



**Shepparton Irrigation Region Water  
Supply Protection Area  
Management Plan (Groundwater)**

REPORT FOR THE YEAR ENDED  
JUNE 2007

## Foreword

This report is submitted to the Minister for Water, the Goulburn Broken Catchment Management Authority and the North Central Catchment Management Authority in accordance with Section 32C of the *Water Act 1989*. A copy of this report is available for inspection at the Tatura office of Goulburn-Murray Water (G-MW), or upon request. A notice of report availability will also be published as required by Section 32D of the *Water Act 1989*.

The purpose of this report is to detail activities of G-MW in administering and enforcing the Shepparton Irrigation Region Water Supply Protection Area Groundwater Management Plan (the Groundwater Plan), and provide information that is required to be reported under the Groundwater Plan.

<b>Area</b>	Shepparton Irrigation Region Water Supply Protection Area (SIRWSPA)
<b>Segment</b>	Groundwater
<b>Area Declared</b>	September 1995
<b>Plan Approved</b>	1999
<b>Scheduled Plan Review</b>	No review date specified in the plan
<b>Implementation Authority</b>	Goulburn-Murray Rural Water Corporation
<b>Relevant CMA</b>	Goulburn Broken Catchment Management Authority and North Central Catchment Management Authority
<b>Report Period</b>	1 July 2006 – 30 June 2007

Since approval of the Groundwater Plan in 1999, G-MW has achieved many plan requirements including implementation of a metering and monitoring program. Implementing elements of the management plan in some cases requires longer term planning, consultation and negotiations with landholders and G-MW is actively progressing towards completion of these elements.

During any year, new operational issues may also arise and impact on plan implementation. These issues, such as new bores requiring meter fitting or existing bores requiring meter maintenance or replacement, are dealt with as they arise.

This report identifies the following issues that require consideration by G-MW and the Department of Sustainability and Environment (DSE) relating to the implementation of the Groundwater Plan:

1. G-MW monitors shallow groundwater levels across the SIRWSPA through a network of 3,800 groundwater observation bores. A watertable map is produced annually based on winter (August) shallow groundwater levels and is available by the end of September each year.

There has been some decline in the watertable between August 2005 and August 2006. Only the west of the Rochester Irrigation Area showed no change in area bounded by 1m and 2m contours. All other regions across the SIRWSPA experienced a notable contraction in the areas bounded by the 1m, 2m and 3m watertable contours. This is likely as a result of the lower than average rainfall

(notably during the 2006 autumn/ winter period) recorded in various locations across the region in the 12 months to August 2006.

Risk to land productivity remains in some parts of the SIRWSPA, as highlighted on the Watertable Map, however these regions are decreasing. In general shallow water table levels are continuing to fall over much of the region, which may adversely affect users reliant on accessing shallow groundwater as a resource.

2. Forty four % of licensees with irrigation bores complied with G-MW's request for a groundwater sample during the current reporting period. This is a significant increase (8%) on the previous reporting period 2005-2006 and G-MW has endeavoured to improve compliance with the salinity sampling program by providing feedback to licensees on the sample results. G-MW also aims to consistently improve the sample return rate by providing information to licensees outlining the purpose and benefits of monitoring groundwater salinity and highlighting the importance of contributing this data. A target has been set to achieve a 50% sample return rate in 2007/08.
3. One hundred and thirty three (133) bores had metered usage in excess of licence entitlement, which is significantly more than the forty (40) recorded last year. The groundwater used over licence entitlement by these bores was 12.6% of total metered use, compared to 2005/06 where the volume used in excess of licence entitlement was 3.5% of total metered use. It is clear that the unprecedented drought year of 2006/07, which resulted in nearly double the metered usage of 2005/06 (from 62,752 ML to 109,247 ML) also saw increased use in excess of entitlement. Reliance on groundwater was increase by low surface water allocations for much of the SIRWSPA.

Managing use within licence entitlement is expected and communicated annually to all licensed groundwater users within the SIRWSPA. A new compliance strategy to manage use within entitlement has been clearly communicated to all licence holders in June 2007, which has the support of all key SIRWSPA stakeholders. In this strategy initial written warnings will be provided and if they are not acted upon and licensees fail to manage use within their licence entitlement, G-MW will prosecute for a continued breach of licence conditions. The newly developed compliance strategy will be implemented from the commencement of the 2007/2008 irrigation season.

G-MW recognises that managing use within entitlement in the SIRWSPA must also include consideration of the catchment management objectives of the Groundwater Plan. However it is acknowledged that, due to the change in climatic conditions over the last decade, further tools need to be developed to ensure the SIRWSPA can be managed more adaptively to encompass both sustainable resource use and salinity management objectives.

G-MW has, and will continue, to discuss alternative management options with the DSE, Goulburn Broken Catchment Management Authority and other Groundwater Plan stakeholders and will commence a formal review of the Groundwater Plan during 2007/08 before further developing these options.

