Groundwater Management – Peake, Roby and Sherlock

February 2024

The Murraylands and Riverland Landscape Board has received several questions about the review of the Water Allocation Plan for the Peake, Roby and Sherlock Prescribed Wells Area (PWA), including from water license holders and stock and domestic users. We have developed this newsletter for water users and the community to answer some of these queries, and provide information about the amendment process.

If you'd like to be informed of upcoming community consultation events, please register for our mailing list by emailing mr.landscape@sa.gov.au or phoning 08 8532 9100.

How is the Peake, Roby and Sherlock Prescribed Wells Area managed?

In 2004, communities from the hundreds of Peake, Roby and Sherlock raised concerns about the security of groundwater in the area. Community consultation and groundwater modelling was undertaken to develop a dedicated Water Allocation Plan for the Roby, Peake and Sherlock PWA.

The aim of the water allocation plan is to ensure sustainable use of available groundwater resources. The plan came into effect in 2011 and is reviewed every 10 years to ensure it continues to meet the needs of the local community and the environment.

The groundwater model assessed the capacity of groundwater resources and these findings were used to develop sustainable annual allocations across 6 different management zones. A copy of the final report can be found online (*https://rb.gy/ycd7rt*)

The water allocation plan outlines the groundwater systems (aquifers) in the Peake, Roby, and Sherlock PWA, and provides rules for how these systems are managed.

The plan divides the PWA into a system of management zones based on aquifer and salinity which allows licensees access to a sustainable annual allocation of groundwater depending on the level of water within the aquifer (capacity of the water resource), and the salinity level of the groundwater.

There are 2 main aquifer systems – the confined and unconfined aquifers, and their water quality characteristics are different.

- The aquifers are managed by type (confined or unconfined) and by location across the area.
- In the confined aquifer there are 4 management zones based on location which coincide with the natural groundwater salinity.
- In the unconfined aquifer, there are 2 management zones, again based on location, salinity gradient and specific attributes of those aquifers.
- Each management zone has an annual allocation volume limit based on the scientific understanding of how much water can be sustainably extracted. Monitoring is undertaken to check the condition of the groundwater and to ensure that management zone limits are set at the right level.

The Murraylands and Riverland Landscape Board acknowledges the First Peoples of the lands and waters we live and work upon. We pay our respects to their Elders past, present and emerging and acknowledge and respect their deep spiritual and cultural connection to Country.

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The water allocation plan (https://rb.gy/e39azo) talks through the hydrogeology, location and allocation of each management zone.

What are the rules for taking and using water?

The water allocation plan sets out the rules to manage the taking and use of groundwater to ensure that this resource is used sustainably. The rules include:

- 'Annual allocation volumes' for each management zone are limits on the amount of groundwater that can be extracted from each management zone each year. The limits are managed via individual water licences so that the total amount of licensed groundwater does not collectively exceed the annual allocation volume for each zone.
- Transfer of water licences and allocations are subject to specific rules within the water allocation plan. These rules do not allow allocation volumes for management zones to be exceeded or allow transfer of groundwater from high salinity to low salinity areas.
- If the same owner holds adjoining allotments that fall in different management zones, there are rules for managing the extraction of this groundwater.
- Within the extraction management zone (the zone including the township of Peake) there are further transfer rules in regard to groundwater level.
- There are well construction rules in place that limit the location of new licensed wells in relation to existing wells.

How often is groundwater monitored?

The Roby, Peake and Sherlock PWA includes a network of observation wells that are monitored by the Department for Environment and Water (DEW) every 6 months for groundwater level and salinity.

Additionally, the Murraylands and Riverland Landscape Board has a landholder salinity program where landholders can submit water samples to DEW for analysis. Water licence holders are notified of the salinity sampling program annually, but anyone can bring a sample into a landscape board office to be tested for salinity at any time during the year. If you'd like to be added to the annual landholder salinity, program please contact us to be added to the contact list at mr.landscapeboard@sa.gov.au or 08 8532 9100.

What are the current groundwater monitoring triggers?

Groundwater monitoring triggers are alarms that occur when a notable negative change in groundwater condition is detected through the regular 6-monthly monitoring schedule. For the Roby, Peake and Sherlock PWA, the triggers relate to groundwater levels and increases in salinity across a 3-year timeframe and would require further investigations to determine the cause.

During the period in which the Roby, Peake and Sherlock water allocation plan has been in operation, the triggers have not been activated.

In the event of a groundwater monitoring trigger, the *Landscape South Australia Act 2019* (the Act) enables the Minister for Climate, Environment and Water to reduce allocation volumes if there is concern that water use is causing a detrimental effect to the resource.

Can allocation volumes be changed?

