



Healthy Rivers Ambassadors

*Promoting a healthy, working
Murray Darling Basin for the future*

Murray-Darling Basin Royal Commission
GPO Box 1445
Adelaide SA 5001

31 May 2018

Dear Commissioner Walker,

SUBMISSION TO MURRAY-DARLING BASIN ROYAL COMMISSION ISSUES PAPER NO 2

Thank you for the opportunity to provide a further submission to the Murray-Darling Basin Royal Commission and thank you for raising these fundamental questions regarding interpretation and implementation of the Basin Plan. I support your concerns that the current implementation process for the Basin Plan cannot deliver ecologically sustainable levels of take (ESLT).

My previous submission was based on reluctant acceptance of the Murray-Darling Basin Authority's interpretation of the required processes to implement the Basin Plan but expressed some of the grave concerns I have developed about the process over the last two years, particularly around the inadequacy of the water recovery target.

My viewpoint is that of a wetland ecologist with long experience in both policy and on-ground management of the wetlands and rivers of the Murray-Darling Basin. I became more closely involved in the Basin Plan implementation process from 2016 as a Healthy Rivers Ambassador and then a River Fellow in 2017. I quickly came to the conclusion that the MDBA interpretation of the Plan cannot deliver ecologically sustainable outcomes for Basin ecosystems or deliver the Basin Plan goal of healthy working rivers.

I strongly support the continued direction of your investigation into fundamental issues of concern in order to ensure that the Murray-Darling Basin Plan is implemented effectively and as intended, with reduction of over-allocation of water as a primary object.

Provisions of National Water Initiative

As stated in your Issues Paper, the Basin Plan is required to have regard to the National Water Initiative (NWI), which includes the principle of allocating water for healthy rivers first, before allocating water for consumptive uses. It also requires water authorities to 'complete the return of all currently over-allocated or overused systems to *environmentally-sustainable levels of extraction*'.

Implementation of water reforms has been slow since the NWI was agreed in 2004. Progressive report cards for the NWI from 2007 repeatedly noted slow progress in reducing over-allocation of water, particularly for the Murray-Darling Basin. Initially, good progress was made in areas such as water markets and trading while milestones were linked to tranche productivity payments, but after this requirement was removed, progress on water reforms slowed very significantly. The Living Murray Program took seven years from 2004 to recover 500 GL of water, taking two years longer than agreed to recover a much lower target than the 3000 GL recommended by scientists at that time.

The report card of the NWI published in 2011 stated that the state and federal governments had yet to deliver the intended benefits of the Water Act. The assessment contained 12 major recommendations requiring recommitment to the objectives of the NWI, along with increased funding, stronger community involvement, stronger urban water reform, coordination with natural resources management, review of mining and petroleum impacts, and factoring in climate change.

The National Water Commission (NWC) was abolished in 2015, with the reason given by the Coalition Government being a combination of 'budget savings' (unmeasurable in the scale of the Federal budget) and 'job done'. The opposite was true, as the National Water Commission was about to apply all of their careful research to the task of reducing over-allocation of water resources. Much more work was still needed for full implementation of the many recommended actions arising from a solid body of NWC investigations into sustainable water management while taking into account ecological, economic and social issues. From 2015 the functions of the NWI were split between multiple agencies, and the function of the independent umpire and reviewer in the National Water Commission has effectively been lost.

General Concerns about Ability of Plan to meet Targets

As indicated in my previous submission, there is significant collective evidence that the Basin Plan as being rolled out will not meet its own targets. The starting point of 2750 GL as the water recovery target was already compromised and unable to deliver all the environmental outcomes in the Plan, compared to the 3,856GL to 6,983GL required to return the river systems to a healthy state, and the minimum 4,000 GL required to maintain the current degraded condition.

Discussions leading to the draft Plan started with a limit of 4,000 GL maximum water recovery. The reason given was that any higher volumes of water recovery would result in unacceptable social and economic impact. As you point out in your discussion paper, this brought social and economic considerations into the determination of the ESLT and prevented the establishment of an ESLT based on environmental criteria.

Recently I researched the targets and outcomes set out in the Basin Plan and then looked for evidence that the Plan is on track. My findings were very disturbing, with broadscale evidence that the interim targets of *no further loss or decline* in multiple environmental parameters from November 2012 to June 2019 are not being met by a large margin. As indicated in evidence included in my previous submission, waterbird numbers across the Basin are in free-fall, the Lower Darling River is drying again for the second time and delivery of environmental flows is being hampered by flow constraints and the CEWH 'good neighbour' policy which disadvantages delivery of environmental water if there is a clash with agricultural activities.

