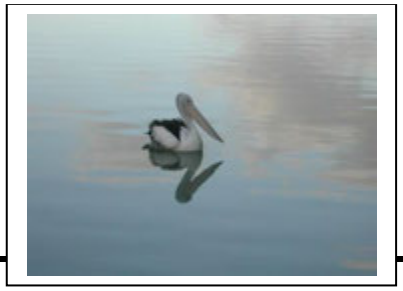

Dr Anne Jensen
Environmental Consultant

ABN 34 930 978 273

Commissioner Jane Doolan
Associate Commissioner John Madden
Australian Government Productivity Commission
4 National Circuit, Barton
ACT 2600
Basin.plan@pc.gov.au

7 October 2018

Dear Commissioner Doolan & Associate Commissioner Madden,

RESPONSE TO DRAFT FIVE YEAR REVIEW OF MURRAY-DARLING BASIN PLAN

The Five Year Review of the Murray-Darling Basin Plan by the Productivity Commission is a milestone document in Australian water reform. It succinctly summarises the key issues and outlines urgent actions needed to keep the Basin Plan on track. You and your staff are to be congratulated on a comprehensive report which packages up the key findings and recommendations in a very readable format.

I strongly support implementation of the package of recommendations in the comprehensive draft report, with some additional modifications and strengthening as outlined in my detailed comments below. These additional comments relate particularly to the risk of under-recovery of environmental water, consolidating and securing environmental water delivery, linking the salt export target to environmental outcomes, incorporation of the effects of climate change, and the need to coordinate and speed up parallel implementation of all elements of the Plan package with appropriate timelines and penalties.

In essence, your review finds that the Basin Plan cannot be delivered 'on time' (ie by June 2024) and recommends deadline extensions for key elements. The recommended extensions need to have rigorous timelines and penalties attached. They should be tied as appropriate to scheduled review dates, including 2020, 2023, 2024, 2025 and 2026.

The Basin Plan can only be delivered 'in full' if the total package of final recommendations is adopted as soon as possible by Basin Governments, the Australian Government and the Murray-Darling Basin Authority, with full investment of required resources. Again, timelines and penalties are required to ensure timely and effective action. Otherwise, there are serious risks that outcomes required in the Basin Plan will not be delivered, resulting in long term damage both to river communities and to river ecosystems.

The recommendations to speed up delivery of the four key elements of the Basin Plan (supply projects, efficiency projects, relaxation of constraints and complementary measure) are essential and are strongly supported. These include particularly the recommendations to ensure that the 37 supply projects can deliver the 'equivalent environmental outcomes' which were used to justify reducing the Basin water recovery target by 605 GL.

The recommendation to extend the deadline for completion of the Water Resource Plans is regrettable but necessary, and should also carry enforceable penalties for any further delays.

The recommendations to develop effective arrangements for evaluation and monitoring of Basin Plan progress are strongly endorsed, particularly with respect to management of environmental flows and meeting environmental targets.

Implementation of this comprehensive package of recommendations to get the Basin Plan back on track should proceed in full with adjusted timelines, with sufficient resources, with renewed commitment from all parties, without delay and with regular reporting requirements and penalties for any further delays.

Background to comments in submission

I have worked on sustainable management of natural resources in the Murray-Darling Basin throughout my career, which has covered water policy and governance in the SA environment agencies, practical wetland rehabilitation projects in a conservation NGO, academic research on environmental water needs for floodplain vegetation and wetlands, and environmental consulting on natural resources management.

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. One of my current roles is as part-time wetland ecologist advising on environmental watering projects in the SA Murray Valley being managed by Nature Foundation SA.

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. Our volunteer group includes representatives of communities throughout the Basin. From our meetings and briefings, I have become very concerned that the MDBA interpretation of the Plan and its implementation processes are not on track to deliver ecologically sustainable outcomes for Basin ecosystems or to deliver the Basin Plan goal of healthy working rivers.

