

# **Tarwin Groundwater Catchment Statement**

**January 2014**



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## Purpose of this document

Victoria has introduced Groundwater Catchments to capture the full extent of connected groundwater resources.

The catchment statement is the first step toward ensuring users and the community have a complete picture of the current management of groundwater in the Tarwin Groundwater Catchment. The objective is, over time, to simplify management of groundwater throughout the catchment and enable users to get access to water for future development. The Seaspray Groundwater Catchment boundary is available at the state government's Central Plan Office (document reference LEGL./12-057).

This document brings together all the plans affecting the licensed use of groundwater in the Seaspray Groundwater Catchment. Water Supply Protection Areas and Groundwater Management Areas exist within the catchment. Statutory management plans apply in some water supply protection areas and local management plans apply in all other areas.

Management plans included in this statement will be reviewed at least every five years, but reviews may occur earlier if required. Reviews will improve existing management and potentially reduce the number of management areas within the catchments. This will make management less complex, while ensuring equitable sharing and long term sustainability of the resource.



CRAIG PARKER

General Manager Groundwater & Rivers

19 July 2013

## Definitions

### Carryover

Allows entitlement holders to retain ownership of unused water allocated or purchased from the current season into the following season in accordance with rules specified in a Ministerial Order made under section 62A of the *Water Act 1989*.

### Entitlements

Water entitlements referred to in this report refer to entitlements issued under section 51 of the *Water Act 1989*.

### Groundwater basins

One or more groundwater catchments within a geological basin. The basin may extend off-shore or across State boundaries. In some cases a basin may be broken into one or more sub-basins to reflect administrative management boundaries.

### Groundwater catchments

An area containing a connected groundwater resource(s), bringing together the input (recharge) areas, use (demand) areas and discharge areas.

### Groundwater Management Area (GMA)

A Groundwater Management Area (GMA) is a discrete area where groundwater of a suitable quality for irrigation, commercial or domestic and stock use is available or expected to be available.

### Groundwater Management Plan (GMP)

The object of a management plan is to make sure that the water resources of the relevant Water Supply Protection Area are managed in an equitable manner and so as to ensure the long-term sustainability of those resources (section 32(A)(1), *Water Act 1989*).

### Groundwater Management Unit (GMU)

Either a groundwater management area or a Water Supply Protection Area.

### Local Management Plans

Local Management Plans describe the resource, management objectives and specific rules such as restrictions, carryover (if applicable) and trade within a specified area. Local Management Plans cannot amend licence conditions.

### Permissible Consumptive Volume (PCV)

The total volume of water that can be taken in an area or water system and a period of time. (section 22(A)(1), *Water Act 1989*)

### Victorian Water Accounts

The Victorian Water Accounts document key water resource management issues and provides an overview of water availability and use across Victoria.

### Water Supply Protection Area (WSPA)

A Water Supply Protection Area (WSPA) is an area declared under section 27 of the *Water Act 1989* to protect the groundwater or surface water resources through the development of a management plan which aims for equitable management and long-term sustainability.

## Tarwin Groundwater Catchment

The Tarwin Groundwater Catchment is located in the Central Basin in eastern Victoria (Figure 1). The Tarwin Groundwater Catchment map is lodged with the Central Plan Office, reference number: LEGL./12-059 TARWIN GROUNDWATER CATCHMENT. Local Management Plans for sub-areas of the catchment form the basis for groundwater management.

The Local Management Plans do not replace permissible consumptive volumes, approved groundwater management plans or place any additional requirements on the use of groundwater for stock and domestic purposes.

The local management plan details can be found in the appendices.

<b>Local Management Plan Area</b>	<b>Plan Details</b>
Leongatha Groundwater Management Area	Appendix 1
Tarwin Groundwater Management Area	Appendix 2
All remaining areas	Appendix 3

