Nature Conservation Council
The voice for nature in NSW

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Productivity Commission

4 National Circuit

Barton ACT 2600, Australia

Submission uploaded online

Submission: Murray-Darling Basin Plan Implementation Review 2023

The Nature Conservation Council of New South Wales (NCC) is the state's peak environment organisation. We represent over 170 environment groups across NSW. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

This submission will continue the themes addressed in Melissa Gray's interview with Inquiry Commissioner Chris Guest in Dubbo on 18th July 2023.

1. **Basin Plan One Implementation:** the effectiveness of the implementation of the Basin Plan over the five years since the previous assessment.
   a. All barriers to recovering water must be lifted, and voluntary open-tender buy backs must proceed without delay.
   b. Constraints to the delivery of environmental water must be relaxed as a priority
   c. The Sustainable Diversion Limit Adjustment Mechanism (SDLAM) projects that are not complete by December 2023 must be scrapped.
   d. Water Resource Plans are inconsistent, there's no requirement for review, NSW plans are still not accredited, and First Nations consultation has been inadequate.

2. **Basin Plan Two Development**: advice and recommendations on future actions and opportunities to simplify the framework of the Basin Plan to ensure effective achievement of its outcomes.
   e. Climate change must be included in a future Basin Plan, yet the objectives of Basin Plan One must be achieved first.
   f. Serious deficits in NSW water management be addressed.
   g. Legal definitions must be tightened.
   h. Aboriginal water rights must be addressed.

Recommendations

1. Basin Plan One Implementation

a. Water Recovery

The implementation of the Basin Plan has stalled for the last ten years due to a lack of political will.

Only 2,100 GL of the mandated 3,200 GL has been recovered for the rivers as actual water entitlements.

All restrictions on water recovery methods should be removed. This includes removing the legislated cap on buybacks and the socio-economic test.

There must be no delay to water recovery by the quickest and most effective method: purchasing water entitlements from willing sellers. The 450 GL must be recovered as quickly as possible using voluntary water purchases.

On and off farm efficiency projects should not be relied upon as a method of recovering water. These projects are slow and come at very high cost. The actual return of water to the rivers is shared with industry and difficult to quantify, given the unmeasured impact of the loss of return flows to the rivers and groundwater reserves[1]. If reasonable, cost-effective projects are identified, they could progress along with water purchasing.

While the existing Commonwealth Environmental Water Holder's (CEWH) portfolio is generally managed very well, one third of the portfolio has lower reliability than general

[1] https://www.abc.net.au/radionational/programs/breakfast/300-billion-litres-of-murray-darling-water-lost/8747724

security licences. High security licences should be prioritised to improve the reliability of the CEWH's portfolio. Water purchases should be cost effective and preference reductions in permanent plantings.

Water recovery in the Northern Basin should be prioritised to increase the health and resilience of the Darling-Baaka River. The Darling-Baaka has been described as an ecosystem in crisis by the Natural Resources Commission[2]. Catastrophic fish kills occur in drought and in flood. There are water quality and algae warnings current for the Barwon and the Darling-Baaka Rivers in July 2023, less than six months after one in one-hundred-year flood events.

Floodplain harvesting plays a significant role in the declining health of the Northern Basin and the Darling-Baaka. The licencing of floodplain harvesting in NSW is covered further in section 2 g) below.

Recommendations:

- Remove the cap on buybacks and the socio-economic neutrality test
- Recover the 450 GL through voluntary water purchases
- Strategically purchases of high security licences to achieve improved reliability of the CEWH's portfolio
- Prioritise water purchases in the Northern Basin to slow the ecological decline of the Darling-Baaka.

b. Constraints

Taxpayer owned environmental water must be able to be released at sufficient flow rates and durations to provide critical regular small over bank flows. These flows allow wetlands and low-lying floodplains to connect to the river. These small regular over bank flows keep the level of organic matter on floodplains at a healthy level, and kick start the food web and breeding cycles of native fish and other aquatic wildlife.

Long running resistance to the use of environmental water on natural floodplains and wetlands has paralysed governments. It is vital that progress on constraints relaxation in NSW and Victoria occur in lockstep, as both sides of the Murray will receive the benefit of increased environmental flows.

