal blooms and blackwater events throughout the connected river systems.

Recent events such as the 2022-23 floods highlighted the impacts from floods washing the accumulation on floodplains of nutrients, soil disturbance and pesticide active ingredients downstream, as well as accumulated natural debris, scoured sediment, salt, and debris from human settlements and agricultural activities.

Water quality testing along Murray-Darling rivers does not cover sufficient parameters at enough locations frequently enough. For Lake Alexandrina and the Goolwa channel, a toxic blue green algal bloom persisted for many months in 2024 and 2025, rendering the water unusable for any purpose. Only two stations, at Milang and the Goolwa barrage, currently test for algal counts. The nearest full water quality testing site in the Lower Murray is at Tailem Bend, 30 km upstream, associated with the pipeline offtake for towns in the Upper South East region.

The extended algal blooms in the Lower Lakes have had little attention as they occurred below the pipeline offtakes which deliver water to South Australia towns and cities outside the Basin. The continuing poor water quality has had significant impacts on local towns and farmers around the Lakes. Assessments of water quality are not frequent or specific enough to detect rising occurrences of various algal blooms, nutrient accumulation, black water events, low dissolved oxygen, or other water quality threats.

More frequent and more detailed testing is required at a minimum range of representative sites throughout the Basin, together with water quality management plans to limit pollutants and disperse algal blooms and blackwater events. The option of specific water reserves to manage water quality, as occurs in Lake Eildon, should be considered, since the best solution for clearing blooms and black water events is additional flows.

Base flows must be secured throughout the river systems to maintain sufficient water quality for all communities and for ecosystem health. Provision must be made in upstream Water Sharing Plans for reserve volumes to be available to disperse poor quality water events. It must be clearly understood that environmental flows should not be used to manage such water quality events and, in any case would be insufficient to provide a solution.

The importance of the barrages must be clearly explained, to maintain water quantity and quality for water supply drawn from the 270 km river reach from Blanchetown to the Lower Lakes, as well as the consequences of salt water intrusion into the Lakes if the barrages are over-topped by sea level

³⁹ [Narrabri Shire down to less than two weeks' supply of water amid PFAS contamination 'crisis' - ABC News](#)

rise. Water from the Murray is supplied to 75% of South Australia's population, which sets the quality controls for drinking water supplied via five pipeline off-takes in the Lower Murray Valley.

With increasing concerns about water quality, regular updates should be provided to Basin communities. This requires development of an accessible and comprehensive centralised dashboard of current water quality monitoring data compared to target values, along with regular report cards (quarterly) including water quality, cultural and ecological performance against meaningful and appropriate targets, such as the Environmental Reference Standards set by the EPA in Victoria.

Water Justice for First Nations

Lifeflood Alliance strongly supports all genuine efforts towards water justice for Basin Nations and Traditional Owners. Cultural water entitlements for Aboriginal Nations must be delivered as promised, with increased urgency, and with legal recognition of water rights and effective involvement in local water management. Cultural values of water should be embedded in water planning.

Successive government policies over many decades have caused major environmental degradation, with heavy costs to First Nations of the Basin. The process of reviewing the Basin Plan must give priority to developing effective pathways for restorative justice in water allocation, ownership and water management across the Murray-Darling Basin. Water rights must be legislated and made available to Basin Nations through their preferred self-determined institutions via amendments to the Water Act and Basin Plan.

The failure to deliver promised water for cultural use through the Aboriginal Water Entitlement Program (AWEP) has been yet another water injustice, with the very significant delays of 4-5 years meaning that the volume of water which can be purchased now is much reduced from what was possible at the time of the original funding announcement. Even when the program is complete, First Nations will still own less than half of one percent of water rights across the Basin. Clear, strict targets and deadlines are needed to accelerate the transfer process as a top priority, with strong accountability to ensure compliance and delivery.

The current efforts by the MDBA and DCCEEW to engage with Traditional Owners and boost their capacity to manage water allocations are only a small first step, which should be accelerated and expanded with urgency and co-design, to achieve immediately measurable outcomes. Priority must be given to ensuring that affected river communities have rapid access to sufficient water to secure the health of their local rivers and to support community well-being and culture.

Ongoing additional resources must be included to support sustainable management of the water entitlements once agreed. It is expensive and time-consuming for Basin Nations and their self-determined, relevant institutions, to participate in Basin Plan matters. Traditional Owner groups must rely on funding from philanthropy, grants and partnerships, simply to participate in discussions with governments. Much of the work is conducted by volunteers. Funding must be allocated to provide secure, ongoing support so Basin Nations can be directly and appropriately resourced to participate independently and properly in water management, governance, legal processes and decision-making. This could be included as a specific section of a Community Transition Fund to assist communities to make the challenging adjustment to managing declining water availability and reliability in the future.

