

Katunga Water Supply Protection Area Groundwater Management Plan

Annual Report for the year ending

30 June 2013

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Foreword

Goulburn-Murray Water (GMW) is pleased to present the annual report for the Katunga Water Supply Protection Area Groundwater Management Plan (the Plan) for the 2012/13 season.

GMW is responsible for implementation and administration of the Plan, which was approved by the Minister for Water on 24 July 2006.

This report has been prepared in accordance with section 32C of the *Water Act 1989* and it provides an overview of groundwater management activities in the Katunga Water Supply Protection Area for the 2012/13 water season. This report also considers how well the Plan has been meeting its management objectives.

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



Gavin Hanlon
MANAGING DIRECTOR

Date 26/9/2013

Executive summary

Groundwater use in the 2012/13 irrigation season was 39.1% (23,707.7 ML) of total licence entitlement in the Katunga Water Supply Protection Area. This is an increase in usage compared to the 2011/12 season. The increased usage is consistent with the drier summer and autumn seasons and shows an increased demand for groundwater.

Groundwater monitoring shows that groundwater levels responded quickly to the increased use; however, groundwater recovery levels (measured in September 2012) were still several metres higher than levels experienced at the end of the millennium drought (in 2009).

The annual allocation for the 2012/13 season was set at 70% of entitlement, the maximum allowable under the Plan.

The Plan was reviewed by GMW in November 2011 and a number of recommendations were made as potential amendments to the Plan. Amendments to the Plan require the Minister for Water to first appoint a Consultative Committee. This committee will consider any amendments and make recommendations for changing the plan to the Minister.

A process to consider amendments to the Plan is scheduled to commence in October 2013.

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1 Introduction

1.1 Purpose

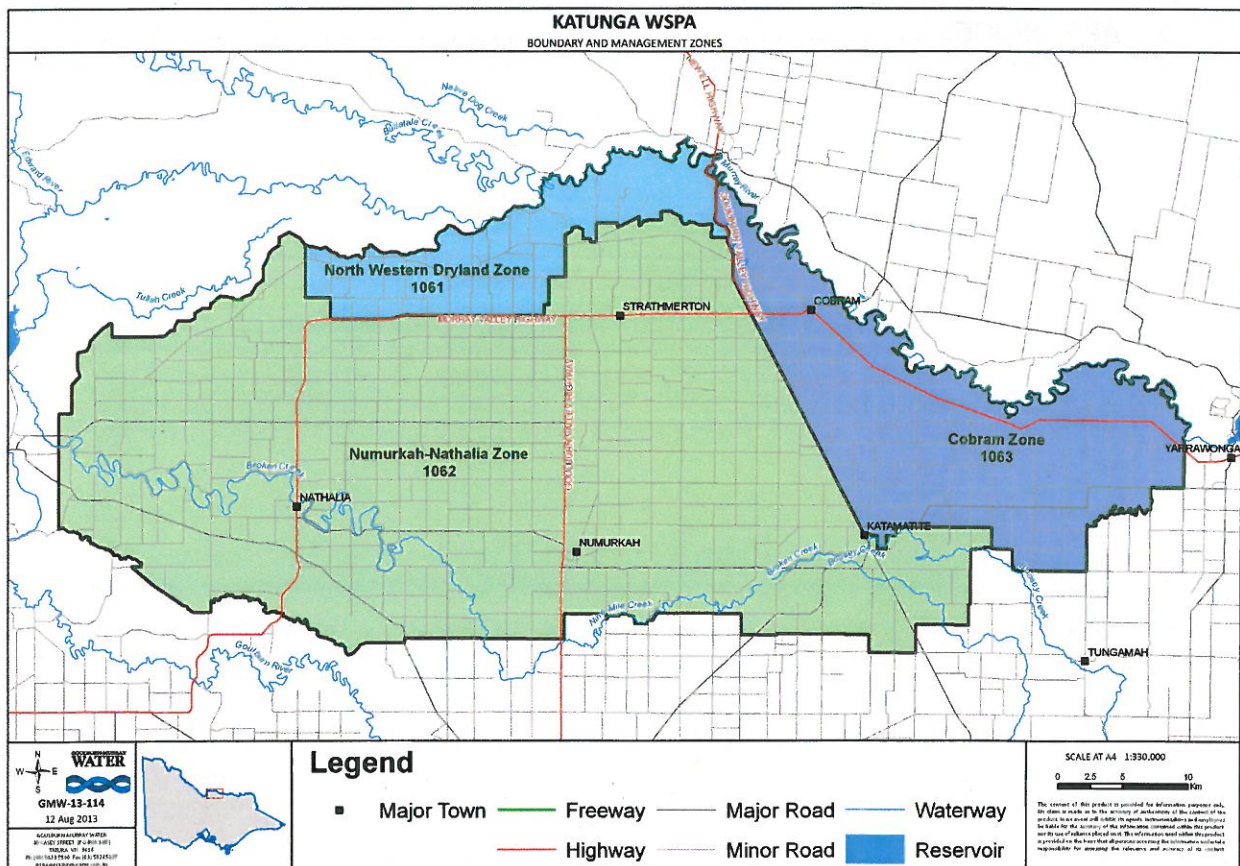
This annual report provides an overview of groundwater resource status and use in the Katunga Water Supply Protection Area (WSPA) throughout the 2012/13 irrigation season.

