

WENTWORTH GROUP

OF CONCERNED SCIENTISTS

Mr Peter Cosier, Dr Richard Davis, Prof Tim Flannery FAA, Dr Ronnie Harding FEIANZ, Dr Terry Hillman AM,
Prof Lesley Hughes, Prof David Karoly, Dr Jamie Pittock, Prof Hugh Possingham FAA, Mr Robert Purves AM,
Dr Denis Saunders AM, Ms Anna Skarbek, Prof Bruce Thom AM, Mr Martijn Wilder AM.

Murray-Darling Basin Authority
GPO Box 1801
Canberra City ACT 2601

24th February 2017

Submission on the proposed amendments to the Murray-Darling Basin Plan

Thank you for the opportunity to comment on the proposed amendments to the Murray-Darling Basin Plan.

The Murray-Darling Basin Authority is proposing to reduce water recovery in the northern Murray-Darling Basin by 390 gegalitres (GL) a year to 320GL a year on a long-term average basis, provided that Australian, New South Wales and Queensland governments commit to a range of measures that improve water management as defined in Appendix B of the Northern Basin Review report.¹

The Authority is also proposing to increase the sustainable diversion limits (SDLs) for three groundwater areas in various locations within the Murray-Darling Basin by a total of 160GL, and make a number of changes to the way groundwater is managed under the Basin Plan.

Some additional amendments are also being proposed to improve the consistency and effectiveness of the Basin Plan.

The Wentworth Group is committed to reforms in the Murray-Darling Basin which secure the environmental, social and economic future of the Basin as a whole. We also support an adaptive plan which is reviewed and improved on the basis of targeted and efficient monitoring, new science and knowledge of opportunities and risks.

The Wentworth Group does not support the proposal to increase the SDLs. In this submission we outline our key concerns and recommendations, and then offer alternative suggestions to the proposed amendments.

Background

A core objective of the Murray-Darling Basin Plan, as set out by the *Water Act 2007*, is to “protect, restore and provide for the ecological values and ecosystem services of the Murray Darling Basin”. Central to this is establishing an environmentally sustainable level of extractions of surface water and groundwater based on the best available science and in consideration of social, economic and environmental outcomes. Failure in this regard could be expected to result in continued and indefinite decline in the ecosystems currently supporting the basin community.

What the Australian Parliament agreed to in 2012 was a plan to recover 2,750GL of water and allowing for an additional 450GL of environmental water recovery to form 3,200GL of surface water recovery or equivalent. The agreement also allowed for groundwater extractions to increase from the baseline of 2,385GL to a sustainable diversion limit of 3,334GL.

When the Basin Plan was finalised in 2012, it was recognised that “more work in the northern Basin was needed” and there was “limited information available about groundwater in particular.”² The Authority undertook to conduct research and investigations into aspects of the Basin Plan in the northern Basin, including the basis for long-term average sustainable diversion limits (SDLs). The purpose of the review was to “improve the Authority’s knowledge of the northern basin, including the water needs of water-dependent ecosystems, and how water recovery has affected communities.”³

At the same time, the Authority sought to revise SDLs in three groundwater units of the Basin. The groundwater reviews undertaken by the Authority were on the basis of “differing views between the MDBA and Basin States as to the magnitude of the appropriate SDL for each groundwater units”.⁴

As a result of the Northern Basin Review and the groundwater reviews, the Authority is now proposing to increase surface water and groundwater SDLs. Under the proposal, surface water SDLs would increase by 70GL, reducing the water recovery amount in the northern Basin from 390GL to 320GL (a reduction of 18%) and the total surface water recovery amount from 3,200GL to 3,130GL (a reduction of 2%). Groundwater SDLs could increase by 160GL above the 3,334GL in three groundwater units, increasing the basin-wide total of groundwater SDLs from 3,334 GL to 3,494 GL (an increase of 4.8%).

1. The Wentworth Group does not support the proposed amendments to increase long term extraction limits for surface water in the northern Basin.

