

Murray-Darling Basin Plan: Five-year assessment

Submission to the Productivity Commission Issues Paper

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Wentworth Group of Concerned Scientists

Mr Peter Cosier, Director, Wentworth Group of Concerned Scientists.

Prof Tim Flannery FAA, palaeontologist and writer, Chief Councillor, Australian Climate Council, 2007 Australian of the Year.

Dr Ronnie Harding FEIANZ, zoologist, former Director, Institute of Environmental Studies, UNSW.

Dr Terry Hillman AM, ecologist, former Member, Murray-Darling Basin Sustainable Rivers Audit.

Prof Lesley Hughes, ecologist, Macquarie University, Councillor, Australian Climate Council, Lead Author, Intergovernmental Panel on Climate Change, Working Group II.

Prof David Karoly, Former Professor of Atmospheric Science, University of Melbourne, former Member, Climate Change Authority.

Prof David Lindenmayer AO, landscape ecologist, Fenner School of Environment and Society, Australian National University.

Assoc Prof Jamie Pittock, environmental scientist, Fenner School of Environment and Society, Australian National University.

Prof Hugh Possingham FNAS FAA, Professor of Ecology at The University of Queensland, Australia.

Mr Rob Purves AM, businessman, Director, Purves Environmental Fund, President, WWF Australia.

Dr Denis Saunders AM, ecologist, Chair, Sara Halvedene Foundation, Editor, Pacific Conservation Biology, former Chief Research Scientist, CSIRO.

Ms Anna Skarbek, investment banker and lawyer, CEO ClimateWorks Australia, Director Clean Energy Finance Corporation, former Director, Carbon Market Institute.

Prof Bruce Thom AM, FIAG, FTSE, geographer, Chair, 2001 Australian State of the Environment Report.

Mr Martijn Wilder AM, Partner, Baker McKenzie, Chairman, Low Carbon Australia, Director, Clean Energy Finance Corporation, WWF Australia, and The Climate Council

Overview

The Wentworth Group is committed to reforms in the Murray-Darling Basin which secure the environmental, social and economic future of the Murray-Darling Basin as a whole. A key priority is ensuring the implementation of the Basin Plan in full and on time, a commitment reiterated by COAG in 2016¹ and again by the Prime Minister in 2017.² We also support an adaptive plan which is reviewed and improved on the basis of targeted and efficient monitoring, new science and evolving knowledge of the opportunities and risks that may affect that future.

We welcome the opportunity to contribute to the *Murray-Darling Basin Plan: Five-Year Assessment* by the Productivity Commission's. In the following submission, we respond to key areas of interest that are central to the terms of reference and also raised in the Issues Paper:

1. Review of the Murray-Darling Basin Plan
2. The Sustainable Diversion Limit adjustment mechanism
3. The Northern Basin Review

Central to delivering the Basin Plan is the need to restore trust between governments, and between government and the community. Restoring trust can only occur through complete transparency. By restoring the trust that existed at the time of the 2004 National Water Initiative, and with \$5 billion of allocated public funds remaining, it is possible to complete these reforms in full and on time, and in doing so, continue the journey towards a healthy working Murray-Darling Basin for all communities.

1. Review of the Murray-Darling Basin Plan

In 2012, the Australian Parliament adopted the Murray Darling Basin Plan – a plan to restore a “healthy and working Murray-Darling Basin.” It is now five years since that agreement was signed.

In November this year, the Wentworth Group released a comprehensive [Review of progress of water reform in the Murray-Darling Basin](#) (Attachment A) using evidence of the environmental, economic, social changes that have occurred during the implementation of the Basin Plan. We provided a copy of this report to the Productivity Commission in January this year.

In this review, we document the progress towards the Basin Plan objectives and outcomes, using evidence of the environmental, economic and social changes that have occurred in past decades following recent water reforms and broader drivers. The review has two main components:

1. Measuring progress towards Basin Plan objectives and outcomes; and
2. Actions necessary to deliver the Basin Plan ‘on time and in full’.

We conclude that while much progress has been made in national water reform, since the Basin Plan was adopted in 2012, water reform in the Basin has slowed to a trickle. We present evidence of serious systemic issues in implementation, which if not rectified will guarantee there is no possibility of the Basin Plan being completed in full and on time – a commitment all governments made to the Australian community at COAG in December 2016.