Over the past 10 years, the condition of groundwater resources in the region have improved significantly. Groundwater levels, salinity and groundwater flow direction in the confined groundwater aquifer have been restored to sustainable levels. Sustainable water extraction across the Roby, Peake and Sherlock PWA means that licensed water use in most management

zones is below the annual allowable volume.

Given the current condition of groundwater, there are no reasons to change allocation volumes in any of the management zones.

However, the landscape board is interested in the community suggestion of potentially changing the trigger from the current 3 year rolling average to an earlier trigger, and this will be explored at upcoming community meetings.

How much water is allocated and how much is being used?

Information about the allocations of individual water licence holders is confidential and cannot be shared.

Information about annual allocations and use for each management zone is included in the groundwater status report (https://rb.gy/0g7ue9) compiled by DEW.

Water Licensees

Water licence holders pay an annual water levy based on an amount gazetted each year. This levy is used by the landscape board to support water planning and management in the PWA. Each licensee is also required to do an annual meter reading.

Annual water use surveys were originally used as a method to record water use but now this information is provided through metering. The landscape board is currently undertaking an internal review to determine if these surveys are still providing useful information.

Aquifer	Management zones	Annual Allocation Volume (limit) (ML)	2022-23 total allocation volume on licence (ML)	2022-23 total licensed water use (ML)
Confined	Coastal Plain High Salinity	100	0	0
	Coastal Plain Medium Salinity	250	201.6	0.6
	Coastal Plain General	100	0	0
	Extraction	1,718	1,738	338.3
Unconfined	Coastal Plain High Salinity	2,000	0	0
	Mallee Highland	1,215	291.6	0.1
Total		5,383	2,231	339

Table 1. Volumes and amounts of licensed water use for each management zone (2022-23)

Is stock and domestic water metered?

No, in the PWA using water for this purpose does not require a licence, or for use to be metered. The Act states that water levies are not charged for stock and domestic water.

The volume used by stock and domestic water users is not known precisely, although an estimated annual volume has been calculated

using the number of active wells and at an estimate of 2 ML/year for each well. Estimated stock and domestic use is 600 ML/year (190 ML in the unconfined aquifer and 410 ML in the confined aquifer).

Can new wells be drilled?

Well construction permits are required for the drilling, plugging, backfilling or sealing of groundwater wells. There are rules within the water allocation plan that the DEW assess against each well permit application.

There are well construction rules in place that limit the location of new licensed wells in relation to existing wells. For example, there is a minimum distance required between a new well in the same aquifer as a stock and domestic or licensed well currently in use for extraction.

Outcome of the 10-year review of the plan

In 2021, the Murraylands and Riverland Landscape Board undertook a review of the Roby, Peake and Sherlock Prescribed Wells Area Water Allocation Plan in accordance with section 54 of the Landscape South Australia Act 2019.

As part of this review, a scientific groundwater assessment was undertaken by DEW and the outcomes of this are available in a report (https://rb.gy/ccj7bv) was produced to showcase the outcomes. A summary of the review (https://rb.gy/1a45cv)) is also available.

As part of the review, every water licence holder in the Roby, Peake and Sherlock PWA was contacted to discuss their future water use plans to assist in understanding what demands may be made on the water resource later. Meetings were also held with First Nations in the area including the First Peoples of the River Murray and Mallee, and Ngarrindjeri.

Since this process began, the landscape board has received feedback that not enough stock and domestic users have been involved in the review process. To help alleviate concerns, we are seeking contact details for these people. Stock and domestic users are not licensed so we do not have their contact details on record.

The review itself does not make changes to the water allocation plan; it makes recommendations on what to do next. The key recommendation of the review was to undertake an amendment process which requires broader community consultation – this is the phase we are now in.

Any issues or topics can be raised during this amendment process for consideration, and we welcome ideas and concerns from the community.

Are you a stock and domestic water user in the Peake, Roby and Sherlock PWA?

Register your contact details with us so we can keep you updated about water resources and future community meetings.

Email **Rowland.Boxall@sa.gov.au**

Will changes be made to the plan?

Yes. At the very least the water allocation plan needs to be brought into line with the Act.

Community engagement started in 2022. It is still ongoing and we have already received a lot of feedback at community meetings and from individuals.

The landscape board is also currently undertaking a similar process with the neighbouring Mallee Prescribed Wells Area.

What have we heard so far?

The community meeting in Peake in July 2023 resulted in the following feedback from the community:

- The community welcomed the update that the resource has recovered to near pre-2003 condition and that groundwater levels tend to be on the rise.
- The suggestion by the landscape board to merge the 2 water allocation plans – the Mallee and the Peake, Roby, Sherlock into one plan while maintaining separate management zones and rules was not supported by most people present at the meeting.
- Having a carryover policy for unused licensed annual allocations was discussed. This would have a set limit and timeframe with similar policy already in place in neighbouring prescribed areas. This idea was not supported by people present at the meeting.
- Some people accessing water in the unconfined Mallee Highland Management Zone are using the same groundwater resource as those people in the Mallee PWA in the neighbouring green management area. It has been suggested that

the plans could allow transfer of water between the 2 prescribed areas just for these two explicit management zones as along as evidence of aquifer properties were met. Most people present at the meeting did not support transfer of licensed water between the 2 prescribed areas.