As part of the northern Basin Review, the MDBA established 43 site-specific flow indicators to represent environmental water requirements across the northern Basin. If these indicators are met, the assumption is there is a “high likelihood that the ecological outcomes will be met”.⁵ The Murray-Darling Basin Authority’s own research shows that under the current Basin Plan with 390GL recovery, less than half (47-49%) of these indicators will be met.^{5, 6}

Paradoxically, the Authority has demonstrated that a reduction in water recovery of 70GL can achieve a greater number of the 43 flow indicators (up to 51%) than the 390GL provided for in the current Plan.^{5, 7} This is because the same assumptions were not applied to both model scenarios. For example, in the 320GL C scenario the MDBA has adjusted water recovery settings to achieve outcomes in an efficient way, while the same settings are not applied for the 390GL scenarios published.⁵ Had they tested the 390GL scenario with the same assumptions, the result would have most likely increased the number of flow indicators met. In other words, the Authority’s argument that “the level of improvement in environmental outcomes slows down as recovery increases from 320 GL to 415 GL” is fundamentally flawed.¹

The second reason why the Authority is able to achieve more flow indicators in the 320GL scenario is because the MDBA has lowered the probability of achieving those outcomes overall. For example, in the Culgoa River, the number of years between flow events on the outer floodplain will increase by 20% under the 320GL scenario compared to the 390GL scenario, thus “the likelihood of a healthy outer floodplain is considerably reduced”.⁵ Such differences are considerable, and not “slightly” reduced outcomes, as the MDBA has reported.

Downstream impacts and implications for southern Basin outcomes from the proposed 70GL reduction were not adequately assessed. Different estimates were provided for the impact on flows into Menindee Lakes, the Lower Darling, and into South Australia in different publications⁸

and it was unclear whether the result was actually modelled. This is a serious concern for water security of downstream users.

We note that the Australian Government is a signatory to the Ramsar Convention on Wetlands which requires contracting Parties make a commitment to “conservation, management and wise use of wetlands.”⁹ The Water Act and Basin Plan draw their constitutional validity in large part on codifying domestic implementation of the Ramsar Convention. However, the Murray-Darling Basin Authority has not addressed Ramsar obligations in their final Northern Basin Review report.

We support the proposal for a range of measures in addition to flows to ensure the maximum environmental benefit from managing the Basin’s water resources under the Basin Plan. Much work needs to be done to protect environmental flows, improve coordination of environmental watering, address constraints and implement complementary measures. These measures are not a substitute for flows: their efficacy depends on the provision of environmental flows. The ‘toolkit’ proposed by the MDBA will go a long way to addressing these issues, some of which should already be mandatory under the Basin Plan (e.g. constraints management, environmental flow protection). To ensure maximum benefit from environmental water under the Basin Plan, we recommend that such measures should be guaranteed in legislation before any change of sustainable diversion limits is made.

Adverse changes in the regional workforce as a result of water reforms, documented in the social and economic study, are small compared to the larger forces at work in rural communities. A key outcome of the Northern Basin Review on the headline figure of “200 fewer jobs will be lost in irrigation dependent communities” is significant for some communities, but pales against the 75% reduction in demand for seasonal workers due to advances in technology (e.g. round cotton balers, genetically modified crops that require less spraying) in the irrigation industry alone since 2000. Irrigation industry jobs are being lost regardless of the Basin Plan, while agricultural productivity has increased in the Basin as a whole. A better approach will be to invest in other industries and services to diversify the economic base of these small communities. Removing more water from the rivers will likely harm these non-irrigation industries while doing very little to help employment in irrigation. We discuss this further in Section 3 of this submission.

2. The Wentworth Group does not support proposed amendments to increase long term extraction limits for groundwater.

The basin-wide total for groundwater SDLs is proposed to change from 3,334 GL/y to 3,494 GL/y (an overall net increase of 159.9 GL/y or 4.8%). The largest changes are proposed in three groundwater resource units: Western Porous Rock WRP area in southwest NSW (109GL), Eastern Porous Rock WRP area in northeast NSW (15GL) and Goulburn-Murray WRP area in Victoria (48GL). Smaller changes are proposed in two other units.