On the basis of our review, we have identified five actions that are necessary to deliver the Basin Plan in full and on time:

1. Rebuild trust with greater transparency, by:

- **Improving metering and compliance** by Commonwealth, state and territory governments agreeing to comprehensive measurement of consumptive water use and water interception, including groundwater, across the whole Basin to a standard suitable for compliance action.
- **Improving accountability** with professional water accounting standards and independent auditing against standards, accompanied by annual audits of expenditure of public funds and annual reviews of the Basin Plan’s progress by an independent auditor.
- **Reinstating a basin-wide river monitoring program** to measure and report regularly on the overall condition of the 23 river systems across the Basin as well as targeted programs reporting on progress towards specific Basin Plan objectives against what would have occurred without the Basin Plan.
- **Strengthening the capacity of the Murray-Darling Basin Authority to fulfil duties as a regulator.**

- 2. Guarantee recovery of the full 3,200 GL or genuinely equivalent outcomes, by:**
- **Securing the remaining 1,093 GL or equivalent**, including the 450 GL to enhance the Basin’s health, through a combination of strategic water purchase, water efficiency programs and on-farm investment, but only where such recovery results in measurable additional water to the river system. Water recovered must account for the reduction in runoff and groundwater recharge that would have otherwise benefitted the environment.
 - **Ensuring environmental outcomes are equivalent or better** as a result of any adjustment to the sustainable diversion limit by agreeing to the conditions in Table 1. Rivers need water, and ‘complementary measures’ such as carp herpes virus, are not a substitute for real water.
 - **Making sure water recovered for the environment is protected in the river and not being undermined** by changes to state water resource plans, river management and operating rules, changes to baselines or model assumptions (as defined in Table 12 on Page 59 of Attachment A), and other land use changes that affect water availability in the catchments (e.g. farm dams, plantations, floodplain harvesting).³
- 3. Ensure that water recovered achieves measurable improvements to the river system, by:**
- **Removing constraints (physical and policy)** that restrict the use or passage of environmental water to target floodplains and wetlands, by re-configuring infrastructure and enforcing planning restrictions in designated floodways (see), and where appropriate, compensating for any third party impacts.
 - **Ensuring sufficient water reaches the Lower Lakes, Coorong and Murray Mouth** to export salt from the Basin, reduce water quality risks, and deliver freshwater to maintain the ecological character of the Ramsar wetlands.
 - **Aligning the Basin Plan targets, the Basin-wide environmental watering strategy, and water resource plans**, at the catchment level as part of the accreditation process to achieve outcomes.
- 4. A regional development package that puts communities at the centre of reform, by:**
- **Assisting communities most affected by water recovery to restructure their economies to adapt to a future with less water.** Assigning for example, 10% of the remaining \$5.1 billion would release up to \$500 million for regional development initiatives.
 - **Linking public funding directly to the Basin Plan**, by the Commonwealth working directly with community leaders, local government, regional development boards and natural resource management agencies to recover the water in a manner that optimises regional development opportunities for those communities.

5. Prepare for the prospect of a future with less water, by:

- **Improving scientific understanding of the potential future stresses** caused by extreme weather events (e.g. more frequent and more severe drought and higher evaporation from rising temperature) and long-term changes in climate including water availability, supported by a climate change adaptation program for environmental assets, industries and public infrastructure.
- **Expanding the mandate of the Basin Plan** to integrate water planning with broader natural resource management to improve the overall environmental condition of the Basin.
- **Investing in knowledge and capacity** to enhance agricultural productivity, sustainable production and food and water security, and protect the natural resource base in a variable and changing climate.
- **Ensuring water reform** remains a permanent item on the COAG agenda, and recognising the long-term nature of national water reform via the establishment of an independent expert body to undertake regular reviews of progress.

2. The Sustainable Diversion Limit Adjustment Mechanism

The Murray-Darling Basin Plan is an agreement to recover 3,200 GL of environmental water or equivalent outcomes to help restore the health of the Murray-Darling Basin. Under Chapter 7 of the Basin Plan, this volume may be reduced if state governments can demonstrate alternative ways of delivering similar outcomes for the environment, as part of the Sustainable Diversion Limit (SDL) adjustment. The SDL adjustment process also allows for the easing or removal of constraints to environmental water delivery and the addition of 450 GL per year of environmental water above the 2,750 GL target to deliver outcomes of 3,200 GL (Basin Plan s7.09 (e)).

New South Wales, Victoria and South Australia have brought forward a package of projects to which are intended to deliver equivalent outcomes to environmental water under the SDL adjustment process. This package includes engineering works, changes in river operations, evaporative savings, and enhancements to ease or remove constraints to the delivery of environmental water. The Murray-Darling Basin Authority has estimated the outcomes that could be achieved by this package is equivalent of up to 605GL of environmental water.

