



MURRUMBIDGEE SURFACE WATER RESOURCE PLAN

No net reduction in the protection of planned  
environmental water report

**Appendix C**

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## Contents

1. Introduction.....	1
2. Demonstrating no net reduction in the protection of PEW .....	1
2.1. No reduction in legal protection.....	2
2.1.1.Murrumbidgee Regulated River Water Sharing Plan .....	2
2.1.2.Murrumbidgee unregulated WSP .....	3
2.2. No reduction in the quantity of PEW .....	4
2.3. No reduction in the effectiveness of PEW .....	5
2.3.1.Changes to flow classes.....	5
2.4. No net reduction in the protection of PEW .....	5
3. Background— proposed changes to PEW rules in the Murrumbidgee regulated WSP .....	6
3.1. Proposals not to be progressed at this stage .....	6
4. Background— proposed changes to PEW rules in the Murrumbidgee unregulated WSP .....	6
4.1. Removal of alluvial groundwater sources.....	6
4.2. Changes to rules in the Adelong Creek, Tarcutta Creek and Upper Billabong water sources...	7
2.4.1.Changes to flow classes and access rules.....	7

## 5 Tables

Table 1. Legal protection of PEW under the Murrumbidgee regulated river WSP .....	2
Table 2. Legal protection of PEW under the Murrumbidgee unregulated rivers WSP .....	4

# 1. Introduction

Section 10.28 of the Murray–Darling *Basin Plan 2012* (the Basin Plan) states: ‘A water resource plan must ensure that there is no net reduction in the protection of planned environmental water from the protection provided for under state water management law immediately before the commencement of the Basin Plan’.

This is because the environmental outcomes of the Basin Plan are based on modelling that incorporates the planned environmental water (PEW) rules that existed as at 23 November 2012. Any change to PEW rules, or rules that were designed for an environmental purpose, could potentially undermine the environmental outcomes that the Basin Plan is seeking to achieve. The Basin Plan requirement (s10.28) for no net reduction in the protection of PEW ensures this doesn't occur.

However, improved information (from monitoring and system operation) and changes to water policy and governance since the establishment of these rules could provide the opportunity to improve the effectiveness of PEW and enhance environmental outcomes.

NSW has used the water resource plan (WRP) development process to review specific water sharing rules for the regulated water sources which may be refined to provide better outcomes for licence holders and/or the environment.

Proposals to change PEW rules have been developed in close consultation with the Office of Environment and Heritage (OEH) and NSW Department of Primary Industries—Fisheries consistent with water sharing plan (WSP) objectives and, where possible, using environmental water requirements (EWR) in the draft long-term watering plans (LTWPs) to ensure the best environmental outcomes.

All surface water resources in the Murrumbidgee WRP area are covered by the *Water Management Act 2000* (NSW) and either the *Water Sharing Plan for the Murrumbidgee Regulated River Water Source 2016* (the regulated river WSP) or the *Water Sharing Plan for the Murrumbidgee Unregulated Water Sources 2012* (the unregulated rivers WSP), which covers 43 unregulated surface water sources.

At the time of commencement of the Basin Plan, the first regulated river WSP (2003) was in place. Also in force was an unregulated river WSP (2012) covering all unregulated sources except for three that already had a WSP (2003), being: Adelong Creek, Tarcutta Creek and Upper Billabong. These three water sources were incorporated into the unregulated rivers WSP (2012) in 2016 by amendment order No.371. The regulated river WSP was renewed for a further 10 years with little to no change in 2016.

Except where detailed in this report, the abovementioned changes to the regulated and unregulated WSPs in 2016 and the changes proposed to be made in 2019 have been or will be minimal in nature. The changes do not diminish the protection of PEW.

There are other proposed changes to the regulated river WSP (2019) dealing with Pre-requisite Policy Measures (PPMs) and Distribution Rules for the Lowbidgee area. These concern held environmental water (HEW), not PEW, and so will not be mentioned further in this report.

## 2. Demonstrating no net reduction in the protection of PEW

In order to demonstrate there has been no net reduction in the protection of PEW, this document establishes the level of protection of PEW in place prior to the commencement of the Basin Plan in November 2012, and compares this baseline with the changes made to water sharing rules that will protect, manage or maintain PEW. These rules have been incorporated into the WRP so that the WRP will ensure no net reduction in the protection of PEW.