More detail must be included in the Basin Plan review to outline the pathway, governance and funding required to achieve water justice for First Nations, and on how the international agreements

relevant to First Nations can be given effect in the Water Act and Basin Plan. Appropriate targets and reporting processes must be set in the Basin Plan, along with legal recognition.

A separate submission has been prepared by MLDRIN which provides more detail on these issues.

Sustainable Diversion Limit Adjustment Mechanism (SDLAM) and Assessment of SDLs

The SDLAM projects completed to date do not contribute the expected offset benefits required to maintain the ESLT. They have not delivered the replacement 'equivalent environmental outcomes' promised, and the volumes delivered are very much less than legislated in 2017. Projects have been seriously delayed or have not yet started serious design work or the approval process. The concept was fundamentally flawed in that engineering structures cannot replicate the essential lateral and longitudinal connectivity needed to sustain suitable conditions to trigger successful breeding and regeneration events.

The 8 surface SDLs which are evaluated as not meeting their targets are all mainstream downstream reaches, indicating that insufficient flows are being delivered from upstream reaches. This is of serious concern in relation to maintaining healthy river ecosystems. These results indicate that the Basin Plan is not meeting its target. These are the reaches where the combined impacts of the SDLAM offset projects on water recovery and consequently reduced flows are most keenly felt.

The SDLs for the Lower Murray are assessed as not meeting their targets, but the Lower Murray reach does not have control over its inflows or water quality, as this is primarily determined by flows from catchments upstream. Changes will need to be made upstream to have any impact on this SDL, to allow more water to reach the Lower Murray.

Coorong, Lower Lakes & Murray Mouth are separated out in the assessment of SDLs, and the Discussion Paper suggests the Healthy Basin Healthy Coorong program will resolve any problems. This is not the case, expensive engineering solutions cannot provide the necessary flows and, in any case, will not survive on that high-energy coast. Changed, much more flexible operating rules for the barrages could make a real difference in delivering effective, positive environmental outcomes. Barrage operations need to be much more flexible to respond quickly to wind and tide events to maximise benefits and minimise harm.

Poor condition results for the Macquarie Marshes and Gwydir wetlands indicate that the status of upstream SDLs should be evaluated more closely, as there is evidence of serious environmental decline and damage to Ramsar sites.

The use of buybacks needs to be maintained as an option, as the most effective and efficient method of water recovery to cover the very significant shortfall on SDLAM offsets⁴⁰.

⁴⁰ Wheeler S, Zuo, A and Pickersgill, J (2024). Journal of Rural Studies 109.

Maintain and Improve Monitoring and Science

The Sustainable Rivers Audit could only cover a five-year period owing to gaps in data gathering since the previous audit in 2012. The data coverage must be maintained and expanded for the next audit, particularly water quality data.

Monitoring needs to be expanded/made more specific to be able to address the specific targets listed in the Basin Plan, such as the percentage of vegetation communities in good condition.

A key flaw in the implementation process has been the lack of consequences for any jurisdiction failing to meet commitments and deliver agreed projects on time. Previous reforms have been successful when linked to tranche payments from the Federal government, and this could be considered again. Accountability must be much tighter.

A key reform would be to replace the use of average climate figures with median values, to remove the distortion of extreme events from the record. The flow data has been consistently skewed by the floods in the 1950s and 1970s. The first half of the 20th century was dry but most water entitlements were created during the much wetter second half of the century and were based on those conditions. Records since 2000 show >20% decline in inflows, so serious consideration should be given to revising the baseline data being used to underpin models and forecasts in setting annual scenarios and water entitlements.

Legacy of resistance, misinformation and pushback

The same misleading, erroneous messages are being promoted throughout this consultation period, with no recognition of improved knowledge, data, technical advances or the urgency for remedial actions for the sake of the whole community.

- The same voices are spreading the same misinformation, claiming downstream communities waste water, environmental flows are damaging river channels, and that more water can be allocated to upstream communities for consumptive use – these messages need to be strongly refuted and factual information presented about the current status of rivers and the reality of river operations and what options are practical
- Complementary actions are in addition to, not a substitute for, returning water to river systems. Carp control is not a replacement for recovering water or resolving constraints to allow effective flows; weed and pest control is supplementary to environmental watering, not a substitute
- Social and Economic reports for the MDBA found <2% of impacts on Basin communities are due to water buy-backs, but the Sefton report⁴¹ is being quoted selectively, not accurately, claiming much larger impacts from buybacks as an argument not to buy any more water from willing sellers. Most negative regional social and economic impacts are nation-wide, not just in the Basin, relating to a range of factors including commodity prices and lack of employment opportunities in regions
- Everyone needs to adjust to a future with less water, we can't return to what used to be – climate change will make the Basin climate more variable, particularly with more severe, extended droughts in the Southern Basin, so current irrigation and crops will need to adjust.