We have compiled a set of twelve conditions that we believe any proposal submitted for SDL adjustment would need to comply with to meet this requirement (Table 1). Eleven of these conditions were taken from the Basin Plan itself, as well as policies that have been adopted by the Authority. The Wentworth Group has added one further condition which is that any water savings from rules-based projects should be converted into a water entitlement (Condition 8). We believe that all twelve conditions are necessary to ensure projects are designed and operated in a way that is likely to deliver equivalent environmental outcomes.

The Wentworth Group has undertaken an [analysis of the package of projects](#) against these twelve conditions (Attachment B). In formulating our analysis, we used information available on government websites and business cases provided by the Victorian and South Australian Governments. The New South Wales Government declined our request for business cases.

For each project, we determined whether the conditions were met, conditions were not met, further information was required, or the conditions were not applicable. On the basis of this assessment, we have identified those projects that meet all conditions and should be approved; those projects where further information is required; and those projects that should not be approved in their current form.

Table 1. Conditions of approval for projects and their reference in the Water Act, Basin Plan, MDBA policies and intergovernmental agreements

Condition of Approval	Reference
1. Works-based projects must align with Basin Plan targets.	Basin-wide environmental watering strategy ⁴
2. All works-based projects must be assessed using a scientifically robust method.	Basin Plan S6.05
3. Any adjustment of the sustainable diversion limit must ensure that there is no change in flow indicators.	Basin Plan S6.07
4. Sustainable diversion limit must not change by more than ±5% overall.	Basin Plan s7.19
5. Environmental risks must be mitigated to acceptable levels.	Phase 1 Assessment Guidelines for Constraint and Supply Proposals, Overarching Evaluation Criteria #4. ⁵
6. Long-term governance arrangements must be secured.	Phase 1 Assessment Guidelines for Constraint and Supply Proposals, Overarching Evaluation Criteria #3. ⁶
7. Environmental water must be able to reach works projects and the broader floodplain in the future.	Basin-wide environmental watering strategy ⁴
8. Any water savings from rules-based projects will be converted into a water entitlement	Recommended in the SDL Adjustment Stocktake report commissioned by MDBA “Converting savings to licence entitlements is required to achieve a supply contribution” ⁷
9. Projects must deliver value for money.	<i>Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin</i> ⁸ , and Phase 1 Assessment Guidelines for Constraint & Supply Proposals, Overarching Evaluation Criteria #2 ⁹
10. Projects must be monitored to ensure outcomes are delivered.	Basin-wide environmental watering strategy ⁴
11. Projects are consistent with the Constraints Management Strategy. Constraint levels as at 2012 must be used as a benchmark to compare changes.	Constraints Management Strategy (Table 5) ¹⁰ , Phase 2 Assessment Guidelines for Supply & Constraint Measure Business Cases #3.2.2 ¹¹
12. Pre-requisite policies proposed by states for managing environmental water must be configured in the model used to calculate an adjustment.	Basin Plan s7.15 (1) (ii)

Supply measures

The current package of supply measures is worth \$1.3 billion yet most are not of sufficient quality to give the Australian public confidence that they will result in environmental outcomes equivalent to that which could be achieved with 605GL of environmental water as claimed. Our assessment of 37 proposed supply measures against 12 conditions of approval as required by the Basin Plan and government agreements (Attachment B) shows that:

1. Only one project (South Australian Murray Key Focus Area) meets all necessary conditions for approval.
2. Twenty five projects (representing in the order of 316-436 GL water savings) do not satisfy these conditions in their current form and should be required to demonstrate they can satisfy these 12 conditions before approval.
3. We have been unable to evaluate the remaining eleven of the projects (representing in the order of 150-270 GL water savings) because some governments have not made all business cases available to the public and neither has the MDBA released their own assessment of projects. This is contributing to the erosion of trust in the water reform process.

Constraint measures

Of the six nominated constraints proposals, three were not consistent with the Constraints Management Strategy and should not be considered in the SDL adjustment determination (Table 2). A seventh constraints project (Goulburn River) was not included in the final notification for SDL adjustment. Constraints measures are, however, essential to the successful implementation of the Murray-Darling Basin Plan. Constraints proposals need to be modified in line with the Constraints Management Strategy and funding should be reallocated to support the amended projects.

