WENTWORTH GROUP
OF CONCERNED SCIENTISTS

Mr Peter Cosier, Prof Tim Flannery FAA, Dr Terry Hillman AM, Prof Lesley Hughes, Prof David Karoly FAA,
Prof Richard Kingsford, Prof Martine Maron, Prof Jamie Pittock, Prof Hugh Possingham FAA, Mr Robert Purves AM,
Prof Fran Sheldon, Ms Anna Skarbek, Prof Bruce Thom AM, Mr Martijn Wilder AM.

Outstanding issues within NSW's Final Draft Water Resource Plans and consequences for the Murray-Darling Basin Plan

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The primary purpose of the Murray-Darling Basin Plan is to return over-allocated rivers to sustainable levels of extraction. There is $13 billion of taxpayers' money provided to facilitate this outcome.

Water Resource Plans (WRPs) outline how the management of water resources in a particular river catchment will be consistent with the Murray-Darling Basin Plan. They set out the rules and arrangements relating to water take, environmental water ('planned' and 'held'), managing water during extreme events and strategies to achieve water quality standards and manage risks. They also specify environmental objectives and watering requirements. WRPs include groundwater systems and surface water areas (rivers and creeks).

Catchment-specific water plans that are established under state legislation also need to be updated for consistency with the WRPs and requirements of the Basin Plan (i.e. Water Sharing Plans (WSPs) under the NSW *Water Management Act 2000*).

As part of the Basin Plan all Basin governments are required to submit WRPs to the MDBA for assessment against Chapter 10 requirements of the Basin Plan, after which a recommendation is made to the Federal Minister tasked with accrediting the plans.

South Australia, Victoria, Queensland and the ACT have already submitted all of their WRPs to the Murray-Darling Basin Authority (MDBA) for assessment. NSW has submitted 11 of its groundwater WRPs but a further 9 surface water WRPs have not yet been submitted. As NSW did not submit WRPs to the MDBA for assessment by 31 December 2019 (as required under Division 2.1A of the Water Regulations 2008), the Commonwealth Minister granted an extension until the 30 June 2020.

In 2018, the Wentworth Group provided nine safeguards to the MDBA that we consider necessary to ensure water resource plans developed for the Basin Plan will achieve the Plan's objectives and meet statutory requirements (Wentworth Group of Concerned Scientists (2018a); see summary in Appendix 1). These criteria should apply to all WRPs and related planning instruments (e.g. WSPs, water allocation plans) in order to ensure their consistency.

The Wentworth Group has reviewed the remaining nine NSW draft WRPs/WSPs against these safeguards. We found that the draft plans do not satisfy the necessary safeguards (see Table 1). For example, we found:

- Proposed changes to the definition of Planned Environmental Water (PEW) across multiple valleys with no publicly available modelled evidence to ensure this will result in no net

reduction of PEW (see Box 1 and Table 1). We also identified other proposed rule changes that may result in a net reduction of PEW and consequently the need for substitution of PEW with Held Environmental Water (HEW).

- Proposed rule changes in the Namoi which allow for increased supplementary flow access from 10% to 50% during some unregulated flow periods. A 2015 trial undertaken in the Namoi by NSW found that the 50:50 rule does "not provide adequate protection of the environmental component of the supplementary flow compared with the existing 90:10 rule" (Namoi Surface WRP, 2020, Appendix C).
- Risks to hydrological objectives and ecological objectives in unregulated river systems, because existing rules are not effective in ensuring connectivity within and between valleys particularly during periods of low flows and there is inadequate specification of measureable, mandated valley-specific flow targets linked to environmental objectives.
- Lack of public information about the quantity of take under floodplain harvesting, including interception by temporary works, to ensure 1993/ 1994 Cap estimates are robust and current levels of floodplain harvesting do not exceed the Cap.
- Concerns about the status of pre-requisite policy measures (PPMs) and lack of evidence showing measures are in effect, given the MDBA noted in their July 2019 communique that "each jurisdiction needs to commit to further work to refine and improve PPM implementation over time" (MDBA, 2019).
- Corrective actions for SDL compliance breaches may penalise environmental water holders because corrective actions currently apply to all water entitlement holders (first supplementary then general security), not just consumptive users (see s5.6.2 of Final Draft WRPs). Given the environmental water allocations are not counted towards the SDL, they should not be adversely affected by corrective actions.

If the WRPs and WSPs are accredited in their current form, there is potential for significant consequences for river health and Ramsar-listed wetlands of international importance including the Gwydir wetlands and Macquarie Marshes, undermining the Basin Plan.

