

Upper Ovens River Water Supply Protection Area Water Management Plan

Annual Report

For year ending 30 June 2020

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Excellence



Honesty



Accountability



Courage



Caring

Document History and Distribution

Versions

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Foreword

Goulburn-Murray Water (GMW) is pleased to present the annual report for the *Upper Ovens River Water Supply Protection Area Water Management Plan* (the Plan) for the 2019/20 water year.

GMW is responsible for the implementation, administration and enforcement of the Plan which was approved by the Minister administering the *Water Act 1989* on 11 January 2012.

This report has been prepared in accordance with section 32C of the *Water Act 1989*.

This report provides an overview of the groundwater and surface water management activities administered under the Plan, during the 2019/20 water year.

A copy of this report is available for inspection at the Tatura office of GMW, or can be downloaded from the GMW website.



Charmaine Quick

MANAGING DIRECTOR

Date: 25/09/2020

Executive summary

The *Upper Ovens River Water Supply Protection Area Water Management Plan* (the Plan) was approved on 11 January 2012 by the Minister for Water.

The 2019/20 water year marks the eighth year of operation of the Plan.

The total of groundwater and surface water use in the Upper Ovens River Water Supply Protection Area (the WSPA) during 2019/20 was 3,566.4 ML, or 27 per cent of the total licence entitlement volume.

Low spring rainfall meant the flow rates in the Ovens River at Myrtleford fell below the restriction trigger level, resulting in the introduction of restrictions on the take of water from a number of streams in the WSPA. However, total rainfall was above average, with most rainfall occurring towards the end of the water year.

Groundwater monitoring data indicate that groundwater pumping in 2019/20 did not result in observable impact on aquifer-wide groundwater levels.

The total volume of licence transfers has continued to be low, reflecting the limited demand for transfer associated with low volume of use.

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1 Introduction

1.1 Purpose

This report has been prepared to meet the requirements of the *Upper Ovens River Water Supply Protection Area Water Management Plan* (DSE, 2012) (the Plan) and section 32C of the *Water Act 1989* (the Act).

The report provides an overview of water resource management activities undertaken in accordance with the Plan during the 2019/20 water year (1 July 2019 to 30 June 2020).

1.2 Water Supply Protection Area

The Upper Ovens River Water Supply Protection Area (the WSPA), declared in October 2008, covers an area of approximately 1,580 square kilometres of the Ovens River catchment, upstream of its confluence with the Buffalo River, near Myrtleford in north-east Victoria.

The WSPA comprises 2 management zones:

- **Zone 1** covers licences to take water directly from waterways, or indirectly via bores screened in unconsolidated sedimentary aquifers that have a strong connection with waterways. These resources are managed as a connected system and comprise 2 trading zones: Groundwater – 1085 and Surface Water – 181.
- **Zone 2** covers licences to take groundwater from the underlying fractured bedrock aquifer system. This management zone comprises 1 trading zone: Groundwater – 1086. This resource is treated as a separate system to the resources managed under Zone 1.

The management zones are illustrated conceptually in Figure 1. The physical location of the WSPA is shown in Figure 2.