This report demonstrates that the changes to the water sharing plan rules meet the requirements of s10.28. To meet the requirements the report addresses:

- the legal protection of PEW, under NSW state water management law
- the estimated quantity of water protected
- effective use of the water to achieve environmental outcomes.

## 2.1. No reduction in legal protection

### 2.1.1. Murrumbidgee Regulated River Water Sharing Plan

Since the commencement of the Basin Plan in November 2012, there have been no changes to the rules of the regulated river WSP, which establish and maintain the protection and priority of PEW in the water source. These rules are found in Part 4 of the redrafted WSP (2019), Part 4 of the 2016 WSP now in force and in Part 3 of the 2003 WSP, which was in force on 23 November 2012. The intent and effect of PEW provisions are the same in each of these Murrumbidgee regulated river WSPs.

Two provisional storage volumes (PSV 1 and PSV 2) are provided with the intent to increase the size and frequency of spill events for environmental benefits. These are detailed under System Operation Rules at Division 3 of Part 10 of the redrafted WSP (2019), Division 2 of Part 6 of the current WSP (2016) and Part 12 of the 2003 WSP, which was in place at the commencement of the Basin Plan in 2012.

It is proposed to make explicit (see clause 68) that PSV 1 forfeits at the end of each water year, as does PSV 2. The crediting rules in place at the commencement of the Basin Plan and those in place now in the WSP are written in a way that effectively results in PSV 1 being forfeited at the end of each water year. Operational advice is that forfeiture has continued to happen, when required, since 2004. This change is summarised in Table 1.

**Table 1. Legal protection of PEW under the Murrumbidgee regulated river WSP**

WSP PEW Provisions	Protection under operation of pre-Basin Plan WSP	Protection under WSP and WRP
Operation of Provisional Storage Volume 1 (PSV 1)	The operation of PSV 1 is detailed at clause 62 of the 2003 WSP.	The operational rules in the 2003 and current WSPs are written in a way that effectively results in PSV 1 being forfeited at the end of each water year. Operational advice is that forfeiture has continued to happen, when required, since 2004. It is proposed to make explicit that PSV 1 forfeits at the end of each water year, as does PSV 2.

## 2.1.2. Murrumbidgee unregulated WSP

No changes have been made to Part 4 of the *Water Sharing Plan for the Murrumbidgee Unregulated River Water Sources 2012*, which establishes and maintains the protection and priority of PEW in the unregulated water sources of the Murrumbidgee WRP area. No changes have been made to Part 8, which establishes daily access rules in these water sources.

There is new wording in Division 2 of Part 6 of the redrafted unregulated rivers WSP, concerning a long-term average sustainable diversion limit, which simply refers to the Basin Plan. However, calculation of annual extraction and the long-term annual extraction limit are unchanged and there is no material effect on PEW.

The alluvial groundwater sources and all rules relating to these groundwater sources have been removed from the *Water Sharing Plan for the Murrumbidgee Unregulated River Water Sources 2012* and will be incorporated into the *Water Sharing Plan for the Murrumbidgee Alluvial Groundwater Sources 2019* as part of the remake process. There is no change to the legal protection of PEW as a result of this change.

Changes have been made to the rules for the Adelong Creek, Tarcutta Creek and Upper Billabong water sources. Minor changes relate to incorporating the water sources into the valley-wide macro WSP for the Murrumbidgee unregulated water sources. There is no change to the legal protection of PEW as a result of these changes.

Changes to flow classes in the Adelong Creek, Tarcutta Creek and Upper Billabong water sources provide simplified water sharing rules that can be clearly implemented and enforced. This has improved the management of PEW and maintained the level of protection in place before November 2012. These changes are summarised in Table 2 and described in more detail in section 4 of this document.