1.2 Water Supply Protection Area

The Katunga WSPA is located in the Murray and Goulburn Valleys, extending from Yarrowonga to Barmah and from the River Murray to Numurkah. The Katunga WSPA boundary has been set to manage groundwater resources at a depth of greater than 25 m below the ground surface. The overlying Shepparton Irrigation Region WSPA groundwater management plan manages groundwater resources within 25 m of the ground surface.

There are three management zones within the Katunga WSPA: 1062, 1061 and 1063 (Figure 1).

Figure 1 Katunga Water Supply Protection Area



1.3 Groundwater management plan

The Groundwater Management Plan (the Plan) was approved on 24 July 2006 by the then Minister for Water in accordance with section 32A(6) of the *Water Act 1989*.

The objective of the Plan is to make sure that the groundwater resources within the WSPA are managed in an equitable and sustainable manner. The Plan enables annual allocations to be set which manage groundwater extraction. The intent of the annual allocation process is to prevent groundwater levels from falling below what many groundwater users consider to be an acceptable level, based on equity, accessibility and cost.

2 Groundwater management

2.1 Licence volume

The groundwater licence volume in the Katunga WSPA was 60,611.7 ML as at July 2013. The volume of entitlement in each management zone is summarised in Table 1.

Table 1 also shows the total number of licensed bores and their distribution by management zone. Licensed bores are also shown spatially in Figure 2.

Table 1 Entitlement in the Katunga WSPA (2012/13)

Zone	Licences	Licensed bores	Licence volume (ML)
1061	14	15	3,186
1062	179	195	36,661.7
1063	64	79	20,764
Total	257	289	60,611.7

NOTE: Data extracted from the Victorian Water Register on 27 July 2013

The current level of entitlement is 34.7 ML higher than the Permissible Consumptive Volume (PCV) for the WSPA (60,577 ML). This minor increase has occurred to correct a groundwater licence which had been originally issued incorrectly. Administrative changes to licences can be made under the Plan in certain circumstances¹.

This may require future amendment to the PCV for the Katunga WSPA.

¹ The Authority may issue a licence which may lead to the total groundwater licence entitlement specified in Prescription 13 of the Plan (the PCV) being exceeded to overcome an administrative oversight or error or other anomaly.

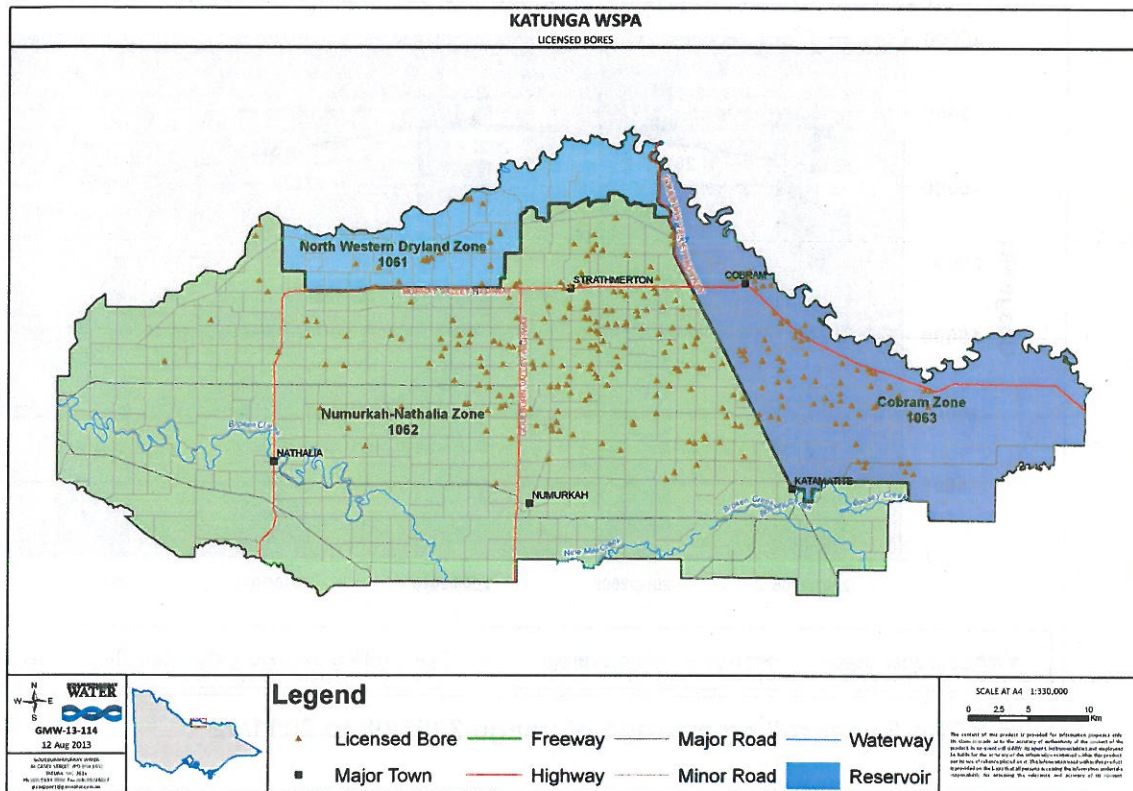


Figure 2 Licensed bores in the Katunga WSPA

2.2 Groundwater allocations

The process for setting annual allocations for groundwater licence holders in the Katunga WSPA is specified in Prescription 3 of the Plan, and is based on groundwater use. If the 5 year rolling average usage figure is greater than 30,000 ML then the annual allocation is 50% of entitlement in the following year. If 5 year rolling average usage is below 30,000 ML, the allocation is set at 70% of entitlement (the maximum allowable in the Plan).