These proposed amendments will “allow additional water to be taken from three groundwater areas once the states demonstrate how they will limit impacts to acceptable levels”.³

The MDBA needs to guarantee that states will manage risks associated with groundwater use before providing for an increase in SDLs. This must include risks to groundwater during dry periods, because groundwater is used as a drought reserve and extractions increase when surface water availability is scarce (e.g. 1982-83, 2006-07). It must also include risks to surface water, because managing surface and groundwater resources conjunctively in the future is critical. The MDBA must also ensure that different forms of groundwater (both high and lower quality groundwater) are managed sustainably and are allocated to their highest value use.

Risks of 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. In the Western Porous Rock SDL unit, the aquifer is not well connected to surface water so impacts of the proposed increase in SDLs on surface water are expected to be less significant.

Future impacts of groundwater use are likely to increase with growth in mining activities. In the Western Porous Rock SDL resource unit, five mines located within the region use some of the 63GL of water which is extracted annually from the unit. Active exploration licences are expected to lead to a significant increase in mining activities and water use into the future. The NSW government informed the MDBA that future demand for water from four proposed mines in the Western Porous Rock SDL resource unit is estimated at 121.5GL/year.¹⁰

Finally, states must ensure adequate provisions for managing groundwater resource under uncertainty. Large variation in groundwater recharge estimates suggest that the scientific information on the extent of and recharge rates for these aquifers, and interaction with surface waters, are poorly known. For example, CSIRO (2010) estimated the total recharge volume for the Western Porous Rock groundwater unit was 236.8 GL/year (assuming adjusted area), significantly less than the 396.5GL reported for the Basin Plan. The proposal to increase groundwater SDLs for this unit by 109.4GL is within the margin of error.

The outcome of the proposed amendments to increase groundwater SDLs rests on how well state governments can manage the current and future impacts of use within the groundwater and surface water zones. The New South Wales government currently has in place Water Sharing Plans for groundwater resources including the Murray-Darling Basin Porous Rock groundwater sources.

Until there is sufficient evidence in place to demonstrate the capability of states to manage uncertainty and the current and future risks to water resources in these regions, the Wentworth Group does not support increases in long term extraction limits for groundwater. Future changes to groundwater SDLs should be conditional on (1) the extent to which management plans address risks of groundwater use; and (2) annual groundwater bore monitoring linked to adaptive extraction limits, such that extraction limits can only be increased if there is evidence that no long term depletion of the groundwater resource is occurring, while extraction limits can be reduced if there is evidence of long term depletion (this practice is routinely applied in setting fishing quotas). We advise postponing any consideration of an increase in groundwater take to the 2026 review of the Basin Plan when more information should be available to make a better decision.

3. A package of structural adjustment measures must be provided to smaller communities that experience substantial socio-economic impacts as a result of water reform.

The whole purpose of water reform, dating back to the *National Water Initiative* in 2004 and the Murray Darling Basin Plan in 2012 is the recognition that Australia can't have viable regional communities without healthy rivers.

This recognition has until recently led to significant improvements in the management of water in Australia. Many irrigators across the Basin have made windfall gains from the large transfer of wealth resulting from the transfer of water entitlement from public to private ownership - estimated at \$28 billion.¹¹ In addition, another \$7 billion of public money has been invested through the *Water for the Future* program for the purchase of water entitlements and irrigation infrastructure upgrades. The result of changes in the agricultural sector has seen the gross value of agricultural productivity in the Basin continuing to increase under the Basin Plan, with growth in major regional centres (e.g. Dubbo and Tamworth). These benefits are central to the package to

restore the river health of the Murray-Darling Basin and should be recognised in any triple-bottom line assessment.

In recent years however, this consensus has begun to unravel. It is unravelling because current government policies have forced the Murray-Darling Basin Authority to make implicit trade-offs between communities: between upstream and downstream communities, between irrigation and grazing, and between current and future generations.