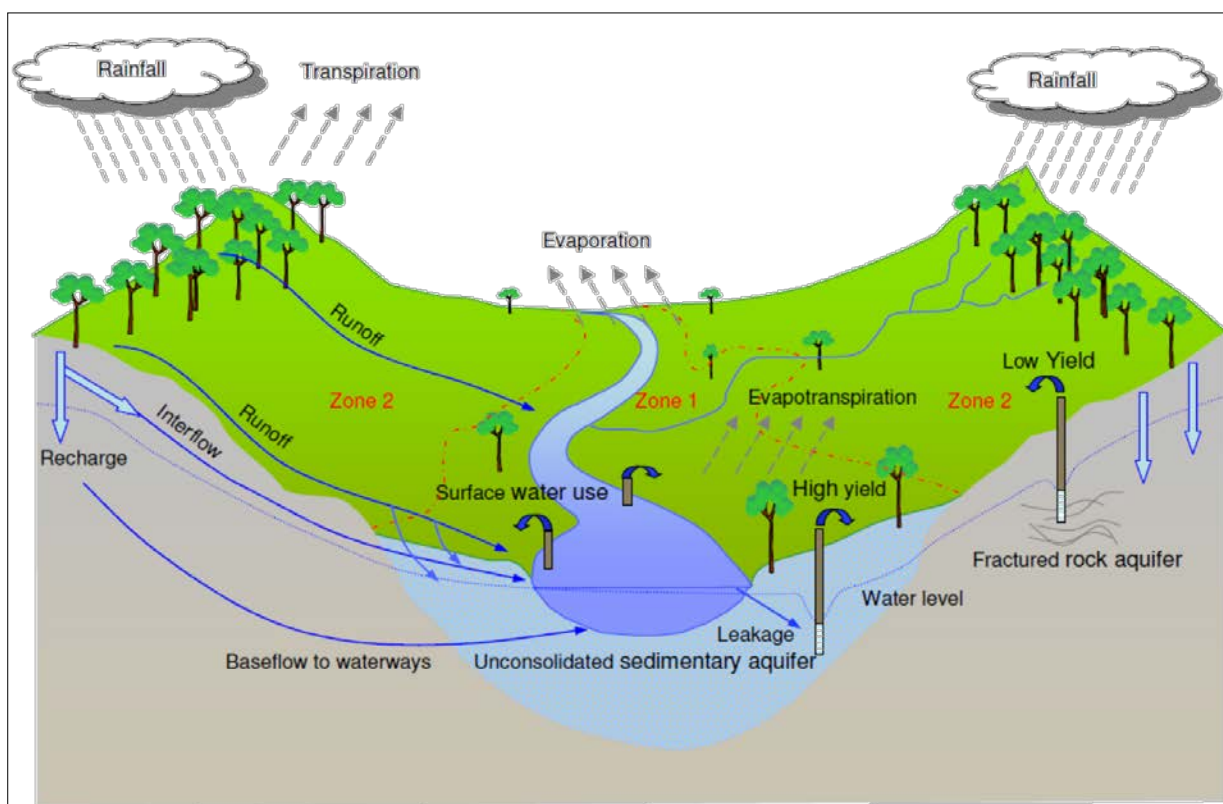


Figure 1 Management zones in the Upper Ovens River WSPA

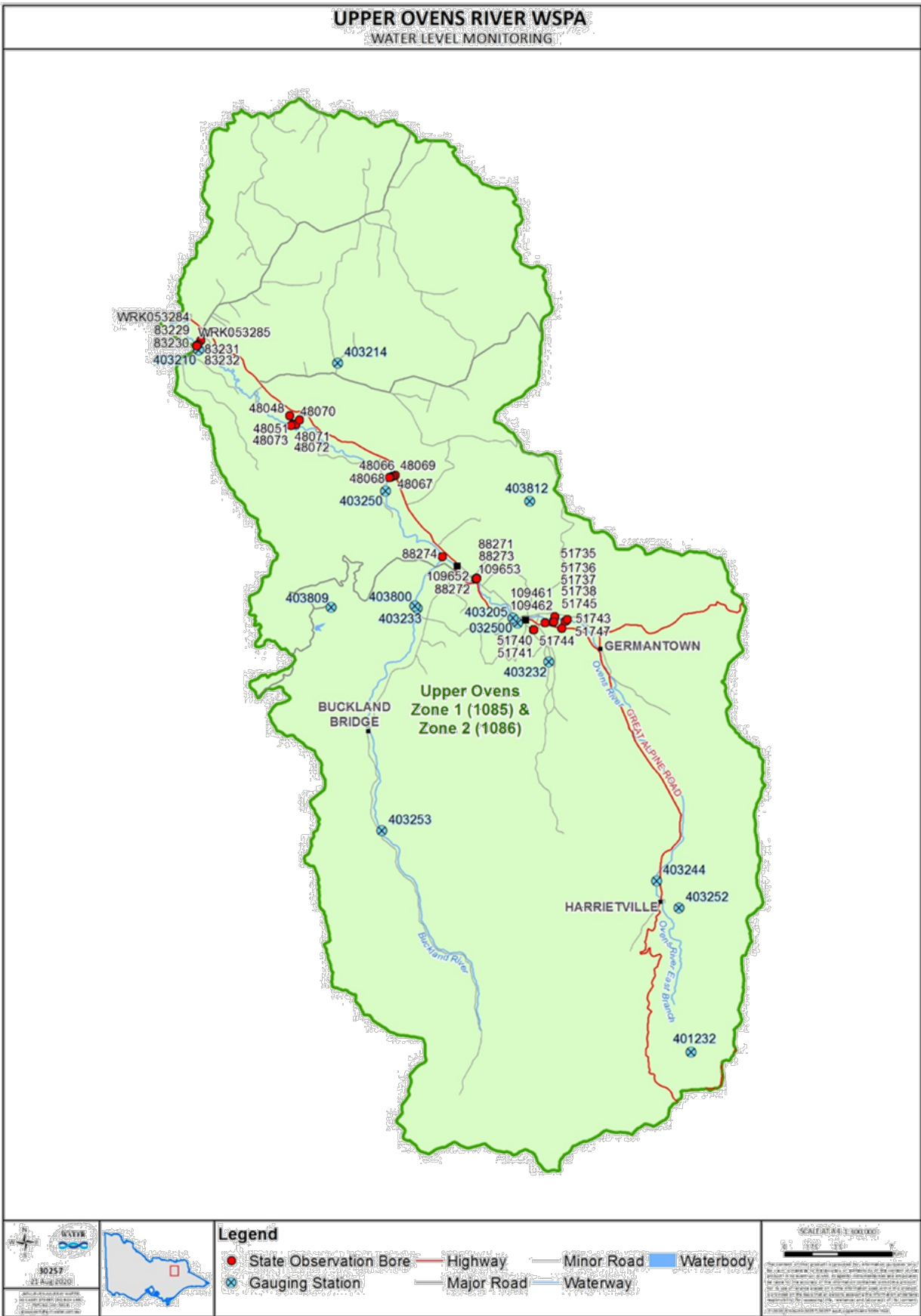


Figure 2 Upper Ovens River Water Supply Protection Area

1.3 Water Management Plan

The Plan, which applies to the management of water resources within the area of the WSPA, was approved on 11 January 2012 by the Minister for Water (the Minister), in accordance with section 32A(6) of the Act.

The objective of the Plan is to make sure that water resources within the WSPA are managed in an equitable manner and to ensure the long-term sustainability of those resources.

Goulburn-Murray Water (GMW) is responsible for the implementation, administration and enforcement of the Plan. A summary of GMW's activities in accordance with Plan prescriptions is presented in Appendix A.

A copy of the Plan can be downloaded from GMW's website: www.gmwater.com.au.

2 Water Management

2.1 Licence entitlement volume

The total licence entitlement volume in the WSPA was 13,425.4 megalitres per year (ML/yr) at 30 June 2020. The number of licences in each management zone is summarised in Table 1, along with a breakdown of the total licence entitlement volume. Licence entitlement volume is broken down further into named areas set in Prescription 22 (Appendix D).

Table 1 Licence entitlement volume in the Upper Ovens River WSPA in 2019/20

Management zone	Licences	Licensed bores	Licence entitlement volume (ML/yr)
Zone 1 Surface Water – 181	504	<i>Not applicable</i>	9,810.0
Zone 1 Groundwater – 1085	68	83	2,543.2
Zone 2 Groundwater – 1086	33	34	1,072.2
Total	605	117	13,425.4

Note: Data extracted from the Victorian Water Register 1 July 2020.

There has been a 16 ML/yr decrease in licence entitlement volume compared to 2018/19 (13,441.4 ML/yr) as a result of the following:

- Zone 1 Surface Water had a reduction of 12 ML/yr resulting from 6 domestic and stock licences being surrendered (2 ML/yr each); and
- Zone 2 Groundwater had a reduction of 4 ML/yr resulting from licence cancellation.

2.2 Restrictions on taking water within Zone 1

The water sharing regime prescribed by the Plan commenced on 1 July 2012 and comprises 5 stages of restrictions in which the share of licence entitlement volume available for take and use is progressively reduced with each stage (Table 2). The water sharing regime applies to licence holders in Management Zone 1 who normally take water during summer months and is activated when flow in the Ovens River at the Myrtleford gauging station falls below specified trigger levels.

Table 2 Restriction stages that apply to licences in Zone 1

Restriction stage	Trigger flow: Ovens River at Myrtleford (ML/d)	Description	Share of licence entitlement volume available
Stage 1	100	Water use rostered	100%
Stage 2	60	Volumetric limitations imposed	75%
Stage 3	30	Volumetric limitations imposed	50%
Stage 4	10	Volumetric limitations imposed	25%
Stage 5	1	No pumping permitted	0%

Flow rates in the Ovens River at Myrtleford fell below the restriction stage 1 trigger levels in late 2019, and as a result of below-average spring rainfall, the Ovens River reached Stage 1 restriction by early January 2020.

Flows recorded at the Myrtleford gauging station during the period of lowest flows of the 2019/20 water year (January to March 2020) are shown in Figure 3.

Roberts Creek, Barwidgee Creek, Myrtle Creek, Happy Valley Creek, Havilah Creek and Jackson Creek all reached Stage 5 restriction during the 2019/20 water use year. Stage 5 restrictions are implemented when flows decline to below 2 megalitres per day (ML/d) on these tributaries in accordance with Prescription 4. Restrictions for these streams were lifted in early May 2020.

Rostered restrictions were implemented on remaining tributaries in line with the trigger flows in the Ovens River at Myrtleford as per the arrangements set out in the Plan. Stage 1 restrictions were applied to all Zone 1 licences, with Stage 5 implemented on the smaller tributaries as described above.

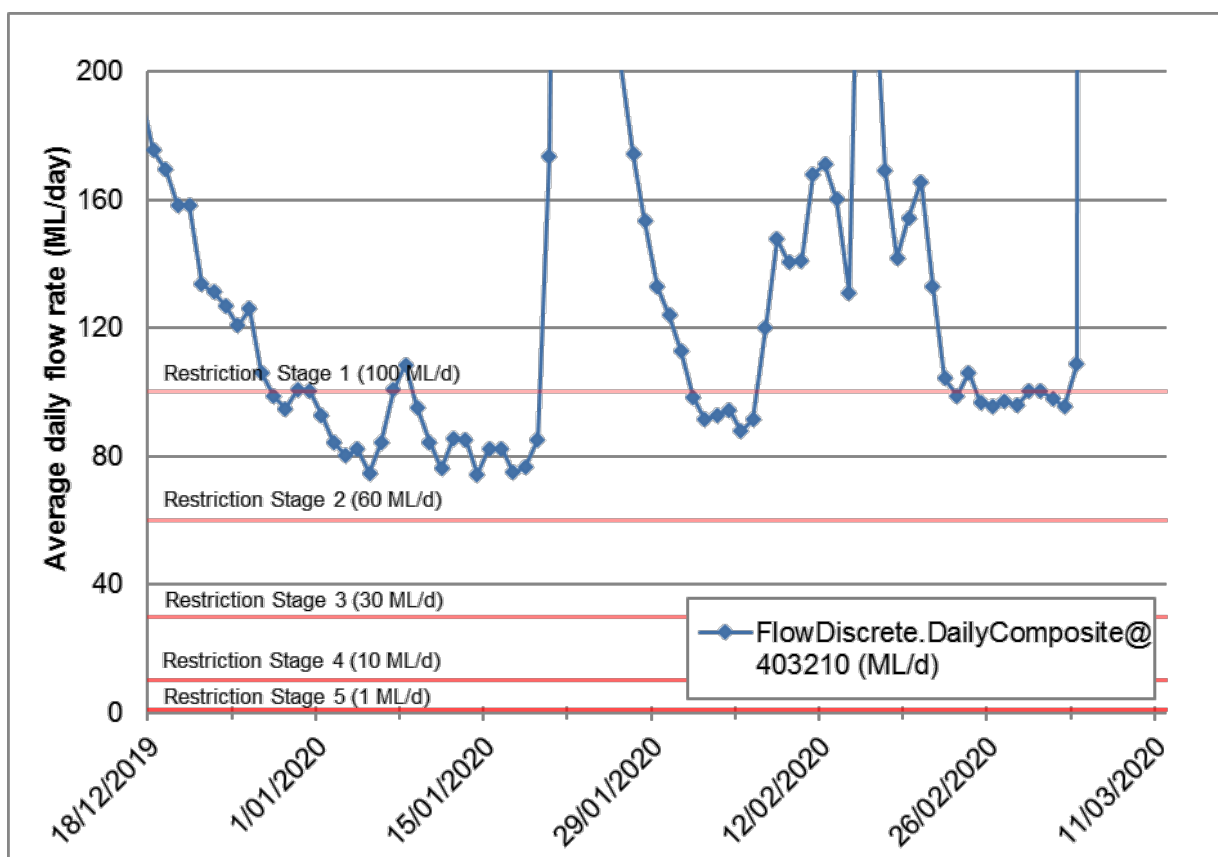


Figure 3 Average daily flows in the Ovens River at Myrtleford, December 2019 to March 2020

2.3 Water use

As part of the implementation of the Plan, all licensed operational groundwater bores with a licence entitlement volume greater than 10 ML/yr were required to be metered by January 2017. This target has been met and now brings metering of all licensed groundwater users in line with licensed surface water users. A majority of licensed surface water users in the WSPA are metered; only historical licences with licence entitlement volume of 9 ML/yr or less have not been metered (consistent with Victoria’s Metering Policy).

The total recorded surface water and groundwater use in 2019/20 was 3,566.4 ML (Table 3) representing 27 per cent of licence entitlement volume. This is a marginal decrease from 2018/19, when total recorded use of 3,632.3 ML was also 27 per cent of licence entitlement volume.