The 5 year average usage for the period 1 July 2007 to 30 June 2012 was 24,832 ML (Figure 3), and so the 2012/13 season resulted in an allocation of 70% being announced for all management zones.

The 2012/13 allocation was announced in a notice circulated in the Cobram Courier, Yarrowonga Chronicle and Numurkah Leader on 27 July 2012. A media release was also distributed to media outlets in the region and all licensees were notified of the annual allocation.

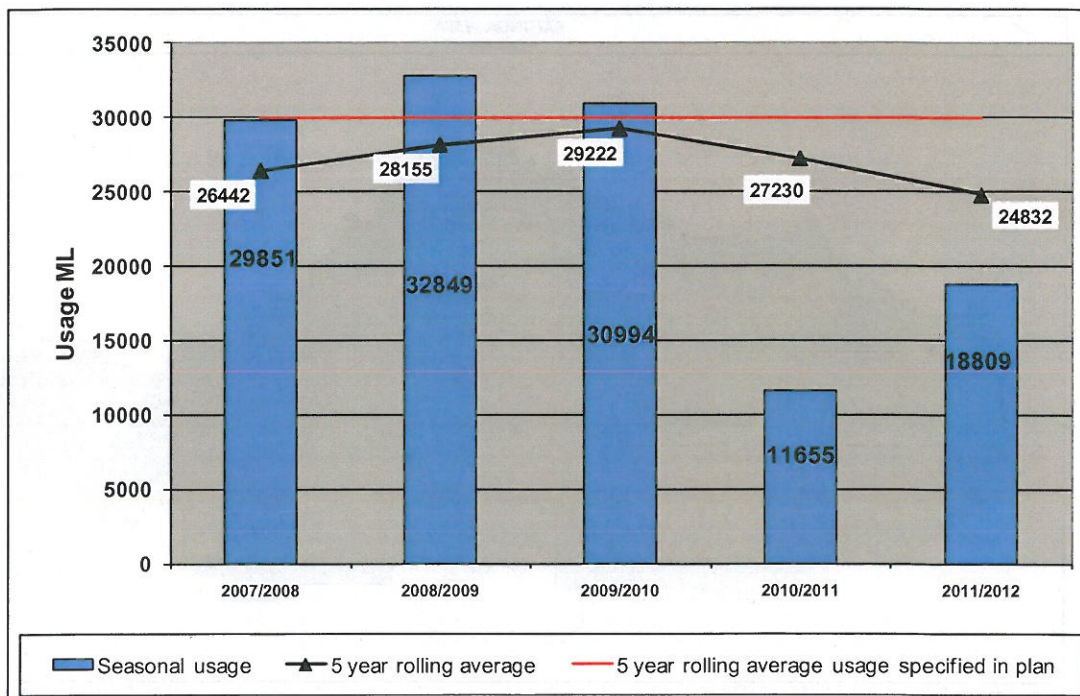


Figure 3 The 5 year rolling average of usage 2007/08 to 2011/12

2.3 Groundwater use

Total metered usage for 2012/13 was 23,707.7 ML, which is 39.1% of total entitlement.

Metered use by zone is shown in Table 2.

Table 2 Metered usage in the Katunga WSPA 2012/13

Zone	Metered use (ML)	Estimated use (ML)	Total use (ML)	% Licence volume
1061	2,527.5	0	2,527.5	79.3
1062	12,272.8	0	12,272.8	33.4
1063	8,907.4	0	8,907.4	42.9
Total	23,707.7	0	23,707.7	39.1

Annual metered use as a proportion of entitlement is shown in Figure 4.