⁴¹ Sefton, R, Peterson, D, Woods, R, Kassebaum, A, McKenzie, D, Simpson, B & Ramsay, M 2020, Final Report: Independent assessment of social and economic conditions in the Murray–Darling Basin, Panel for Independent Assessment of Social and Economic Conditions in the Murray– Darling Basin, Melbourne.

Stronger Voice for the Environment

We would like to suggest one further point, *Investment in adequate representation of environmental advice on sustainable management of Basin ecosystems and support for environmental advocacy groups.*

The major water consumption interests are well-funded and are disproportionately influential in consultation and lobbying processes which determine policy and management outcomes. Advisory panels also tend to have disproportionate representation of extractive user groups, while the underlying ecosystem does not have appropriate specialist representation to ensure minimum provisions to safeguard sustainable management of water resources and maintenance of ecosystem health.

In the absence of Basin Rivers having 'Living Voice' accreditation, environmental interests are required to play a more significant role in future. More representation is needed at each level of governance.

Voices for the environment and local community interests tend to be voluntary, under-resourced groups who struggle to engage effectively in intense and extended engagement processes. The current process of implementation of the Basin Plan, with attendant enquiries and submissions, leading to the current process for the Basin Plan Review has continued for many years. The expectation that voluntary groups can provide meaningful input on complex issues without minimal funding support is unrealistic and unsustainable.

The development of this submission is a case in point. It has taken hundreds of hours of volunteer effort, reading documents, attending meetings and briefings, developing positions and creating the submission itself, all without any funding support. And it is only the most recent expression of volunteer work and community commitment stretching back to the earliest days of the Basin Plan. This work requires greater recognition.

Menindee Lakes Review

The Menindee Lakes flow trial has been successful in bringing all the agencies together to address urgent issues relating to management of the storages and connected waterways. This is a critical opportunity to build on this successful negotiation and partnership and to expand the agenda to change the outdated operating rules, to maintain minimum flows from upstream and capacity for releases to maintain water quality downstream.

Future management of through-flows and releases from the Menindee Lakes should ensure that a minimum reserve volume is retained in the Lakes to support the fish nursery and that the flow regime is managed to support native fish and waterbird breeding, as well as healthy wetland environments and healthy river communities.

There is a critical opportunity to re-negotiate the Menindee Lakes Operating Agreement to take into account altered current conditions and predicted future conditions, whole-of-Basin impacts and interactions, such as critical fish-breeding habitat in the Lower Darling and prevention of serious impacts on water quality, water supply and quality of aquatic habitats.

An essential feature of new operating rules needs to be securing minimum base flows to ensure connectivity through the length of the Darling-Baaka system. Greater recognition needs to be given to background conditions, such as extended drought, to develop rules for managing flows and

extractions in dry times, with reduced take. It is essential for future survival of the system to prevent large-scale drying.

The Darling catchment should be managed from the downstream end and up, with end-of-system connectivity as the defining condition. This is essential to maintain resilience and functioning ecosystems, for example ongoing successful breeding events in native fish populations which then migrate throughout the Basin.

Links to Water Market

Water reform dating back decades up to and including the Basin Plan is not well understood across Basin communities. All ills are blamed on the Basin Plan, when in fact major changes, including the separation of land and water, and the introduction of water markets have been impactful both positively and negatively to rural communities.

The major impact of the water market has been that water licences which were not being taken up ('sleeper' licences), have been traded and the water is now being extracted and used to increase production.

Water trading needs greater controls on inter-valley trading (IVT) and requirements to ensure system capacity to deliver demands and avoid third party environmental damage. IVT from the Goulburn to the Murray has increased as a result of horticulture developments downstream and has had a very significant impact on the lower Goulburn. While changes to IVT rules have helped, this impact could be reduced by relaxing constraints in the Goulburn.

The water accounting system needs to be reviewed to ensure that future reductions in water availability are shared fairly, to protect the environment from bearing the major portion of any reduction.

The water market needs to operate within ecological limits, with the cap (the SDLs) reflecting a genuine ESLT that factors in climate change, and with minimum flow thresholds that protect required flow regimes.