Thank you for the opportunity to provide additional comment to the Murray-Darling Basin Plan Five Year Assessment. Please advise if any clarification is required or further details are required on sources of information for this statement.

Yours sincerely,

Dr Anne E Jensen
Environmental Consultant
Healthy Rivers Ambassador for MDB
River Fellow 2017
Honorary Research Associate, Nature Foundation SA

Detailed Comments on Five Year Review

The Productivity Commission has provided a considered and well-founded analysis of progress on implementation of the Basin Plan. It presents a comprehensive summary of the challenges, outstanding issues and actions needed to sustain momentum in this critical water reform process to achieve required outcomes within a reasonable timeframe.

The following suggestions are made to include some additional key points and to strengthen the draft package of recommendations.

Risk of under-recovery

The report addresses the issue of over-recovery in the Lachlan and Gwydir catchments but does not address the bigger issue of the serious risk of under-recovery for the Basin target.

I disagree with your assessment that the risk to water recovery is low. This risk assessment is only valid in terms of reported recovery of the target volume of 2075 GL. It does not give adequate weight to concerns about the security and availability of actual volumes recovered. In addition, it pre-supposes that 2075 GL/y is sufficient to deliver environmental targets in the Basin Plan, when there is significant evidence that this volume will not be sufficient, even if all the supply projects and efficiency projects were delivered to full effect by 2024.

There is a high risk that the reconciliation in 2024 will find that targets have not been met, that projects have not been completed and the predicted 'environmentally equivalent' outcomes have not been delivered. This could result in a requirement to purchase additional volumes of water at higher cost in a drier climate scenario with greater community resistance.

The statement of acceptance that sufficient water has been recovered to 'bridge the gap' does not acknowledge serious concerns raised by the Australia Institute, the Wentworth Group of Concerned Scientists and in the Murray-Darling Declaration (March 2018) about whether the quoted volume of water recovered is actually fully available to the Commonwealth Environmental Water Holder (CEWH) for application as needed across Basin watering sites. One water parcel was purchased from the Warrego River, with only 1/20th of the volume purchased expected to flow into the Darling system, as reported by the Australia Institute.

The long term annual average yield (LTAAY) of the CEWH water holdings of 2107 GL is 1836 GL (at February 2018). Records indicate that CEWH water use has not exceeded 1750 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 all 2107 GL.

The MDB Guide states that environmental water requirements for key environmental assets and key ecosystem functions can be achieved with a high level of uncertainty with water recovery of 3,000 GL/y. MDBA modelling for the Basin Plan stated that 17 out of 18 targets could be delivered for four icon sites with high uncertainty at flows of 2800 GL with all constraints relaxed (Gibbs *et al.* 2012). The revised target of 2075 GL/y is a political construct which is significantly lower than the minimum volume of ~4000 GL/y required for healthy working river ecosystems as advised by scientists during the formulation of the Basin Plan.

The conclusion must be that, at best, environmental targets can only be met with a high level of uncertainty after the supply projects are all completed and shown to deliver 'equivalent environmental outcomes' and all constraints are relaxed. Your review indicates that these conditions cannot happen until later than 2024, imposing further stress on river ecosystems in the interim through under-recovery, with dry conditions and low flows already predicted for 2019-20.

While concerns about transparency of water purchases are addressed in recommendations 3.3 and 3.4, an additional recommendation is required to address the high risk of under-recovery. This should include an urgent investigation of the real availability of water from CEWH holdings and the impact of constraints and the CEWH 'good neighbour' policy on coordinated and prioritised water delivery.

Meeting Environmental Targets

As outlined in my previous submission, the environmental targets of the Basin Plan are not currently being met. In particular, the intermediate targets of no loss of, or degradation in, key parameters from November 2012 to June 2019 are not being met at a basin scale, for example in waterbird numbers, fish populations, the condition of the Coorong and Lower Lakes ecosystems, the Murray Mouth opening regime or the condition, diversity and extent of water-dependent vegetation. Vegetation communities are still recovering from the long term impacts of water extraction plus the severe extended Millenium Drought (Figure 1).

