

HydSocSA Murray-Darling Basin Plan Expert Forum 13th April 2026

Submissions close on 1st May

What we heard – Update – the Q&A Session has been added :

The Forum was well attended, 80+ attending.

Much has been achieved during the past 12 years of Basin Plan implementation but there remains much more to be done. This will require the admission of shortcomings within the Basin Plan and the demand for a more courageous advice by the Authority to the governments of the Basin.

Joel Bailey, MDBA General Manager, Applied Science

Overview of **Basin management, The Basin Plan** and the current Review, How to make a **submission**

- **Basin Hydrology** – climate variability inflows from just the Basin's margins feeding '000s km of rivers down to SA and the sea; highly variable flow variations, Southern and Northern Basin differences – very long travel times for water, infrastructure, shared responsibilities.
- **Basin governance**: - multiple states, agencies and interest groups; evolved over the past 30 years. River Operations, operating under the M-DB Agreement, provide 'just in time' e-water deliveries which is very complex.
- **Water Act of 2007** -> Federal Govt adopted the **Basin Plan in 2012** with concurrence of the States. Primary objective to set quantifiable SDLs (Sustainable Diversion Limits) based on 'environmentally sustainable levels of take' (ESLT) using long term averages (LTAAY)
- More than 2000 GL/a LTAAY has been recovered; assigned to the CEWH (Commonwealth Environmental Water Holder); environmental water delivery has improved through learnings.
- **2026 Basin Plan Review**: being undertaken now, before all of the commitments have been realised. The current situation is different from 2010-12 and includes 12 years of learnings, ageing infrastructure, greater 1st Nations roles, improved science evidence, but tighter fiscal situation.
- **Plausible futures**: - predictions vary across the Basin; in the Southern Basin, rainfall is predicted to reduce, becoming more variable resulting increasing uncertainty of water availability.
- **Submissions close 1st May**: - <https://getinvolved.mdba.gov.au/2026basinplanreview>

Dr Alec Rolston, Director Goyder Institute for Water Research

SA River Murray Science, climate change and the CLLMM region

- **Goyder Institute 2010** – science partnerships
- **Importance of independent science**: water policy decisions need to reflect unbiased, trusted evidence inputs including traditional academic, 1st Nations, lived experiences, and citizen science. Provides transparent, evidence-based decision making and policy
- **M-DB Plan**: - an internationally 'go-to standard' for transboundary water management
- **CLLMM**: Coorong Lower Lakes and Murray Mouth Science Centre at Goolwa demonstrates impartial science delivery
- The **Lower Lakes, Murray Mouth and Coorong** region of the Basin faces all of the threats associated with excessive upstream extraction, climate change, reducing inflows and sea level rise. This is resulting in rapid changes of the ecosystem health.
- **BP Review 2026**: We must do more with less; what changes in Basin Plan outcomes are required and what is the evidence base for proposing the changes?
- **International agreements** obligations such as Ramsar Convention and .
- The MDBA Should be urged to make a bold statement to government during this 2026 review of the basin plan.
- **Climate Change Outlook**: Average annual inflows have already nearly halved over the past 20 years compared to the 1900-2000 average. This trend is expected to worsen with 20% reduction of inflows
- **\$\$\$**: -Good science takes time and it is imperative that the Governments of the Basin commit to long term science investments covering all elements of policy needs.
- **Future science/knowledge** need a system for the Basin which involves and empowers Communities, First Nations, Policy makers and decision makers through collaborative science and knowledge generation

Dr Anne Jensen Environmental Consultant

Has the Basin Plan delivered its predicted environmental outcomes?