- The community suggested that the landscape board reviews current groundwater levels and salinity triggers to determine they are still an adequate indicator for unsustainable use.

What's next?

Community consultation sessions in 2024 will continue to explore many of the issues raised at the Peake meeting in 2023. These upcoming sessions will also include discussions about topics including aquifer boundaries and partial unbundling.

Aquifer boundaries

The issue of having arbitrary boundaries to manage the resource based on hundreds and not the aquifer is a concern for some people. A number of wells within the hundred of Peake access water from the Murray Group Limestone aquifer (in the unconfined Mallee Highlands Management Zone). This is the same water as the Green Management Area in the neighbouring Mallee PWA. Current rules in the Peake, Roby and Sherlock PWA restrict the transfer of where this water can be used. It has been requested that the landscape board investigate this matter further. Under the current legislation there are three options available:

- Water between prescribed areas cannot be transferred unless they are under one water allocation plan. This option would therefore combine the plans but still have separate rules in place to manage the water resource. We have already heard from some members of the community that they do not support this option.
- The boundary of both prescribed areas could be changed. This option would be resource and time intensive given the limited area in which the issue arises.
- Keep the current management zones and rules in place.

What does partial unbundling mean?

The term unbundling refers to water-related rights being separated from each other and was introduced under the National Water Initiative 2004.

The Water Allocation Plan for the Peake Roby and Sherlock PWA already allows for the transfer of water so water allocation from one licence holder could be temporarily or permanently transferred to another as long transfer rules in the plan are met.

Bundled, unbundled and partially unbundled is the term used for the degree of separation of the licence documents that are required to manage the resource, for example unbundled rights are granted in separate documents:

- Water access entitlement (water licence): A right to a specified share of available water;
- Water allocation: A right to take a specified volume of water in a specified period (often the water use year);

- Water resource works approval: A right to construct, operate and maintain infrastructure to take water;
- Site use approval: A right to use water at a particular location.

The decision to unbundle or partially unbundle is made depending on what is the best option to manage the resource and is done in consultation with local communities. Currently, water licences in the Peake, Roby and Sherlock PWA are bundled which means all the different parts of a licensee's water access documentation sits on the water licence.

Partial unbundling has been found to be the best process among many other prescribed areas in South Australia that have recently updated their water allocation plans. Partially unbundling water licences means conditions for site use and works approval reside on a water licence/water access entitlement. The advantage of partial unbundling is that it allows allocations to be varied annually based on the resource condition without impacting licensees' water rights.

The water access entitlement (licence) would have a fixed number of shares which do not change over time, however the value of these shares could change when required to respond to issues with the resource condition.

For example, when the resource is in a good condition, 1 share may equal 1 kilolitre (kL), but when the resource condition declines to a point which requires a management response, the value of the share may reduce to 0.8 kL. This would mean if you held 100 shares, when valued at 1 kL per share you would have 100 kL of allocation, if valued at 0.8 kL per share you would have an allocation of 80 kL. More information about partial unbundling and the use of a shares approach to water allocations will be available at the upcoming community meeting.

For more information

Contact **Rowland Boxall**
Email: Rowland.Boxall@sa.gov.au
Phone: 0484 924 714
landscape.sa.gov.au/mr

Upcoming community meeting

The Murraylands and Riverland Landscape Board will be hosting a community meeting in February 2024.

This will be an opportunity to ask questions, raise any new ideas or concerns and discuss some of the key issues e.g. aquifer boundaries and partial unbundling.

Information about the event will be mailed to all residents in the Peake Roby Sherlock PWA and to all water licence holders once the date is set. It will be advertised and will also be available on our website (landscape.sa.gov.au/mr/get-involved/events), local council website and regional noticeboards.

Please spread the word about the meeting to all water users and let us know if you would like to be added our Peake, Roby and Sherlock PWA contact list.

The Murraylands and Riverland Landscape Board is looking for dedicated members to sit on the community reference group. This group meets every few months, and is usually held in the Mallee or the Peake, Roby and Sherlock region. The meetings have set agendas to discuss key policy investigations cover both the Mallee and Roby, Peake and Sherlock PWAs.

If you would like to join the community reference group, are able to travel across the 2 regions and are able to work with a wide range of people, please contact the Murraylands and Riverland Landscape Board.

This project is supported by the Murraylands and Riverland Landscape board through funding from the landscape levies.