Signed

Russell Cooper  
Managing Director

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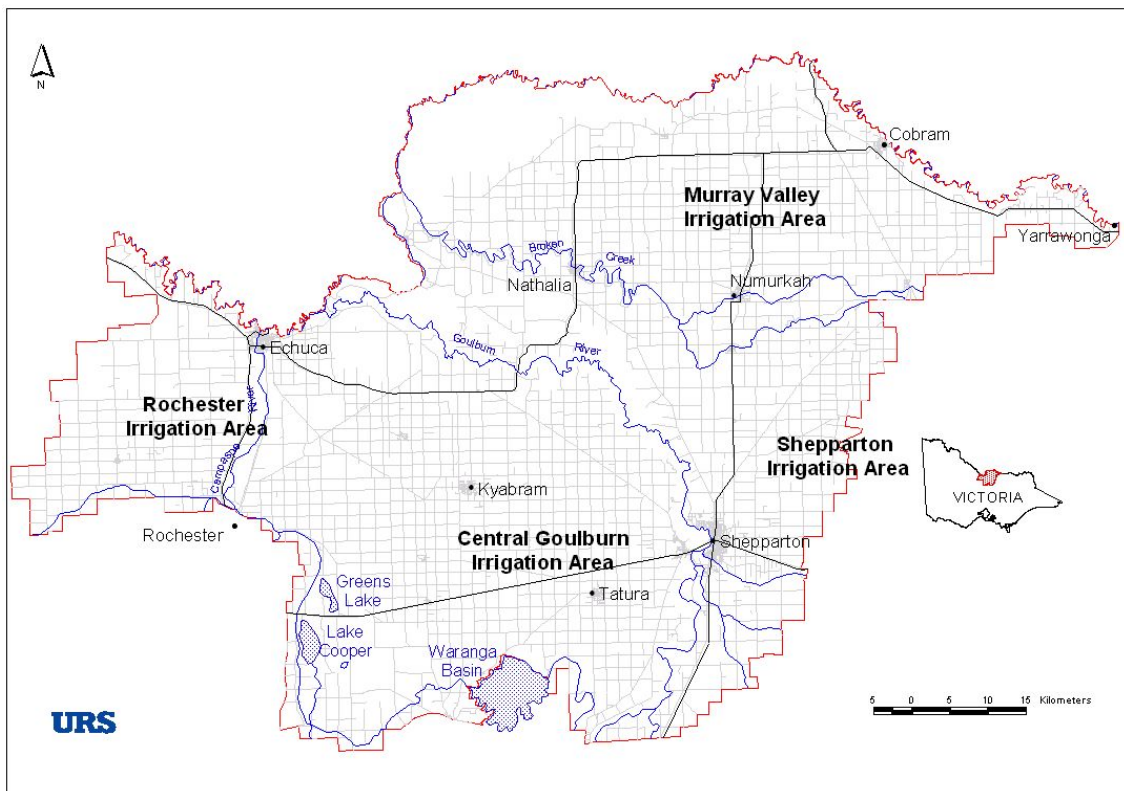
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# 1. Introduction

## 1.1. The Region

The Shepparton Irrigation Region (the Region) was declared a Water Supply Protection Area in September 1995. The Region includes the Murray Valley, Shepparton, Central Goulburn and Rochester Irrigation Areas and some adjacent dryland areas (see Figure 1 below). The majority of the Region falls within the area covered by the Goulburn Broken Catchment Management Authority with a small part of the Rochester Irrigation Area covered by the North Central Catchment Management Authority.

A Consultative Committee prepared the Shepparton Irrigation Region Groundwater Management Plan (the Groundwater Plan), which was approved in 1999. The Groundwater Plan was developed to augment the Shepparton Irrigation Region Land and Water Salinity Management Plan (the Salinity Plan). The objectives and implementation measures of the Salinity Plan have since been adsorbed into the wider agricultural, social and environmental resource management objectives specified in the Goulburn Broken Catchment Management Strategy.



**Figure 1 – Shepparton Irrigation Region Water Supply Protection Area boundary**

The area covered by the Groundwater Plan is 725,000 hectares (ha) of which 430,000 ha occurs in the Irrigation Areas and is suitable for irrigation. Around 280,000 ha is irrigated in most years. Most of the irrigated area is used for pasture production (246,000 ha or 88%) usually for dairy production, about 9,600 ha (3%) is used for horticulture, and the remainder is made up of grain crops, seed crops, lucerne, forage crops and vegetables.

Of the approximate 7,300 farms within the Irrigation Areas, 3,600 (49%) are “mixed” farms, 3,100 (42%) are dairy farms and 650 (9%) are horticultural farms.

The Region is one of the major food processing areas of Australia with large local and international companies such as Kraft, Fonterra, Plumrose, Unilever (Rosella), Tatura Milk, Murray-Goulburn, SPC-Ardmona, Leggos, Campbell Soups and Girgarre Foods (Heinz) established within its boundaries.

However, the economic benefits to the region, state and nation brought about by widespread irrigation practises in the Region over the last century have come at an environmental cost. The cost is manifest in high and shallow groundwater tables, saline groundwater and associated environmental degradation. Despite these challenges, agencies and the Region’s community have worked in partnership over recent decades to improve irrigation efficiency and environmental outcomes.

Other groundwater management plans have been developed to manage overuse of groundwater resources that could result in excessive declines in groundwater pressures within those Water Supply Protection Areas covered by such plans.

The Groundwater Plan is unique to Victoria by comparison to other groundwater management plans in both its intent and management measures.

Section 2 of the Groundwater Plan states: *“The primary objective of this Plan is to support the implementation of the Salinity Plan which aims to protect the Region’s agricultural productivity and natural resources. It will do this by encouraging and supporting regular and responsible pumping of groundwater to provide salinity control while protecting both the groundwater resource and the rights of groundwater resource users.”*

Goulburn Murray Water’s primary interest includes equitable groundwater resource management to allow sustainable usage of that resource within licence conditions. Goulburn-Murray Water also has a statutory responsibility to consider matters under section 40 of the *Water Act 1989*, which includes, determining effects on existing users, the sustainability of the groundwater resource and the environment (including connections between groundwater and surface water).

The Goulburn Broken Catchment Management Strategy focuses more particularly on encouraging regular groundwater pumping to provide salinity and partial groundwater control. It encourages groundwater use within agreed salinity limits which are designed to encourage sustainable land and water management practises.

The Groundwater Plan does not have a Permissible Consumptive Volume (PCV) against which licence entitlements are measured. Groundwater level monitoring is not undertaken with the specific aim of tracking where excessive declines in groundwater levels are occurring, rather monitoring is undertaken to allow watertable and salinity control works to be targeted in the high risk, high watertable areas.