- **Rhythm of the rivers:** In 2012 Millennium drought and decades before— declining river health – loss of rhythm of the rivers
- **BP2012 intent** – reverse over-allocation → Env't Sustainable Level of Take
- **\$13B !!** over-allocation reduced but ESLT NOT achieved
- **Successes:** Some very good outcomes from e-water delivery
- **Eco-hydrologic targets:** Specific Targets were set but have they been met - public reporting?
- **SA floodplains** have seen any environmental water only natural floods – continued floodplain decline- Red Gum skeletons
- **Connectivity:** Longitudinal and lateral connectivity imperative – constraints removal
- **Water Sharing Plans** need End of System minimum flows
- **Climate Change Flow** reductions Share the pain of climate induced water inflow reductions
- **Healthy Working River:** Healthy ecosystems support healthy communities
- **Urgency:** The Lower Basin and the Macquarie Marshes being declared critically endangered threatened ecosystems.
- **Political will:** Minister Watts at a recent Basin Leadership Summit: quote:
... *“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”*.
Let's give him the evidence and support to act to keep the Basin Plan on track! The Authority needs to provide, bold, frank and fearless advice on the evidence before it!

Professor Sarah Wheeler Matthew Flinders Professor of Water Economics

Socio-economic evidence?

- **Mis-information:** During the past decade of basin plan implementation there has been much spread of misinformation over the costs of water recovery on irrigated communities. The recovery of approximately 20% of historic water allocations has resulted in just a 2% reduction in overall GDP.
- **Negative Media:** A study of regional media demonstrated that negative comments on the basin plan outweighed positive reporting by more than 3:1. Stories on environmental water benefits and indigenous cultural water make up a very small % of stories.
- **Declining Willingness of Humans to pay to address environment issues:** This is not just an Australian or basin wide matter across the whole globe the human concerns of environmental matters has diminished despite the increasing scientific evidence of ongoing decline. The willingness to pay for environmental damage is reducing.
- **\$\$\$ Efficiencies:** It is clear that water recovery by buyback from willing sellers is by far the most cost-effective approach to recover over allocated water. The Basin Plan focus on water recovery in exchange for improved irrigation systems has involved wasted investment and is subject to flawed accounting.
- **E-Water entitlement reliability:** There has been an emphasis on acquiring long term water entitlements; However, it is apparent that there are many other water-trade product opportunities, including short term leasing, options and allocation trade providing more efficient in delivering water at particular times and locations.
- **Basin Plan Outcomes:** The MDBA discussion paper has not recognised the ongoing level of degradation that the science evidence has uncovered. Only 10% of SDLs have been identified as needing further action for a more sustainable allocation. Many other issues with the Basin Plan, including a lack of attention to the science.
- **Unspent Funds:** There remains \$\$bn of remainder funding- re-focus this to better deliver the current plan.

Ms Rosalie Auricht ex CEO Renmark irrigation Trust (RIT)

- **A managed system:** - regular flow variability including overbank watering needs to be managed important to acknowledge Basin Plan successes so far.
- Irrigation Industry has been **legally compliant** with its obligations; State governments issue water rights to irrigators, and some states didn't know when to stop.
- **Irrigators care:** Irrigators have been often maligned as having no respect for the environment. Yet, it is these communities living along the river corridor more often recognise the decline of the system. RIT has shown collaborative responsibility in the delivery of environmental water.
- **SA capped irrigation take in 1969**, opting for high security allocation regime based on its 1969 entitlement, resulting in early adaptation, steadily increasing water use efficiency, channels to pipes, furrow to sprinklers, daily orders and delivery, then drippers, soil moisture measurement
- **Upstream States** rely upon much lower reliability which often involves making allocations as the water arrives within the dams providing much lower drought security.
- **Water recovery** through 'willing sellers' has resulted in industry and community angst. RIT has also shared the pain of 'Swiss cheese' effect of losing customers. Water recovery through improved off-farm and on-farm efficiencies was pursued inter-state
- **SA finds a way:** SA had few options for offering water use efficiency to the 2012 Basin Plan. A funding deal helped irrigators improve their whole business productivity in exchange for further reducing water take. Eg remote water management, under-cover cropping – shade cloth over orchards, etc...
- **E-Water delivery:** RIT provided the first environmental watering partnership with the C'wealth Environmental Water Holder. Many irrigators understand that a healthy riverine ecosystem and healthy irrigation businesses - go hand in hand. 10 years ago, a local irrigator went up to David Papps, the first Commonwealth Environmental Water Holder, shook his hand, and with tears in her eyes said "Thank you. I have been watching these trees dying from my kitchen window. Now they have a chance."
- **Constraints removal:** An example is one single problem property owner refuses to accept over bank flows despite being offered the construction of two bridges connecting the parts of his property. This is holding hostage to the delivery of environmental water
- **Now:** In SA, around one third of SA's irrigation water entitlement has been returned to the environment. Increase beyond the original water recovery targets is not supported.
- **Future:** vast sections of our Lower Murray floodplains are still not receiving a regular drink, and flow regimes are not right to support a healthy riverine ecosystem. Our priority must be to maximise the benefit of all the e-Water we do and will have.