Note that recorded use includes metered and deemed use. Deeming occurs on operational bores with a licence entitlement volume of 9 ML/yr or less. Domestic and stock licences, as well as registered farm dams, are not metered which means use in the WSPA may be higher than the recorded use shown below for Zone 1 Surface Water.

Table 3 Recorded use by Upper Ovens River WSPA management zone in 2019/20

Management zone	Licence entitlement volume (ML/yr)	Recorded use (ML)	Proportion of total licence entitlement volume used
Zone 1 Surface Water – 181	9,810.0	2693.5	27%
Zone 1 Groundwater – 1085	2532.4	633.2	25%
Zone 2 Groundwater – 1086	1072.2	239.7	22%
Total	13,425.4	3,566.4	27%

The pattern of groundwater and surface water use in the WSPA is influenced by climate and rainfall within the catchment. Mean rainfall at the Eurobin station in the upper Ovens River catchment for all years recorded is 1,082 millimetres per year (mm/yr); rainfall totals for water years can be seen in Figure 5. Rainfall was above average in 2019/20 with 1,157 mm/yr recorded (Figure 4). However most of this rainfall occurred towards the end of the water year in March, April and May after the irrigation season, with the 2019 spring months being notably.

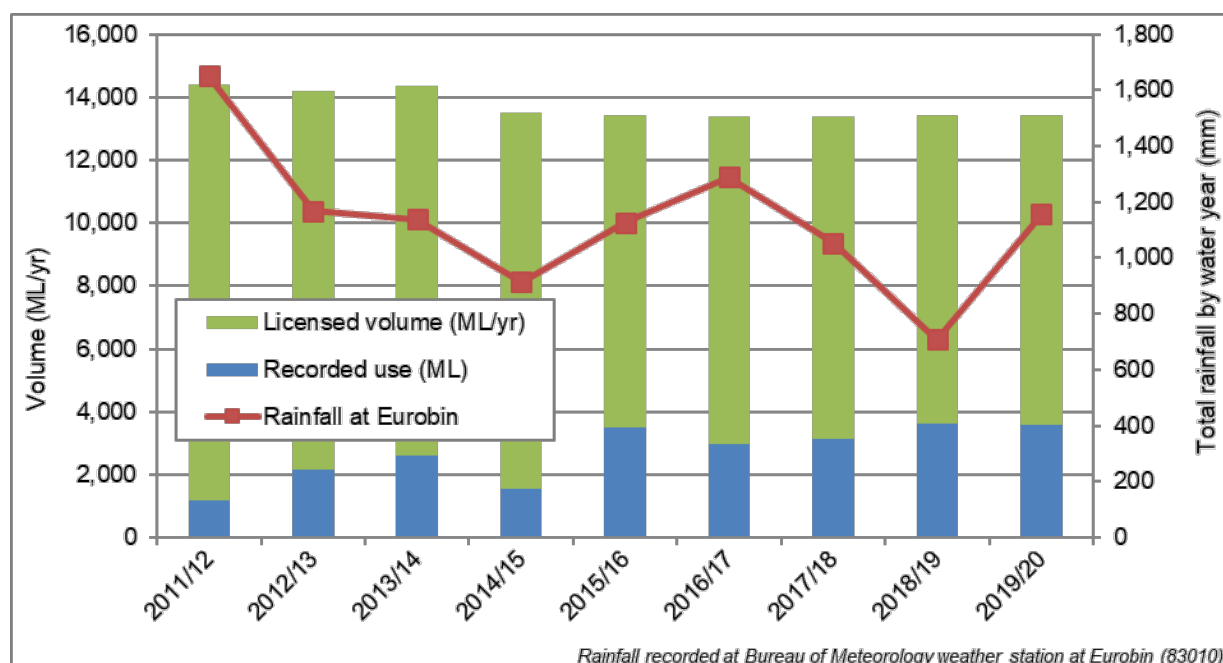


Figure 4 Total licence entitlement volume, allocation, recorded use and annual rainfall in the Upper Ovens River WSPA

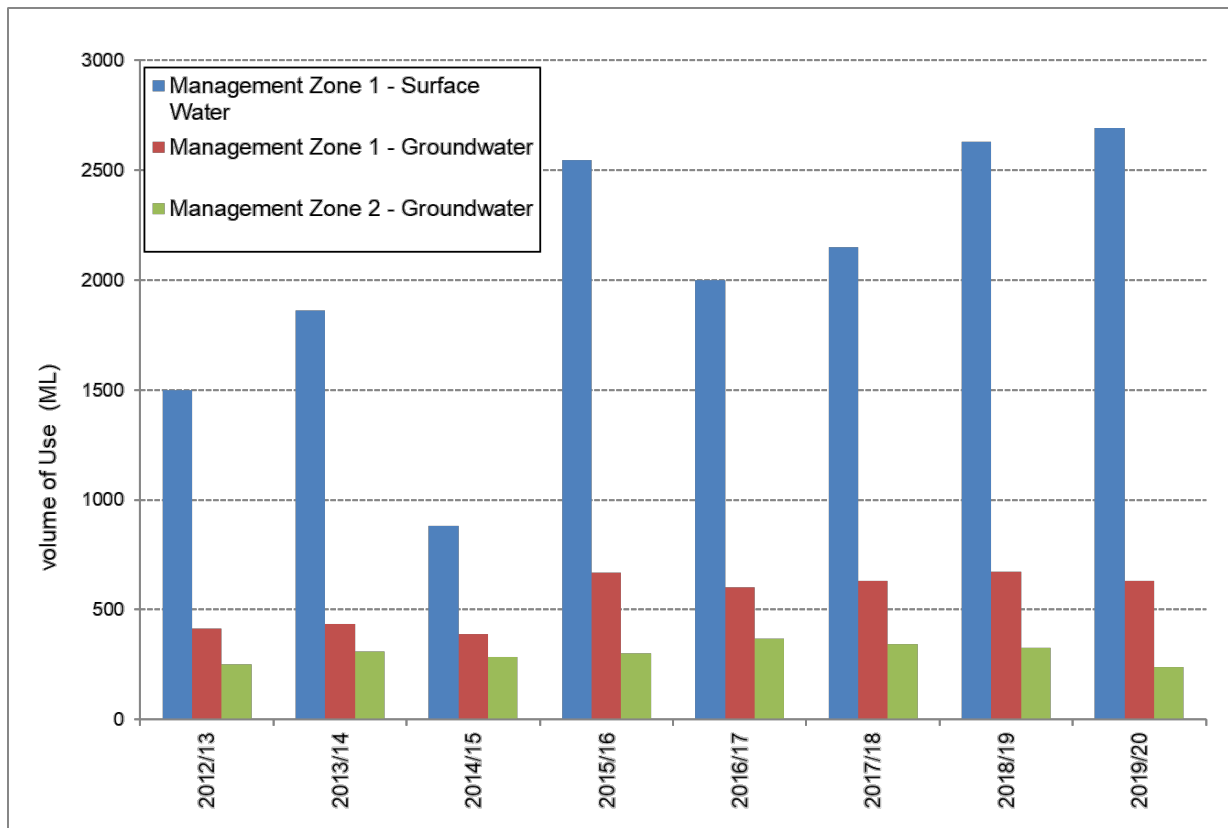


Figure 5 Recorded use by management zone in the Upper Ovens WSPA

2.4 Licence transfers

Groundwater and surface water licence transfer activity during 2019/20 is summarised in Table 4. Temporary and permanent transfers during the 2019/20 water year were higher than in 2018/19.

Table 4 Licence transfers in the Upper Ovens WSPA in 2019/20

Management zone	Temporary transfers				Permanent transfers			
	Transfer from		Transfer to		Transfer from		Transfer to	
	No. of transfers	Volume (ML)	No. of transfers	Volume (ML)	No. of transfers	Volume (ML/yr)	No. of transfers	Volume (ML/yr)
Zone 1 Surface Water – 181	8	479.0	10	596.2	2	13.6	1 ²	11.6
Zone 1 Groundwater – 1085	2	66.0	1	24.0	1	10.0	1	10.0
Zone 2 Groundwater – 1086	2	155.0	1	29.0	1	12.0	1	12.0
Total	12	700.0	12	649.2¹	4	35.6	3[*]	33.6[#]

Note: Data extracted from the Victorian Water Register on 1 July 2020.

^{*} Final licensed volume can differ from transferred volume due to loss of 20% of volume on downstream trades.

[#] There was 1 2 ML permanent transfer from Zone 1 Surface Water – 181 to King and Lower Ovens Unregulated Zone 180.

2.5 Metering

There are 84 meters within the WSPA, with all meters to be read at least twice a year. For the 2019/20 season the meters were only read once at the end of the season, as the planned read in January/February were impacted by bushfires in the north east. The condition of meters is noted when readings are taken in January and June of each year. A summary of the meter-related activities is provided in Table 5. The 1 maintenance activity relates to preventative maintenance on the meter.