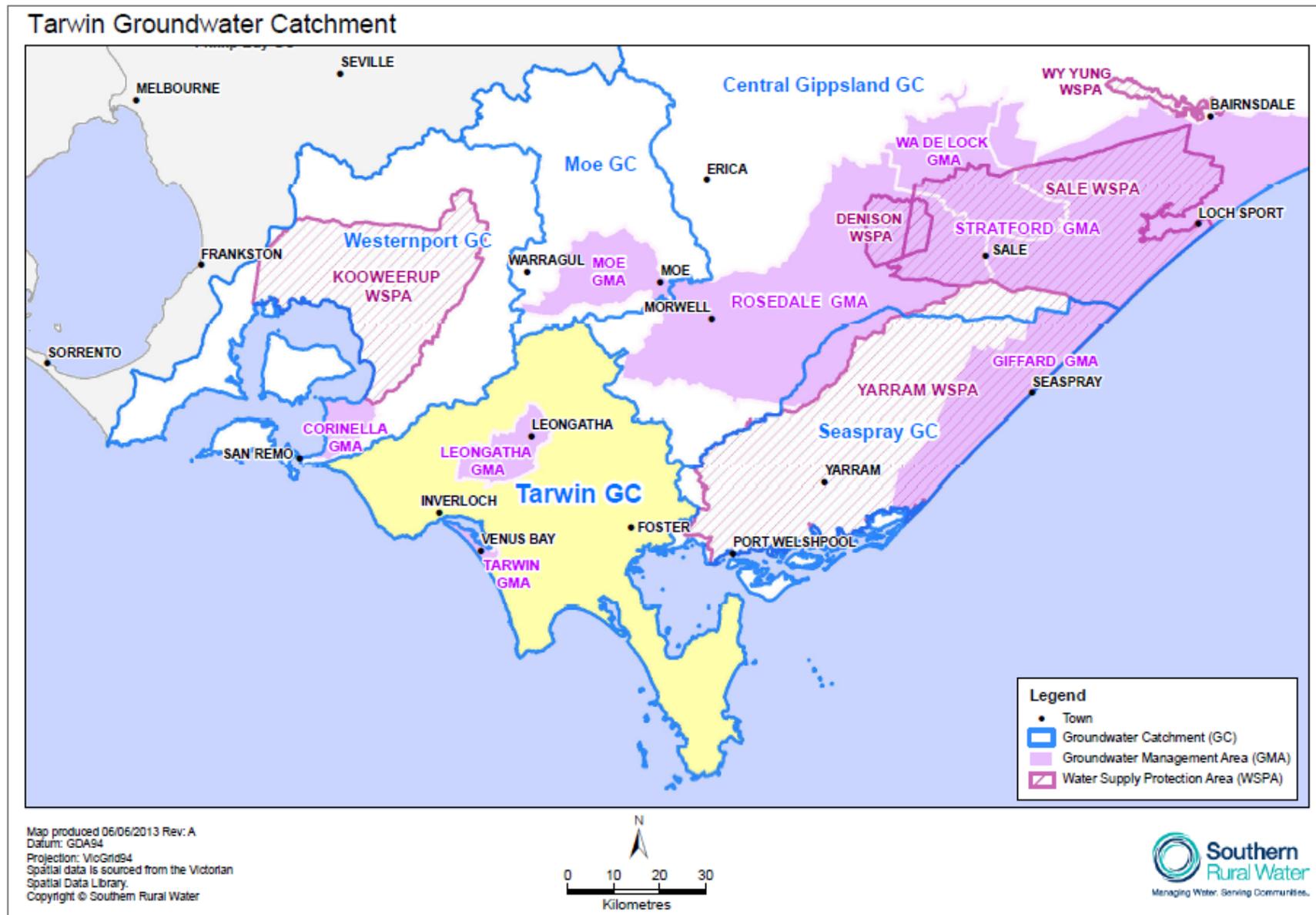


Figure 1 - Location of the Tarwin groundwater catchment and GMA/WSPAs in the Central and Gippsland Basins.

Local management plans may (from Policy 3.5, *Gippsland Regional Sustainable Water Strategy*, p43):

- document management objectives for the system;
- explain to licence holders (and the broader community) the specific management objectives and arrangements for their water resource and the rules that apply to them as users of that resource;
- be based on existing operational rules, recognising the rights of existing licence holders;
- be consistent with the *Policies for Managing Section 51 Take and Use Licences*;
- document any limits, including water use caps, Permissible Consumptive Volumes (PCVs) or extraction limits that apply to the Groundwater Management Units (GMUs);
- include trading zones and rules;
- clarify water sharing arrangements for all users and the environment, including environmental flow requirements;
- document monitoring and reporting requirements: and
- be periodically reviewed to incorporate new knowledge.