Dr Emma Carmody Commissioner for the River Murray in South Australia

- **Quote:** First documentation of human induced impacts on landscapes:: Alexander von Humboldt traveling in Venezuela in 1800, realised that deforestation for agricultural expansion (monoculture) was drying up Lake Valencia and causing soil erosion.
- **Water Act Objective:** At the height of the Millennium drought, the evidence of over abstraction within the Murray-Darling Basin became irrefutable. The Water Act 2007 demanded reduction in water allocations to an 'Environmental Sustainable Level of Take' using the best available science.
- **Best Available Science:** Scientific analysis concluded 4000 to 7000 GL/d of water needed to be recovered of the 11,500 then allocated to reinstate a sustainable level of take. However, through a fraught process, vested interests drove the politics of the day resulting in a compromised Basin Plan. limited to just 2750GL/a recovery and also ignored existing knowledge of climate change impacts (CSIRO 2009) together with some spurious 'offsets'
- **Stationarity:** The notion of 'stationarity', as a valid basis for setting future long-run water allocations using a historic record, varying within a fixed historic envelope, had already been debunked. The 2017 to 2019 Northern Basin Tinderbox drought demonstrated that history is not a good predictor. Precautionary planning should take account of plausible future conditions. The current Basin Plan discussion paper A plausible future could well be much hotter, drier and variable than the historical record.
- **Recalcitrance:** Despite the apparent agreement of the States to the 2012 Basin Plan, upstream States introduced Water Sharing Plans that deliberately reduced future water reserves to satisfy irrigation water rights ignoring the evidence.
- **E-Water Reliability:** Water recovery efforts have resulted in environmental water holders having largely low reliability water products. Despite acknowledged increasing expertise, e-Water holders are hamstrung.
- As an Environmental lawyer, Emma respects the 'rule of law'. However, it is obvious that water planning is dominated by politics. Often, the result is 'paper water' rather than the delivery of real 'wet water'!

Panel Discussion – Key Questions:

These are the main questions, panel responses were transcribed / edited from a recording