We encourage the NSW Department of Planning, Industry and Environment to consider these issues further before submitting the WRP for Commonwealth assessment. To ensure transparency we also encourage the NSW Department to upload to their website all versions of WRPs and related documents, including updated WSPs, which are submitted to the MDBA for assessment. We also ask that the MDBA does not endorse any plan unless there is evidence that all safeguards are met, and that the MDBA investigates the concerns raised in this letter and makes their assessments of WRPs against all Basin Plan requirements publicly available.

Box 1: Proposed changes to the definition of Planned Environmental Water (PEW) across multiple Water Sharing Plans with no evidence to ensure no net reduction of PEW

Section 10.28 of the Basin Plan requires that WRPs ensure "no net reduction in the protection of planned environmental water" based on the level of protection "provided for under State water management law immediately before the commencement of the Basin Plan." The MDBA has defined 'protection' as the level of legal protection as well as protection of the quantity and effectiveness of PEW (MDBA, 2015).

The NSW *Water Management Act* 2000 (WMA) requires the classification of planned environmental water in at least 2 of the following ways:

(a) by reference to the commitment of the physical presence of water in the water source,
(b) by reference to the long-term average annual commitment of water as planned environmental water,
(c) by reference to the water that is not committed after the commitments to basic landholder rights and for sharing and extraction under any other rights have been met.

Before the commencement of the Basin Plan, six of the NSW regulated surface WSPs in the Basin used all three of the above definitions in the classification of PEW. In the Final Draft Water Sharing Plans available on the NSW Government website, the NSW Government is proposing to change the definition by removing following PEW definition (c) from the classification: "all water remaining after water has been taken under basic landholder rights, access licences and any other rights" leaving only definitions (a) and (b) for those six plans (see Table 1).

Definition (c) is likely to protect larger quantities of water as PEW than Definitions (a) and (b) which are based on water committed by rules and water in excess of the LTAAEL. For example, if a valley extracts less water than the LTAAEL, the quantity of PEW under the current WSP is probably larger than the quantity of PEW under the proposed definition in the Final Draft.

In seeking to modify the definition of PEW, the NSW Department of Planning, Industry and Environment asserts in its *No net reduction in the protection of planned environmental water reports* that "often PEW is described as the long-term average annual volume of water outside the WSP long-term annual average extraction limit (LTAAEL)" and as there is "no change to the LTAAELs … there is no reduction in the overall quantity of PEW". This argument fails to incorporate the removal of definition (c) which provides for the protection of a larger quantity of PEW.

This proposed change to the definition of PEW is likely to have a material impact on the legal protection as well as the quantity and effectiveness of PEW, and therefore may not comply with section 10.28 of the Basin Plan. There is no known modelling or scientific analysis made publicly available that shows the contrary.

Table 1: Proposed rule changes in final draft plans that do not satisfy necessary safeguards. Note: Criteria 1, 6, 7, 9 in Appendix 1 were not evaluated as part of this assessment.

	Outstanding issue / concern (refer to Wentworth Group of Concerned Scientists (2018a) for details)	Requirement in Basin Plan and related documents	Rationale / Evidence
	Barwon-Darling		
1.	Agreed hydrological objectives and ecological objectives may be compromised (#2 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan s10.26, and objectives in Part 2 of Chapter 8	Lack of end-of-system flow targets linked to measurable ecological objectives (e.g. outcomes for fish, birds, vegetation) means existing rules may not be fully effective in enhancing connectivity between Barwon-Darling and Lower Darling during periods of low flows 2020 (EDO, 2020; Natural Resources Commission, 2019)
2.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Lack of non-discretionary volumetric triggers to manage upstream access and protect small flow events through the system - Interim Unregulated Flow Management Plan for the North-West is not implemented (EDO, 2020; Natural Resources Commission, 2019)
	Gwydir		
3.	Net reduction in 'planned' environmental water (#3 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to the definition of PEW with no evidence to ensure no net reduction in PEW
4.	Agreed hydrological objectives and ecological objectives in the Basin Plan and related documents may be compromised (#2 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan s10.26, and objectives in Part 2 of Chapter 8	Draft WSP (Clause 45) includes provisions that enable diversion, at the NSW Environmental Water Managers discretion, of supplementary flows away from the Gwydir Ramsar wetlands following extreme wet, very wet periods and excess supplementary events (CEWO, 2020)
5.	Interception activities may compromise the ability to achieve an environmentally sustainable level of take; Lack of monitoring of floodplain harvesting (#5 and #6 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.12 (1) (g); Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring"	Risks of interception of natural flows due to floodplain harvesting, low confidence in the data on floodplain harvesting, and lack of mechanism to monitor and regulate take prior to 2021 (CEWO, 2020)
6.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Lack of non-discretionary volumetric triggers linked to measurable ecological objectives to manage upstream access and protect small flow events through the system to satisfy international obligations including Ramsar and migratory bird agreements (CEWO, 2020)
	Intersecting streams		
7.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	HEW flows originating from the NSW Intersecting Streams water source are not protected from extraction. These flows are fundamental to enable watering between connected WRP areas and to achieve outcomes under the Basin Plan and relevant long term environmental watering plans (CEWO, 2020)
8.	Interception activities may compromise the ability to achieve an environmentally sustainable level of take; Lack of monitoring of floodplain harvesting (#5 and #6 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.12 (1) (g); Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring"	Risks of interception of natural flows due to floodplain harvesting, and low confidence in the data on floodplain harvesting (CEWO, 2020)
	Lachlan		
9.	Net reduction in 'planned' environmental water (#3 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to the definition of PEW with no evidence to ensure no net reduction in PEW
10.	Interception activities may compromise the ability to achieve an environmentally sustainable level of take; Lack of monitoring of floodplain harvesting (#5 and #6 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.12 (1) (g); Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring"	Risks of interception of natural flows due to floodplain harvesting, and low confidence in the data on floodplain harvesting (CEWO, 2020)
	Murrumbidgee		
11.	Net reduction in 'planned' environmental water (#3 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to the definition of PEW with no evidence to ensure no net reduction in PEW