The review provides limited selective examples of improved condition in Box 2.3, but these are not specifically related to the intermediate targets. For example, the very cautious conclusion of Capon & Campbell (2017) is that environmental watering is 'likely to have increased species diversity' and 'resilience of plant species and vegetation communities to drought is also likely to have been enhanced' in 2015-16. Colonial waterbird breeding at five sites on the Murrumbidgee is not evidence of meeting basin-scale targets when compared with Kingsford's annual surveys showing very significant long term decline in bird numbers, even taking into account beneficial effects of floods in 2010-12 and 2016.

The long term targets for improved condition post June 2019 include for example increased abundance of waterbirds by 20–25% by 2024, improved condition of southern river red gum, improved breeding and populations of native fish. Monitoring programs need to be able to measure whether these targets will be met. The recommendation for an effective framework for monitoring and evaluation is strongly endorsed, and this must be linked to the targets which are scattered through the Plan (*as identified in my original submission*).

There is also a need to identify continued losses which will occur as a result of the water recovery volume being insufficient to deliver all Plan targets, eg almost half of environmental targets will not be met in the Northern Basin by 320 GL. In addition, there are areas on outer floodplains which will not be sustained by the future flow regime or managed environmental flows, eg black box communities outside the 1 in 10 y flood frequency, as outlined in the CEWH Black Box Management Framework (Australian Water Environments 2017). Areas lost will include significant areas of black box communities on the outer floodplain in the Chowilla Icon Site.

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)*

Security of Environmental Water

In preparations for the 2018-19 water year, there has been evidence of political pressure to reduce use of environmental water because of the effects of drought in the Northern Basin. Even though South Australian environmental water has 100% allocation for this year (as it is high security water), comments were made by SA agency staff that we should show 'empathy' for low security water holders in New South Wales who have 0% allocation and therefore not apply our full allocation. Comments were also made by CEWO staff that watering should not commence this year at new sites because it was unlikely that water would be available next year in predicted dry conditions.

From an ecological perspective, watering in 2018-19 becomes a higher priority if it is likely that water will not be available next year. Watering this year will build resilience, a stated goal of the Basin environmental watering strategy, and reduce potential decline if next year is dry.

Much has been made of the fact that environmental water should have equal rights with irrigation water, since it costs the same and has equivalent entitlement conditions, but the CEWH 'good neighbour' policy and political pressure like this make it a secondary user. Irrigators with 100% allocation this year will be using all of it!

There has also been recent political grandstanding suggesting environmental water should be given to irrigators to grow fodder to give to drought-stricken farmers, thankfully resisted by the current Water Minister, but likely to recur if the drought persists.

Monitoring and Evaluation

The recommendations to develop effective arrangements for evaluation and monitoring of Basin Plan progress are strongly endorsed, particularly with respect to management of environmental flows and meeting environmental targets. The large investment by the CEWH in long term monitoring has not delivered definitive measurements again Basin Plan targets to date, only stating the environmental watering is 'likely to have enhanced' environmental outcomes. Some scientists are concerned that the requirement to standardise monitoring methods across the Basin means that changes linked to environmental watering are not easily detected, particularly at downstream locations.

There have also been public statements by scientists involved in the long term monitoring program that results 'may not be seen for decades'. This indicates a serious risk that any failure to achieve environmental targets may not be detected for a very long period, so any necessary intervention may not occur before long term harm is done. New monitoring arrangements need to be more clearly aligned to Basin targets with clear reporting milestones that would be sufficient to allow timely intervention if required.

Effects of Climate Change

As noted in my earlier submission, a significant risk to achieving the objectives of the Basin Plan is that reduced water availability due to climate change has not been factored into the Plan, with possible reductions of 30-50% in run-off to storages. The response of the MDBA when this issue is raised is that 'it will be picked up in the review process'. The requirement to include the effects of climate change should be factored into your recommendations for the next steps in monitoring and evaluation.