Define Highest Value Use of Water

The unbundling of land and water rights was based on the premise that this would allow the water to go to the highest value use. The outcome has been that it has gone to the highest economic value use, which has been nut and cotton crops.

However, this has not created the highest value for the sustainability of the Basin ecosystem or for large sections of Basin communities, who are seeing the negative impacts of low flows, declining environmental health, poor water quality and declining landscape amenity, all affecting their livelihoods and well-being.

It is suggested that there needs to be a formal and agreed definition of *highest value use of water*. This should minimally include the quadruple bottom line - economic, social, environmental and First Nations cultural matters.

MORE SPECIFIC QUESTIONS FROM MDBA TO ANSWER

MDBA QUESTIONS	LBA BRIEF RESPONSES
Do SDLs maintain ESLT?	NO, STILL OVER-ALLOCATED, NEED TO REDUCE SDLs
how can we make better use of environmental water?	YES, RELAX CONSTRAINTS, REVISE OPERATING RULES TO ALLOW MORE EFFECTIVE DELIVERY AT RIGHT TIME AND FREQUENCY
How to include and engage First Nations effectively?	BASIN NATIONS ARE NOT SEEKING 'ENGAGEMENT' - THEY ARE SEEKING THE ACTIVATION OF INHERENT RIGHTS, JOINT-DECISION MAKING, AGENCY VIA ADEQUATE AND RECURRENT FUNDING, AND SELF DETERMINATION
How to establish better connectivity in the Northern Basin, and for other floodplains, including the Lower Murray?	ADOPT EXPERT PANEL RECOMMENDATIONS FOR BASE FLOWS PLUS SEASONAL FLUSHES RESOLVE CONSTRAINTS FOR LOWER VALLEYS, INCLUDING OPERATING RULE CHANGES INCLUDE LATERAL CONNECTIVITY IN ALL VALLEYS
How to include impacts of climate change, what are the right tools to achieve flexibility?	PUSH STRONG MESSAGES THAT LESS WATER WILL BE AVAILABLE, PROMOTE SUSTAINABLE USE NEED SUPPORT PACKAGES TO ASSIST TRANSITION TO ALTERNATIVE CROPS, TECHNOLOGIES, RECYCLE MAKE SURE MINIMUM FLOWS RETAINED TO KEEP RIVERS FUNCTIONING AND ABLE TO DELIVER WATER TO USERS
How to improve drought preparedness?	PUSH STRONG MESSAGE THAT DROUGHT IS NORMAL, EXPECTED, NEED TO PREPARE IN WETTER TIMES MAINTAIN WATER RESERVES TO SURVIVE DRY TIMES, INCLUDING WATER QUALITY RESERVES DIVERSIFY, RECYCLE & RE-USE, MODIFY CROPS, PREPARE ENSURE ENVIRONMENT GETS WATER IN WETTER TIMES TO BUILD RESILIENCE FOR DRY TIMES

What do you see as the priorities and why?

Convince the Minister and the Prime Minister (in PM Howard's footsteps) to take decisive next steps, because we need bold actions to make the Basin Plan effective for the future

Minister Watt has said

'if we don't act decisively, we are condemning all Basin communities to slow decline'

Lifeflood Alliance calls on the Minister to act decisively to further reduce over-allocation and achieve an ecologically sustainable level of take which will improve Basin ecosystem health and support all Basin communities, human and environmental alike.

RECOMMENDED ACTIONS GOING FORWARD

Complete Implementation of Basin Plan as Agreed

- Accelerate delivery of agreed commitments under original Basin Plan, create incentives and penalties, such as linking delivery on projects and actions to tranche payments
- Complete recovery of 450 GL/y LTDLE as fast as possible
- Accelerate action to relax constraints, starting with the package proposed in this submission to break the deadlock
 - Develop demonstration environmental watering projects at local scale, particularly in mid-Murray and Goulburn reaches, with publicity of local benefits, coordinate and combine local projects for regional benefit and system flow pulses
 - Encourage coordination of state governments on easing rules-based constraints to allow enhancing natural high flows to create managed short-term overbank flows onto lower valley floodplains
 - extend rules-based protocols to allow enhancing natural high flows to create flows of initially 60,000 ML/d at Wentworth in spring-early summer 1 in 3 y if base flows allow, and later 80,000 ML/d 1 in 5 y (*see specific proposal attached*)
- Continue and support Independent Panel to provide advice on relaxing flow constraints along the Murray River (upstream of the SA border) and connected Goulburn River
- Encourage reinvigoration and completion of Enhanced Environmental Watering (EEW) supply project to deliver intermittent floodplain inundation and flow pulses
- Negotiate separate agreements with NSW and Victorian governments to deliver agreed commitments to complete offset projects at a faster pace, with penalties for any further failure to deliver on Plan commitments.