- Q** ESLT relative to Climate predictions?
- A** ESLT modelling has been updated including climate change in the sustainable yields study but the SDL review has used multiple lines of evidence – published but ongoing
- Q** What advice to the Minister?
- A** Investment in Science
- A** Flows down River not wasted, it does good all the way down with multiple benefits
- A** Words not enough – need more than a carcass of river for future generation, beyond endless politicking assign implement Water Act with ESLT based on good science
- A** Deliver intended commitments – all states; SA Gold Star, maximise use of water upstream States attitudes, be remembered
- A** MDBA supposedly independent but hasn't happened – do their job allow Minister to respond – don't pre-empt
- A** Minister to take a strong stance = change the language – spell out what will be lost – Algal Blooms Minister has committed
- Q** Better Governance Positions? Beyond irrigators vs environment, leadership tools
- A** Heart of challenges in transboundary water management – has been some limited transfer of powers, enduring challenge some progress in participatory projects eg CLLMM
- A** Water Act -Constitutional powers come from international treaties Aus Legal obligations; key tools – cheque book – induce or co-erce States under federal funding agreements – alarmed at drafting – insufficient safeguards not publicly available – poor governance but difficult and complex situation
- A** Initial Plan undertaken 'in confidence' failed to convince communities of benefits, recently big effort consultation effort but community attitudes remains the same, reluctance to change despite living in a highly variable and changing environment
- A** IGWC surveys of awareness – 40% of basin people don't know they live in the Basin
- A** Behavioural change objectives faces reluctance – need to connect communities locally led initiatives
- Q** How much actual wet water has been recovered, book volume much greater than wet water LTDLE quantification
- A** Traded entitlements are assigned Cap Factors which does provide update opportunities
- Q** Basin Plan gets blamed for much pain but water market reform has had severe impacts, upstream states have a lot of low security – general security 0% but blamed on BP
- A** Changes to Cap Factors have been politicised – not a perfect scientific process which has not incorporated CC
- A** Need to understand the jargon – long run average LTDLE actual allocation and actual water delivered – important for CEWH public interest – how much water is capable of being delivered yearly allocations will continue to go down with CC
- A** Northern Basin Review – influenced by vested interest group – resulted in changed cap Factors

- Q** Water Quality implications – Eflow being used to solve WQ issues rather than environmental
- A Yes – make a submission especially for SA – irrigators suffer from WQ problems – results in higher urban treatment costs
 - A Key matter in insights Paper – is also of interest to upstream
 - A Require minimum base flow in all rivers – end of system flows
 - A Back in WSPs – need requirement for WSPs to take account of downstream dependant eco-systems
 - A The issue is in discussion Paper but not solutions, WQ events happening more recently. Not just rainfall but rising temperatures affect WQ
 - A Beyond Flow alone WQ vents influenced by local land actions – role of MDBA limited
- Q** Strategic Drought Reserves – need confidence about drought and low flows
- A Changing climate BP provision for critical human needs – vulnerability of towns with single source - Tinderbox drought brought this out
 - A State have access to deferred water , different States differ. Eg NSW allocates as water arrives but water market provides irrigators opportunity for next 2-3 years.
 - A Drought reserves are currently based on 1896 – 2009 history with no consideration of CC – state of cognitive dissonance in which we live given everything we know in 2026! In the Tinderbox drought not sufficient water for towns and E-Water was used to supply towns – not its actual job. Northern Basin Water Act critical human needs are a light touch and unenforceable
- Q** Water Resource Plans are difficult and time consuming – best to avoid duplicating effort how to focus attention into high risk areas – bang for buck over next 10 years – focus our energy
- A Constraints is a high priority current roadmap \$2bn but perhaps over 10 years – affordable and important
 - A Values based – Australian Society in signing Wetlands Convention shows we care important legally – actually origin of the Water Act; not being adequately protected but not the only important sites
 - A Both further water recovery and constraints relaxation are worth pursuing -not either/or
 - A MDBA has identified WRPs as
 - A Perhaps DDLAM – pigs may fly have been prohibitively expensive – look at temporary trade options for time / place based e-Water
- Q** it's screwed and people suck! Where's the 'hope'?
- A Hope – water has already made a difference – large areas in Riverland – people there are happy but elsewhere people call for similar outcomes. Eg in SA 84,000ha SA floodplain need overbank flows at least once every 5 years – also flows on down to Coorong
 - A So constraints relaxation high priority – 80,000 ML/a was in the plan which has often been described as a flood but in fact just minor flood level – could only be achieved if there was already 40,000ML/d as a 'natural flow on which to piggy back, First step is upstream constraints for 10- 15,000 ML/d as first step . Need agreements in place for timely response actions.
 - A Hopeless ness in enemy of justice – hope came from a conservative government under John Howard that initiated the Water Act which led to BP. Needs improvement and is delivering positive outcomes – eg during TinderBox Drought e-Water was only water reach the barrages and mouth