## **1.2. Hydrogeology**

The riverine plains of the Shepparton Region are alluvial deposits which have a comparatively flat surface. The depth of alluvium above bedrock varies, typically ranging from 20 metres to 120 metres with a maximum recorded thickness of 250

metres. The nature of the sub-surface strata is complex.

The alluvial deposits are divided into three principal geological units: the Renmark Group, the Calivil Formation and the Shepparton Formation.

The Renmark Group and Calivil Formation (often considered one hydrogeological unit) are unconsolidated gravels and sands which lie unconformably upon weathered pre-Cainozoic basement rock. These sediments were deposited during the Tertiary period along broad valleys by rivers flowing from the highlands onto the plain. The Renmark Group/Calivil Formation form three major aquifers that generally follow the course of today's Murray, Goulburn and Campaspe Rivers (commonly referred to as "Deep Leads"). These aquifers broaden toward the north and west and merge to form a continuous sheet under much of the south-eastern Murray Basin.

The Shepparton Formation overlies the Calivil/Renmark aquifer and forms the uppermost geological formation (usually 80 to 100 metres thick) over most of the region. The Shepparton Formation predominantly comprises alluvial silts and clays interspersed with meandering channels of sands and gravels, typically up to 5 m thick, and often discontinuous. The aquifers of sand and gravel are locally capable of supplying significant quantities of water. However, due to the highly variable lithology of the Shepparton Formation, the occurrence of good quality groundwater available in useful quantities is highly irregular. For management purposes the unit is often divided into the Upper and Lower Shepparton Formation.

As defined by the Groundwater Plan, aquifers which are wholly or in part within 25 metres of surface are defined as "shallow aquifers", and aquifers at greater depths than that are defined as "deep aquifers". Since 1999, other Groundwater Management Plans have been developed, which cover the deep lead aquifers in the Murray Valley (Katunga WSPA) and Lower Campaspe (Campaspe Deep Lead) regions of the Region respectively. The Groundwater Plan has not been modified to reflect current management relating to the deep lead aquifers within the SIRWSPA. The connection between deep and shallow aquifers will need to be more fully addressed in a future review of the Groundwater Plan.

### **1.3. Salt Disposal**

The Salinity Plan was developed with the aim of managing shallow groundwater levels and land salinity in the Region. As discussed above, an important outcome of the Salinity Plan has been the establishment of the Groundwater Plan for the SIRWSPA. The main aim of the Groundwater Plan is to manage private irrigation groundwater use to ensure sustainability of the region's land and water resources. The secondary aim of the Groundwater Plan is to equitably manage the groundwater resource.

A key aspect of the Groundwater Plan, as originally envisaged, was management of salt disposal from the Region. The Region is able to export salt under the Murray Darling Basin Salinity Management Strategy, and private groundwater bores have provided a part of the region's salt disposal capacity.

The requirement for private irrigation bores to provide regional salt disposal was reviewed in April 2007 under the Shepparton Irrigation Region Catchment Implementation Strategy. This review concluded that it is now considered unlikely that

winter salt disposal from private shallow irrigation bores will provide tangible benefits for salinity control or protection against rises in pumped groundwater salinity over the next 100 years. The watertable level reduction due to groundwater pumping for irrigation should allow sufficient leaching of salt from the root zone by irrigation and rainfall to provide salinity control for pastures. Accordingly requirements or options for off-farm disposal from private shallow irrigation bores have been removed. This means that shallow groundwater users will no longer have an off-site salinity disposal entitlement allowance on their groundwater licence.

All SIRWSPA customers with off-site salt disposal allowance on their licence were advised of these changes in June 2007, and as groundwater licences are renewed, salinity disposal entitlement will be removed.



## **2. Goulburn-Murray Rural Water Corporation's Duties under the Groundwater Management Plan.**

Goulburn-Murray Rural Water Corporation (G-MW) is the authority responsible for managing and administering the Groundwater Plan.

The Groundwater Plan requires that G-MW undertake:

- groundwater volumetric usage meter fitting to all licensed irrigation bores existing prior to 1 July 1999 with usage of >20ML/a at the cost of G-MW (note that bores installed for licensed use since 1 July 1999 must be metered at the licensee's cost)
- groundwater volumetric usage meter reading – post irrigation (summer) season;
- groundwater level monitoring;
- groundwater level reporting (August watertable map production);
- groundwater salinity assessments;
- administering groundwater licensing within the prescriptions of the Groundwater Plan and in accordance with G-MW's statutory responsibility under the *Water Act 1989*; and
- review and report annually to the Minister administering the *Water Act 1989* on the prescribed activities of the plan

This report is the seventh annual report to the Minister and presents the outcome of the above key activities undertaken in the period 1<sup>st</sup> July 2006 to 30<sup>th</sup> June 2007.

### 3. Works Program

The required works program in accordance with the Groundwater Plan and completion dates are shown in the table below:

**Table 1 – Works program in accordance with the Groundwater Plan**

Works	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
Meters Fitted: Installation Program <sup>1</sup>	205	109	41	0	14	57	6	0	Ongoing <sub>2</sub>
Meter Reading (summer season)	Done	Done	Done	Done	Done	Done	Done	Done	Ongoing
Meter Reading (winter season)	N/A <sup>3</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ongoing
Groundwater Level Monitoring	Done	Done	Done	Done	Done	Done	Done	Done	Ongoing
August Watertable Map Reporting	Done	Done	Done	Done	Done	Done	Done	Done	Ongoing
Groundwater Salinity Assessment	Done	Done	Done	Done	Done	Done	Done	Done	Ongoing
Groundwater Licence Administration	Done	Done	Done	Done	Done	Done	Done	Done	Ongoing
Annual Reporting to the Minister	Done	Done	Done	Done	Done	Done	Done	Done	Ongoing

<sup>1</sup> Refer to Dot Point 1 in Section 2.