Accelerate Action to Halt Environmental Decline

- Facilitate coordinated action to ensure sufficient flows at right time for long enough to sustain breeding and maintain water quality through the system
- Facilitate action to prevent fish kills and poor water quality events through maintaining minimum base flows and providing periodic seasonal flushes, as recommended by the Expert Panel on Connectivity for Northern Basin rivers, with similar provisions for Southern Basin rivers
- Extend and support Independent Expert Panels on Connectivity and Constraints for both Northern and Southern Basins
- Ensure ongoing funding to resource the native fish strategy, in addition to managing constraints.

Return Rhythm of the Rivers

- Coordinate action to implement minimum flows through all river systems, including requiring minimum end-of-system flows from sub-catchments in Water Sharing Plans and Water Resources Plans
- Ensure protection is in place for environmental water flows through the length of the river systems and across catchments, for repeated environmental delivery and benefits
- Continue and support the Southern Connected Basin Environmental Flows Working Group
- Explain better what longitudinal and lateral connectivity is, that we need inundation of floodplains at minimum frequencies, duration and timing, with subsequent returns to rivers from inundated floodplains and wetlands to trigger key biological processes which sustain native species and maintain water quality, and prevent incidents of poor water quality.

Produce Clearer Reporting on Ongoing State of the Basin

- Publish regular reports on Basin health against Plan targets
- Weekly flow reports should include graphs of unregulated flows compared to current regulated flows, and clearly indicate contributions from environmental flows
- Environmental watering reports should include an estimate of wetland and floodplain areas not watered, as well as watered sites
- Regular reports should be published against the stipulated Plan targets of % area in good health of particular vegetation communities or trends in waterbird abundance and diversity, etc (see Appendix 1)
- Expand dashboards for each sub-catchment to show trends that local communities can relate to, including areas not watered and declining, as well as watering successes
- Involve citizen scientists in monitoring key local populations such as bats, mussels and turtles and share reports to whole Basin
- Change from reporting average values to median values with a range of variation, to generate more realistic expectations of water availability and reliability.

Take Real Immediate Action to Adapt to Impacts of Climate Change

- Build resilience before next drought, with minimum base flows and connectivity needs met, including intermittent controlled overbank flows for lateral connectivity to recover degraded floodplains (see Appendix 2)
- Support adaptation, change and adjustment in Basin communities and industries to live with less water and hotter, more variable climates
- Adjustment to climate change includes less, more unreliable regional rainfall as well as reduced river flows – irrigators have been running out of allocations due to lack of local rain, and need support for adjustment and transition to alternative livelihoods and different crops with lower water needs, such as dryland cotton
- Support adaptation, change and adjustment in Basin communities to live with less water and a hotter, more variable climate with more severe, more frequent droughts and/or floods.

Highlight Declining Water Quality as an Emerging Threat

- Water quality should be managed through secure designated provisions to maintain base flows and held reserves to flush blooms and water quality events, plus expanded monitoring sites and parameters tested
- Establish minimum flows to the Coorong in partnership with the Ngarrindjeri Regional Authority – the current allocation to SA stops at barrages, with no provision for flows to the Coorong unless there are unregulated flows – the Coorong currently only receives environmental allocations or unregulated flows, with no flows during regulated conditions, and its ecological health is continuing to decline

- Work to reduce poor water quality following significant floods, as seen in the dramatic flood-driven outflows to the Southern Ocean in 2023 with accompanying mass fish deaths of both freshwater and marine species as the waters mixed
- Environmental water should not be diverted to fix water quality issues, it is needed to support environmental health and does not have sufficient reserves to provide emergency flows to disperse algal blooms or blackwater events

Make Governance Effective and Accountable

- Better coordination is needed with states, facilitated with incentives to deliver or penalties for failure to meet deadlines or deliver projects, such as linking delivery of outcomes to Commonwealth tranche payments (as was done with the National Water Initiative reforms)
- Design a more effective over-arching cooperative arrangement to facilitate better interstate cooperation and accountability, and commit to regular meetings/engagement between Ministers, senior government officials and stakeholder groups
- Incorporate upstream responsibility for downstream impacts into forward agreements
- Ensure international treaty requirements are met for all 16 Ramsar-listed wetlands in the Basin, with appropriate monitoring and reporting
- Review and upgrade water accounting and licencing systems to include rainfall run-off and simplify reporting by extractive users, with regular publication of volumes extracted for all sub-catchments
- Require a general standard of efficiency and wise use from extractive water users
- Develop a separate, more flexible accounting system for environmental water to allow delivery of more natural pulses of water, to remove artificial constraints of reporting by financial year, and to allow carryover to more suitable flow conditions in subsequent years and to allow watering through winter into early spring as environmentally optimum
- Increase representation of environmental interests in consultation and management decisions
- Support compliance and metering of water take, particularly through the activities of the office of Inspector-General, and increase penalties for breaches
- Protect minimum diversion limits and maintain minimum base flows, stop sneaky changes to regulations and accounting which allow more extraction
- Ensure ongoing funding to resource the native fish strategy (not just constraints).