[2] Natural Resources Commission, Review of the Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012, September 2019

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Recommendations:

- Appoint a panel of independent experts to find a workable pathway to constraints relaxation.
- Broaden the options available for private landholders to participate in constraints relaxation, including having time-limited easements or voluntary land purchases.
- The Commonwealth should include an adjustment mechanism and a trust fund to quickly respond to and manage any unexpected outcomes for private landholders after initial implementation of constraints relaxation.
- Set a deadline for agreements after which time compulsory acquisition of easements is undertaken.

c. SDLAM projects

Sustainable Diversion Limit Adjustment Mechanism projects (SDLAM) seek to artificially pool water in a handful of redgum wetlands. The significant majority of wetlands along the Murray would not receive replenishment from environmental water and would be lost. The concept of SDLAM projects is that an environmental equivalence test can be applied, and an offset determined so that 605 GL of water can remain in irrigation accounts.

The South Australian Royal Commission report found there were 'real doubts' that these projects were based on the best available scientific knowledge[3]. Peer reviewed research published by the CSIRO confirms that finding[4].

For more than a decade 605 GL has continued to be used by irrigators while the environment has not received the environmental offsets due. As the CEO of the MDBA

[3] https://www.preventionweb.net/publication/murray-darling-basin-royal-commission-report

[4] Lyons Kate, Pittock Jamie, Colloff Matthew J., Yu Yilan, Rocheta Eytan, Steinfeld Celine (2023) Towards a scientific evaluation of environmental water offsetting in the Murray–Darling Basin, Australia. *Marine and Freshwater Research* **74**, 264-280. https://doi.org/10.1071/MF22082

Andrew McConville said “The credit has been banked, but the payment still needs to be delivered."[5]

Recommendations:

- Projects that are clearly off track should be removed from the program immediately, with water purchased to make up for the shortfall.
- Should there be an extension of time for delivery agreed by Basin water ministers:
    - a further assessment should be conducted in 12 months to remove any further projects that are unlikely to meet the extended timeframe.
    - Until supply measure projects are operational and environmental outcomes proven, the environment must have access to the equivalent volume of water. This could be done through the purchase of temporary water entitlements.
    - No new supply measures should be admitted to the SDLAM projects as this would create the risk of further complications and delays.

d. For NCC’s comments on issues with Water Resource Plans, see the Lifeblood Alliance submission.

2. Basin Plan Two Development

e. Climate change

Basin Plan One must address over allocation before Basin Plan Two can address the very critical issue of climate change impacts on rivers.

Researchers from the Australian National University and the University of NSW Sydney ‘poor water management and excessive extraction are the primary causes of declining flow and the poor state of Australia's Darling River’[6].

[5] Address to the National and Rural Press Club, 22 November 2022

[6] https://newsroom.unsw.edu.au/news/science-tech/water-extraction-key-cause-darling-river-drying-study

The Guide to the Proposed Basin Plan 2010 found that at a minimum, annual extractions would have to be reduced by 3,000-4,000 GL to attain ecosystem health.[7] The bare minimum volume of 3,200 GL is still a long way off being achieved less than one year out from the deadline.

Only once this volume, as actual water entitlements (not dubious unproven offsets), has been achieved can the serious and urgent work of considering the impacts of climate change on the river system be incorporated in the Sustainable Diversion Limits for Basin Plan Two.

The impacts of climate change are already being felt. If serious steps to reduce extraction aren't taken, the risk of catastrophic ecological collapse is concerningly close. The sooner meaningful structural adjustments to water management and extraction are introduced, the less severe the consequences of climate change will be felt by industry.

f. Issues with NSW water management

Issues identified below with water management in NSW are not directly related to the Basin Plan, however they are significant enough that they have hindered the implementation of Basin Plan One and would undermine the development and implementation of Basin Plan Two if not addressed as a priority.

Planned Environmental Water

Planned Environmental Water (PEW) in regulated Water Sharing Plans (WSPs) in NSW does not provide the regulated stretch of river with enough water to cover the need for a base flow.

During droughts, when WaterNSW operates the river tightly, it can be the case that the only water in regulated stretches of river is irrigation orders and the water being used to deliver those orders. This creates a very high risk of fishkills in regulated river stretches downstream of the pumps.

It also means that often actively managed environmental water (Commonwealth and/or NSW taxpayer owned water) is relied on to provide base flows in regulated rivers. It is not the purpose of managed environmental water to provide base flows.

There are different definitions of PEW in WSPs across NSW. Some WSPs have only two parts of the definition, and others (mostly unregulated WSPs) have all three parts.

[7] https://cdn.environment.sa.gov.au/environment/docs/guide-to-basin-plan-vol-1-gen.pdf

The definition of PEW should be consistent across all water sharing plans in the state. Yet many PEW rules are threaded within water sharing plans, making it complex and cumbersome to assess what the impact of changing the definition would be without extensive analysis. There are also complex webs of implicit PEW rules within water sharing plans, adding to the complexity.