<sup>2</sup> All bores that meet the criteria have been metered with the exception of one bore whose owner has consistently refused access to G-MW officers. Arrangements are being made in 2007/08, including engaging legal assistance, to enable property access to install a meter on this bore.

<sup>3</sup> Winter pumping did not occur due to low dilution flows in the Murray River.

#### 4. Allocations at 30 June 2007

The following table includes the groundwater licence entitlement volumes allocated to June 2007 for extractive use purposes.

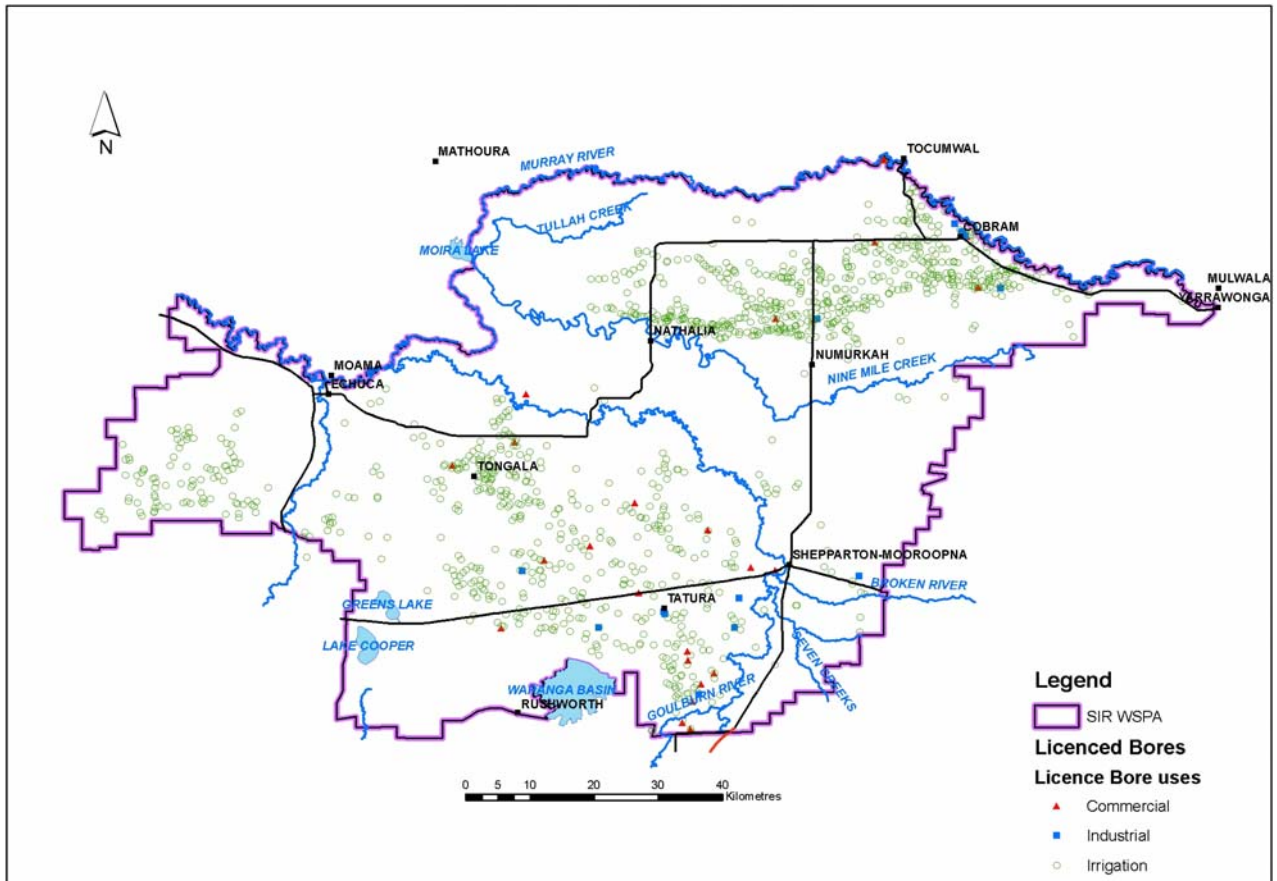
**Table 2 – Licence volume totals as of 30 June 2007**

WSPA	Column 1 Total No. Licences	Column 2 Licensable (ML)	Column 3 Domestic & Stock (ML)	Column 4 Watertable & Salinity Control (ML)	Column 5 Total (ML)
Shepparton Irrigation Region	1,456	232,155	1245	15,814	249,214

**Notes:**

- Column 1 *Number of Licences*
- Column 2 *Total volume of groundwater allocated under licence (excludes Domestic & Stock). Irrigation use entitlements total 230,994 ML (99.5%) of the licensable total.*
- Column 3 *Domestic & stock allowance*
- Column 4 *Includes Public Pump and bores licensed for off site disposal of groundwater for watertable and salinity control purposes (e.g. private dewatering). This figure no longer included salt disposal allocations held by Salinity Plan Bores.*
- Column 5 *Total groundwater allowance*

Figure 2 below shows the distribution of the licensed groundwater extraction bores summarised in the table above.



**Figure 2 - The distribution of licensed groundwater extraction bores in the SIRWSPA**

## 5. Metering

Volumetric flow meters are required to be fitted at the owner's expense to all new licensed groundwater irrigation bores. The meters are to be fitted to meet G-MW's specifications. All private dewatering bores are also fitted with a volumetric flow meter.

In accordance with the Groundwater Plan, all licensed irrigation bores with an annual usage of more than 20 ML<sup>4</sup> installed prior to 1 July 1999 have had funding provided for the supply and fitting of a G-MW approved volumetric flow meter.