Build Political Capital to Support Bold Actions and Decisions

- Spell out extent of existing/continuing ecosystem decline and spell out the consequences to the whole community of further decline and impacts on industries and communities
- Spell out benefits to communities from constraints relaxation, improved connectivity and more effective environmental watering in terms of improved water quality, improved amenity and tourism resources, support for community economies and cultural economies, as well as flood risk mitigation
- Express a wider range of lived experiences across the Basin, include the negative stories as well as the positive stories, environmental and human, and make sure the extent of decline in downstream locations and in specific species and communities is understood as well as success stories
- Publish reader friendly summaries of all detailed technical reports to build better community understanding of the very complex issues influencing Basin management decisions, and the huge technical effort and wealth of information contained in the massive, hard-to-access volume of information.

Water Justice for First Nations

- Water rights must be legislated and made available to Basin Nations through their preferred self-determined institutions via amendments to the Water Act and Basin Plan.
- Basin Nations are seeking more than engagement, they are seeking the activation of inherent rights, joint-decision making, agency via adequate and recurrent funding, self determination and the realisation of relevant international agreements through legislative changes to the Water Act.
- Funding must be allocated to provide secure, ongoing support so Basin Nations can be directly and appropriately resourced to participate independently and properly in water management, governance, legal processes and decision-making.
- Cultural values of water should be embedded in all water planning, including Water Resource Plans.

Next Basin Plan

- Set more specific, measurable, enforceable targets for measuring environmental health, with independent scientific oversight
- Implement a flow response monitoring program with public reporting, such as in the Upper Murrumbidgee, with penalties for failure to implement (such as publicising the failure to implement drought provisions for the Snowy River)
- Incorporate specific monitoring requirements into the next Sustainable Rivers Audit and fund it sufficiently
- Implement coordinated Basin-wide monitoring and improved, more flexible flow management as a result of the modelling uplift, and publish results and flow charts regularly
- Water resources must be shared fairly, including with Traditional Owners, and this includes allowing flows to reach downstream sections of rivers

Urgent Tasks

- Review the system of allocation of floodplain harvesting licensing in the upper Northern Basin which currently prevents water from entering rivers and flowing to downstream users, with ~300GL/y extracted from the upper Barwon-Darling ephemeral catchment, with serious impacts on management of the Menindee Lakes and flows to the Lower Darling
- Re-negotiate the Menindee Lakes Operating Agreement to take into account altered current conditions and predicted future conditions, taking into account whole-of-Basin impacts and interactions, such as critical fish-breeding habitat in the Lower Darling
- Revise operating rules to allow delivery of more natural flow pulses, to restore the 'rhythm of the rivers' and longitudinal and lateral connectivity, and to support essential breeding and regeneration events to maintain minimal populations of key species for long term survival

Future Maintenance of Infrastructure

- call for appropriate forward and ongoing funding in budgets to maintain and improve water infrastructure
- develop a forward maintenance plan to sustain essential storages and delivery systems into the future, given the growing list of ageing critical infrastructure

Separate and Document Impacts of Water Trading

- The effects of the Water Market need to be included in forward forecasts, including future increases in demand as nut crops mature and need much more water than currently extracted
- Recommend limits to water trading based on capacity to deliver in different sub-catchments and limits to future demands as newly planted crops mature, as well as minimum base flow requirements to maintain water quality

- Water resources must be shared fairly, including with Traditional Owners, and this includes allowing flows to reach downstream sections of rivers.