Table 5 Metering activity in the Upper Ovens River WSPA

Metering activity	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
New meters installed	7	11	2	0	0	0
Meters relaced	14	5	2	0	0	0
Meters requiring maintenance	2	14	12	2	2	1

2.6 Licence compliance

There were no prosecutions or convictions relating to groundwater or surface water matters in the WSPA during the 2019/20 water year.

There were 3 identified instances of alleged non-compliance with licence volume of groundwater and surface water in the WSPA during the 2019/20 water year. These were identified by GMW as a result of meter reading events; are being investigated; and relevant actions will be taken in accordance with GMW's Risk-Based Compliance and Enforcement Framework.

2.7 Domestic and stock bore construction

Domestic and stock groundwater use is not required to be licensed, as it is a statutory right under section 8 of the Act and it not subject to volumetric constraint or accounting.

The installation of a bore for domestic and stock use requires a bore construction licence. Upon completion of a bore, a bore completion report is required to be submitted to GMW; details from this report are recorded in the Water Measurement Information System.

During the 2019/20 water year in the WSPA, 5 domestic and stock bore construction licences were issued by GMW and the Victorian Water Register (combined). 2 bore completion reports were submitted to GMW from the driller.

3 Monitoring Program

3.1 Groundwater levels

Groundwater monitoring data for the WSPA demonstrates a strong seasonal response to variations in climate. Seasonal groundwater drawdown and recovery levels (Appendix B) have been relatively similar over the past 7 years. This trend was similar in both the unconsolidated sedimentary aquifer and fractured bedrock aquifer. The groundwater monitoring data indicates that groundwater pumping in 2019/20 did not result in observable impact on aquifer-wide groundwater levels. The lowest recorded drawdown levels were seen in the bedrock aquifer at Myrtleford; however, without a record of levels in this aquifer prior to 2011, it is unknown if this is within the expected range following a period of below average rainfall.

3.2 Surface water flows

The surface water data from the Ovens River gauging station at Myrtleford (Figure 6) show that flows were generally consistent with a winter rainfall-dominated climate characterised by low summer stream flows and high winter stream flow patterns. Flows were responsive to good rainfall events in July and August 2019. However, a dryer than average spring meant flows dropped to less than 100 ML/d until significant rainfall events occurred in March, April and May 2020. The cumulative rainfall data for 2019/20 are shown in Figure 6 where rainfall events can be seen in comparison to streamflow.

The location of monitoring bores and surface water gauges are shown in Figure 1.

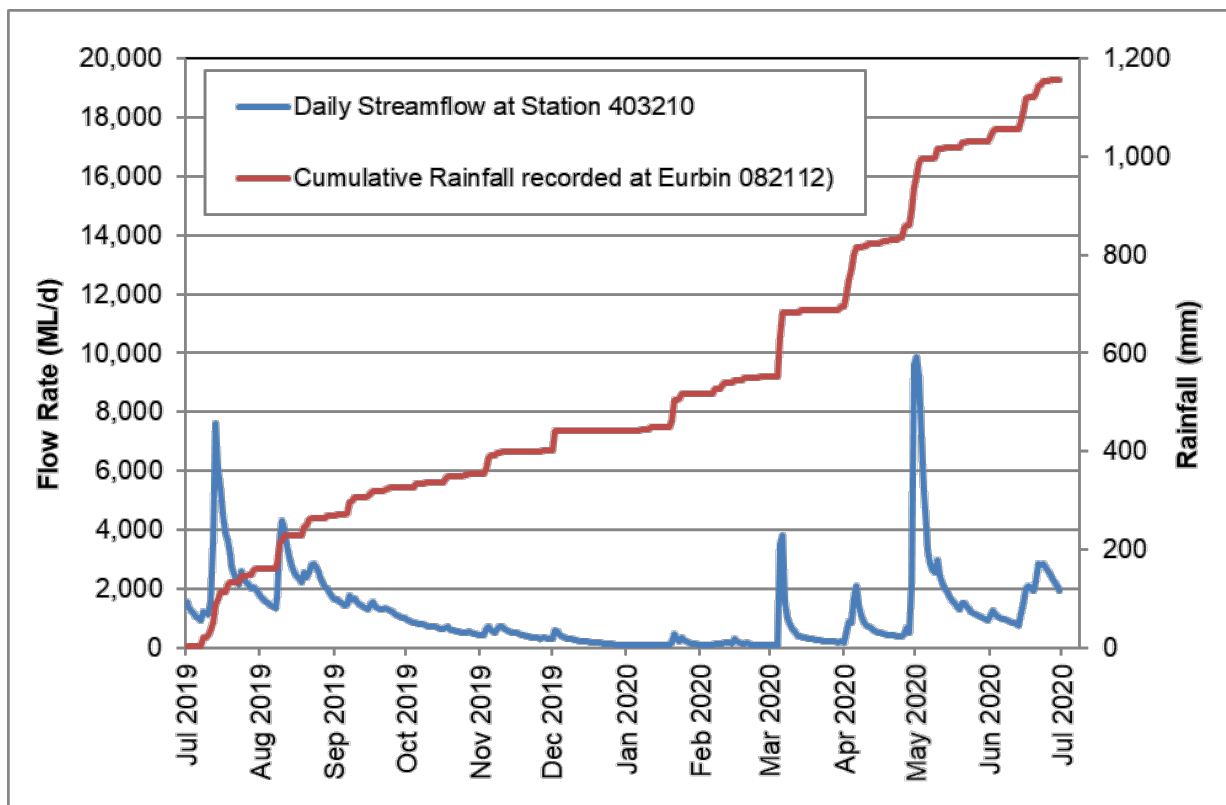


Figure 6 Rainfall and streamflow monitoring in the Upper Ovens River WSPA (DELWP, 2020)

4 References

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http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=136&p_display_type=dailyDataFile&p_startYear=2018&p_c=-1378248122&p_stn_num=083010

Victorian Department of Environment, Land, Water and Planning (DELWP), 2020. *Water Measurement Information System*. Streamflow data for station number 403210 retrieved in August 2020 from:

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Victorian Department of Sustainability and Environment, 2012. *Upper Ovens River Water Supply Protection Area Water Management Plan*. Department of Sustainability and Environment, Melbourne.

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Appendix A – Assessment of activities against Plan prescriptions

Management Zones

Prescription	Activity	Compliant
1. Prescriptions that apply to the taking of groundwater in Management Zone 1 apply to the taking of groundwater from all bores in the Protection Area unless the bore is only capable of extracting groundwater from the fractured rock aquifer.	All groundwater licences have been identified as either being located in Management Zone 1 or 2.	Yes

Prescriptions on Taking water in Management Zone 1

Prescription	Activity	Compliant
2. Prescriptions 3, 4, 5, 6 and 7 apply to the taking of surface water or groundwater under an all-year licence in Management Zone 1 while a Restriction Stage is in effect unless – (a) the licence is for domestic and stock use; or (b) the licence is subject to a condition that a portion of the water taken and used is to be returned to the water system; or (c) the special transitional arrangements in Prescriptions 12 to 16 apply	Licence holders identified in Prescription 2 were subject to restrictions during the 2019/20 water year. Refer to Appendix E for commencement and end dates for water sharing regimes.	Yes
3. On or after 1 July 2012, the Corporation subject to its discretion in Prescription 9 must declare the specified Restriction Stage if satisfied that the flow rate at stream gauge no.403210 at Myrtleford (the compliance point) will shortly be equal to or less than the corresponding specified flow rate. Refer to table within Plan.	The Ovens River and tributaries were subject to Restrictions during the 2019/20 water year. Refer to Appendix E for commencement and end dates for water sharing regimes.	Yes
4. On or after 1 July 2012, the Corporation must declare Restriction Stage 5 in respect to each tributary if satisfied that the flow rate at the compliance point will shortly be equal to or less than 2 ML/d. Refer to table within Plan.	Restriction Stage 5 was declared for Roberts Creek (January 2019), Barwidgee Creek, Myrtle Creek, Happy Valley Creek, Havilah creek and Jackson Creek (January 2020) in line with Plan requirements.	Yes
5. During a Restriction Stage, a licence holder is authorised to take water only at the times and at the rates specified by the Corporation.	Licence holders were subject to Stage 2 and Stage 3 restrictions during the 2019/20 water year.	Yes
6. During Restriction Stage 2, 3, or 4 a licence holder is authorised to take only the corresponding percentage share of entitlement specified in Column 2 of Prescription 3.	Stage 2 Restrictions were implemented for Buckland River, Two Mile Creek, and Ovens River whilst Stage 3 Restrictions were implemented for Buffalo Creek and Snowy Creek.	Yes