### Summer Groundwater Extraction

Eight hundred and eighty six (886) licensed irrigation bores were fitted with a volumetric flow meter at the end of the reporting period. Of these, the number verified as having reliable usage data for the full reporting period totalled 813. The majority of the remaining 73 bores had meters installed or repaired during the reporting period and therefore did not have verified base meter readings. Data from meters assessed as being reliable are considered to be representative of groundwater use in the reporting period. Metering data is stored and maintained by G-MW.

The following table sets out the volume used as recorded by fully operational meters for the year to 30 June 2007.

**Table 3 – Metered bore details as of 30 June 2007**

<b>WSPA</b>	<b>Column 1 Total No. Metered Bores</b>	<b>Column 2 Metered Bore Entitlement (ML)</b>	<b>Column 3 2006/07 Metered Bore Use (ML)</b>
Shepparton Irrigation Region	813	167,084	109,247

**Notes:**

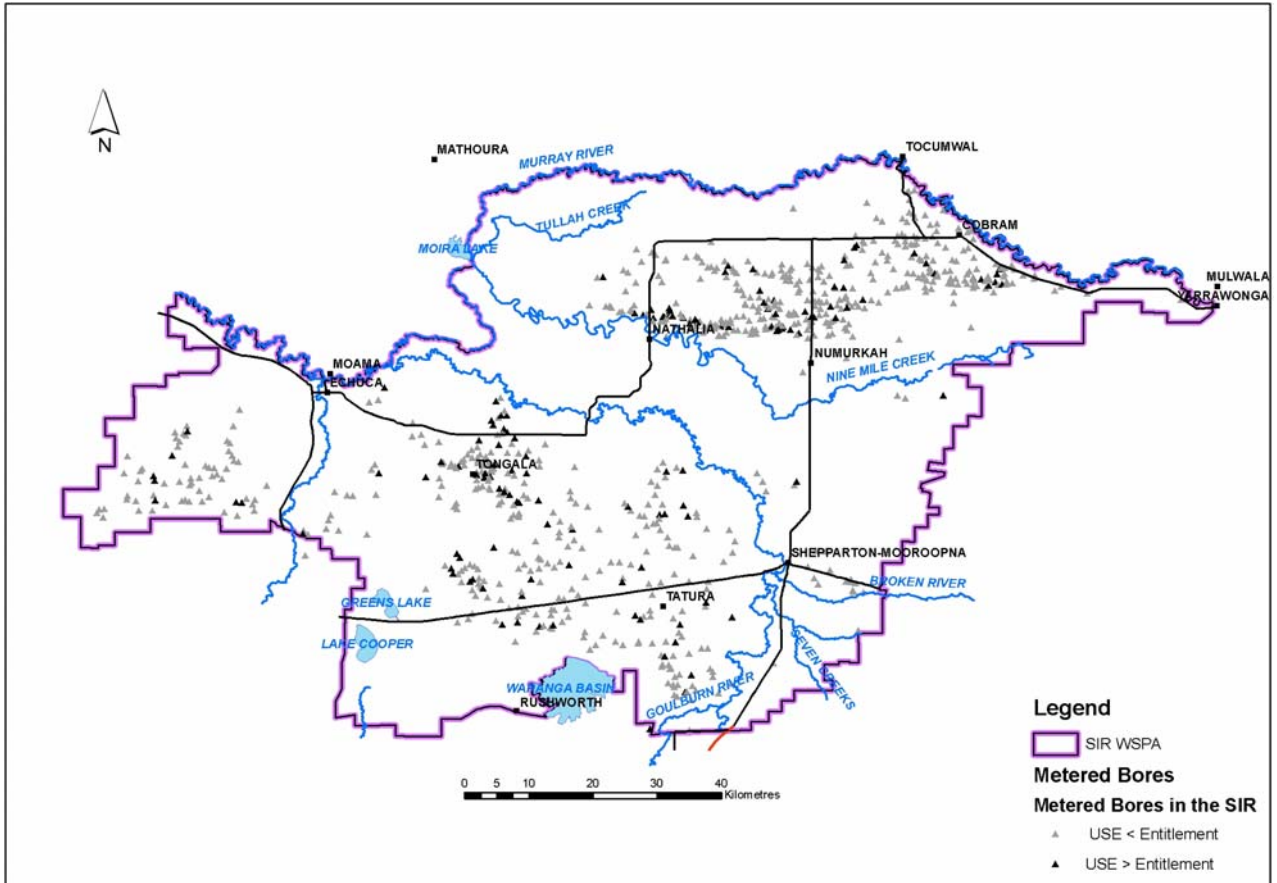
*Column 1* Number of licensed irrigation bores fitted with a meter that have been verified as being operational for the full reporting period.

*Column 2* Total licensed entitlement of the irrigation bores numbered in Column 1

*Column 3* Total volume of metered groundwater use from irrigation bores numbered in Column 1