## Aquifers in the Tarwin Groundwater Catchment

Groundwater is found in aquifers. An aquifer is a layer of fractured rock, gravel, sand or limestone below the ground that is porous enough to hold groundwater and allow it to flow. An aquitard is a layer of rock or clay that may hold some groundwater but is not porous enough to allow it to flow significantly.

The Gippsland Groundwater Atlas (SRW, 2012) identifies and clearly describes the resources across the Tarwin groundwater catchment. The catchment can be broadly subdivided into three layers; the upper, middle and lower aquifers. The aquifer layers are generally separated from one another by aquitards. A cross section showing the relative position of the aquifer layers is provided in Figure 2.

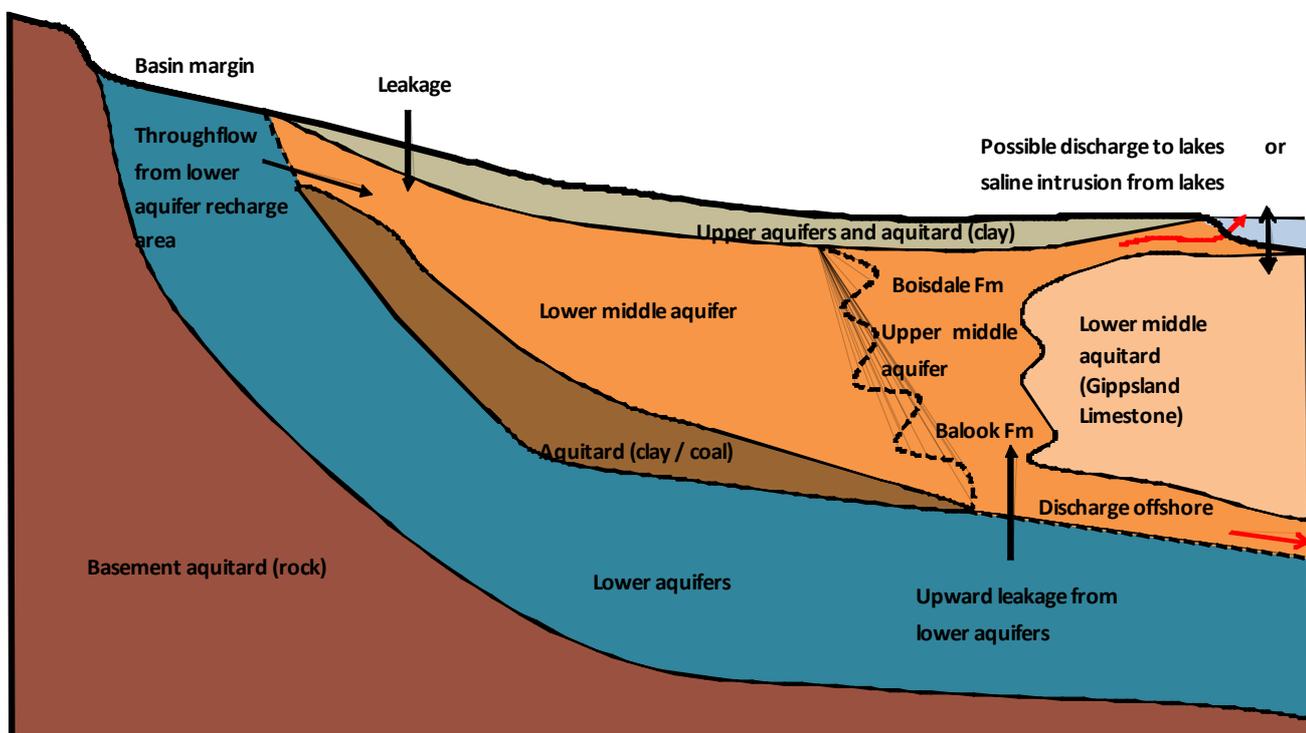


Figure 2 –Cross-section showing the relative position of the aquifer layers (taken from the “Gippsland Groundwater Atlas”, p45, SRW, 2012)

The local management plans describe the rules for management of all or part of an aquifer (upper, middle or lower). The aquifers comprise layers that have both hydrogeological names (as described in the Victorian Aquifer Framework, DSE, 2012) and primary geological names. The principal aquifer managed by each local management plan area and the associated hydrogeological and geological names are summarised in Table 1.