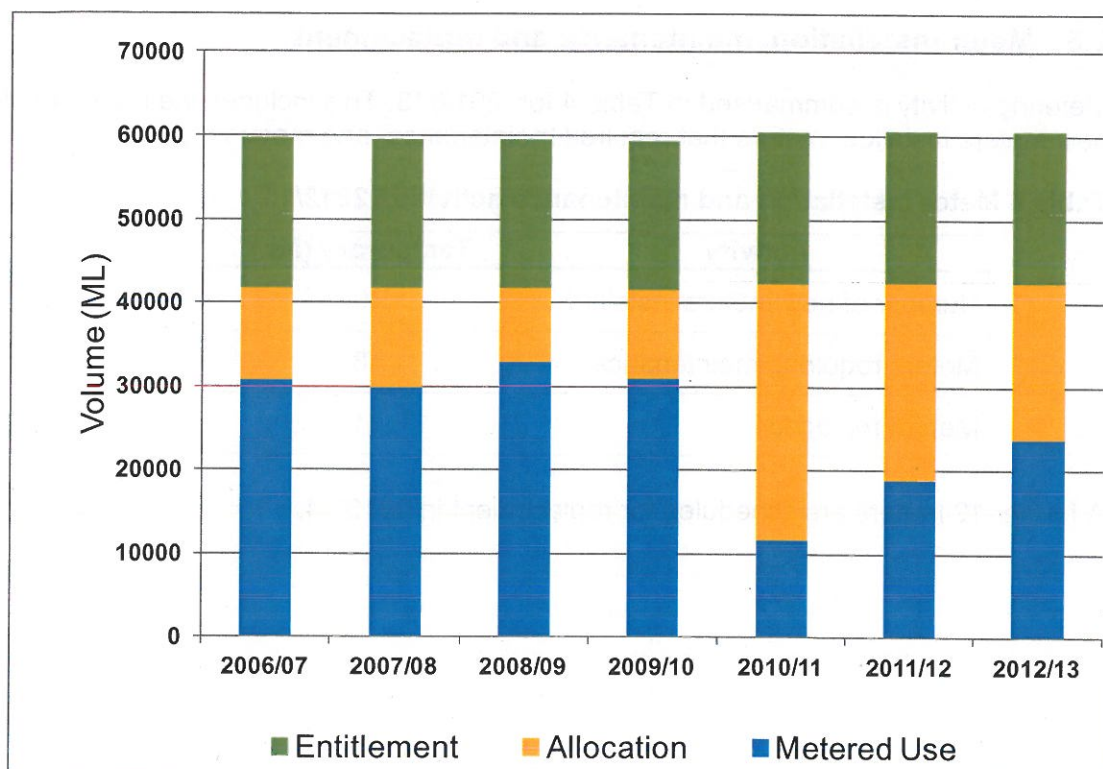


Figure 4 Annual entitlement, allocation, and metered usage in the Katunga WSPA

The pattern of groundwater use in the Katunga WSPA is heavily influenced by climate and the availability of surface water for irrigation. Groundwater use increases during extended periods of dry weather and when surface water allocations are reduced. The increase in use in 2012/13 compared the previous two years is consistent with the return to dry weather for much of the year.

2.4 Transfer of entitlement

Groundwater licence transfer activity during 2012/13 is summarised in Table 3 below.

Table 3 Transfers in the Katunga WSPA 2012/13

Zone	Transfer to		Transfer from	
	Permanent (ML)	Temporary (ML)	Permanent (ML)	Temporary (ML)
1061	8	134	10	100
1062	8	688.1	10	545
1063	0	396	0	774
Total	16	1218.1	20	1419

Levels of temporary trade increased in 2012/13 compared to the previous two years when trade was at very low levels (around 200 ML/year). However, temporary trading did not occur at the levels seen during the extended drought, when licence entitlement volumes were around 2,000 to 3,000 ML/year. Permanent trade levels have remained low.

2.5 Meter installation, maintenance and replacement

Metering activity is summarised in Table 4 for 2012/13. This includes the numbers of new meters installed, meters that required maintenance, and meters replaced.

Table 4 Meter installation and maintenance activities 2012/13

Activity	Temporary (ML)
Number of new meters installed	0
Meters requiring maintenance	8
Meters replaced	1

A further 12 meters are scheduled for replacement in 2013/14.

3 Monitoring program

3.1 Groundwater levels

The Plan requires that groundwater levels are monitored in 52 State Observation Bores (specified in Schedule 2 and 3 of the Plan), as shown in Figure 5.