While some communities have experienced adverse socio-economic impacts from Basin Plan implementation, the Basin as a whole has experienced increases in economic production. There are better ways to support the smaller number of impacted communities than increasing SDLs and degrading the health of the river system.

The issue driving the push-back on water reform is the failure of structural adjustment to support the communities most adversely impacted by the Basin Plan. To progress reforms, we must support these communities through structural adjustment programs.

With the remaining \$5.9 billion, it is possible to assist communities to manage the necessary transition, while completing these reforms in a way that will deliver the Basin Plan 'in full and on time'.

The issue driving the push back on water reform is the failure of structural adjustment to support the communities most adversely impacted by the Basin Plan. To date, most funding for water reforms has been directed to water purchase and on-farm infrastructure upgrades for the irrigation industry. Only \$100 million (less than 1%) of the \$13 billion investment in water reform has been provided for regional economic diversification to support communities in adapting to the changes.

Structural adjustment has not been considered as part of the Northern Basin Review to mitigate impacts on communities.¹² There is no guarantee of help for Dirranbandi, St George, Wee Waa and other communities impacted by water recovery. Faced with public pressure from impacted communities, the only choice presented to communities is to halt water recovery and unwind targets to mitigate impacts, to the long term detriment of the river and all those communities who benefit from it.

Those communities who have been adversely affected by water reform deserve our support. Local communities should be assisted to plan alternative regional development measures, funded from a substantial share of the remaining \$6 billion in funds for Basin Plan implementation. These may include investments to assist with non-water infrastructure, industry development and public services.

In summary:

1. The Wentworth Group does not support the proposed amendments to increase long term extraction limits for surface water in the northern Basin.
2. The Wentworth Group does not support proposed amendments to increase long term extraction limits for groundwater.
3. A package of structural adjustment measures must be provided to smaller communities that experience substantial socio-economic impacts as a result of water reform.

References

- ¹ MDBA, 2016. The Northern Basin Review. Understanding the economic, social and environmental outcomes from water recovery in the northern Basin. Murray-Darling Basin Authority, Canberra.
- ² Letter from Minister for Sustainability, Environment, Water Population and Communities Tony Burke to former Murray-Darling Basin Authority Chair Craig Knowles regarding suggestions on the Basin Plan for consideration. Dated 1.11.12.
- ³ MDBA, 2016. Plain English summary — proposed Basin Plan amendments. Murray-Darling Basin Authority, Canberra.
- ⁴ Report to the MDBA by the Review Panel of the Western Porous Rock Groundwater SDL Resource Unit in NSW
- ⁵ MDBA 2016, Environmental outcomes of the Northern Basin Review. Murray-Darling Basin Authority, Canberra.
- ⁶ Based on outcomes of the 390GL A scenario (49% achievement) and 390GL B scenario (47% achievement) which represents the Basin Plan as currently legislated.
- ⁷ Based on a comparison of the 390GL A scenario with the 320GL C scenario which was designed
- ⁸ For example, the MDBA's Northern Basin Review Report (2016) estimated a 10-15 GL reduction to the average inflows to Menindee Lakes, and average flows to South Australia may be reduced by 5-10 GL, while the MDBA's website explains that a recovery reduction of 70 GL only results in 7 GL/y less flows reaching Menindee Lakes compared to the current Basin Plan settings (<http://www.mdba.gov.au/faqs-northern-basin-basin-plan-amendments>, accessed 22/2/2017).
- ⁹ Ramsar Convention on wetlands of international importance especially as waterfowl habitat, Ramsar, Iran, 1971
- ¹⁰ Evans, R. Murrihy, E. 2014. Western Porous Rock Groundwater Sustainable Diversion Limit Review: Interim Synthesis Report, Sinclair Knight Merz, Canberra.
- ¹¹ Wentworth Group (2011) Statement on the 2011 Draft Murray-Darling Basin Plan. Sydney.
- ¹² Gunders, J. 2017 ABC News: Murray-Darling Basin Plan: Dirranbandi changes tack in fight for survival over water buybacks <http://www.abc.net.au/news/2017-02-15/dirranbandi-water/8272292>