**Table 1 – Principal aquifer resource managed by the Local Management Plan Area<sup>1</sup>**

Principal Local Management Plan for the layer (or part layer) and Groundwater catchment <sup>2</sup>	Aquifer layer	Hydrogeological layers (Victorian Aquifer Framework, DSE, 2012)	Geological Layers
Tarwin	Upper	QA Quaternary	Various aeolian deposits, various fluvial, lacustrine, alluvial and colluvial sediments. Quaternary sandy limestone, calcarenite and shell deposits.
		UTB Upper Tertiary/ Quaternary	Quaternary stoney rises, tuff, undiff. Quaternary basalt (inc Newer Volcanics)
		UTAM Upper Tertiary Aquifer (Marine)	Moorabool Viaduct Formation
		UTAF Upper Tertiary Aquifer (Fluvial)	Brighton Group, Baxter Formation
	Middle	UMTA Upper Mid Tertiary Aquifer	Batesford Limestone, Sherwood Formation, Yallock Formation
		UMTD Upper Mid Tertiary	Torquay Group, Fyansford Formation, Newport Silt, Maddingley Coal
		LMTA Lower Mid-Tertiary Aquifer	Maude Formation
		LMTD Lower Mid Tertiary Aquitard	Demons Bluff Group, Anglesea Formation
Leongatha	Lower	LTB Lower Tertiary Basalts	Phase 2 Basalts, Mornington Volcanics
Leongatha		LTA Lower Tertiary Aquifer	Childers Fm, Eastern View Formation, Werribee Formation, Yaloak Formation
		LTB Lower Tertiary Basalts	Mornington Volcanics, Older Volcanic Group (Phase 1)
	Basement	BSE Mesozoic and Palaeozoic Bedrock	Permian Glacial Sediments, all Palaeozoic basement rock

Descriptions from Gippsland Groundwater Atlas (SRW, 2012), Groundwater Resources Online (DSE 2012) and Victorian Aquifer Framework (DSE 2012).

Note 1: The areas are often defined by a depth from surface that may incorporate parts of other aquifers and aquitards. The principal aquifer is the primary target for management of groundwater extraction. Any rules, however, apply to the entire defined area (see Appendices).

Note 2: All other aquifer layers not covered by the local management plans above are covered in the “All remaining areas” Local Management Plan (Appendix 3).

## Water management arrangements

### Overarching responsibilities

Groundwater management falls within both the jurisdiction of Southern Rural Water (SRW) and the Department of Environment and Primary Industries (DEPI) in ensuring the delivery of government policy on water and the environment. They are jointly responsible for implementing the Gippsland Region Sustainable Water Strategy. The groundwater catchment statements, of which the Tarwin GCS is one, are part of the implementation of this strategy.

The licensing authority for groundwater within the Tarwin Groundwater Catchment is SRW. SRW are responsible for the issuing of bore construction licences (section 67, *Water Act 1989*) and the licensing of groundwater extractions under “take and use” licences under section 51 of the Act. See the SRW website ([www.srw.gov.au](http://www.srw.gov.au)) or the Victorian Water Register ([waterregister.vic.gov.au](http://waterregister.vic.gov.au)) for more information about these.

DEPI is the department responsible for administration of the *Water Act 1989*, and as such oversee the management of water resources in Victoria.

Sustainable Water Strategies (SWS) and groundwater (or local) management plans are one way that DEPI and SRW ensure the long term sustainability of those resources, and that they are managed equitably.

Monitoring of the groundwater resources (quality and levels) forms a substantive component of this by providing the information to assess the health and availability of the resource. SRW and DEPI undertake extensive monitoring of groundwater in the Tarwin catchment.

### Water accounting

Information on the management and use of groundwater within this groundwater catchment is included in the Victorian Water Accounts which are published annually by the DEPI. Annual reports on WSPAs with groundwater management plans are produced each year by SRW tabulating usage, allocations and entitlements for those areas.

Groundwater entitlements are listed on the Victorian Water Register and are publicly available on the web ([waterregister.vic.gov.au](http://waterregister.vic.gov.au)).

### Review

DEPI may review and evaluate progress on management of groundwater at any time, in collaboration with SRW.