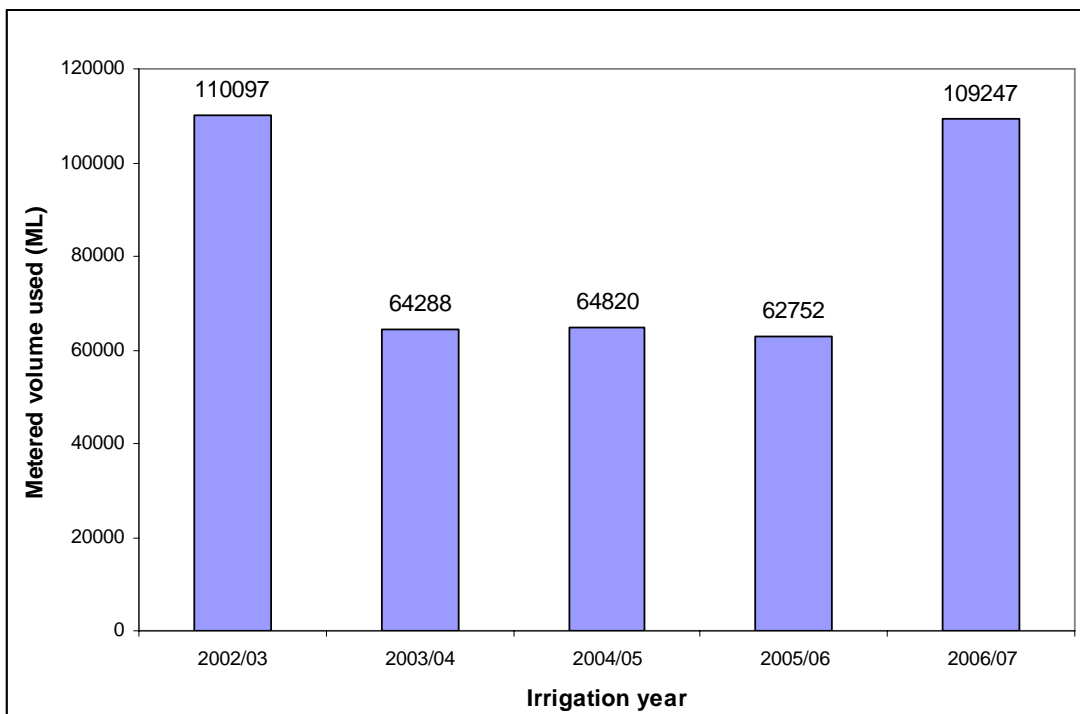
Figure 3 overleaf shows the distribution of licensed irrigation bores that supplied data summarised in the table above.

<sup>4</sup> 20 ML is the annual groundwater usage defined as the upper limit for low capacity bores in the SIR and is a figure endorsed by the former SIR Groundwater Management Plan Working Group in 2000.



**Figure 3 - The distribution of metered groundwater extraction bores in the SIRWSPA**

Groundwater usage from the licensed irrigation bores with meters considered as being reliable in this reporting period, was 109,247 ML. This represents a total use of 66% of the total licensed entitlement for those bores. The metered usage volumes for the past five years are shown below in Figure 4.



**Figure 4 - Total metered usage in the SIRWSPA since 2002/03**

Of the 813 metered licensed irrigation bores considered as providing reliable usage data over the reporting period, a total of 133 (16.4%) had a recorded usage that exceeded their licence entitlement. This represents a significant increase since 2005/2006 from 40 (5%) of metered irrigation bores that exceeded licence entitlement. The total volume used in excess of entitlement increased from 2182 ML to 13,741 ML

**Table 4 – Summary of licensed use within entitlement**

<b>Percentage Excess of Entitlement</b>	<b>No. of Users</b>	<b>Total Volume Overused (ML)</b>
<b>0 – 25%</b>	53	1201
<b>25.01 – 50%</b>	28	1707
<b>50.01 – 75%</b>	20	2648
<b>75.01 – 100%</b>	10	1601
<b>&gt; 100%</b>	22	6584
Totals	133	13741

The increase in use in excess of entitlement is consistent with the significant increase of shallow groundwater in 2006/07 compared to 2005/06. This increase is likely to have occurred as a result of the unprecedented drought conditions in 2006/07 combined with the low surface water allocations. There has been an increased reliance on resource use from groundwater to meet the shortfalls in surface water irrigation entitlement. It has clear that the extreme circumstances and low surface water supplies have also caused an increase in the volume of shallow groundwater used in excess of groundwater entitlement.

The table above summarises use in excess of entitlement from metered bores in the SIRWSPA for the year to June 2007. As flow meters are only read once at the end of each irrigation year, use in excess of entitlement has been difficult to monitor, manage and enforce. The fact that twenty-two licence holders pumped more than 100% over their licence entitlement highlights the need for increased meter reading and compliance.

*Development of a compliance strategy*

Despite these circumstances, G-MW has an obligation to manage use within entitlement. The 2005 DSE Groundwater Audit confirmed that licensed groundwater use must occur within entitlement. Planned use in excess of entitlement can only occur with an approved temporary or permanent transfer. Salinity management objectives in the Groundwater Plan do not however permit licence transfers to occur in the SIRWSPA.

Legal advice was sought during 2006/07 on additional tools to manage use within entitlement including excess use fees; overdraw mechanisms and rolling average usage. However, these options cannot be developed without first amending the Plan (a formal process under the *Water Act 1989*) and requires the support of key stakeholders (particularly partners under the Goulburn Broken Catchment Strategy).

In light of the difficulty in pursuing other management options, G-MW must take compliance action such as licence cancellation or prosecution in response to use in

excess of entitlement. This is consistent with the approach to managing groundwater licences elsewhere.

A compliance strategy has been developed for 2007/08 onwards and has approval from the Groundwater Plan stakeholders. The strategy is modelled on a 'three strikes' approach, which includes a first warning letter, a final warning letter and ultimately, prosecution or licence cancellation. Increased meter reading and in-season monitoring will also occur as a part of this new strategy. For further discussion see section 9.1 of this report.





## **7. Transfer of Water Entitlement**

Transfer of licence groundwater entitlement (temporary or permanent) is not permitted between bores in the SIR WSPA.

## **8. Data Review**

### **8.1. Groundwater Level Trends**

In August 2006 the shallow watertable levels were generally within 3 metres of the ground surface across about 33% of the SIRWSPA, compared to just over 36% in August 2005. Note that in 1996 the percentage of land area in the SIRWSPA with water table levels within 3 metres of the ground surface was 57%. This is represented in the graph over page.