Prescription	Activity	Compliant
7. If a Restriction Stage 5 is declared – (a) under Prescription 3, a licence holder must not take any water during the Restriction Stage; or (b) under Prescription 4, in respect of a tributary, a licence holder must not take any water from that tributary during the Restriction Stage.	Restriction Stage 5 was implemented during the 2019/20 water year for Roberts Creek, Barwidgee Creek & Myrtle Creek, Happy Valley Creek, Havilah Creek and Jackson Creek in line with Plan requirements. No compliance issues were recorded.	Yes
8. Subject to its discretion in Prescription 9, the Corporation must declare a Restriction Stage is lifted, if satisfied that the flow rate at the compliance point is above the corresponding flow rate and likely to remain so.	The Stage 5 Restrictions on Roberts Creek, Barwidgee Creek, Myrtle Creek, Happy Valley Creek, Havilah creek and Jackson Creek were lifted in May 2020.	Yes
9. The Corporation may decide not to declare a Restriction Stage 2, 3 or 4 or declare a Restriction Stage 2, 3, or 4 is lifted if of the opinion that the Restriction Stage or any lifting of the Restriction Stage is likely to be in place for less than 10 days.	Stage 4 restrictions were not implemented during the 2019/20 water year.	Yes
10. The Corporation must give notice to each affected licence holder of – (a) the declaration of a Restriction Stage and details of– (i) the times and rates at which water can be taken during the Restriction Stage; (ii) if relevant, the licence holder’s percentage share of entitlement for the Restriction Stage; (iii) the date on which the declaration takes effect; and (b) the declaration that a Restriction Stage has been lifted.	The Stage 5 restrictions on Roberts Creek, Barwidgee Creek, Myrtle Creek, Happy Valley Creek, Havilah Creek and Jackson Creek was implemented during the 2019/20 water year, in line with the Plan requirements.	Yes
11. The Corporation must display on the Corporation’s website an explanation of the methodology used to calculate the percentage share of entitlement for all affected licence holders.	The methodology used to calculate percentage share of licence entitlement volume is available on the GMW website.	Yes

Transitional Arrangements for Zone 1 Groundwater

Prescription	Activity	Compliant
12. As provided in Prescription 2(c), Prescriptions 13 to 16 apply to the percentage share of entitlement the holder of a groundwater licence in Management Zone 1 is authorised to take while Restriction Stage 4 or 5 declared by the Corporation under Prescription 3 is in effect.	Stage 4 Restrictions were not imposed and transitional arrangements were not implemented	Yes

Prescription	Activity	Compliant
<p>13. The holder of a groundwater licence in Management Zone 1 is authorised to take only the percentage share of entitlement specified in Prescription 3 that corresponds to –</p> <p>(a) Restriction Stage 3, if Restriction Stage 4 or 5 is declared between 1 July 2012 and 30 June 2014, inclusive; or</p> <p>(b) Restriction Stage 4, if Restriction Stage 5 is declared between 1 July 2014 and 30 June 2015, inclusive,</p>	Not applicable for 2019/20	Yes
<p>14. The holder of a groundwater licence in Management Zone 1 who uses water to irrigate an approved permanent planting is authorised to take only the percentage share of entitlement specified in Column 2 of the table in Prescription 3 that corresponds to –</p> <p>(a) Restriction Stage 3, if Restriction Stage 4 or 5 is declared between 1 July 2012 and 30 June 2019, inclusive; or</p> <p>(b) Restriction Stage 4, if Restriction Stage 5 is declared 1 July 2019 and 30 June 2020, inclusive.</p>	<p>(a) Not applicable for 2019/20</p> <p>(b) Stage 4 Restrictions were not declared in the 2019/20 water year.</p>	Yes
<p>15. If the holder of a groundwater licence in Management Zone 1 irrigates land used for an approved permanent planting and land that is not used for an approved permanent planting, Prescription 14 only applies in respect of water taken to irrigate the land that is used for the approved permanent planting.</p>	A permanent planting and applicable land register has been produced by GMW in order to meet Prescriptions 14, 15, 16 and 17.	Yes
<p>16. If a groundwater licence is transferred after the Plan is approved Prescriptions 13 and 14 do not apply in respect of water taken under a licence resulting from that transfer.</p>	No licence transferred has maintained transitional arrangement.	Yes
<p>17. For the purposes of Prescription 14 and 15 land used for an approved permanent planting is –</p> <p>(a) land used prior to 30 June 2010 –</p> <p>(i) for growing trees producing fruit or nuts, grape vines, tea, hops, kiwifruit vines and berries (other than those which can be planted and be productive within a year); or</p> <p>(ii) for growing plants that take 3 or more years to re-establish; or</p> <p>(iii) as a green or a tee of a golf course,</p> <p>provided the Corporation –</p> <p>(b) received written notice from the licence holder within 12 months from the date the Plan is approved advising that the licence holder has used the land since 30 June 2010 for the purposes specified in paragraph (a); and</p> <p>(c) is satisfied that the criteria in paragraph (a) are met.</p>	A permanent planting and applicable land register has been produced by GMW in order to meet Prescriptions 14, 15, 16 and 17.	Yes

Restrictions and prohibitions on issuing take and use licences

Prescription	Activity	Compliant
<p>18. The Corporation must not issue a new licence unless the new licence relates to –</p> <ul style="list-style-type: none"> (a) the surrender of a licence under section 61 of the Act for the purposes of transferring a licence either within or into the Protection Area; or (b) the cancellation of a water share under section 33ABA of the Act; or (c) the surrender of a registration licence under section 51A of the Act, or (d) the surrender of a licence under section 61 of the Act for the purposes of consolidating 2 or more licences, dividing a licence or changing the conditions of a licence; or (e) the use of groundwater or surface water in a dairy and the issue of the licence is in accordance with any State-wide policy approved by the Minister; or (f) an administrative oversight or error or other anomaly. 	No new licences were issued in 2019/20.	Yes
<p>19. The Corporation must not issue a licence in the circumstances specified in Prescription 18 (a), (b), (c) and (d) if the licence volume exceeds the licence volume of the licence being surrendered or the maximum volume of the water share being cancelled.</p>	No new licences were issued in 2019/20.	Yes
<p>20. The Corporation must not issue an all-year licence in any of the circumstances specified in Prescription 18 if to do would result in the volume of all-year licences in Management Zone 1 exceeding 14,546 ML/yr.</p>	No new licence entitlement volumes were issued; all new take and use licences were issued following transfer of licence entitlement volume.	Yes
<p>21. The Corporation must not issue an licence in any of the circumstances specified in Prescription 18 if to do would result in the volume of all licences in Protection Area exceeding 69,995 ML/yr.</p>	The licence entitlement volume does not exceed the specified limit.	Yes
<p>22. The Corporation must not issue a licence in the circumstances specified in Prescription 18 (a) and (b) if to do would result in the volume of licences authorised to take water in Zone 1 between 1 July and 31 October or from Zone 2 in the area named in Plan exceeding the corresponding volume specified for that area or for any downstream area.</p>	The licence entitlement volume does not exceed the specified limits.	Yes
<p>23. For the purposes of Prescription 22 each area named in the table is the area as described in the Plan (Pg. 42).</p>	Each area is named according to the Plan.	Yes

Prescription	Activity	Compliant
<p>24. For the purposes of Prescription 22 the current volume of licences authorised to take water in Zone 1 between 1 July and 31 October or Zone 2 shall be determined by summing the following proportion of the licence volumes –</p> <ul style="list-style-type: none"> (a) 100% for a Winter-take licence; (b) 100% for a Zone 2 all-year groundwater licence; (c) 10% for an all-year licence to take water for Irrigation in Zone 1 (d) 25% for an all-year licence to take water for any other use in Zone 1 (e) 145% for a registration licence in Zone 1 	<p>Refer to Appendix C.</p> <p>The current volume authorised to be taken between 1 July and 31 October is below the cap for each area reference. This has also been the case since the implementation of the Plan in 2012.</p>	<p>Yes</p>
<p>25. For each named area in the Protection Area the Corporation must publish in the annual report the total number and volume for the following licence types as at 30 June –</p> <ul style="list-style-type: none"> (a) all licences; (b) licences in Zone 1; (c) all-year groundwater licences in Zone 1 (d) all-year surface water licences in Zone 1(exclusive of registration licences) (e) registration licences in Zone 1 (f) winter-take licences in Zone 1 (g) groundwater licences in Zone 2; 	<p>Refer to Appendix D.</p> <p>It is recognised that more dams could be found under future compliance investigations.</p> <p>Unregulated data in Victorian Water Register is still yet to be reviewed to ensure each licence has accurate location information along with a SDL code, stream code and the correct trading zone. This was identified by GMW through the 2017/18 review as an issue and possible limitation to accurate ongoing reporting of licence entitlement volume within the WSPA, in particular to each named area as required under the Plan.</p> <p>Currently groundwater licences are not assigned a SDL code which is required to sum the total number and volume of licences per named area in the Plan. To this point the assigned of bores to named areas has been completed manually.</p>	<p>Yes</p>

Restrictions and Prohibitions on Issuing Works Licences

Prescription	Activity	Compliant
26. The Corporation must not approve an application for a licence under section 67 of the Act to construct a private dam on a waterway unless the applicant has adhered to all legislative requirements and carried out an environmental impacts study and the licence contains appropriate conditions, consistent with the Policies for Managing Take and Use Licences and Policies for Managing Works Licences, to ensure minimal environmental impacts.	All relevant applications complied with this Prescription.	Yes