SRW may independently review Local Management Plans. Administrative changes or clarifications may be made without consultation. SRW will consult licence holders and stakeholders on any change that affects their rights.

## Access to information

More information on groundwater can be obtained from the websites listed below. This includes information on groundwater levels, the Gippsland Groundwater Atlas and groundwater resource reports.

Southern Rural Water – <http://www.srw.com.au>

Department of Environment and Primary Industries – <http://www.depi.vic.gov.au>

Victorian Water Register – [waterregister.vic.gov.au](http://waterregister.vic.gov.au)

Gippsland Groundwater Atlas (SRW, 2012), available online at:

[http://www.srw.com.au/Page/Page.asp?Page\\_Id=687&h=0](http://www.srw.com.au/Page/Page.asp?Page_Id=687&h=0)

Groundwater Resource Reports (DSE, 2012):

<http://www.water.vic.gov.au/monitoring/groundwater/groundwater-resource-reports>

Victorian Aquifer Framework (DSE, 2012) –

<http://www.water.vic.gov.au/environment/groundwater/national-groundwater-action-plan-victorian-projects>

## Appendix 1 Leongatha GMA Local Management Plan

### Objective of the Local Management Plan

The objective of the Local Management Plan is to make sure that the groundwater resources in the Leongatha Groundwater Management Area (GMA) are managed in an equitable and sustainable manner.

### Area description

Leongatha GMA is shown below. The plan is lodged with the Central Plan Office, reference number LEGL./04-144.

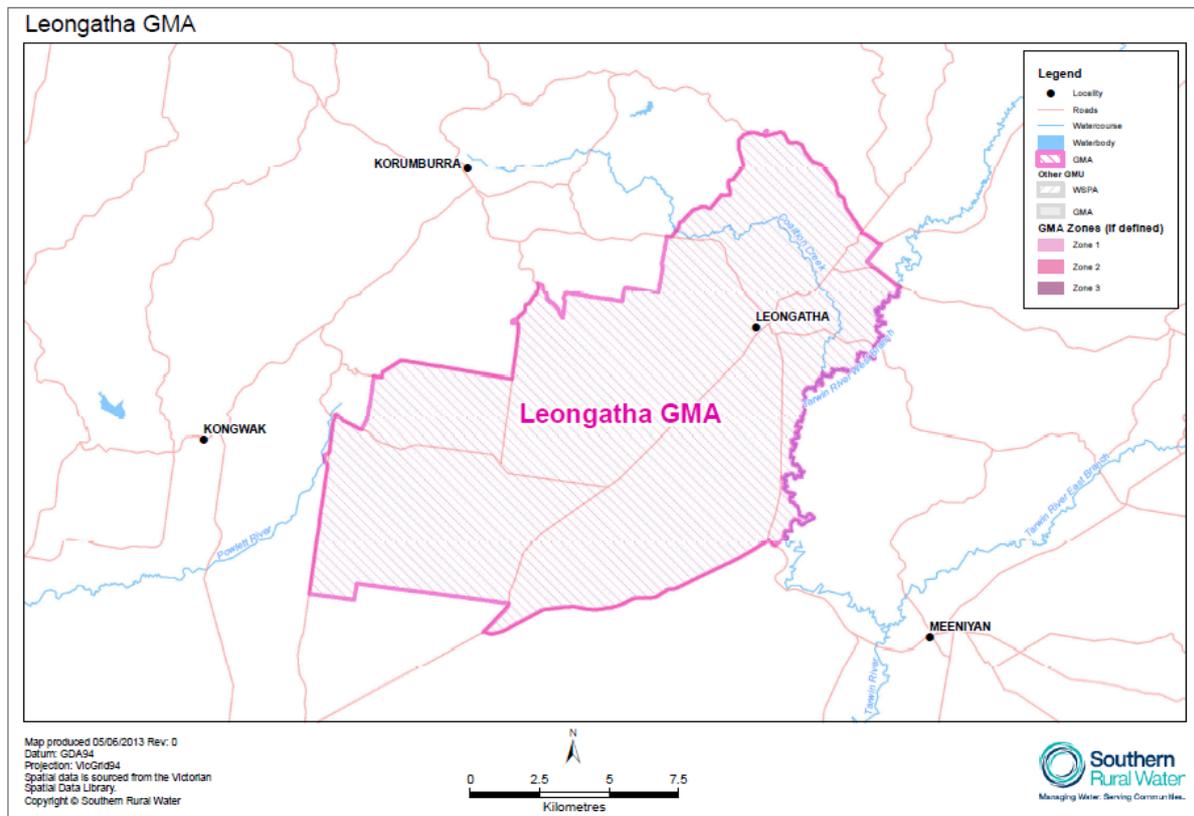


Figure A1-1: Map of Leongatha Groundwater Management Area.