Extraction Limits in NSW WSPs and Climate Change

The previous government commissioned extensive peer reviewed climate change predictions for regional and state water strategies. However, these predictions are not used when extraction limits and available water determinations are calculated, and most public dams do not have drought reserve floors. As a result, when inflows drop due to drought most public dams empty at blistering speed within 2 years.

During the recent drought in some catchments, approximately one third of water users' allocations that had been carried over were placed in a 'drought quarantine account' - which really meant the water simply wasn't in the dam. What followed was catastrophic fish kills, rivers reduced to disconnected green pools, wetlands on fire and 90 regional cities and towns staring down 'day zero' in the severe 2017-2020 drought.

The cultural, social and economic impact of 90 regional communities like Nyngan, Bathurst, Tamworth, Dubbo and Orange being evacuated is difficult to fathom.

Priority Flows

Connectivity is critical. Flows that connect rivers to each other and break their banks onto floodplains support nutrient cycling. Such flows replenish refuge pools and wetlands to maintain water quality, and trigger movement and breeding of native fish and waterbirds. Wetlands filter water and are critical refuges in drought, slowly releasing stored water as rivers recede. Groundwater aquifers fill when water is allowed to settle into floodplains.

NSW water sharing plans do not provide the priority flows for rivers to connect, for Ramsar wetlands, domestic and town water security, water quality and First Nations Peoples as the Act directs.

Models

There is a lack of transparency, and therefore trust around the models that States use to calculate diversions limits and water determinations.

An example of the consequences when modelling is not updated with observed data is explored in the scientific paper *Statistically Integrated Flow and Flood Modelling*

Compared to Hydrologically Integrated Quantity and Quality Model for Annual Flows in the Regulated Macquarie River in Arid Australia - Shiquan Ren, Richard T. Kingsford, April 2011. This report compares actual flows in the Wambuul-Macquarie River with results from the government's Integrated Quality and Quantity model (IQQM) system.

The report shows that the IQQM model considerably underestimates large flows in the unregulated river, and overestimates flows in the regulated river.

This has led to the government claiming there is a 22% reduction in flows due to regulation, when the observed data shows there is a 43% reduction in flows.

The long term annual average extraction limit is calculated using the model data, which in turn is used to establish the 'Plan Limit' - the volume of water that can be extracted in that water sharing plan area.

Recommendations:

- PEW in NSW should be consistently defined and adequately protected;
- extraction limits in surface water sharing plans must be updated to ensure they are informed by climate change modelling;
- there must be drought reserve 'floors' in public dams, and available water determinations must not be made on predicted inflows, only on water that is physically in the dams;
- there must be mandated priority flows in regulated water sharing plans to ensure connectivity is prioritised, adequate downstream water security and quality, protection of Ramsar wetlands, and First Nations right to access water;
- the rules that manage floodplain harvesting and supplementary access must be bought in line with the environmental watering requirements of the catchments.
- River models used by the states should be available for to the Commonwealth to review and adjusted annually with observed data.

g. The Base Line Diversion Limit and Floodplain Harvesting in NSW

The complexity and ambiguity of many policies and concepts used in water management not only evoke mistrust in stakeholders, it is also a barrier to community members raising their concerns about river management.

It has been behind a cloak of complexity and ambiguity that the previous NSW government and the MDBA appear to have significantly increased licenced water diversions through the licencing of floodplain harvesting in NSW, at a time when the Basin Plan is in place to rein in over allocation.

Evidence points to a 142% growth in floodplain harvesting diversions in the Northern Murray-Darling Basin since 1994/95, when growth in take was supposed to be capped[8]. These findings are in line with the lived experience of people living and working on the Darling-Baaka and its tributary rivers.

However, the NSW government were able to issue brand new floodplain harvesting licences for:

- 115.606 GL in the Gwydir
- 51.665 GL in the Border Rivers
- 52.537 GL in the Wambuul-Macquarie
- 51.320 GL in the Barwon-Darling
- (139.82 GL in the Namoi are still pending)

With most of these valleys able to carry over up to 500% of entitlements, it is possible that up to 1,862.714 GL of water could potentially be diverted in one year (including the Namoi volumes).

Despite the strong evidence to the contrary DPE maintains, with the MDBA's support, that the licenced volumes above are the volumes that were being diverted in 1994/95.

The pathway taken by DPE and the MDBA to increase the Base Line Diversion Limit and the Sustainable Diversion Limit to accommodate this level of floodplain harvesting diversion is remarkably complex, and key pieces of information are not available to the public for verification.