Table 2. Legal protection of PEW under the Murrumbidgee unregulated rivers WSP

WSP PEW provisions	Protection under operation of pre-Basin Plan WSP	Protection under WSP and WRP
<p>Changes to flow classes and access rules</p>	<p>Flow classes for the Adelong Creek, Tarcutta Creek and Upper Billabong water sources are specified at clause 17 of the 2003 WSPs, which were in place on 23 November 2012.</p> <p>Management zones with flow classes specified as a volume (ML/day) were established based on flows at end of system gauges. Rules to limit extraction and share flows under each flow class, and for each management zone, were also established.</p> <p>At the time there was an intention to install the required gauges but the significant capital investment required was never fully realised. As such, the flow classes were not able to be implemented in accordance with the rules in the WSP. The flow classes were also not specified as conditions on water access licences.</p> <p>The extraction in the water source was instead managed by the mandatory conditions which required a visible flow at the pump site before water could be taken.</p>	<p>Flow classes in the 2012 macro plan now in force and the proposed 2019 redraft are specified in both plans at clause 56.</p> <p>In Adelong Creek, the trigger flows for Very Low Flow Class and A Class are the same in the 2003, 2012 and 2019 plans, and thus provide for the same volume of PEW.</p> <p>For Tarcutta Creek and Upper Billabong, changes of a similar nature in 2016 have had the effect of maintaining or increasing PEW in these water sources.</p> <p>This reflects the operation of the pre-Basin Plan WSP and so maintains the same level of protection.</p> <p>New provisions to manage access to in river and off river pools have also been adopted, providing clarification on when access is permitted, and thereby ensuring clearer protection of PEW in these pools.</p>

## 2.2. No reduction in the quantity of PEW

At the valley scale, the annual quantity of PEW available for environmental purposes over the long term does not change. Under NSW state water management law, PEW is defined under s8 of the *NSW Water Management Act 2000* (WMA 2000). Often PEW is described as the long-term average annual volume of water outside the WSP long-term annual average extraction limit (LTAAEL). There has been no change to the LTAAELs for the two WSPs within the Murrumbidgee WRP area.

Maintaining the existing extraction limits therefore ensures there is no reduction in the overall quantity of PEW provided for in the plans. The WSP rules that maintain PEW, by limiting extraction to the LTAAEL, are reflected in this WRP (see section 5.3) to meet the requirements of s10.11 of the Basin Plan. As such, the WRP will ensure the same quantity of PEW is provided for in this Plan as that provided under the WSPs in place prior to commencement of the Basin Plan.

As detailed previously in section 2.1.1 of this report, a proposed rule to make explicit that PSV 1 forfeits at the end of each water year does not represent a reduction in the quantity of PEW.

As detailed in Table 2 and section 4.1.2 of this report, the changed flow classes in the three unregulated water sources incorporated into the valley-wide macro unregulated WSP in 2016 have had the effect of maintaining or increasing the quantity of PEW.

## 2.3. No reduction in the effectiveness of PEW

Since the commencement of the Basin Plan in November 2012, there have been no changes to the rules which govern the use of PEW in the WRP area. For the regulated river water source, these rules are found in Divisions 1, 2 and 3 of Part 10 (System operation rules) of the redrafted WSP (2019), the equivalent Divisions 1 and 2 of Part 6 of the 2016 WSP now in force and Part 3 of the 2003 WSP, which was in force on 23 November 2012. The intent and effect of PEW provisions are the same in each of these Murrumbidgee regulated river WSPs.

For the unregulated river water sources, the rules which govern the use of PEW are found in Division 2 (Flow classes and daily access rules) of Part 8 of the both the redrafted WSP (2019) and the 2012 WSP now in force, the latter of which was also in force on 23 November 2012. The intent and effect of PEW provisions are the same in each of these Murrumbidgee unregulated rivers WSPs.

The changes to WSP objectives in the Murrumbidgee WRP area will lead to a consistent expression of objectives across the NSW Basin WSPs, which will help to improve the inferential strength of data analysis, evaluation and predictive modelling. The revised objectives, strategies and performance indicators cover similar topics as they did in the pre-Basin Plan WSPs, but are now more strongly connected and provide a clearer line of sight to environmental outcomes. These objectives are listed at Part 2 of the redrafted regulated river WSP and Part 2 of the redrafted unregulated rivers WSP.

### 2.3.1. Changes to flow classes

In the Murrumbidgee unregulated river water sources, the flow classes which established extraction limits for various components of the hydrograph were never determined due to the lack of gauges. As such, the pre-Basin Plan WSPs did not operate to protect the effectiveness of the PEW at these different flow levels. As stated above, the changes made to PEW rules in the unregulated system have maintained the effectiveness of PEW provided for under the previous plans by quantifying the cease to take rules, and including the visible flow extraction rule in the other reaches. These changes clarify the rules that protect low flows.

## 2.4. No net reduction in the protection of PEW

The discussion in the previous sections has demonstrated there is no reduction in the legal protection, volumes protected or effective use of PEW under the rule changes incorporated into the WRP or made in 2016. As such, the WRP will ensure there is no net reduction in the protection of PEW provided under state water management law immediately prior to the commencement of the Basin Plan.