### Permissible Consumptive Volume

A Permissible Consumptive Volume (PCV) currently applies to the Leongatha GMA. The PCV is a cap on the amount of groundwater allocated in this management unit. The PCV for Leongatha GMA is 6,500 ML/yr.

The PCV applies to the area covered in Figure A1-1, for all formations below the surface.

### Water entitlements

The extraction of groundwater for purposes other than domestic and stock use is authorised under a groundwater licence. There are 34 groundwater licences in the Leongatha GMA

that authorise a total of 1,840 ML. People have rights to take groundwater for domestic and stock use without a groundwater licence.

Groundwater is used in the Leongatha GMA for irrigation, dairy wash downs and urban water supply. Metered groundwater use is less than the total groundwater entitlements, and varies each year according to the seasonal conditions.

Licence holders must not take more than their annual licence volumes.

## Restrictions

The PCV determines the maximum volume of water that can be extracted from the Leongatha GMA; however, the local management plan does not place specific restrictions on taking groundwater.

If necessary, SRW is able to temporarily qualify rights to groundwater under section 33AAA of the *Water Act 1989* if a water shortage occurs - for example, if regional drawdown is affecting access to groundwater by users.

Groundwater licences also allow SRW to restrict extraction if required - for example, to minimise the effect of extraction from specific sites if there is a significant impact on nearby users or the aquifer. If restrictions are necessary, SRW will notify licence holders in advance.

## Trading

In considering an application to transfer a licence temporarily or permanently, SRW must thoroughly assess the application. An application to transfer a licence is not automatically approved. In deciding whether or not to approve an application, SRW must consider section 40 of the Act, including:

- Availability of water now and in the future;
- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality in the WSPA.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set transfer conditions to minimise interference, or it may refuse the application. Approval of an application to transfer may be subject to technical assessments to determine bore interference and impact on surface water bodies.

In the Leongatha GMA:

- Permanent transfers are permitted
- Temporary transfers are permitted for a period of up to five years

## **New licences**

New licences can be issued up to the PCV and in accordance with policies for managing take and use licences.

## **Metering**

Southern Rural Water meters new and existing licensed water users. This allows SRW to keep track of how much water is being used and enables licence holders to keep within their allocated volume. This means:

1. All new licences for irrigation or commercial purposes require a meter
2. Existing licences of 10ML or greater require a meter

The meters are supplied by SRW, and the licence holder will be responsible for paying the full cost of the meter and initial installation. The meter remains the property of SRW. SRW is responsible for maintenance and replacement.

Meters are read at least twice per year.

## **Consultation**

SRW will consult with licence holders and relevant stakeholders before making changes to the Local Management Plan, other than administrative changes or clarifications.

The Local Management Plan will be reviewed every 5 years, unless an update is required sooner.

## Appendix 2 Tarwin GMA Local Management Plan

### Objective of the Local Management Plan

The objective of the local management plan is to make sure that the groundwater resources in the Tarwin Groundwater Management Area (GMA) are managed in an equitable and sustainable manner.

### Area description

Tarwin GMA is shown below. The plan is lodged with the Central Plan Office, reference number LEGL./04-159.



Figure A2-1: Map of Tarwin Groundwater Management Area.

### Permissible Consumptive Volume

A Permissible Consumptive Volume (PCV) currently applies to the Tarwin GMA. The PCV is a cap on the amount of groundwater allocated in this management unit. The PCV for Tarwin GMA is 1,300 ML/yr.

The PCV applies to the area covered in Figure A1-1, for all formations from surface to 25 metres below the surface.

## Water entitlements

The extraction of groundwater for purposes other than domestic and stock use is authorised under a groundwater licence. There are 3 groundwater licences in the Tarwin GMA that authorise a total of 38 ML. People have rights to take groundwater for domestic and stock use without a groundwater licence.