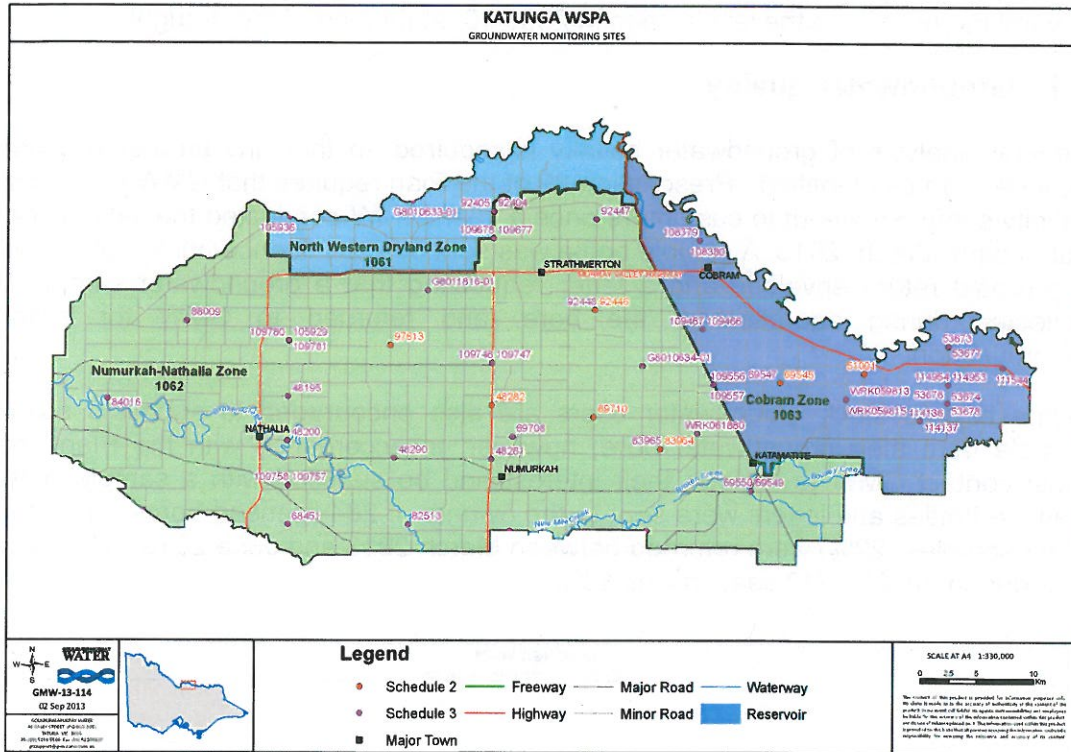


Figure 5 Map of State Observation Bores in the Katunga WSPA

A typical hydrograph, in this case from bore 69547/45 located to the south of Cobram, is shown below in Figure 6. Groundwater level data for all of the eight key representative observation bores across the WSPA are shown in the Appendices in Section 5. These are the schedule 2 bores shown in Figure 6.

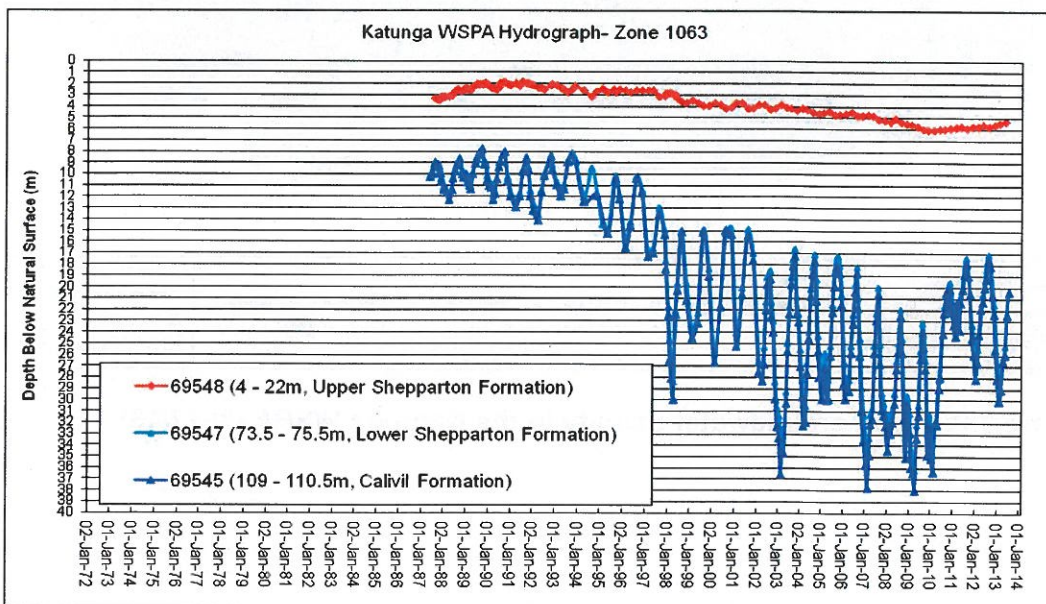


Figure 6 Typical hydrograph (south of Cobram)

The monitoring shows that the deeper groundwater levels (groundwater pressure heads) have declined steadily as the development of groundwater based irrigation increased from 1990 onwards. The monitoring bores also show a strong seasonal variation in response to pumping. Groundwater levels recovered significantly during 2010/11 and 2011/12. This was due to a reduction in pumping caused by the significantly wetter than average conditions over these two years. The graphs also show that groundwater levels have declined again slightly, in response to the increased pumping during the 2012/13 season. The groundwater levels remain several metres above the levels seen in 2009/10, at the end of the drought.

3.2 Groundwater quality

Regular analysis of groundwater salinity is required so that any emerging salinity changes can be identified. Prescription 29 of the Plan requires that GMW conducts a salinity sample mail-out to customers once a year. GMW conducted the salinity mail-out in early March 2013. A sample bottle was sent to every licence holder, along with a pre-paid return envelope and a letter requesting that a groundwater sample be collected during operation of the bore, and returned to GMW for salinity determination.

Domestic and stock groundwater users are also encouraged to submit a salinity sample from their groundwater bore; however, in accordance with the Plan, they must contact GMW to register their interest and be supplied with a sample bottle. Sample bottles and letters were sent to the owners of 284 licensed bores and a total of 61 samples (22%) were returned between March 2013 and June 2013. The return rate during the 2011/12 season was 18%.

