Ten-year review of the Mallee Water Allocation Plan

Information Factsheet

Landscape boards are responsible for reviewing water allocation plans within ten years. The Mallee Prescribed Wells Area (PWA) Water Allocation Plan (the plan) came into place in May 2012.

What did the review involve?

Under the *Landscape South Australia Act 2019*, the ten-year review 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. Discussions with water users and the First Peoples of the River Murray and Mallee were also an important part of informing the review of the plan.

Are the principles still relevant?

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

Community feedback highlighted that people would like to know how water was allocated and transferred between zones. This will be part of the focus during the amendment process.

Has the plan been successful?

Data from all management zones was analysed, although the information presented here focuses primarily on the border agreement area (e.g. Zones 9A, 10A and 11A, along the border with Victoria)

and red and green management areas near the towns of Pinnaroo and Peebinga, where much of the licensed water use occurs (***Error! Reference source not found.***).

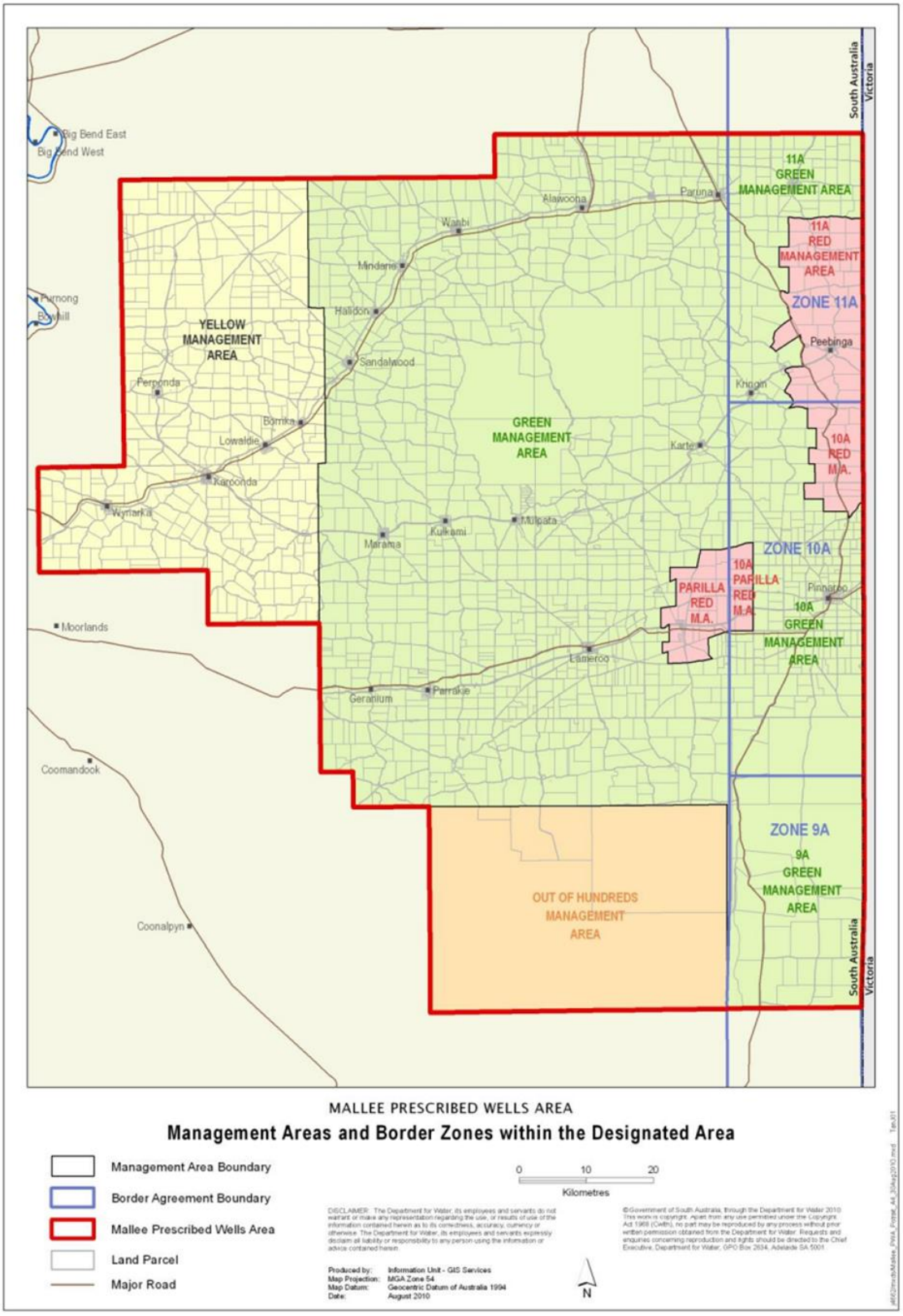

Figure 1 - Management Areas and Border Zones (BZ) with the Mallee PWA

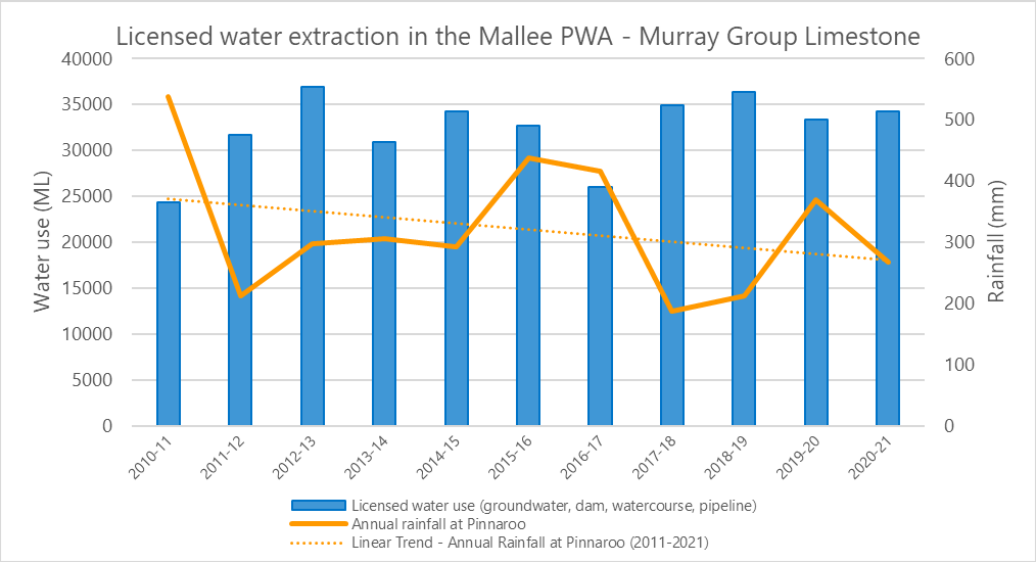

Figure 2 - Annual rainfall data compared to licensed water extraction over the latest 10-year period at Pinnaroo (BOM: 25015)

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

- a steady use in licensed water use in the management areas correlating to the amount of rainfall. *(Figure 2)*.
- water levels within the primary extraction layer, the Murray Group Limestone (MGL) confined aquifer, have reached an equilibrium in some wells (*Figure 3*) with steady salinity levels since 2012. *(Figure 4)*.

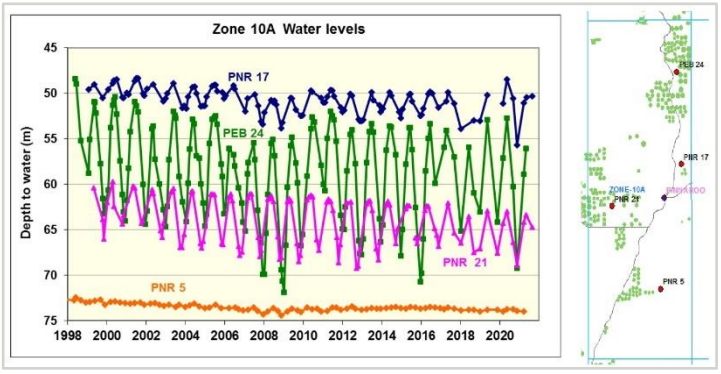

Figure 3 - Water levels in Zone 10A bores

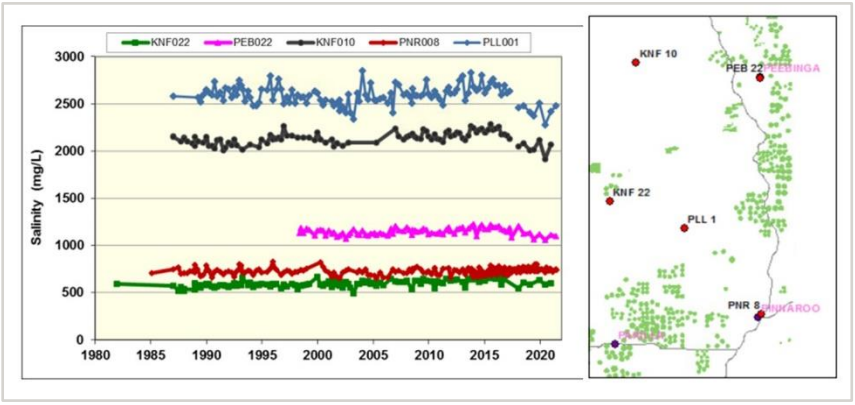

Figure 4 - Water salinity within the Mallee PWA

Water Extraction

Only 61% of the allocated water volume within the PWA has been extracted and, over half of this was extracted from the more heavily utilised border zone 10A, 11A and the Parilla red management areas. Most of this extraction is from the MGL confined aquifer *(Figure 5)*.