Transfers between Management Zone 1 and 2

Prescription	Activity	Compliant
27. Other than as provided in Prescriptions 28 and 31 of this Plan, the Corporation must refuse an application for the transfer of a licence within Management Zone 1 that would result in water being used on a different property that is – (a) downstream of the property on which it was previously authorised to be used unless the licence volume of the licence issued to the transferee is only 80 per cent of the licence volume of the licence to be transferred; or (b) upstream of the property on which it was previously authorised to be used, unless the licence issued to the transferee is a winter-take licence.	All licence transfers complied with this Prescription.	Yes
28. The Corporation must refuse an application for the transfer of a licence within Management Zone 1 that would result in a winter-take licence becoming an all-year licence.	All transfers complied with this Prescription.	Yes
29. The Corporation may approve an application for the transfer of a licence from Management Zone 1 to Management Zone 2 without any change to the licence volume of the licence being transferred.	All transfers complied with this Prescription.	Yes
30. The Corporation must refuse an application for the transfer of a licence from Management Zone 2 to Management Zone 1 unless the transfer results in the issue of a winter-take licence.	No transfer of an annual licence occurred from Management Zone 2 to Management Zone 1.	Yes

Domestic and Stock Transfers

Prescription	Activity	Compliant
31. The Corporation may approve an application to transfer a surface water licence that results in the issue of an all-year licence, provided that the licence is for domestic and stock use only and the licence volume is no greater than 2 ML.	All transfers complied with this Prescription.	Yes

Licence Transfers into the Protection Area

Prescription	Activity	Compliant
32. The Corporation may approve an application to transfer a licence or water share into Management Zone 2.	All transfers complied with this Prescription.	Yes
33. The Corporation must not approve an application to transfer a licence or water share into Management Zone 1 unless the transfer results in the issue of a winter-take licence.	Transfer rules in Prescription 33 were applied to all licence transfers.	Yes

On Property Licence Transfers

Prescription	Activity	Compliant
34. The Corporation may approve an application to transfer of a licence that would result in water being used on the same property on which it was previously authorised to be used without any change to the licence volume or the period during which the water can be taken.	All transfers complied with this Prescription.	Yes

Off Property Licence Conversions

Prescription	Activity	Compliant
35. The Corporation must refuse an application to convert an all-year groundwater licence in Management Zone 1 to a surface water licence that would result in water being used on a different property that is – (a) downstream of the property on which it was previously authorised to be used, unless the licence volume of the surface water licence is only 80 per cent of the licence volume of the groundwater licence; or (b) upstream of the property on which it was previously authorised to be used, unless the surface water licence is a winter-take licence.	All transfers complied with this Prescription.	Yes

Prescription	Activity	Compliant
36. The Corporation must refuse an application to convert an all-year surface water licence in Management Zone 1 to a groundwater licence in Management Zone 1 that would result in water being used on a different property on which it was previously authorised to be used unless the groundwater licence is a winter-take licence.	All transfers complied with this Prescription.	Yes
37. The Corporation may approve an application to convert a surface water licence in Management Zone 1 to an all-year groundwater licence in Management Zone 2 without any reduction in licence volume.	All transfers complied with this Prescription.	Yes
38. The Corporation must refuse an application to convert an all-year groundwater licence in Management Zone 2 to a surface water licence in Management Zone 1 that would result in water being used on a different property on which it was previously authorised to be used unless the surface water licence is a winter-take licence.	All transfers complied with this Prescription.	Yes

On Property Licence Conversions

Prescription	Activity	Compliant
39. The Corporation must refuse an application to convert an all-year surface water licence to a groundwater licence in Management Zone 1 for use on the same property on which it was previously authorised to be used unless the groundwater licence is a winter-take licence.	All transfers complied with the Prescription.	Yes
40. The Corporation may approve an application to convert a surface water licence in Management Zone 1 to an all-year groundwater licence in Management Zone 2 for use on the same property on which it was previously authorised to be used without any reduction in the licence volume of the groundwater licence.	All transfers complied with the Prescription.	Yes
41. The Corporation must refuse an application to convert an all-year groundwater licence in Management Zone 2 to a surface water licence in Management Zone 1 for use on the same property on which it was previously authorised to be used unless the surface water licence is a winter-take licence.	All transfers complied with the Prescription.	Yes
42. The Corporation may approve an application to convert an all-year groundwater licence in Management Zone 1 to an all-year surface water licence in Zone 1 for use on the same property on which it was previously authorised to be used without any reduction in licence volume.	All transfers complied with the Prescription.	Yes

Meter Installation

Prescription	Activity	Compliant
43. Within 5 years from the time the Plan is approved, the Corporation must ensure that a meter is fitted to every operational works used to take water under a surface water or a groundwater licence, other than a registration licence, that authorises the extraction of 10 ML/yr or more.	GMW has completed a metering program where all operational groundwater works authorised to extract 10 ML/yr or more have been fitted with a meter.	Yes

Meter Reading and Account for Use

Prescription	Activity	Compliant
44. The Corporation must – (a) read each meter at least twice every year; and (b) determine the volume of water taken each year under the relevant licence.	Meter reads were planned to be completed in January and June 2020. Unfortunately only 1 meter read was undertaken in June 2020 due to bushfires in the north east during January 2020.	No
45. If for any reason the Corporation is unable to determine the volume of water by means of a meter it must estimate the volume of water taken.	No estimation of water taken was required.	Yes
46. If water is taken under a licence for irrigation use and is not metered, the Corporation must – (a) prior to the commencement of each irrigation water year determine the area to be irrigated for that water year; (b) inspect each place at which water is taken as frequently as it inspects meters; and (c) estimate the volume of water taken each year.	No use was detected from unmetered licence holders.	Yes
47. The Corporation must, within 30 days after a meter is read or an estimate of the amount of water taken is made, record the amount of water taken in a database	All meter reads were entered into GMW's database, Irrigation Planning Module (IPM).	Yes
48. If the Corporation requests the Licensee to read a meter or to estimate the amount of water used, the Licensee must comply with the request.	No requests were made to licensees by GMW.	Yes

Monitoring

Prescription	Activity	Compliant
<p>49. The Corporation must ensure that an appropriate monitoring program is undertaken to ensure that:</p> <ul style="list-style-type: none"> (a) the flows in the Ovens River at Myrtleford are continuously recorded; (b) the flows in key tributaries are recorded or estimated in low flow periods; (c) the water levels in observation bores at Myrtleford are continuously recorded; (d) the water sharing regime is able to be implemented; and (e) the relationship between groundwater levels and stream levels can be observed. 	<p>Groundwater levels were monitored and recorded using the State Observation Bore Network.</p> <p>River flows were monitored and recorded under the Victorian Regional Water Monitoring Partnership. Tributaries without real time monitoring were visually assessed during periods of low flow and recorded in GMW's database, System Planning Module (SPM).</p> <p>The water sharing regime is communicated to all affected licence holders and monitored throughout the period of restriction.</p> <p>The monitoring of stream and groundwater levels allows their relationship to be observed.</p>	Yes

Revocation of the Permissible Consumptive Volume

Prescription	Activity	Compliant
<p>50. Within 3 months of the approval of the Plan, the Corporation must request the Minister revoke the permissible consumptive volume of 4,010 ML in place for groundwater in the Protection Area.</p>	<p>The Minister approved the revocation of the PCV on 3 March 2013 and was published in the Victorian Government Gazette on 7 March 2013.</p>	Yes