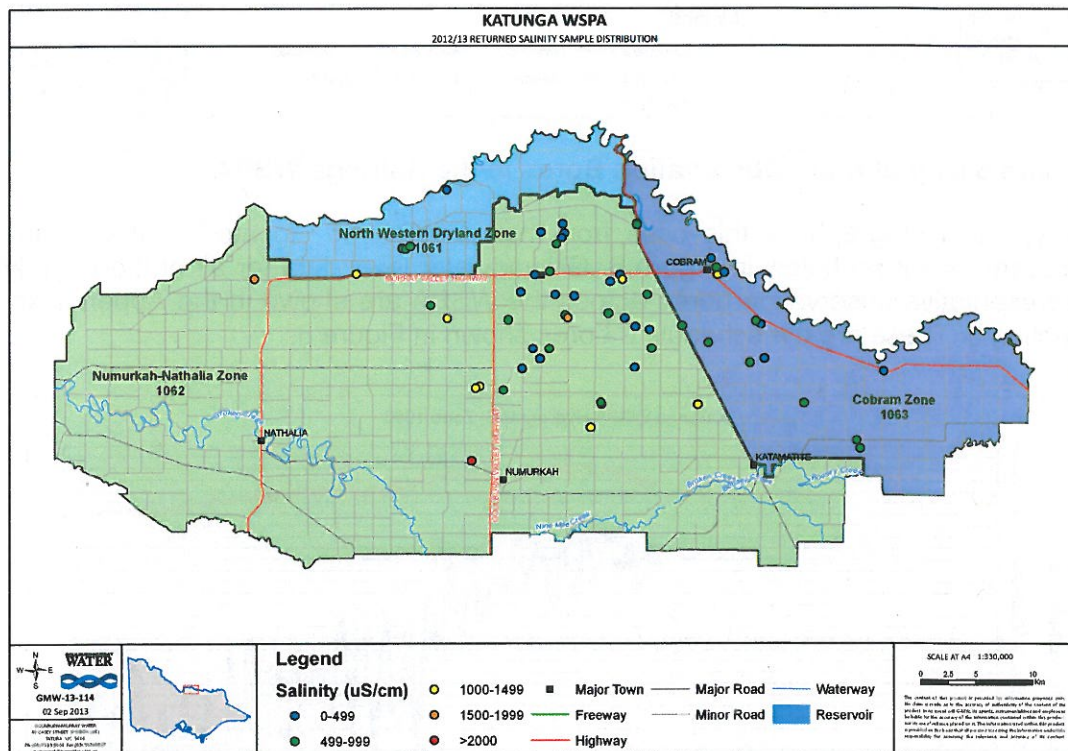


Figure 7 Pumped groundwater salinity in the Katunga WSPA (2012/13)

The results of the groundwater salinity sample results returned in 2012/13 are shown in Figure 7.

Based on the available data the salinity values recorded have not changed significantly from those recorded in the 2011/12 season and there continues to be no evidence to suggest that salinity levels are changing significantly in the Calivil and Lower Shepparton Formation (deep lead) aquifers. Groundwater salinities within the Calivil and Lower Shepparton Formation aquifers are generally lowest in the central and eastern parts of the WSPA.

4 Future management considerations

4.1 The review of the Katunga WSPA Groundwater Management Plan

It is a requirement that a review of the Plan is undertaken every five years. GMW completed a review in November 2011 and its findings were endorsed by the then Department of Sustainability and the Environment in February 2012.

The aim of the review was to consider the performance of the Plan since its approval in 2006, taking into account new information gathered over the life of the Plan, changes in policy and legislation, and the views of groundwater users (obtained via a survey).

Although the Plan has performed well, the review concluded that some changes should be considered to improve current groundwater management arrangements. The recommendations for changes to the Plan relate primarily to the annual allocation methodology, and to the current trading rules. In addition it is recommended that the introduction of carryover be considered, along with improvements to the way groundwater salinity is monitored.

For any changes to occur, a Ministerially appointed consultative committee must consider any amendments to the Plan, and make recommendations to the Minister for approval. This plan amendment process would be coordinated by GMW.