The official cap models that were accredited by the MDBA were not used to licence floodplain harvesting, rather DPE presented 'cap scenario' models that don't seem to have any official relationship to the official cap.

These 'cap scenario models' were used to increase the Base Line Diversion Limits of the relevant catchments, with the MDBA arguing in a Parliamentary hearing that:

[8] Floodplain water harvesting in the Northern New South Wales Murray-Darling Basin February 2021 – Slattery & Johnson

"...the BDLs (see schedule 3 of the Basin Plan) are descriptions, not fixed volumes, and s10.49 of the Basin Plan requires WRPs to be based on the best available information."[9]

A NSW modeler claimed the baseline diversion limit and subsequently the sustainable diversion can be changed '…*at anytime and as often as we like*' according to emails obtained under standing order 52[10]

Among the findings of the NSW Parliamentary Inquiry into Floodplain Harvesting:

- that the modelling used by the NSW Government to determine floodplain harvesting volumes lacks transparency and accountability, does not provide for validation against actual flows and does not have the public's confidence.
- That the process the NSW Government is undertaking to amend the Sustainable Diversion Limit as described by the NSW Department of Planning, Industry and Environment has the potential to be unlawful.
- That the NSW Government has failed to meet its obligations under the Murray-Darling Basin Agreement by allowing the unchecked growth of unregulated floodplain harvesting extraction to volumes well in excess of the 1994 Murray-Darling Basin Cap.

Recommendation:

- The descriptions of the Sustainable Diversion Limit in Basin Plan Two must be strong enough to ensure that SDLs are based on an environmentally sustainable level of take and can't easily be redefined '*anytime and as often as we like*".

h. First Nations water justice

To achieve First Nations water justice, all governments must have a willingness to grant water rights to the appropriate representative First Nations groups. First Nations People must have autonomy over water that they are licenced to control, with the same rights as any other water access licence holder.

[9] MDBA. (2021). Rural and regional affairs and transport, Answers to Questions on Notice: Question No. 149, 26 March 2021. Canberra: Australian Parliament House. Rural and Regional Affairs and Transport – Parliament of Australia (aph.gov.au)

[10] Brown. (2021). Email: Draft notes – today's BDL/LTDLE meeting. Sydney: NSW Parliament. Obtained under Standing Order 52, Order for Papers – Water Modelling, 5 May 2021.Document DPIE.WM.3028

The $40 million in funding to purchase water promised to First Nations in 2018 is long overdue. The reluctance from governments to honour this promise appears to be rooted in a remnant paternalism, that is indicative of the systemically racist colonial structures that dominate this Country. Systemic racism can be difficult to identify by those who enact it and may not consider themselves racist. In making these statements, NCC is not implying that individuals are racists, rather that the system is.

A Commonwealth staff member gave the following testimony at Senate estimates hearing in May 2023, which highlights the paternalistic approach of the government.

> *"The department is looking at how that funding would be allocated. It has looked at a number of models over a number of years with First Nations. That included direct grants of funding or water to those First Nations groups. Past research has shown that in some cases where that has occurred, in circumstances where perhaps a traditional owner group or First Nations group has been unable to manage that water, or been under economic duress, they have to sell that water, and it has left First Nations holdings. That is not a great outcome in terms of an overall increase in First Nations water holdings. We have been trying to work out a mechanism or approach with First Nations people on that. One concept that has been proposed, and that we are looking to develop further, is the concept of a First Nations water holder or trust arrangement."*[11]

A Murray Lower Darling Rivers Indigenous Nations (MLDRIN) representative at the MDBA Peak Bodies meeting on 13th July 2023 questioned the approach as described above, and asserted that Aboriginal People should have the right to trade or sell their entitlements as anyone else would. She was interrupted and shut down during the meeting by representatives of the Department of Climate Change Energy Environment and Water and the Murray-Darling Basin Authority.

The reference to Cultural Flows in the Basin Plan is brief and cursory.

> *10.54 Cultural flows*
>
> *A water resource plan must be prepared having regard to the views of*
>
> *Indigenous people with respect to cultural flows.*[12]

[11] HANSARD, SENATE, ENVIRONMENT AND COMMUNICATIONS LEGISLATION COMMITTEE, FRIDAY, 26 MAY 2023. Page 22.

[12] Murray-Darling Plan Plan, Chapter 10, Part 14, s10.54

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This section of the Basin Plan will have to be developed significantly to ensure Cultural Flows become a reality.

Thank you for the opportunity to participate in the consultation.

Your key contact point for further questions and correspondence is Melissa Gray, Water Campaigner, We welcome further conversation on this matter.

Yours sincerely,

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