Summary & Closure by Professor Mike Young

- Water Reform started by Paul Keating in 1990s – still on that journey
- Malcolm Turnbull architect of Act – had to get it into and through parliament
- Climate Change was built into the legislation
- NWI was better than the Act – currently being reformed can help refine BP
- Science language important averages max, min mean but skewed flow systems
- Change the Language SDL – meaningless - flawed concept ?
- Policy Drift dis-engage from the top?
- Water Reform - Governance is critical
- In a drying climate need less storage dams
- NWI -> Water Act -> Basin Plan– full-time independent chair
- Address variable security entitlements, particularly for CEWH
- Rules based – we see long run low flow and high flow periods use minimum flow 15 Year moving average?
- Triage – acknowledge losses

Your Submissions:

- Be constructive avoid the negatives
- – give just 5 deliverable outcomes
- deal with drying

Editor's comment

The key message of the event was that the Basin Plan has been a courageous intervention initiated during the crisis of the millennium drought. Despite being premised on the then available science it became a political compromise.

Following a massive investment of around \$13bn around 20% of historic water allocations have been recovered; the systems for delivery of e-water have steadily improved. Despite confronting many barriers there have been many local successes. However, the anticipated whole of ecosystem recovery has yet to be accomplished. Unfinished commitments remain. Climate change impacts are biting into the available water and not being addressed. The Basin Plan implementation has occurred during a period of many challenges for rural communities and industries and has often been maligned and criticised especially in the regional media. Much of this has been based on vested interest misinformation or dis-information. It has been very challenging to communicate the successes.

The current review is critically important to ensure the ongoing delivery and enhancements. Your submissions are important – Submissions close on 1st May

Addendum LinkedIn Post by Dr Emma Carmody following the meeting
<https://www.linkedin.com/company/31448293/admin/page-posts/published/>

Did you know that water extraction limits under the Basin Plan (SDLs), which applies to Australia's largest transboundary river system, do not take into account climate change? In fact, they do not even take into account the full climate record. Rather, they are based on the record from 1896 to 2009.

The folly of this approach became abundantly clear within five years of the Basin Plan being adopted. In 2017, Australia entered the Tinderbox Drought, with this marking the beginning of the warmest and driest three-year period in recorded history.

I spent a lot of time out with communities in north-western NSW during this drought and cannot overstate the devastation that it wrought.

Everyone understood - as we all do - that drought is inevitable in Australia. However, there was a palpable sense that water planning processes had failed to properly prepare for such an event, thereby exacerbating impacts on water quality, river connectivity, and water for stock, domestic and cultural purposes.

They were right, and still are, with this being a failure of both the Basin Plan and state water laws. Critically, these deficiencies have resulted in increasingly frequent low and no flow events due to ongoing over-extraction, by which I mean extractions that exceed the hydrological limits of our river systems and the broader reality of our climate.

This is precisely what happened on the Darling-Barka River in the period leading up to the mass fish kill event in 2019, as documented in a report produced by the Australian Academy of Science (provided in the comments below).

To get a sense of how bad things were in the lead up to the fish kill, have a look at the photo of me below the Tilpa Bridge (about half way along the Darling-Barka) taken in mid-2018.

The water was barely ankle deep, fetid, and unfit for any sort of use. Again, reports indicated that the state of the river was not just the product of drought; it was also the result of state-sanctioned over-extraction.

These are not theoretical concerns, nor are they historical. Governments have yet to adequately respond to these challenges, and progress on climate change policy in particular remains insufficient. There are solutions - see for example an article that I wrote in 2019 on climate ready water laws linked in the comments below – but like all policy solutions, they rely on political will.

I spoke about these issues at an event organised by the Hydrological Society of South Australia on Monday night, the focus of which was the current statutory review of the Basin Plan.

If you care about water management and believe that the Basin Plan needs to properly manage risk in a changing climate for communities and the environment, consider making a submission. The deadline is 1 May - details in the comments, below.

Thanks to HydroSoc for the invitation to speak, and to the other speakers for their thoughtful presentations.