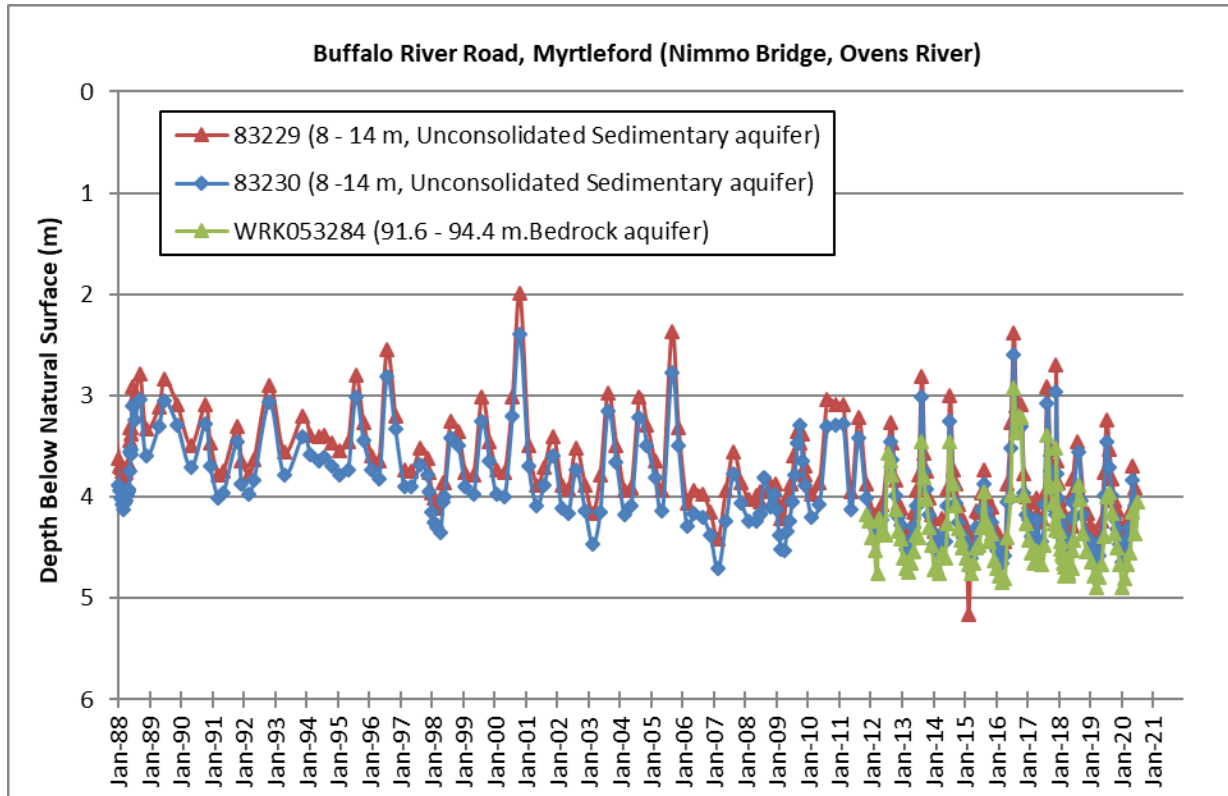
Review of the Plan

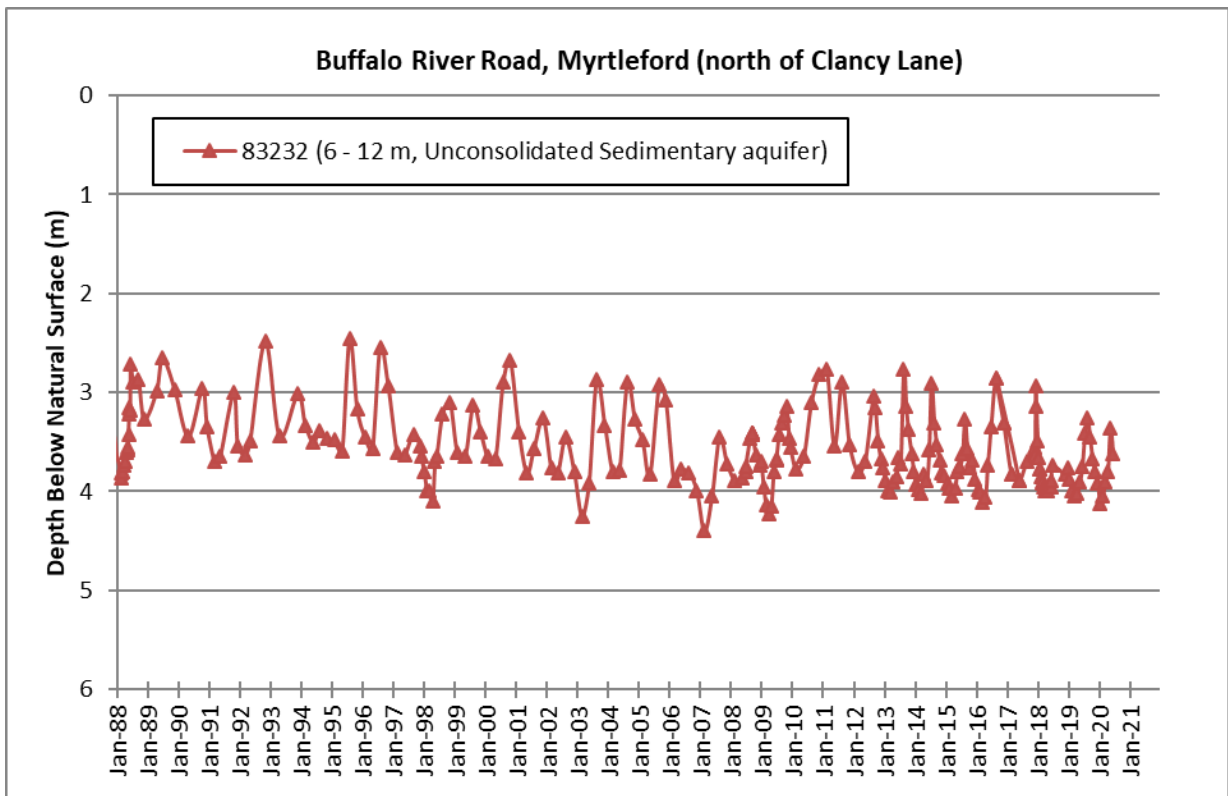
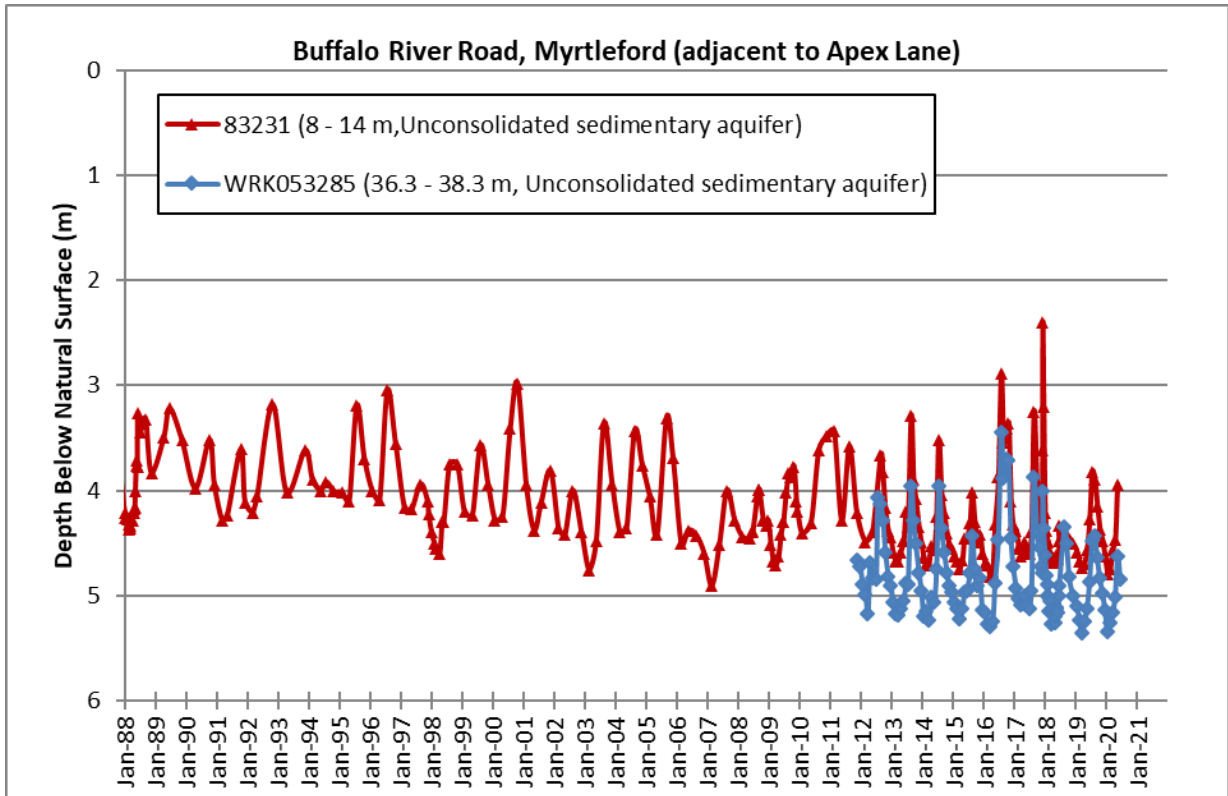
Prescription	Activity	Compliant
<p>51. The Corporation must:</p> <ul style="list-style-type: none"> (a) review the operation of the Plan: <ul style="list-style-type: none"> i) 5 years after it commences; and ii) thereafter, at intervals of no more than 5 years; and (b) propose any consequential amendments (if any) to the Minister. 	<p>Review was undertaken in 2017. Review included licence holder survey, meeting with TAFCO members, workshoped with Ovens/King/Mid Murray Regional Water Service Committee, DELWP, NEW and NECMA. Next review to commence 2021/22.</p>	Yes

Appendix B – Groundwater level data

Hydrographs are provided for key monitoring bores listed in the Plan. All data is sourced from the Water Measurement Information System (DELWP, 2020).

Further groundwater level information is available on the Water Measurement Information System at <https://data.water.vic.gov.au>





Appendix C – Prescription 24 calculations

Licence entitlement volumes authorised to be taken during Winter-take period (1 July to 31 October) in the WSPA are listed in the table below.