Groundwater is licensed for irrigation, dairy and urban water use. Metered groundwater use is less than the total groundwater entitlements, and varies each year according to the seasonal conditions.

Licence holders must not take more than their annual licence volumes.

## Restrictions

The PCV determines the maximum volume of water that can be extracted from the Tarwin GMA; however, the Local Management Plan does not place specific restrictions on taking groundwater.

If necessary, SRW is able to temporarily qualify rights to groundwater under section 33AAA of the *Water Act 1989* if a water shortage occurs - for example, if regional drawdown is affecting access to groundwater by users.

Groundwater licences also allow SRW to restrict extraction if required - for example, to minimise the effect of extraction from specific sites if there is a significant impact on nearby users or the aquifer. If restrictions are necessary, SRW will notify licence holders in advance.

## Trading

In considering an application to transfer a licence temporarily or permanently, SRW is musty thoroughly assess the application. An application to transfer a licence is not automatically approved. In deciding whether or not to approve an application, SRW must consider section 40 of the Act, including:

- Availability of water now and in the future;
- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality in the WSPA.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set transfer conditions to minimise interference, or it may refuse the application. Approval of an application to transfer may be subject to technical assessments to determine bore interference and impact on surface water bodies.

In the Tarwin GMA:

- Permanent transfers are permitted

- Temporary transfers are permitted for a period of up to five years

## **New licences**

New licences can be issued up to the PCV and in accordance with policies for managing take and use licences.

## **Metering**

Southern Rural Water meters new and existing licensed water users. This allows SRW to keep track of how much water is being used and enables licence holders to keep within their allocated volume. This means:

1. All new licences for irrigation or commercial purposes require a meter
2. Existing licences of 10ML or greater require a meter

The meters are supplied by SRW, and the licence holder will be responsible for paying the full cost of the meter and initial installation. The meter remains the property of SRW. SRW is responsible for maintenance and replacement.

Meters are read at least twice per year.

## **Consultation**

SRW will consult with licence holders and relevant stakeholders before making changes to the Local Management Plan, other than administrative changes or clarifications.

The Local Management Plan will be reviewed every 5 years, unless an update is required sooner.

## Appendix 3 Tarwin Groundwater Catchment (Areas outside of GMUs) Local Management Plan

### Objective of the Local Management Plan

The objective of the local management plan is to make sure that the groundwater resources in Tarwin Groundwater Catchment are managed in an equitable and sustainable manner.

### Area description

The remaining region of the Seaspray Groundwater Catchment comprises all areas excluding:

Leongatha Groundwater Management Area Appendix 1

Tarwin Groundwater Management Area Appendix 2

The remaining area of the Tarwin Groundwater Catchment is subdivided into two zones based on depth. The boundary between the zones is defined as 200m below the natural surface or 50 metres below the base of the Tertiary surface (whichever is the greater, refer Figure A3-1).

Where it can be shown that extraction from the deeper zone has no material impact on the upper zone, a licence is still required but upper zone management rules (in particular, PCVs and restrictions) would not apply.