Stronger Messages Going Forward

Much stronger messages in the recommendations to the Basin Plan review should include:

- There is only a finite amount of water, we can't get more water by taking it from other catchments or from declining groundwater sources, more dams won't create more water – so we all have to manage more efficiently with less water in future and share the limited and declining resource fairly
- Existing diversions must be used more efficiently to maintain production (as was seen in the Millennium Drought, when production was maintained on <35% of normal allocations)
- More water still needs to be recovered to sustain a minimal level of Basin health and be managed more efficiently for broader environmental, social, cultural and economic outcomes. Buy-backs from willing sellers have been demonstrated to be the most effective and efficient method, in value for money and volume of water recovered
- The continuing over-allocation to extractive uses needs to be reviewed and reduced still further, with consideration given to retirement of less secure entitlements which are unlikely to receive viable allocations in a drying future
- The compromised minimum recovery target in the Basin Plan still has not been reached, and even if reached, would still leave significant areas of the Basin stressed or even beyond recovery, including Ramsar sites and the stressed communities of the Lower Murray and Macquarie Marshes
- Basin ecosystems overall are still in decline – especially native fish, waterbirds, vegetation communities (particularly black box woodlands), turtles and mussels – with the overall target of reversing decline in ecosystems still very far from being met
- Basin rivers are declining from the bottom up, with assessments of the Sustainable Rivers Audit showing all lower reaches in decline
- The assessment of Sustainable Diversion Limits showed all lower valleys were not meeting targets due to failures of upstream reaches to provide minimum end-of-system flows.

We urge the Minister to undertake every possible effort to encourage greater cooperation by state governments to deliver the intent of the Basin Plan, to reverse the over-allocation of water resources and to halt the decline of Basin ecosystems. The viability of Basin communities depends on completing implementation of the Basin Plan as intended, in full if not on time, but as expeditiously as possible.

Please refer relevant comments in our submission to the review of the Water Act and the Menindee Lakes review.

Further information on any of these comments can be obtained by contacting Dr Anne Jensen (ajensenwetlands@gmail.com) as the nominated representative of Lifeblood Alliance

Lifeblood Alliance member groups: Australian Conservation Foundation, NSW Nature Conservation Council, Conservation Council of South Australia, Environment Victoria, Queensland Conservation Council, Murray Lower Darling Rivers Indigenous Nations, River Lakes and Coorong Action Group, Inland Rivers Network, National Parks Association of NSW, Goulburn Valley Environment Group, Healthy Rivers Dubbo, Central West Environment Council and Healthy Rivers Lower Murray

APPENDIX 1 BASIN TARGETS NOT MET

Overall Targets and Outcomes for the Basin Plan

The Basin Plan includes the following over-arching targets (Section 7), which have not been met.

- 7 intermediate targets (to 30 June 2019) – no loss or degradation in flows, connectivity, assets, functions, CLLMM regime, condition & recruitment of native species
- 7 long term targets from 1 July 2019 require improvement in the same parameters.

There are 7 separate targets (Section 5) associated with delivery of the 450 GL/y LTDLE, including floodplain & habitats in the Southern Basin, flows to the Lower Lakes, Coorong & Murray Mouth, plus a salt export target of 2 million tonnes annually.

The intermediate targets which required no loss or degradation to 30 June 2019 have failed, and the long-term improvements since that date have been limited to areas which have received environmental water. Examples of continuing failures to meet those targets include:

- ongoing concerns about health of Coorong, algal blooms in Southern Lagoon, decline of key aquatic food plants, and declining numbers of migratory waders visiting each summer
- individual site and reach improvements are only occurring where environmental water can be delivered but there is continued decline and stress in ecosystems at wider scale, need to support regeneration post-2011 flood
- significant continued decline of waterbirds at Basin scale since 1983, in spite of significant floods in 2010-12, limited floods in 2016 and massive floods in 2022-23
- concerns for continued survival and migration of large native fish with repeated water quality issues, and survival of threatened species of small native fish.

Targets and Outcomes for the Basin Environmental Watering Strategy

The environmental watering program of the CEWO is maturing well, with cross-basin coordination of spring flows starting from 2017-18 to combine watering at sites in seven tributaries to produce a coordinated flow pulse to reach the Murray Mouth and Coorong. This involved re-use of e-flows at multiple sites, coordination of end-system-flows and creating connectivity with floodplains. Despite these efforts, the CEWO is unable to meet most of the 16 environmental watering targets due to physical and governance constraints, as well as the volume of water available. Recent analysis found that only 26% of environmental water requirements were met during 2012-2022⁴².

The targets for the Basin Watering Strategy include actions with the additional water available for environmental watering to deliver benefits for River flows and Connectivity, Vegetation, Waterbirds and Fish. However, environmental indicators were mostly not achieved⁴³

⁴² Sheldon, F, Rocheta, E, Steinfeld, C, Colloff, MJ, Moggridge, B, Carmody, E, Hillman, T, Kingsford, R & Pittock, J (2024). Are environmental water requirements being met in the Murray-Darling Basin Australia? *Marine & Freshwater Research*, 75(8), p.MF23172.

