10-year review of the Peake, Roby and Sherlock Water Allocation Plan

Landscape boards are responsible for reviewing water allocation plans within ten years. The first Peake, Roby and Sherlock Prescribed Wells Area (PWA) Water Allocation Plan (the plan) came into place on 2 March 2011.

What did the review involve?

Under the *Landscape South Australia Act 2019*, a ten year review of a water allocation plan considers:

- the principles (rules) of the plan
- the success of the plan; and
- an assessment of whether the plan remains appropriate

The review was undertaken by the Murraylands and Riverland Landscape Board in collaboration with the Department for Environment and Water (DEW). Discussions with water users including First Nations, the First Peoples of the River Murray and Mallee, and Ngarrindjeri were also an important part of informing the review of the plan.

Are the principles still relevant?

The current principles within the plan remain relevant as they ensure the underground water resource of the unconfined and confined aquifers continue to be available for the social, cultural, spiritual, economic and environmental needs for current and future generations.

The review found no reason to change the intent of any of the principles relating to allocating or transfering water.

Has the plan been successful?

The review analysed data from all management zones, although the information presented here focuses on the extraction management zone (EMZ) near the township of Peake where most of the licenced water use occurs.

Monitoring of underground water levels and salinity values has been undertaken to track the status of the water resource. Since the plan has been in place, over 10 years of monitoring has shown:

- a decrease in (licensed) water use in the extraction management zone (EMZ). Fig 1.
- water levels within the confined aquifer are showing signs of recovery as levels have increased since 2015. Fig 2.

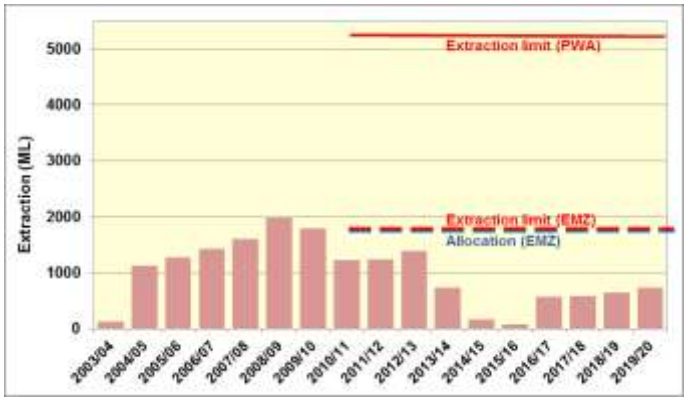

Fig. 1 Licenced water use

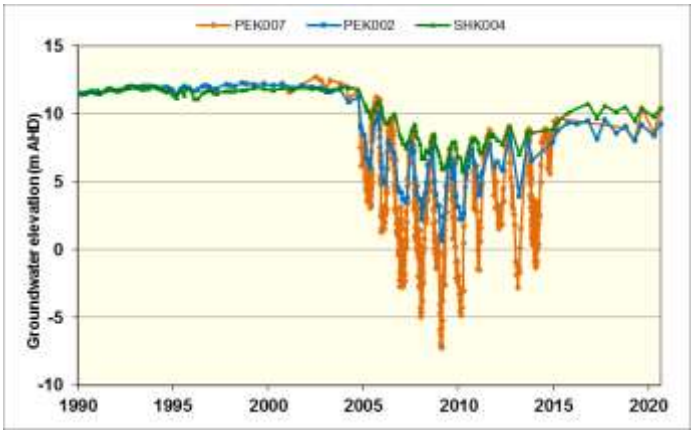

Fig. 2 Underground water levels

Groundwater flow has also recovered and is again flowing from an east to west direction (Fig. 3) rather than a reversal of flow towards Peake that was occurring in 2010 (Fig. 4).

The current groundwater levels and salinity values indicate that, under the existing water use (licensed extraction), the plan has been successful in managing for sustainable use of the water resource.