12.	Interception activities may compromise the ability to achieve an environmentally sustainable level of take; Lack of monitoring of floodplain harvesting (#5 and #6 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.12 (1) (g); Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring"	Risks of interception of natural flows due to floodplain harvesting, and low confidence in the data on floodplain harvesting (CEWO, 2020)
13.	Agreed hydrological objectives and ecological objectives in the Basin Plan and related documents may be compromised (#2 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan s10.26 and objectives in Part 2 of Chapter 8	Evidence that inter-valley trade has a direct negative effect on instream water quality and critical environmental needs reliant on end-of-system flows, which are not fully mitigated through other measures (CEWO, 2020)
14.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Concerns about ongoing commitment to implementing pre-requisite policy measures (Wentworth Group of Concerned Scientists, 2018b)
	Macquarie-Castlereagh		
15.	Net reduction in 'planned' environmental water (#3 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to the definition of PEW with no evidence to ensure no net reduction in PEW
16.	Failure to protect environmental water ('planned' and 'held' under entitlement) within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	WSP allows HEW to be used to supply stock and domestic take within Milmiland Creek, reducing the effectiveness of environmental water to achieve the intended outcomes for priority environmental assets such as the Macquarie Marshes and within the Macquarie River channel (CEWO, 2020)
17.	Interception activities may compromise the ability to achieve an environmentally sustainable level of take; Lack of monitoring of floodplain harvesting (#5 and #6 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.12 (1) (g); Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring"	Risks of interception of natural flows due to floodplain harvesting, and low confidence in the data on floodplain harvesting and lack of mechanism to monitor and regulate take prior to 2021 (CEWO, 2020)
18.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Lack of non-discretionary volumetric triggers linked to measurable ecological objectives to manage upstream access and protect small flow events through the system to satisfy international obligations including Ramsar and migratory bird agreements (CEWO, 2020)
	Namoi		
19.	Net reduction in 'planned' environmental water (#3 in WG, 2018); Agreed hydrological objectives and ecological objectives in the Basin Plan and related documents may be compromised (#2 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to the 90:10 supplementary flow access rule with no evidence to ensure no net reduction in PEW (Wentworth Group, 2017)
20.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Current provisions in the draft WSP do not protect HEW and PEW originating from the Peel River water source to the Lower Namoi, and thus do not enable environmental watering to provide for enhanced hydrological connectivity envisaged under the Basin Plan (CEWO, 2020)
21.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Lack of non-discretionary volumetric triggers to manage upstream access and protect small flow events through the system (CEWO, 2020)
	Border Rivers		
22.	Net reduction in 'planned' environmental water (#3 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to the definition of PEW with no evidence to ensure no net reduction in PEW
23.	Interception activities may compromise the ability to achieve an environmentally sustainable level of take; Lack of monitoring of floodplain harvesting (#5 and #6 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.12 (1); Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring"	Risks of interception of natural flows due to floodplain harvesting, and low confidence in the data on floodplain harvesting and lack of mechanism to monitor and regulate take prior to 2021 (CEWO, 2020)
24.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Lack of non-discretionary volumetric triggers to manage upstream access and protect small flow events through the system (CEWO, 2020)