These effects are likely to be extremely significant for environmental outcomes in the Basin Plan. Colloff *et al.* (2016) compared pre-Basin Plan conditions with Basin Plan and Basin Plan plus climate change conditions. They found that modelled climate change conditions resulted in a reduction of >5000 GL/y inflows compared to pre-Basin Plan conditions. They reported that the MDBA were aware that under climate change flows would not be sufficient to meet almost all flow thresholds for ecological targets in the Basin Plan, and that floodplains and wetlands of the southern Basin would be significantly affected by altered flooding regimes under a warmer, dryer climate (MDBA 2011). Very significant ecosystem changes are predicted under climate change, including the decline of river red gum forests and woodlands, conversion of water-dependent vegetation communities to terrestrial communities on floodplains, less spawning events in native fish and waterbirds, and large scale declines in diversity and abundance of flood-dependent biota (Colloff *et al.* 2016).

Review of Salt Export Target

The discussion of the salt export target is conducted in the limited context of water quality and targets such as 800 EC at Morgan. However, management of flows to meet the aspirational target of salt export also delivers environmental benefits from flows through the river systems. It can also facilitate management strategies designed to reduce accumulation of salt on and under floodplains.

As water quality targets are consistently being met, there is pressure for cost savings by switching off salt interception schemes, which would have a significant negative impact on the health of affected floodplains and vegetation communities. The review of salt targets needs to be linked to other issues such as environmental watering, flow regime and connectivity. The abolition of the salt export target could have perverse outcomes on environmental health, if it reduces the requirement for flows to the end of the system.

Extending Deadlines

It is of concern that deadline extensions are needed to ensure that Water Resource Plans currently under development are sound documents which will deliver sustainable future outcomes as required. Any extensions should be tightly monitored, with penalties for further delays.

Similar conditions should be applied to extensions needed to ensure that the 37 supply projects can deliver their 'equivalent environmental outcomes' which were used to justify reducing the Basin water recovery target by 605 GL. It is critical that these environmental outcomes are delivered or the shortfall is made good as soon as possible after reconciliation, in order to limit continued ecosystem impact from insufficient water availability.

Of equal concern are the serious delays in the development of the efficiency projects to find 450 GL additional water which is required to maintain river flows, the Coorong and Lower Lakes, and keep the Murray Mouth open. The impacts from delayed delivery of these outcomes should be strictly monitored. Appropriate incentives and penalties are required to speed up delivery of this additional water.

Removing Constraints is Critical

The review found that little progress has been made on critical projects to remove constraints to flows, with a very large number of negotiations required with individual landholders. The delays in removing constraints have already had numerous impacts on environmental flow delivery. For example, flows from Menindee Lakes to provide oxygenated water into a black water event during the 2016 flood were prevented by the Wentworth Caravan Park refusing to accept the higher level flows required to deliver the water.

Another instance is occurring currently (October 2018), with environmental flows to the Lower Lakes and Coorong unable to be delivered because landholders in New South Wales are refusing to accept flows of 18,000 ML/d through a river reach with 15,000 ML/d bankfull capacity. If this environmental water cannot be delivered to the Lower Lakes prior to December, the benefit will be lost.

Resolving Compliance Issues

When the issue was raised about New South Wales irrigators taking environmental water in the Upper Darling, the response of Senator Anne Ruston was that this activity was strictly legal under NSW regulations and that nothing could be done to change those regulations until the Water Resource Plans were completed in 2019. It will be critical to ensure that the new plans have addressed the issues of compliance and protection of environmental flows, since there have already been protests from irrigators about protection provided for recent environmental flows from the Barwon River to the Lower Darling. The recommendations from the Mathews report and the MDBA to improve compliance need to be tied to the Water Resource Plans and linked to the conditions around extension of deadlines to ensure sound plans which ensure a sustainable level of take and protect low flows.