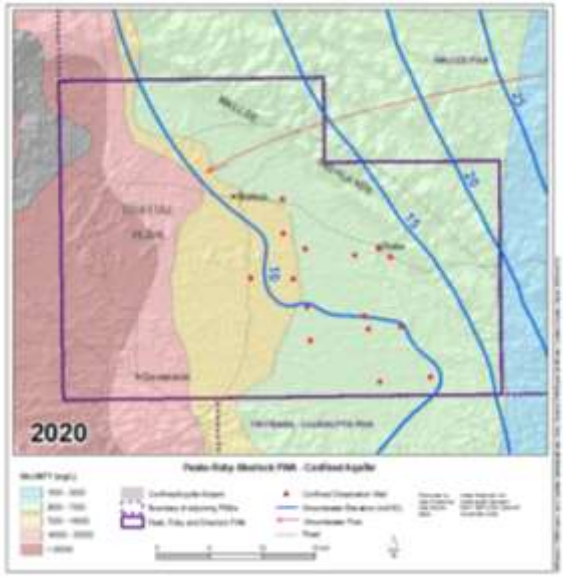

Fig. 3 Direction of groundwater flow 2020.

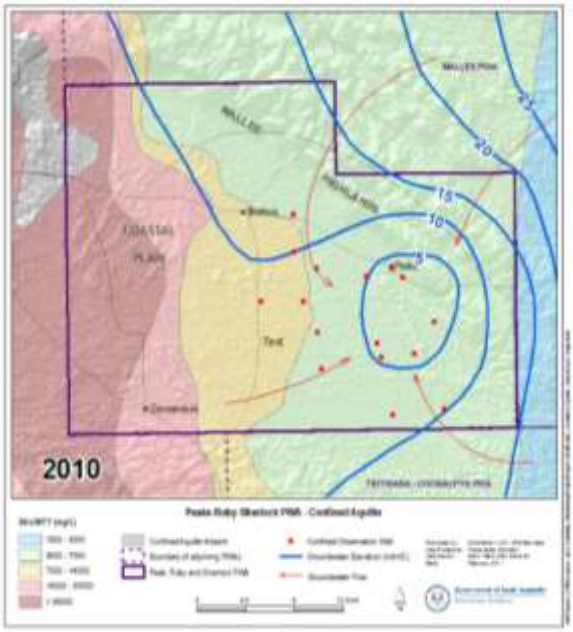

Fig. 4 Direction of groundwater flow 2010

Is the plan still appropriate?

This part of the review considered:

- First Nations objectives as identified within the plan
- community (water users) information
- the results of the comprehensive water resource risk assessment undertaken in 2018, and
- climate projections for South Australia to 2050.

First Nations identified that more work is needed to implement Aboriginal Water Interests. First Nations suggested that assessments of groundwater soaks should be undertaken and that any future amendments of the plan should consider First Nations water allocation opportunities.

Overall the community information verified the scientific analysis of the recovery of water levels and salinity.

The Murray Region Water Resource Plan Area Risk Assessment in 2018 identified risks to water resources within the Peake, Roby and Sherlock PWA as 'low' and the plan was an effective tool to reduce risk.

Climate projections to 2050 identified the following points may have potential impacts on water resources in the rural sector.

- Increases and changes in heat patterns may extend the irrigation season and increase water demand; can cause heat stress in livestock; and cause damage to yield and quality of crop production.
- South Australian agriculture, in particular the growing of grains and pulses, horticulture and viticulture may benefit from reduced frost frequency and associated damage after 2030.
- A combination of warming temperatures and reduced rainfall in spring will likely increase water use and demand for irrigated agriculture.
- Impacts from drought include; increased irrigation demand for parks and open space; loss of biodiversity associated with

the declining condition of watercourses, wetlands and natural areas; increased demand for groundwater; reduced productivity of crops and livestock; and reduced natural regeneration of native plants.

- Impacts associated with increasing evapotranspiration include reduced soil moisture and secondary impacts on plant health and crop yield; increased irrigation demand; adverse impacts on wetland and water resource condition; adverse impacts on groundwater recharge.

The climate projection of a decrease in annual rainfall is supported by the declining trend of the recent thirty year climate period[1] recorded at Peake (Fig. 5). Climate impacts on the underground water resource should be taken into account as clearly the impact of less localised rainfall is likely to result in increased demand on the available water resource.

What else did the review consider?

In recent years there has been changes to national and state water policy and these changes have been incorporated into the *Landscape South Australia Act 2019*. Some of these changes give more flexibility to manage the resource based on current resource conditions. Generally the plan is functioning well but improvements could be made to more effectively manage the resource in the future. The landscape board has decided to make amendments to the plan, however existing water licence holder's rights to water will not change as a result of the proposed amendments.