A recent report released by the Murray-Darling Basin Authority claiming that 8 out of 10 environmental targets in the Coorong have been met does not reflect my own observations or those of scientific colleagues working regularly at Coorong sites. With numbers of migratory waders visiting the Coorong this past summer reported at an all-time low, this does not indicate a healthy working ecosystem. Massive algal blooms in recent years in the Southern Lagoon have been smothering *Ruppia* plants in their flowering season, preventing production of seeds and turions which form a major food source for waterbirds. These observations do not support the MDBA report of good health in the Coorong and may indicate that key indicators are not being included in monitoring programs.

Water Recovery

Water recovery has been halted at 2107 GL since 30 June 2017 and this situation will continue following the passage of the SDL adjustment of 605 GL on 8 May. However, the 'equivalent' benefits from the 36 supply projects do not have to be delivered until 2024. If on reconciliation in 2024 there is found to be a shortfall, this will be made up by water purchases or new recovery projects, thus subjecting Basin ecosystems to a continued shortfall in water recovery for a further seven years.

Recent documents released by the Australia Institute raise serious doubts about whether the quoted volume of recovered water is fully available to the Commonwealth Environmental Water Holder (CEWH) for application as needed across Basin watering sites. In one case, a water parcel purchased from the Warrego River rarely flows downstream, with only 1/20th of the volume purchased expected to flow into the Darling system. If multiple purchases are shown to have less than the stated volume readily available for environmental use, then Basin water recovery is even less than the currently inadequate volume of 2107 GL.

Records indicate that CEWH water use has not exceeded 1800 GL in the last three years, with the reasons given being constraints to delivery or natural river flows reducing water requirements. Therefore, the full volume has not been requested to date, to test availability of the full 2107 GL.

Concept of Equivalent Environmental Outcomes

The Basin Plan includes provision for adjustments in the water recovery target on the basis that equivalent environmental outcomes can be produced with a lower volume of held environmental water than would otherwise be required. As an environmental scientist, I find this concept flawed. The proposition that water delivered by an engineering project can somehow deliver equivalent environmental outcomes cannot be justified in ecosystem science. Water reaching a wetland via a pipe or filling a wetland using a regulator will not provide connectivity or return flows in the same way as natural flows. I agree that an environmental outcome may be achieved, such as filling the well-defined wetlands at Hattah Lakes, but it is not equivalent to the outcomes achieved with natural flows. Engineering works create barriers to fish passage and prevent return of nutrients and aquatic organisms to the mainstream.

In the case of the Coorong, flows from the South-east region into the southern, most saline end of the ecosystem are no substitute for river flows which naturally enter from the fresher northern end of the system. Managing the Menindee Lakes to minimise evaporative loss could have very serious environmental impacts on the Lower Darling River, which only just last year was identified as critical habitat for some part of the life cycles of all large native fish species in the Basin.

The very narrow basis of the scientific modelling applied to assess environmental equivalence misses the major question of whether environmental targets can be met with the reduced flows. Instead it compared the difference at a reach scale between the inadequate 2750 GL volume with up to 22% less flows and finds no significant difference in the environmental outcomes for each river reach. However, neither of the scenarios tested can deliver all the targets in the Basin Plan. A similar approach was used for modelling two flow scenarios for the Northern Basin review, again finding no significant difference between two scenarios which each only delivered ~50% of Basin Plan targets for that region.

The modelling comparisons should instead be conducted on the basis of testing whether environmental targets can be met, using similar methodology to evaluations conducted earlier to assess whether flow targets would be met for icon sites (eg Gibbs *et al.* 2012).

SDL Adjustment Process

The SDL adjustment has been passed on the basis of a detailed agreement between Minister Littleproud and Shadow Minister Burke. The package of promises offered by the Coalition included future actions to address concerns around the integrity of the supply projects, delivery of the efficiency projects for 450 GL of additional flows, more rapid action on constraints projects and provisions for cultural flows. Interestingly, it included financial incentives to accelerate development of the supply projects.

However, these promises are not legally binding and push-back from irrigation communities is already appearing on the subject of the 450 GL recovery. Now that the 605 GL reduction is secured, once again the argument is being made by upstream interests that the social and economic cost is too high to recover the 450 GL. The Victorian Water Minister has stated recently that the 450 GL cannot be found, in spite of the

recent report by Ernst & Young in December 2017 indicating that it is feasible to find 450 GL while mitigating social and economic impacts.

Political negotiations continue around the implementation of the Basin Plan, with further reductions in the 2750 GL target still possible. The end result for water recovery could still be only 2100 + 54 GL, taking into account the 5% 'limits of change' rule. This volume is insufficient to be classed as an ecologically sustainable level of take. From a scientific point of view, any recovery volume less than 4000 GL would not qualify as sufficient for sustainable water resource management as part of an ESLT.