Efficiency measures

Basin governments have listed a range of water use efficiency measures to contribute to recovering 450 GL, however there has been no specific projects agreed nor any reported recovery of water to guarantee recovery of the full 450GL. A recent independent report by Ernst and Young for the Murray-Darling Basin Ministerial Council concluded that 450GL can be recovered with neutral or positive socio-economic impacts, as per the Basin Plan and Water Act. Any amendment needs to ensure that the full 450GL of real water savings are achieved within budget and statutory requirements. Funding contracts and proposed water savings must account for the impact of efficiency measures on return flows and provide for appropriate monitoring and auditing to be undertaken.

Table 2. Physical constraints must be addressed to permit delivery of water to floodplains and wetlands in the southern Murray-Darling Basin. Constraints highlighted in red are proposed levels that will fail to meet the Murray-Darling Basin Authority’s target as specified in the Constraints Management Strategy.

Region	Location	PRE-BASIN PLAN: Constraint in 2012 ¹⁰ (ML/d)	TARGET: Target in MDBA Constraints Management Strategy (ML/d)	PROPOSED BY STATES: Constraint in business case ¹² (ML/d)
Murray	Hume to Yarrowonga	25,000	40,000	40,000
	Downstream of Yarrowonga	40,000 (but effectively 22,000* due to upstream constraint of 25,000)	40,000 (50,000 for reaching disconnected wetlands and ephemeral creeks) ¹³	30,000
Darling	Weir 32/Increase Menindee outlet capacity	9,300	18,000	14,000
	Darling anabranch	Water flows into anabranch over 9,300ML/d	Regulator added and closed above 9,300ML/d when environmental water is supplied from Menindee	n/a
Murrumbidgee	Gundagai	30,000	50,000	40,000 at Wagga (~30,000 at Gundagai)
	Balranald	9,000	13,000	9,000
Goulburn	Seymour	12,000	15,000	n/a
	McCoys Bridge	20,000	40,000	20,000
Total flow at South Australian border		66,000 **(assuming 26,000 from Goulburn)	111,000 **assuming Menindee allowed 18,000	78,000**

*10,600 ML/d in regulated periods in summer and in other periods Hume to Yarrowonga constraint of 25,000 ML/d was in place meaning that flows downstream of Yarrowonga were effectively restricted to 22,000 ML/d.

**This number assumes perfect co-ordination of flows between the Murray and tributary flows, something which is highly unlikely. The 111,000ML/d target is most likely to achieve the outcomes in schedule 5 of the Basin Plan (i.e. 80,000 ML/d).

Pre-requisite policy measures

As part of the SDL adjustment mechanism (Basin Plan s7.15 (1) (ii)), Basin States have committed to implement pre-requisite policy measures to credit environmental return flows for downstream environmental use and to allow the call of held environmental water from storage during unregulated flow events by 30 June 2019.¹⁴ However there has been no transparency of the pre-requisite policy measures proposed by state governments nor any independent public assessment of their adequacy.

All pre-requisite policy measures proposed by Basin states should be reviewed by the MDBA using hydrological models. In undertaking this review, prerequisite policy measures proposed by states should be configured into the model when calculating the adjustment to the sustainable diversion limit, to avoid the risk that policies presented by Basin governments do not enable the same outcome as the benchmark model for SDL adjustment.

Recommendations

We believe the following actions are necessary to honour the commitment by the Prime Minister in December 2016 to deliver the Basin Plan 'in full and on time':

1. **Supply measures:** All supply measure projects must demonstrably meet the 12 conditions of approval as required by the Basin Plan and other government agreements (Table 1), based on a transparent assessment;
2. **Constraints measures:** Constraints proposals are to be modified in line with the targets set by the Murray-Darling Basin Authority in the Constraints Management Strategy set by the Murray-Darling Basin Authority (Table 2) and funding re-allocated to achieve this outcome;
3. **Efficiency measures:** The full 450GL of real water savings are guaranteed to be recovered, within budget and statutory requirements, accounting for the impact of efficiency measures on return flows; and
4. **Pre-requisite policy measures:** All pre-requisite policy measures proposed by Basin states are consistent with model assumptions, using consistent hydrological models, and subject to publicly available review by the MDBA using hydrological models.

3. The Northern Basin Review and Groundwater Reviews

The Murray-Darling Basin Plan (the Basin Plan) provides for the Murray-Darling Basin Authority (the Authority) to conduct research and investigations to inform amendments to the Basin Plan, including changes to Sustainable Diversion Limits (SDLs; s6.06 (1)). Following reviews of SDLs in the northern Basin and groundwater diversion limits in 3 zones in the Basin, a legislative amendment was tabled in the Senate on 4 November 2017. The proposed changes to the Basin Plan included a 70GL increase in SDLs in the northern Basin (from 390GL to 320GL recovery), and an increase of 160GL to SDLs in three groundwater areas. The Senate voted to disallow the amendment on the 14 February 2018, resulting in no change to the 390GL sustainable diversion limit in the Northern Basin.