What's next?

The Murraylands and Riverland Landscape Board have endorsed the findings of the ten-year review. The review found the plan was still fit for purpose. However the landscape board will amend the plan to bring it in line with the latest legislation. An amendment process to update the plan with the findings from the review will commence in 2022.

What does this mean for me?

You do not need to do anything at this stage. Staff from the Murraylands and Riverland Landscape Board will contact you once the amendment process commences as required under the *Landscape South Australia Act 2019*.

The 10-year review of the Peake, Roby and Sherlock Water Allocation Plan was undertaken with funding from the Landscape Water Levy

More information

Melissa White
Senior Project Officer, Water Planning
Email: melissa.white@sa.gov.au
Phone: 0428 113 442

https://www.landscape.sa.gov.au/mr/water/water-allocation-plans/peake-roby-and-sherlock

[1] The 30-year period is the standard reference period as defined by the World Meteorological Organisation (WMO). The WMO describes "standard reference periods" for use by the international community in order to maintain consistency in the calculation of climate statistics across the world. This allows climate statistics from different countries to be compared and analysed. The standard reference period is commonly used in climate maps, climate statistics and is the base period for most climate change studies. The last standard reference period was 1961 to 1990, the current standard reference period is 1991 to 2020

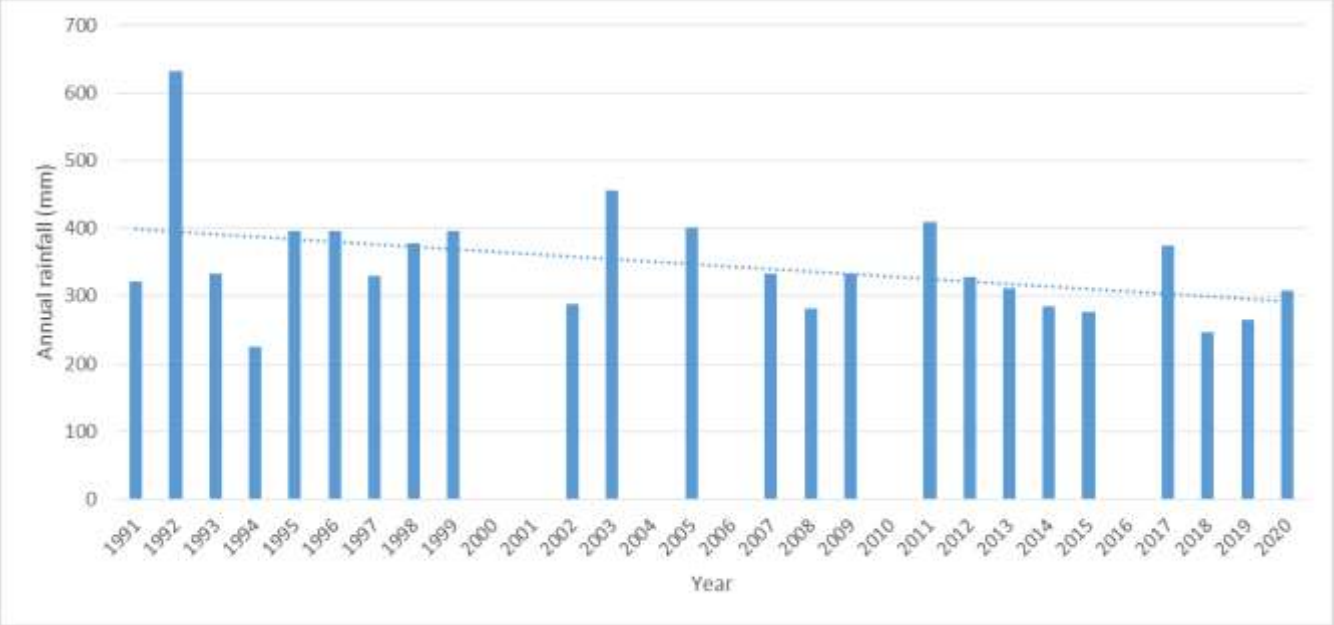

Fig. 5. Annual rainfall data for the recent thirty year period at Peake (BOM station 25515). Note: gap in annual rainfall is due to insufficient data.