Monitoring and Assessment

The withdrawal of New South Wales' funding from the MDBA in 2013 brought an abrupt end to the sound, science-based Sustainable Rivers Audit, which had just established a comprehensive baseline condition assessment across 23 sub-catchments and had reported twice on relative condition. The monitoring was stopped just as recovery was setting in after the life-giving floods of 2010-12, so no monitoring was undertaken at Basin scale to measure recovery in response to the floods. The last SRA report had 20 out of 23 sub-catchments in poor or very poor condition but Basin-wide monitoring was not continued to determine the extent of any recovery post-flood.

The loss of funding for the SRA has removed independent, Basin-scale monitoring of Basin condition which would demonstrate whether the Plan targets are being met, particularly whether the target of 'no further decline' by June 2019 is being met or not.

Conclusion

As you rightly state in your Issues Paper No 2, the Basin Plan was intended to redress the balance to include the environment which had previously had no water rights. The key instrument provided was the ESLT. However, powerful irrigation lobby groups and upstream communities complained that there was too much emphasis on the environment and argued for concessions to include economic and social factors. As compromises continue through the implementation process, the balance is moving away from the possibility of sustainable healthy working rivers and towards rivers continuing to decline.

At this point, the water recovery target is not sufficient to achieve an ecologically sustainable level of take, as it cannot deliver the goal of healthy working rivers. Decline is continuing in key indicators and river ecosystems are still recovering from long-term damage from over-extraction coupled with the effects of extreme stress during the Millennium Drought (Figure 1). The volume of water presently allocated to the CEWH is inadequate to halt decline and assist recovery at a Basin scale. It is not even sufficient to assist recovery at the 6 selected 'icon' sites designated in the Living Murray Program.

The Murray-Darling Basin Plan will only be as good as its implementation. This must include action to:

- return enough real water to support life cycles & processes
- ensure sufficient flows to the Murray Mouth and Coorong
- ensure genuinely equivalent environmental outcomes from projects supporting the 605 GL reduction in water recovery
- protect delivery of environmental flows
- ensure all-state compliance and enforcement
- control water theft
- monitor and report progress clearly and in real time.

Instruments to strengthen the Basin Plan and achieve these outcomes could include:

- Reinstatement of the National Water Commission or equivalent
- Development of legal instruments to ensure that the elements of the recent agreement of 8 May between Minister Littleproud and Shadow Minister Burke can be enforced
- Development of timelines with penalties to speed up delivery of legal requirements in the Basin Plan, starting with the 24 Water Resources Plans due to be completed and approved by June 2019
- Development of standards to measure 'environmental equivalence' at a project scale instead of modelling at a river reach scale
- Reinstatement of the Sustainable Rivers Audit, coupled with additional funding for local monitoring
- Review of the parameters monitored in the recent report by the MDBA on the health of the Coorong, which appears to conclude a healthier state than warranted by on-ground observations
- Financial and environmental audit of infrastructure 'efficiency' projects already carried out
- Development of strict guidelines for future infrastructure efficiency projects prior to approval of spending the balance of funding available
- Immediate implementation of all recommendations in the MDBA Basin-wide Compliance Review, with strict reporting provisions required from each state government on progress with dealing with reported breaches and progress with developing improved compliance systems
- Immediate investigations into the availability of all of the reported 2107 GL held by the Commonwealth Environmental Water Holder.

We need a healthy working Plan to deliver healthy working rivers throughout the Basin. Sadly, during the lobbying around recent parliamentary votes, the Basin Authority has in effect taken the view that a compromised, ineffective Basin Plan with an environmentally unsustainable level of take is better than no Plan.

We need to see the Authority speed up the implementation process with stringent review of the supply projects to justify the 605 GL reduction and facilitation of the development of efficiency projects to deliver the 450 GL. Additional incentives and penalties are required to ensure that the completion and endorsement of the full set of 24 water resources plans is achieved by 1 July 2019.

Enforceable deadlines with incentives and penalties will be required during the next stage of implementation progresses, to ensure the completion of the water resources plans due in June 2019 and the development of the supply and efficiency projects at the latest by 2024.

I am happy to provide more details or explanation if required and to attend a hearing.

Yours sincerely,

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River Fellow 2017



Figure 1 Floodplain vegetation between Berri and Loxton showing impacts of long-term water extraction and drought, with a legacy of dead black box trees (left) and dead river red gums (right) on river terraces. (Photo A Jensen; 30 May 2018)