The Wentworth Group did not support this amendment because, in its current form, it would have undermined the objectives of the Basin Plan and rendered the Basin Plan inconsistent with the Water Act requirement to develop the Basin Plan “on the basis of the best available scientific knowledge and socio-economic analysis.” The reasons are summarised below and in Attachment C:

1. **The amendment did not adequately protect important flow events (e.g. environmental flows, low flows) from being diverted by irrigators.** Environmental water recovered in the northern Basin under the Basin Plan can continue to be legally diverted by irrigators in valleys including the Barwon-Darling and the Balonne. Furthermore, the amendment failed to prevent irrigators from extracting important flow events which would otherwise have supplied the river, downstream communities and businesses with water (e.g. Wilcannia, Broken Hill, Lower Darling), particularly during low flow periods including drought.¹⁵
2. **The Authority ignored recommendations to mitigate impacts of water recovery on communities, and instead lowered environmental standards of the Basin Plan to avoid assumed impacts.** In reviewing SDLs in the northern Basin, the Authority failed to consider recommendations of the statutory Northern Basin Advisory Committee to mitigate adverse impacts of water recovery on communities. The only option presented to communities was an amendment which lowered environmental targets in an attempt to avoid assumed socio-economic impacts, affecting sites including the Ramsar-listed Macquarie Marshes, and the Condamine-Balonne floodplain where the proposed flow targets were no longer consistent with Basin Plan objectives.
3. **Environmental outcomes were likely to be worse than modelled because necessary policy measures were not guaranteed in legislation.** The Authority’s recommendation to increase surface and groundwater limits was contingent on policy measures which were not guaranteed under the amendment (e.g. coordinating environmental watering, recovering water strategically, effective compliance). Governments did not demonstrate that they were willing and capable of implementing these measures to a standard consistent with model assumptions.

4. **States did not demonstrate they were capable of managing risks of increased groundwater extractions.** Risks resulting from increasing the SDLs are likely to be significant in the Eastern Porous Rock and Goulburn-Murray SDL units where groundwater is well connected to surface water, and in the Western Porous Rock units where four large mines have been proposed.
5. **Supporting this amendment would have further eroded the public trust in governments to successfully implement reforms,** in the context of serious management failures, including alleged water theft and inadequate compliance and enforcement as revealed by ABC's Four Corners, the Matthews Review in New South Wales, ongoing NSW ICAC inquiries involving the Barwon-Darling, a court case concerning a farmer in the Barwon-Darling, an investigation by the Queensland Major Organised Crime Squad in the Border Rivers, a Basin-wide Compliance Review and the South Australian Royal Commission.

We propose five recommendations aimed at ensuring that any future reviews fulfil their intended purpose and result in amendments that are consistent with the Water Act and the Basin Plan's objectives:

1. The Parliament should not consider any changes to the sustainable diversion limits until statutory event-based protection of flows (including environmental flows and low flows) is in place, and capable of being audited and enforced across all northern Basin rivers. Non-statutory based measures are not sufficient: statutory measures are necessary (e.g. via Water Resource Plans reviewed regularly), with interim protection prior to 2019.
2. The Murray-Darling Basin Authority should consider structural adjustment measures to mitigate impacts of water recovery on smaller communities as part of future water recovery in the Northern Basin, and as part of any review of sustainable diversion limits.
3. There should be no change to surface and groundwater sustainable diversion limits until statutory measures are in place which guarantee Basin governments will implement specific water management measures (e.g. coordination of environmental flows; strategic recovery of water entitlements; and effective compliance) in a way that is consistent with assumptions in the hydrological model.
4. Prior to any change in the sustainable diversion limits for groundwater, Victoria and New South Wales Governments must demonstrate to the Commonwealth Government that they are capable of implementing water management rules which will enable risks of groundwater extractions to be managed to acceptable levels.
5. Monitoring, compliance and enforcement regimes should be implemented and properly resourced at both State and Commonwealth levels.

It is possible to recover the remaining water in the Northern Basin in a way that results in measurable additional flows to the river, while supporting communities likely to be adversely impacted by reforms. One approach is to use strategic purchase to recover water for the

environment while releasing funds for regional development. Water recovery through voluntary purchase provides farmers with several benefits: flexibility in managing impacts of drought, a pathway to retire from their land, cash flow during drought and improved on-farm water efficiencies.^{16, 17}

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