Most districts across the SIRWSPA experienced water table decline in areas bounded by the 1m, 2m and 3m watertable contours between August 2005 and August 2006; most notably in the Murray Valley and Central Goulburn irrigation areas. Across the SIRWSPA the total area bounded by 1 metre contours was 0.7% in August 2006 compared with 33% in August 1996. Only the Rochester/ Campapse West district showed little change in land area bounded by the each watertable contour.

The general water table decline observed may be attributed to significantly lower than average rainfall occurring across the Water Supply Protection Area in the twelve-month period from August 2005 to August 2006, particularly in the autumn and winter period of 2006 (i.e. rainfall totals in the latter half of 2005/06 recorded at Tatura, Kyabram, Rochester and Cobram were as much as 50% below historic median totals)

With a few exceptional areas, northern Victoria has generally experienced lower than average rainfall conditions over the decade since 1996. The “lower than average” groundwater recharge conditions within the SIRWSPA can be attributed to:

1. reduced natural rainfall recharge to the shallow aquifer system and,
2. a dramatic reduction in surface water allocations to irrigators.

Since 1996, the above factors have resulted in watertable levels across the SIRWSPA that are not reflective of shallow watertable conditions observed in the previous decade, as shown in Figure 6.

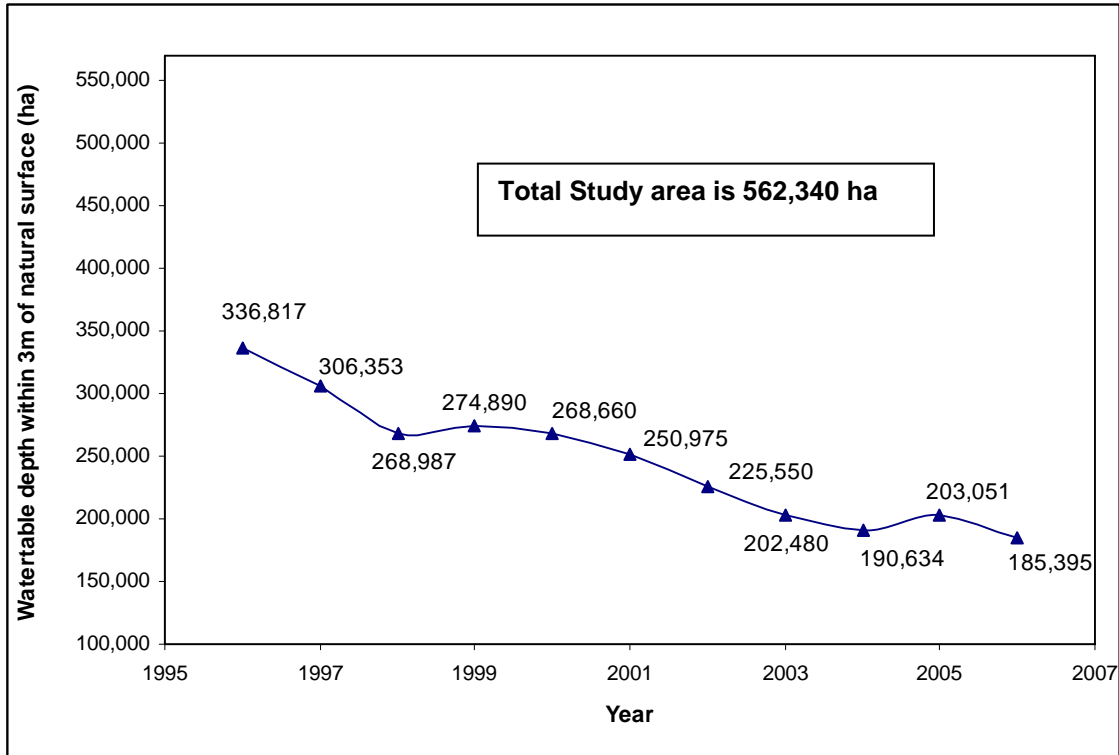


Figure 6 – Watertable depth within 3 metres of natural surface across the SIRWSPA

### 8.2. Groundwater Salinity

G-MW conducts a salinity mail-out to operators of licensed irrigation bores during the irrigation season each year. A sample bottle is provided to the registered owner of all licensed shallow (ie < 25 m deep) irrigation bores within the Groundwater Plan area. Included is a pre-paid return envelope and an accompanying letter requesting that a groundwater sample be collected during operation of the irrigation bore and returned to G-MW for salinity determination (as electro-conductivity, EC).