Name of Area (Reference)	Cap volume (ML)	Current volume authorised to be taken during Winter-take period (ML)	Space under cap (ML)
Ovens River (4030001)	11,329.9	14.7	11,315.2
Ovens River (4030002)	4,617.5	184.9	4,432.6
German Creek (4030003)	2,341.6	135.6	2,206.0
Ovens River (4030004)	766.5	144.0	622.6
Ovens River (4030005)	1,946.5	1,107.7	838.8
Eurobin Creek (4030006)	2,134.1	208.2	1,926.0
Ovens River (4030007)	2,062.3	812.0	1,250.4
Morses Creek (4030101)	6,635.4	352.9	6,282.5
Morses Creek (4030102)	262.1	53.2	208.9
Buckland River E. Branch (4030201)	9,141.7	-	9,141.7
Buckland River (4030202)	9,499.9	0.5	9,499.4
Buckland River (4030203)	3,225.2	202.6	3,022.6
Devils Creek (4030204)	3,287.6	49.7	3,238.0
Buckland River (4030205)	504.2	129.5	374.8
Buckland River (4030206)	752.1	25.8	726.4
Buffalo Creek (4030301)	3,249.2	162.8	3,086.5
Buffalo Creek (4030302)	270.8	72.0	198.9
Barwidgee Creek (4030401)	545.0	63.8	481.2
Barwidgee Creek (4030402)	535.6	35.2	500.4
Sandy Creek (4030403)	331.6	34.8	296.8
Myrtle Creek (4030404)	263.5	263.5	-
Barwidgee Creek (4030405)	528.4	86.9	441.5
Barwidgee Creek (4030406)	482.0	95.7	386.3
Happy Valley Creek (4030407)	2,364.7	46.9	2,317.8
Happy Valley Creek (4030408)	2,343.8	978.5	1,365.3
Happy Valley Creek (4030409)	235.6	71.5	164.1
Barwidgee Creek (4030410)	334.8	118.8	216.0
Total	69,995.0	5,451.3	64,543.7

Appendix D – Licence entitlement volumes

Licence entitlement volumes within named areas of the WSPA are presented in the tables below. These data relate to Prescription 25 of the Plan.

Sum of all licences

Name of Area (Reference)	Cap volume (ML)	Total number of licences	Total volume (ML)
Ovens River (4030001)	11,329.9	8	36.0
Ovens River (4030002)	4,617.5	69	523.6
German Creek (4030003)	2,341.6	13	208.1
Ovens River (4030004)	766.5	9	145.0
Ovens River (4030005)	1,946.5	68	1,891.3
Eurobin Creek (4030006)	2,134.1	15	286.0
Ovens River (4030007)	2,062.3	108	4,836.6
Morses Creek (4030101)	6,635.4	67	629.1
Morses Creek (4030102)	262.1	6	46.0
Buckland River E. Branch (4030201)	9,141.7	0	-
Buckland River (4030202)	9,499.9	1	2.0
Buckland River (4030203)	3,225.2	16	274.0
Devils Creek (4030204)	3,287.6	11	51.0
Buckland River (4030205)	504.2	12	377.1
Buckland River (4030206)	752.1	8	106.0
Buffalo Creek (4030301)	3,249.2	13	566.1
Buffalo Creek (4030302)	270.8	11	259.6
Barwidgee Creek (4030401)	545.0	2	44.0
Barwidgee Creek (4030402)	535.6	8	46.0
Sandy Creek (4030403)	331.6	3	24.0
Myrtle Creek (4030404)	263.5	15	412.0
Barwidgee Creek (4030405)	528.4	17	215.4
Barwidgee Creek (4030406)	482.0	22	253.5
Happy Valley Creek (4030407)	2,364.7	8	139.3
Happy Valley Creek (4030408)	2,343.8	34	963.8
Happy Valley Creek (4030409)	235.6	11	172.3
Barwidgee Creek (4030410)	334.8	37	917.6
Total	69,995.0	592	13,425.4

Breakdown of licences – Zone 1 and Zone 2

Name of Area (Reference)	Groundwater licences (Zone 1)		All-year surface water licences (Zone 1) ¹		Registration licences (Zone 1)		Winter-take licences (Zone 1)		All Zone 1 licences		Groundwater licences (Zone 2)	
	No. of licences	Volume (ML)	No. of licences	Volume (ML)	No. of licences	No. of licences	Volume (ML)	Volume (ML)	No. of licences	Volume (ML)	No. of licences	Volume (ML)
Ovens River (4030001)	0	-	8	26.0	0	-	1	10.0	8	26.0	0	-
Ovens River (4030002)	6	98.0	57	347.6	4	49.0	1	21.0	67	494.6	2	8.0
German Creek (4030003)	2	56.6	7	62.0	3	72.0	1	10.0	12	190.6	1	7.5
Ovens River (4030004)	0	-	5	10.0	1	15.0	0	-	6	25.0	3	120.0
Ovens River (4030005)	8	573.0	39	521.6	11	366.0	1	29.0	58	1,460.6	10	401.7
Eurobin Creek (4030006)	1	5.0	11	150.0	3	131.0	0	-	15	286.0	0	-
Ovens River (4030007)	23	1,177.0	80	3,355.0	4	57.0	2	34.6	107	4,589.0	1	213.0
Morses Creek (4030101)	3	95.0	60	308.2	2	158.0	2	59.9	65	561.2	2	8.0
Morses Creek (4030102)	1	2.0	3	6.0	1	26.0	0	-	5	34.0	1	12.0
Buckland River E. Branch (4030201)	0	-	0	-	0	-	0	-	0	-	0	-
Buckland River (4030202)	0	-	1	2.0	0	-	0	-	1	2.0	0	-
Buckland River (4030203)	2	40.0	9	61.0	4	38.0	1	99.0	15	139.0	1	36.0
Devils Creek (4030204)	0	-	10	20.0	1	31.0	0	-	11	51.0	0	-
Buckland River (4030205)	1	9.0	10	290.1	1	44.0	1	34.0	12	343.1	0	-
Buckland River (4030206)	1	13.0	7	93.0	0	-	0	-	8	106.0	0	-
Buffalo Creek (4030301)	2	85.6	9	379.5	1	33.0	0	-	12	498.1	1	68.0
Buffalo Creek (4030302)	2	20.0	6	198.0	1	17.0	1	11.6	9	235.0	2	13.0
Barwidgee Creek (4030401)	0	-	0	-	2	44.0	0	-	2	44.0	0	-
Barwidgee Creek (4030402)	0	-	4	24.0	4	22.0	0	-	8	46.0	0	-
Sandy Creek (4030403)	0	-	0	-	3	24.0	0	-	3	24.0	0	-
Myrtle Creek (4030404)	2	40.0	5	149.0	3	46.0	1	14.0	10	235.0	5	163.0
Barwidgee Creek (4030405)	1	2.0	11	167.4	5	46.0	0	-	17	215.4	0	-
Barwidgee Creek (4030406)	1	14.0	17	188.5	4	51.0	0	-	22	253.5	0	-
Happy Valley Creek (4030407)	0	-	5	115.3	3	24.0	0	-	8	139.3	0	-
Happy Valley Creek (4030408)	1	17.0	18	266.8	15	591.0	1	89.0	34	874.8	0	-
Happy Valley Creek (4030409)	0	-	8	132.3	3	40.0	0	-	11	172.3	0	-
Barwidgee Creek (4030410)	11	296.0	22	599.6	0	-	0	-	33	895.6	4	22.0
Total	68	2,543.2	412	7,472.9	79	1,925.0	13	412.1	559	11,941.1	33	1,072.2

¹Excludes registration licences

Note: All licence entitlement volumes sourced from the Victorian Water Register on 1 July 2020.

Appendix E – Rosters and restrictions

A summary of restrictions on taking water in management zone 1 of the WSPA during the 2019/20 water year is provided below.

This relates Prescriptions 3, 4, 5, 6 and 7 of the Plan.

Waterway	Roster Type	Commencement date	Roster Type	Commencement date
Buffalo Creek	Stage 3 Roster	14/01/2020	No restriction	7/05/2020
Roberts Creek	Stage 5 Suspension	6/01/2020	No restriction	7/05/2020
Barwidgee Creek	Stage 3 Roster	5/12/2019	Stage 5 Suspension	6/01/2020
Myrtle Creek	Stage 3 Roster	5/12/2019	Stage 5 Suspension	6/01/2020
Buckland River	Stage 2 Roster	14/01/2020	No restriction	15/04/2020
Two Mile Creek	Stage 2 Roster	14/01/2020	No restriction	15/04/2020
Ovens River Upper	Stage 2 Roster	16/01/2020	No restriction	15/04/2020
Snowy Creek	Stage 3 Roster	28/11/2019	No restriction	7/05/2020
Happy Valley Creek	Stage 3 Roster	28/11/2019	Stage 5 Suspension	6/01/2020
Havilah Creek	Stage 3 Roster	28/11/2019	Stage 5 Suspension	6/01/2020
Jackson Creek	Stage 3 Roster	28/11/2019	Stage 5 Suspension	6/01/2020