The recommendation to separate the Murray-Darling Basin Authority into a corporation to coordinate implementation and a regulator to manage compliance, to make it easier to control water theft and corruption, is strongly supported. It will be necessary to have an independent regulator to prevent future instances of

environmental flows being captured by irrigators. Strong compliance will be needed to re-establish trust with Basin communities, especially in the Lower Darling and Lower Murray.

Incentives and Penalties

The Productivity Commissioners have highlighted the lack of incentives and penalties to keep state governments on track to deliver Basin projects on time. The recommendations to link financial payments to milestones should be extended to every opportunity to ensure timely delivery of sound projects, whether supply projects, efficiency projects, relaxing of constraints, complementary measures or the new monitoring and evaluation system.

Comments on Specific Recommendations of the Review

Recommendation 3.1 This recommendation appears to accept submissions from irrigators about 'over-recovery' in the Gwydir and Lachlan rivers, but has not considered possible 'under-recovery' – see comments above which suggest that an additional higher priority recommendation should be added to confirm full and effective water availability of 2075 GL, or to require additional water to be added to CEWO holdings to reach this target.

Recommendation 3.2 is strongly supported

The balance of this chapter lacks appropriate recommendations. Draft findings 3.3 and 3.4 warrant recommendations to halt any further investment in on-farm irrigation efficiency projects. The Australia Institute have raised serious concerns and the UNDP report which was suppressed clearly stated that there had been no environmental benefit or return of flows, while a few individual irrigators received substantial financial benefits.

There are also findings available that other factors have had social and economic impacts on regional communities, not just the Basin Plan (see Murray-Darling Declaration) but Recommendation 3.3, while relating to social support, implies acceptance that 'substantial adverse impacts' have occurred.

Recommendations 4.1-4.5 are strongly supported but need provision for accounting and penalties for failure.

Recommendations 5.1-5.3 are supported with requirements to speed up implementation and timelines.

Recommendations 6.1-6.3 are supported but it is critical to ensure appropriate water take rules and compliance measures are being included.

Recommendations 7.1-7.2 are supported but need to link to environmental flows to ensure coordination of delivery.

Recommendation 8.1
I agree that the target could be reviewed but this should be an open review. I do not support including the option of abolishing the salt export objective altogether (see comments above). This review should be linked to wider issues, including pressure to switch off SIS as a cost-saving measure and the risks of salt accumulation on floodplains with reducing flows.

Recommendation 8.2
While I agree that the WMP is the appropriate process, the outcome has potential to impact on all Basin fish and other catchments due to the importance of flows to help meet the salt target at Burtundy and flows to the Lower Darling for native fish species, so this recommendation needs a safety clause to include downstream impacts.

Recommendations 9.1-9.2 need to consider the potential impact of delivering water for CHN if it impacts on simultaneous delivery of environmental water (see comments above).

Recommendation 10.2 is supported, but should consider if there is a need for protection/limits for ecosystems in low flows.

Recommendation 11.1 The 5 y BWS should include guidelines for building resilience, minimising harm in drought and supporting drought refuges (see comments above about securing environmental water in drought).

Recommendation 11.2 LTWPs should identify areas lost if not included in priorities for watering and long term impacts under reduced flows (also **Recommendation 11.7**).

Recommendation 11.3 I agree annual targets are not useful but need a replacement 5 year framework, including impact of drought/dry years, and also allow more flexibility if predicted annual flow scenario changes (predicted in April to prepare water year schedule, can change by Sept-Oct)

Recommendation 11.4 needs a mechanism to link northern and southern flows, especially to secure Lower Darling flows.

Recommendations 11.5, 11.6 are supported

Recommendation 12 is supported, it is critical these are implemented, need penalties, all subject to split of responsibilities.

Recommendations 13.1 is supported, it is critical to have accountability, incentives and penalties in place and enforced.

Recommendations 13.2 is supported, it is critical to have transparent accounting and reporting.

Recommendations 13.3 is supported, it is critical to have monitoring at appropriate scales with clear conclusions.

Recommendations 14.1-14.5 recommended changes to governance are supported.

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