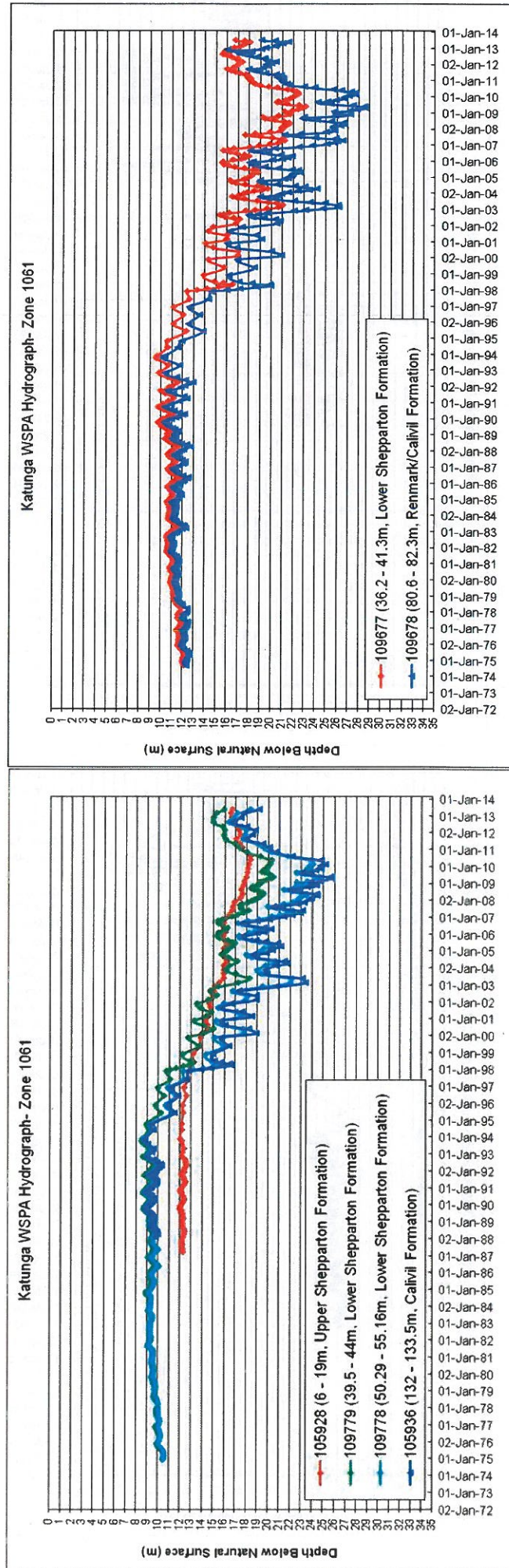
It is proposed that a process to amend the Plan will commence in October 2013. GMW will first need to request the appointment of a committee to consider amendments to the Plan. Prior to deciding whether to initiate this process the Minister will consider any submissions received during a 60 day consultation period.

Licence holders and other stakeholders will be consulted once the Plan amendment process has been initiated.

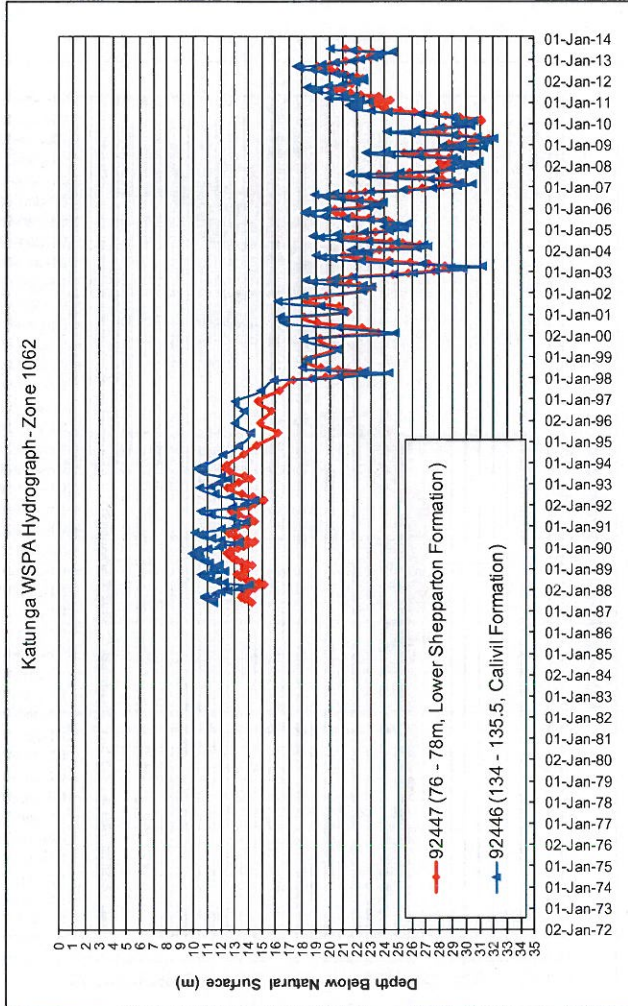
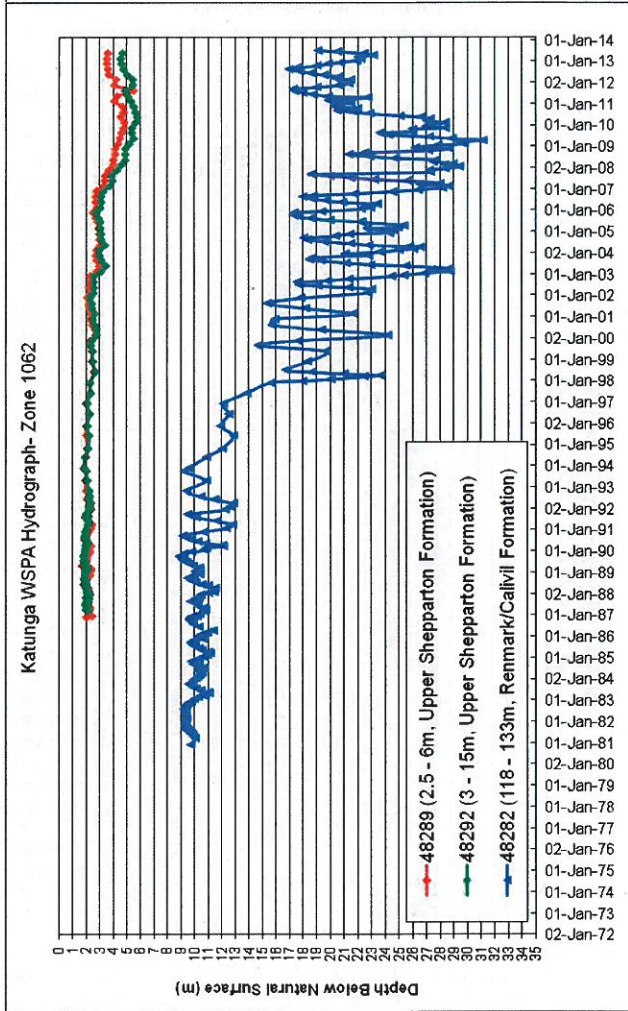
5 Appendices