	NSW Murray and Lower Darling		
25.	Net reduction in 'planned' environmental water (#3 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan 10.28 *"No net reduction in the protection of planned environmental water*"	Proposed change to definition of PEW with no evidence to ensure no net reduction in PEW. Proposed changes to the B-MF EWA Operating Rules may reduce long-term volume of PEW, risking ecological character of Barmah Forest and NSW Central Murray Forests Ramsar sites (MDBA, 2018; Wentworth Group of Concerned Scientists, 2018b).
26.	Agreed hydrological objectives and ecological objectives in the Basin Plan and related documents may be compromised (#2 in Wentworth Group of Concerned Scientists (2018a))	Basin Plan s10.26; Objectives in Part 2 of Chapter 8	Decline in regulated water supply capacity does not enable watering between water resource areas, posing increased risk to the ecology of the Barmah-Millewa Forests and downstream priority assets and ecosystem functions within the River Murray (CEWO, 2020)
27.	Failure to protect environmental water ('planned' and 'held') within and between valleys, including over state borders (#4 in Wentworth Group of Concerned Scientists (2018a))	MDBA's Compliance Review, independent Review Panel's report (Nov 2017); Matthews Review (2017)	Concerns about ongoing commitment to implementing pre-requisite policy measures (Wentworth Group of Concerned Scientists, 2018b)

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Wentworth Group of Concerned Scientists 2018a Proposed criteria for accrediting Water Resource Plans under the Murray-Darling Basin Plan, Sydney.

Wentworth Group of Concerned Scientists 2018b Requirements of SDL adjustment projects to ensure they are consistent with the Water Act 2007, Basin Plan 2012, MDBA policies and intergovernmental agreements, Sydney.

Appendix 1. Safeguards that the Wentworth Group consider are necessary for Water Resource Plans to ensure they are consistent with the Basin Plan.

1. **The Baseline Diversion Limit (BDL) used for calculating the Sustainable Diversion Limit (SDL) accurately describes the diversion limit that applied before the recovery of water for the Basin Plan** (*as per Schedule 3 of the Basin Plan (BDLs for surface water SDL resource units), and the definition of BDL in s1.07)*

2. **Water Resource Plans enable achievement of the agreed hydrological objectives and support the ecological objectives described in the Basin Plan and related documents** *(as per Basin Plan s10.26: (1): "A water resource plan must provide for environmental watering to occur in a way that: (a) is consistent with: (i) the environmental watering plan; and (ii) the Basin-wide environmental watering strategy; and (b) contributes to the achievement of the objectives in Part 2 of Chapter 8")*

3. **No net reduction in 'planned' environmental water** *(as per Basin Plan 10.28 "No net reduction in the protection of planned environmental water")*

4. **All environmental water ('planned' and 'held' under entitlement) must be protected within and between valleys, including over state borders** *(as per recommendation 10 and 11 of the MDBA's Murray-Darling Basin Water Compliance Review, Recommendation 10 of the independent Review Panel's report (Nov 2017), and Chapter 5 of the Independent investigation into NSW water management and compliance interim report (Ken Matthews, Sept 2017).)*

5. **Each Water Resource Plan should set out the steps that are to be taken to monitor each of the components of the SDL which are currently not metered** *(as per Basin Plan s10.24: "Monitoring impact of interception activities" and Chapter 10 Part 10 (s10.44 to s10.46) "Measuring and Monitoring")*

6. **Each Water Resource Plan should ensure that growth in interception activities does not compromise the ability to achieve an environmentally sustainable level of take** *(as per Basin Plan 10.12 (1) (g): A water resource plan must account for "changes over time in the extent to which water allocations in the unit are utilised.")*

7. **Each water resource plan must not compromise groundwater dependent assets, nor connectivity between groundwater and surface water systems** *(as per Basin Plan 10.19 – 10.21 including "A water resource plan must be prepared having regard to whether it is necessary for it to include rules which ensure that, for groundwater that has a significant hydrological connection to surface water, the operation of the plan does not compromise the meeting of environmental watering requirements (for example, base flows).")*

8. **All models used to inform decisions should be up to date and accredited against standards. There should be no change to the baselines, rules and assumptions without a systematic, independent and publicly available review** *(as per Basin Plan 10.49: "A water resource plan must be based on the best available information.")*

9. **Accreditation of water resource plans should be subject to independent and publicly available review** *(as per Basin Plan 10.49: "A water resource plan must be based on the best available information.")*