### 3. Background— proposed changes to PEW rules in the Murrumbidgee regulated WSP

#### 3.1. Proposals not to be progressed at this stage

Except making explicit the forfeiture of PSV 1, no changes are proposed at this stage. DoI Water, OEI and DPI Fisheries and the Murrumbidgee WRP Stakeholder Advisory Panel considered proposals as part of WRP development in 2017 and 2018. A summary of proposals concerning PEW and their current status is contained in Table 3.

**Table 3. Proposals concerning PEW in the Murrumbidgee regulated river WSP**

Proposed change concerning PEW	Status of the proposed change
<p><b>Review planned environmental water rules</b></p> <p>Review environmental water rules including transparent, translucent and environmental water allowance release rules to improve effectiveness and simplicity.</p>	<p><b>No change recommended</b></p> <p>DoI Water recommends no change to environmental water rules. Modelling and analysis by DoI Water and OEI have not yet led to acceptable options. Any change needs to be consistent with the original aims and needs to be outcomes-based, not just flow-based.</p>
<p><b>Review flow targets along the Murrumbidgee system</b></p> <p>Set flow targets along the Murrumbidgee system to reflect more natural flows and seasonal timing.</p>	<p><b>No change recommended</b></p> <p>DoI Water recommends no change. Flow targets along the Murrumbidgee will not be specified in the WSP. OEI, DPIF and DoI Water have developed indicative flow targets that sit in the Murrumbidgee Long Term Watering Plan (LTWP) and operational documents but not the WSP.</p>
<p><b>Develop rules governing the treatment of PEW during periods of water shortage and WSP suspension</b></p>	<p><b>No change recommended</b></p> <p>DoI Water will not be progressing any changes to the WSP relating to the treatment of PEW during periods of water shortage and WSP suspension. The matter is addressed as part of the NSW Extreme Events Policy (EEP) and the Incident Response Guide (IRG) for the Murrumbidgee WRPA (SW9), and will be managed using this framework.</p>

### 4. Background— proposed changes to PEW rules in the Murrumbidgee unregulated WSP

#### 4.1. Removal of alluvial groundwater sources

Changes have been made to remove the alluvial groundwater sources and all rules relating to these groundwater sources from the Murrumbidgee unregulated rivers WSP. These groundwater sources will be incorporated into the *Water Sharing Plan for the Murrumbidgee Alluvial Groundwater Sources 2019* as part of the remake process.

This change will ensure that a water resource plan for surface water will only incorporate surface water-specific water sharing plans, and water resource plans for groundwater will only incorporate groundwater-specific water sharing plans.

## 4.2. Changes to rules in the Adelong Creek, Tarcutta Creek and Upper Billabong water sources

The *Water Sharing Plan for the Adelong Creek Water Source 2003*, *Water Sharing Plan for the Tarcutta Creek Water Source 2003* and *Water Sharing Plan for the Upper Billabong Water Source 2003* were enacted in 2004, as part of the first round of WSPs. These first round plans were due for replacement in 2014; however, they were extended and replaced in 2016. All three water sources are located within the Murrumbidgee unregulated WSP area and were incorporated into the valley-wide unregulated macro WSP as part of the replacement process. The boundaries of these three water sources did not change at replacement.

As a result, the broader provisions of the macro plan were adopted for the Adelong Creek, Tarcutta Creek and Upper Billabong water sources. These include provisions relating to account management, planned environmental water and compliance with the LTAAEL. During this process, flow classes were simplified to ensure they could be implemented.

### 2.4.1. Changes to flow classes and access rules

When the three unregulated water sources with existing 2003 WSPs were incorporated into the valley-wide macro plan for all unregulated water sources in 2016, there were no changes to reference gauges and minimal change to management zones. In Upper Billabong, the Billabong Creek Management Zone and the Billabong Headwater Management Zone were combined into one zone. In Adelong Creek, there remained one management zone and in Tarcutta Creek the three management zones of Barambola, Westbrook and Umbango remained unchanged.

Flow classes were changed in that Class B and Class C flows were removed, resulting in a nominal increase in protection of PEW. For Very Low Flow Class flows and A Class flows, daily flow volumes were the same in Adelong Creek, the same or similar in the Tarcutta Creek management zones, and higher in the Upper Billabong management zones – meaning an increase in PEW.