Table 6 – Salinity sampling summary for 2006/07

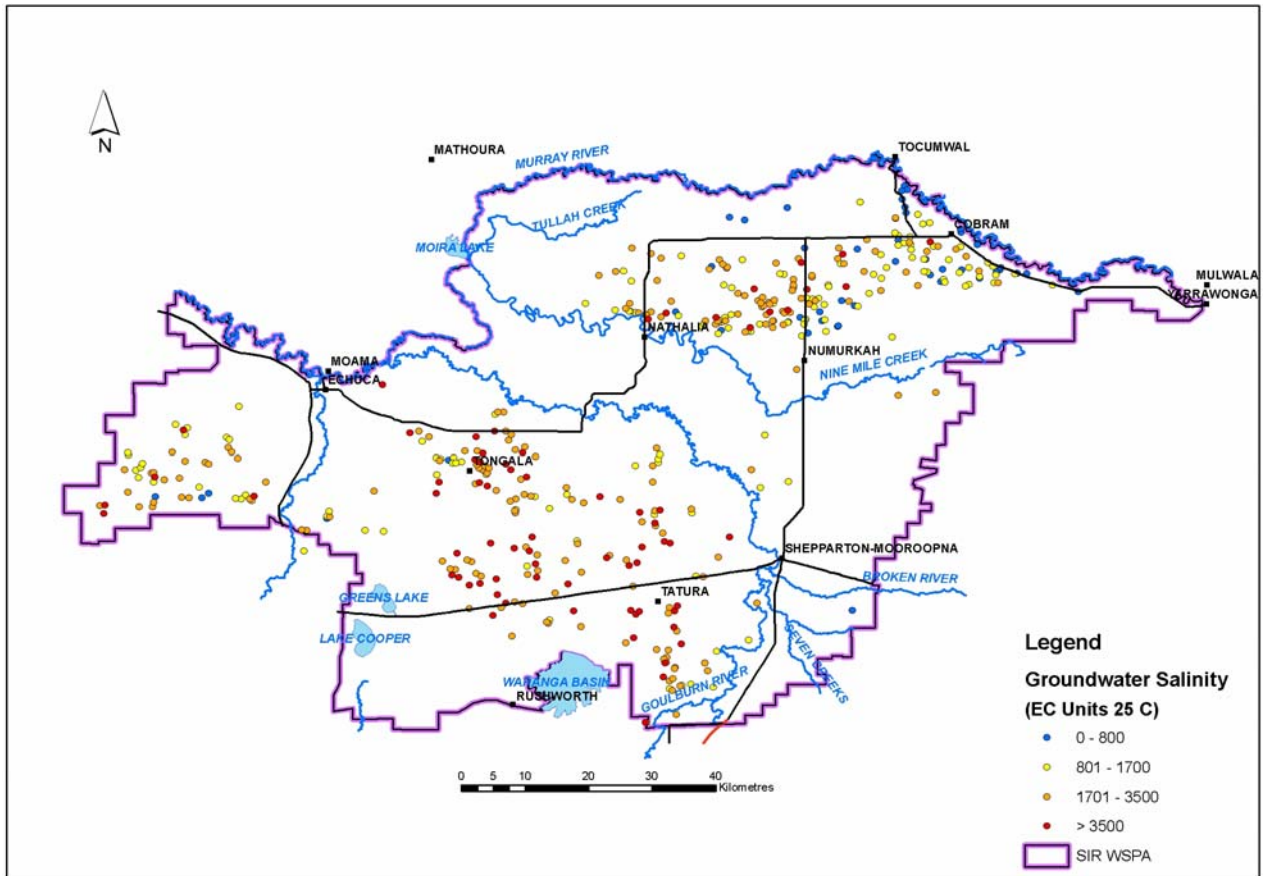
Column 1	Column 2	Column 3	Column 4	Column 5
Sample Requests	No. of bores with salinity sample history since 2003	Samples returned from Mail-Out	Samples from Other Sources	Total No. Samples
1074 <sup>6</sup>	747	400	80	480

**Notes:**

- Column 1 No. of sample bottles mailed to licensed groundwater users as part of the salinity mail-out during the irrigation season (includes bores licensed for purposes other than irrigation).
- Column 2 No of bores which have a history of returned salinity samples since 2003.
- Column 3 No. of groundwater salinity samples obtained in response to the Mail-out during the current reporting period
- Column 3 No. of groundwater salinity samples obtained from other sources (such as site inspection) during the current reporting period
- Column 4 Columns 2 + 3

<sup>6</sup> Owners of bores licensed for purposes other than irrigation were also included in the 2006/2007 salinity sample bottle mail-out. Irrigation bore sample requests numbered 898.

The data from salinity samples has been used for licence renewal assessment and will feed into regional trend analysis.



**Figure 7 – The distribution of groundwater salinity samples received for SIRWSPA irrigation bores**

Figure 7 above shows the distribution of irrigation bores for which groundwater salinity data is available during the reporting period. The figure highlights that groundwater salinity in the SIRWSPA is highly variable due to the complex nature of the shoe-string sands that make up the Upper Shepparton Formation aquifer. Refer to section 9.2 for further discussion on salinity sampling.

## **9. Discussion of Issues Arising**

### **9.1. Overuse of Entitlement**

During 2006/07 G-MW developed a compliance strategy to manage licence holders who use in excess of their groundwater licence entitlement. This strategy includes the initial provision of written notice by G-MW to licence holders who use in excess of their licence entitlement, followed by prosecution for breach of licence conditions should further use in excess of entitlement occur. G-MW has received support for this compliance strategy from all Groundwater Plan stakeholders.

The new compliance strategy was communicated to all SIRWSPA licence holders during 2006-2007 and reminders will continue to be issued on a yearly basis outlining the both the strategy as well as legal obligations in managing use within licence entitlement. However the target for managing licensed use remains at zero use in excess of entitlement.

Due to dryer climatic conditions over the last decade, adaptive management tools will need to be carefully considered by G-MW, in consultation with DSE and other Management Plan stakeholders, to ensure the SIRWSPA can be successfully managed to encompass both sustainable resource use needs and catchment strategy objectives (e.g. salinity). These need for more adaptive management will be discussed in detail in a review of the Management Plan, which is proposed to be commenced during 2007/08.

### **9.2. Response from Request for Groundwater Samples**

It is a condition on groundwater irrigation licences in the SIRWSPA that licensees are required to submit a sample of groundwater from their licensed irrigation bore when requested by G-MW. G-MW officers are generally not able to collect samples when meter reading as meters are read annually and at the end of the irrigation season when licensed bores are typically not in operation.

Just over 44% of licensees with irrigation bores complied with G-MW's request for a groundwater sample during the current reporting period. This is an increase (8%) on the previous reporting period 2005-06. G-MW is endeavouring to improve compliance with the sampling program by providing prompt feedback to licensees on salinity sample results, and seeks to improve understanding of the purpose and benefits of providing groundwater salinity data in ongoing communication with customers. A communication strategy developed in 2006/2007 by G-MW to reinforce the benefits of customers contributing salinity samples appears to have improved the response rate. This communication strategy will continue into 2007/08 and a target sample return rate of 50% from licensees with irrigation bores has been set.