Key Groundwater Hydrographs

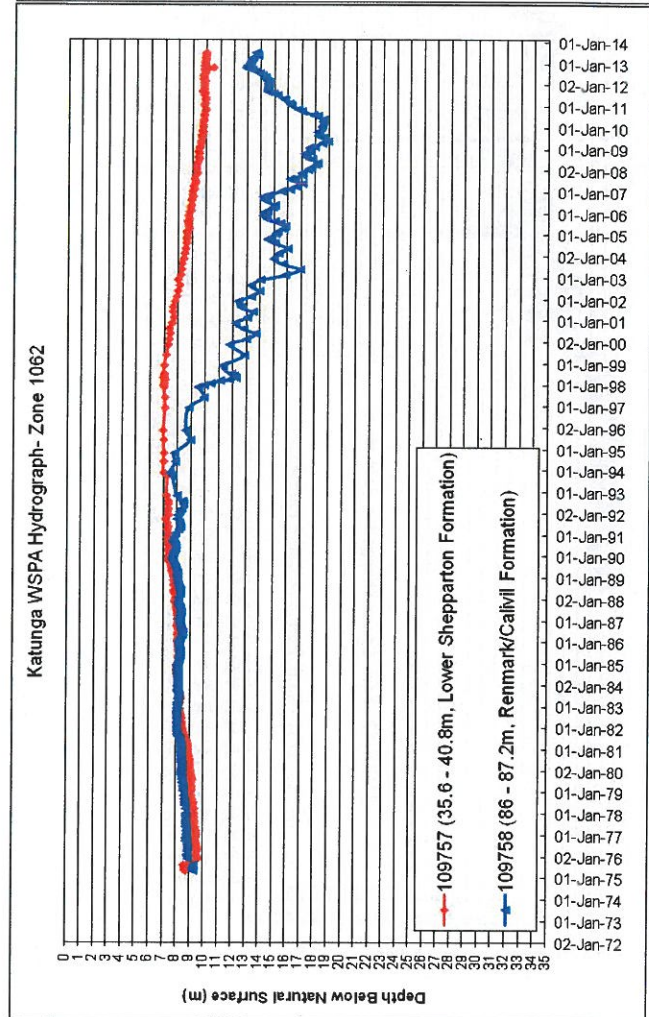
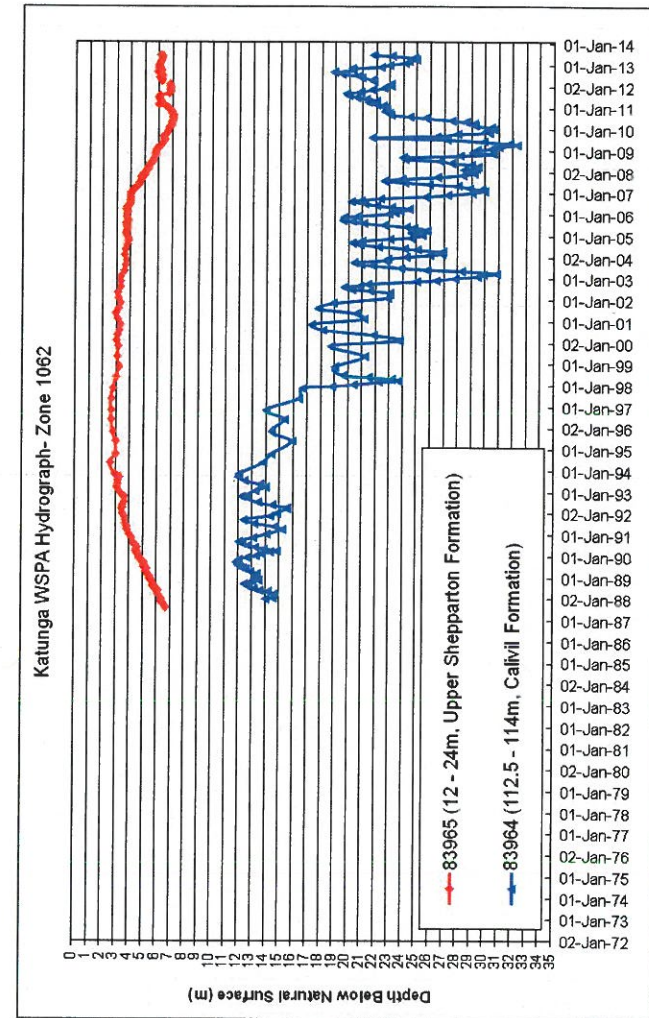
a) Zone 1061



b) Zone 1062



c) Zone 1062 cont.



d) Zone 1063