⁴³ Colloff, Matthew J, *et al.* (2024). 'Murky waters running clearer? Monitoring, reporting and evaluation of the state of the Murray-Darling Basin after more than three decades of policy reform.' *Marine and Freshwater Research*, 75.18 (2024): MF24193.

Component	Expected outcome
<p>River flows and connectivity: Improved flow connections along rivers, and between rivers and their floodplains</p>	<ol style="list-style-type: none"> 1. Maintain base flows at least 60% of natural levels 2. Improve overall flow by 10% more into the Barwon–Darling, 30% more into the River Murray and 30–40% more to the Murray mouth which opens to the sea 90% of the time 3. Maintain connectivity in areas where it is relatively unaffected, between rivers and floodplains in the Paroo, Moonie, Nebine, Warrego and Ovens 4. Improve connectivity with bank-full and/or low floodplain flows by 30–60% in the Murray, Murrumbidgee, Goulburn and Condamine–Balonne, and by 10–20% in remaining catchments 5. Maintain the Lower Lakes above sea level 6. Adequate flushing to export an average 2 million tonnes of salt from the River Murray system into the Southern Ocean each year
<p>Native vegetation: Maintain the extent and improve the condition of native vegetation in the Murray-Darling Basin.</p>	<ol style="list-style-type: none"> 7. Maintain the current extent of about 360,000 hectares of river red gum, 409,000 ha of black box, 310,000 ha of coolibah forest and woodlands, existing large communities of lignum, and non-woody communities near or in wetlands, streams and on low-lying floodplains 8. Maintain the current condition of lowland floodplain forests and woodlands of river red gum, black box and coolabah 9. Improve the condition of southern river red gum
<p>Waterbirds: Maintain current species diversity, improve breeding success and numbers.</p>	<ol style="list-style-type: none"> 10. Maintain current species diversity of all current Basin waterbirds and current migratory shorebirds at the Coorong 11. Increased abundance of waterbirds by 20–25% by 2024 12. Improved breeding with up to 50% more breeding events for colonial nesting species and a 30–40% increase in nests and broods for other waterbirds
<p>Fish: Maintain current species diversity, extend distributions, improve breeding success and numbers.</p>	<ol style="list-style-type: none"> 13. Improved distribution of key short and long-lived fish species across the Basin 14. Improved breeding success for short-lived species (1–2 years), long-lived species in at least 8/10 years at 80% of sites, mulloway in at least 5/10 years 15. Improved populations of short-lived species (numbers at pre-2007 levels), long-lived species (with a spread of age classes represented), Murray cod and golden perch (10–15% more mature fish at key sites) 16. Improved movement with more native fish using fish passages

APPENDIX 2 PROPOSAL TO BREAK DEADLOCK ON CONSTRAINTS

A proposal has been prepared to indicate how constraints preventing overbank flows in the Southern Basin could be resolved. The full proposal has been attached as a separate file, owing to its large file size.

It is suggested that flows in the mid-Murray and tributaries could be managed to produce managed inundation of connected wetlands and creeks with flows up to 25,000 ML/d downstream of Yarrowonga.

When there are naturally higher flows in the rivers, sufficient to produce small to medium floods, coordinated management of releases could boost flows up to 60,000 ML/d at Wentworth to benefit all valleys in Southern Connected Basin. This would demonstrate the limited impacts of such flows and demonstrate the very significant benefits in all connected valleys in the Southern Basin.

By building community acceptance and recognition of benefits from environmental flows, when medium to high flows occur, coordinated management of releases could extend flows up to 80,000 ML/d at Wentworth, to replicate the natural rhythm of river flows.

The diagrams attached indicate the source and volumes of water required to achieve the coordinated flows, and the various benefits in the different valleys from such a coordinated flow event.

PROPOSED 3-STAGE APPROACH TO RELAXING CONSTRAINTS

- 1) Resolve Murray River constraints to allow more e-flows, initially from 13,500 ML/d up to 18,000 ML/d, with an eventual target of 25,000 ML/d d/s Yarrowonga, 7-8 y in 10, maximum interval 2 y, to provide inundation of Barmah-Millewa wetlands simultaneously and eventually double the area inundated**
- 2) Resolve Murray River and tributaries constraints to allow Booster flows during high flows to reach multiple targets along valleys connected at >25,000 ML/d, up to combined flows of 60,000 ML/d at Wentworth**
- 3) Resolve Murray River and tributaries constraints to allow Extender flows with coordinated tributary flows and releases to value add to natural high flows > 40,000 ml/d, aiming to reach combined flows of 80,000 ML/d at Wentworth**

See separate attached file for full proposal