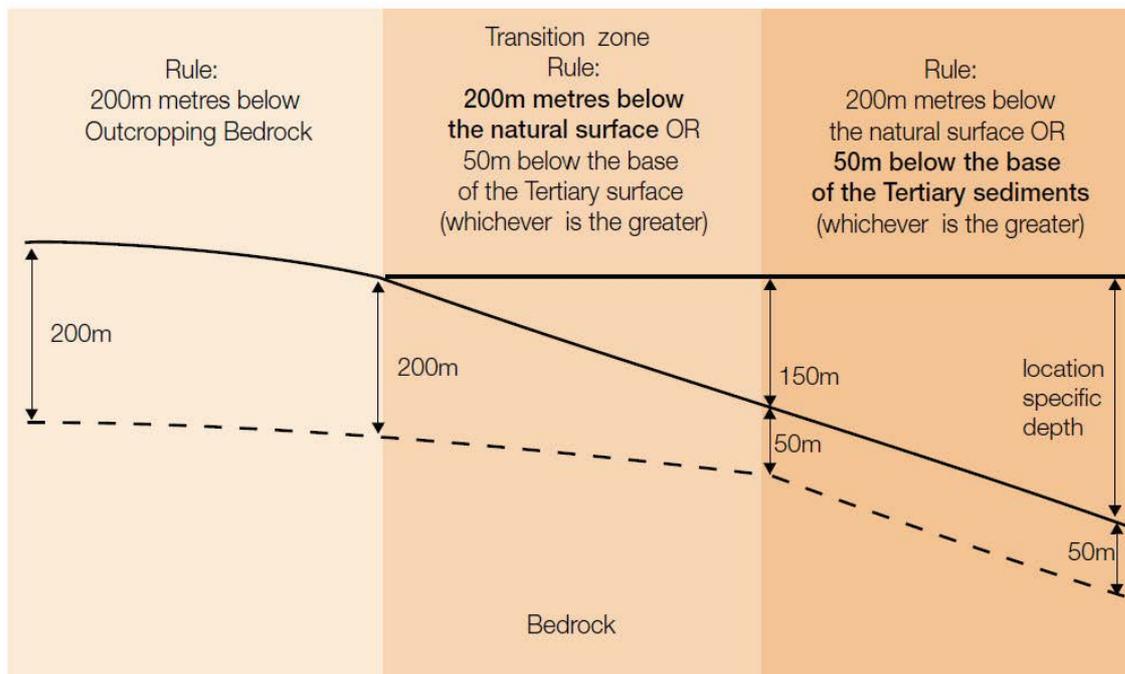


Figure A3-1: Depth defined management zones

### Permissible Consumptive Volume (PCV)

There are no PCVs that currently apply to this area or its zones.

## Water use and entitlements

The extraction of groundwater for purposes other than domestic and stock use is authorised under a groundwater licence. People have the right to take groundwater for domestic and stock use without a groundwater licence. This applies for the entire area and all zones.

Guidelines on the rights to take and use groundwater under section 51 of the Act are available on the water register site ([www.waterregister.vic.gov.au](http://www.waterregister.vic.gov.au)).

## Restrictions

This Local Management Plan does not place any restrictions on taking groundwater.

If necessary, SRW is able to temporarily qualify rights to groundwater under section 33AAA of the *Water Act 1989* if a water shortage occurs - for example, if regional drawdown is affecting access to groundwater by users.

Groundwater licences also allow SRW to restrict extraction if required - for example, to minimise the effect of extraction from specific sites if there is a significant impact on nearby users or the aquifer. If restrictions are necessary, SRW will notify licence holders in advance.

## New licences

New groundwater licences can be issued within this Local Management Plan area. In considering an application for a groundwater licence SRW must undertake a thorough assessment. An application is not automatically approved. In deciding whether or not to approve an application SRW consider:

- Availability of water now and in the future;
- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set conditions to minimise interference, or it may refuse the application. Approval of an application may be subject to technical assessments to determine water availability, bore interference and impact on surface water bodies.

These rules do not take precedence over Permissible Consumptive Volumes (PCVs) and Water Supply Protection Areas (WSPAs).

## Groundwater trade

There are no trading rules in this Local Management Plan area.

In considering an application to transfer a licence temporarily or permanently, SRW must thoroughly assess an application. An application to transfer a licence is not automatically

approved. In deciding whether or not to approve an application SRW must consider section 40 of the Act, including:

- Availability of water now and in the future;
- Adverse effects that an approval may have on existing users, on waterways and aquifers and on the environment; and
- Existing and projected water quality in the area.

When an application is made, SRW will assess whether groundwater extractions at the new site will cause adverse and material interference to any nearby groundwater user. If interference is likely, SRW may set transfer conditions to minimise interference, or it may refuse the application. Approval of an application to transfer may be subject to technical assessments to determine bore interference and impact on surface water bodies.

## **Metering**

Southern Rural Water meters new and existing licensed water users. This allows SRW to keep track of how much water is being used and enables licence holders to keep within their allocated volume. This means:

1. All new licences for irrigation or commercial purposes require a meter
2. Existing licences of 10ML or greater require a meter

The meters are supplied by SRW, and the licence holder will be responsible for paying the full cost of the meter and initial installation. The meter remains the property of SRW. SRW is responsible for maintenance and replacement.

Meters are read at least twice per year.

## **Consultation**

SRW will consult with licence holders and relevant stakeholders before making changes to the Local Management Plan, other than administrative changes or clarifications.

The Local Management Plan will be reviewed every 5 years, unless an update is required sooner.