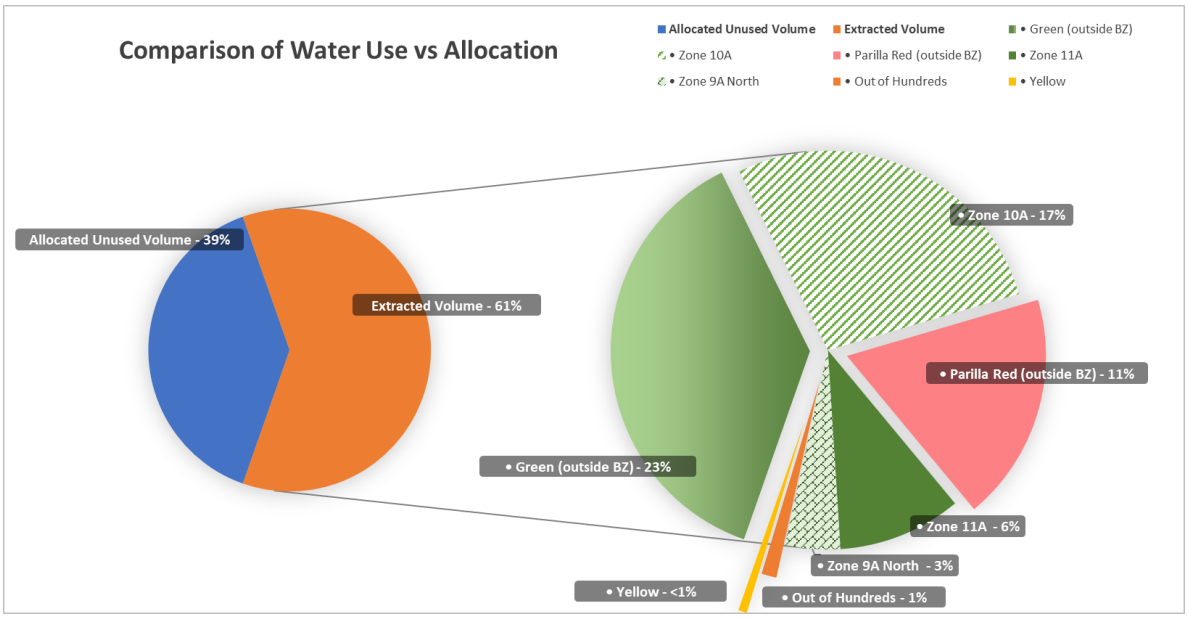

Figure 5 - Water extraction per area as part of total allocation

Groundwater salinity gradually increases towards the west of the PWA, and the number of wells reduces correspondingly, which results in less extraction taking place and enables groundwater levels to recover(*Figure 6*).

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.

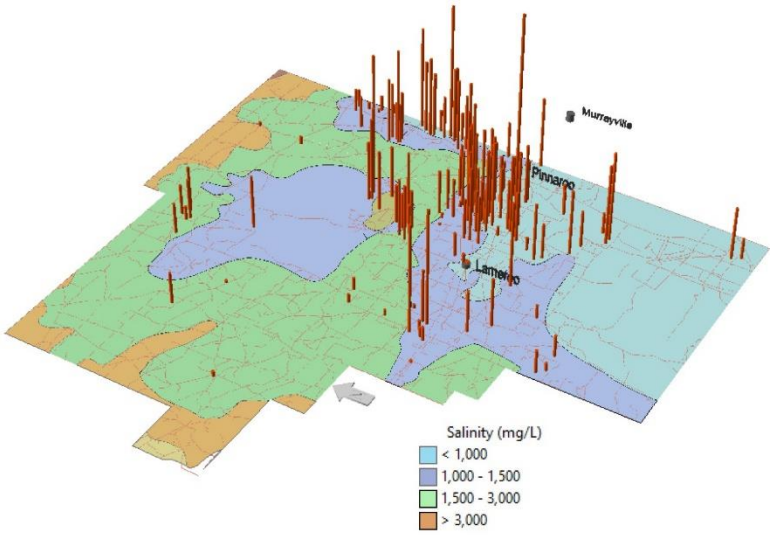

Figure 6 – Salinity and well distribution throughout the PWA

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.

The Murray Region Water Resource Plan Area Risk Assessment in 2018 identified risks to water resources within the Mallee 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 water dependent ecosystems 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 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 Pinnaroo *(Figure 2)*. Climate impacts on the underground water resource should be taken into account as less localised rainfall is likely to result in increased demand on the available water resource.

[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

What else did the review consider?

In recent years there has been changes to national and state water policy which 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 and will undertake further investigations to amend the plan according to the latest legislation. For the amendment process, the landscape board will establish a local community sub-group to work through policy options and any latest scientific results.

What does this mean for me?

If you would like to be involved during the amendment process, please contact us.

Once the new plan has been drafted, the landscape board will contact all licensees to seek feedback on the changes. It is proposed that this will occur in the 2023-2024 water year.

More information

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Mallee Water Allocation Plan
Mallee and Peake-Roby Sherlock Prescribed Wells Areas Factsheet

The 10-year review of the Mallee Water Allocation Plan was undertaken with funding from the landscape water levy