Tintinara-Coonalpyn Prescribed Wells Area

2018–19 groundwater status overview

Tintinara-Coonalpyn PWA	Confined aquifer		○
	Unconfined aquifer	Mallee Highlands	●
		Plains	○

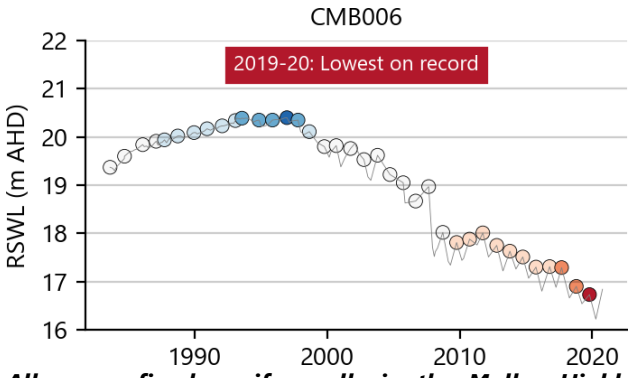
LEGEND

- Highest on record
- Very much above average
- Above average
- Average
- Below average
- Very much below average
- Lowest on record
- Long-term trend

Groundwater level

The majority of unconfined aquifer wells in the plains management areas were observed to have water levels which were either 'below average' compared to their historical record (50% of wells) or at their 'lowest level on record' (32% of wells) in 2019

- Water level trends from 2015–19 show declining trends in 57% of wells and stable trends in 26%
- The figure below shows a declining trend in water levels since 1996 that corresponds with an increase in extraction and a period of below-average rainfall since 2004.

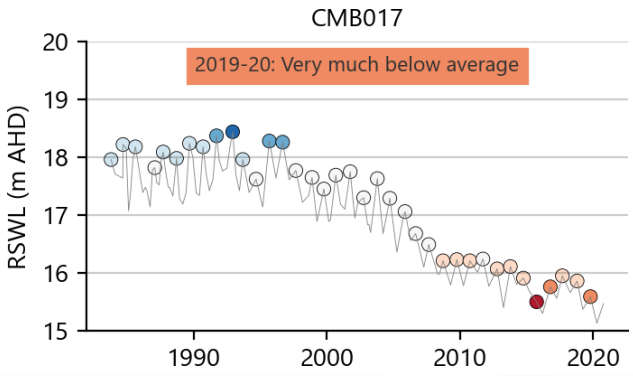


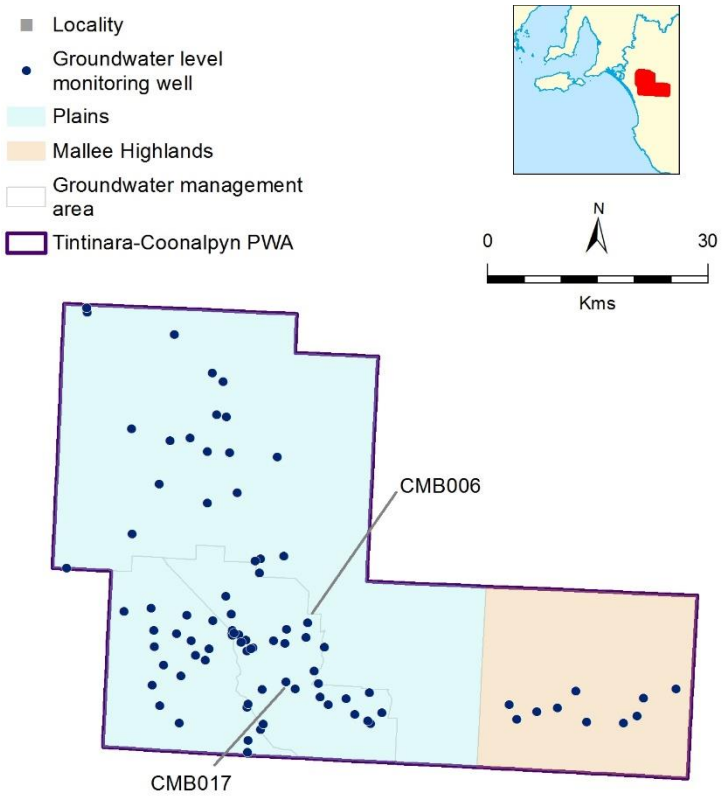
All unconfined aquifer wells in the Mallee Highlands management areas were observed to have water levels below the historical average in 2019, with the majority of wells (63%) at their lowest water level on record

- Water level trends from 2015–19 show declining trends in 87% of wells.

Water levels in 83% of confined aquifer monitoring wells were at 'below-average' or lower levels in 2019

- Water level trends from 2015–19 were declining in 81% of wells
- The figure below shows the long-term water level decline slowing since the end of the Millennium drought in 2009.





Regional context

The Tintinara-Coonalpyn Prescribed Wells Area (PWA) is located within the Limestone Coast Landscape Region. The Tintinara-Coonalpyn PWA covers an area of approximately 3400 km^2 between Tintinara and Coonalpyn, extending eastward across the southern part of Ngarkat Conservation Park and is managed under the Tintinara-Coonalpyn PWA water allocation plan

Groundwater resources in the region occur in the shallower unconfined Quaternary and Tertiary limestone aquifer and also in the deeper Tertiary confined sand aquifer.

There are four management areas (GMAs) for the unconfined aquifer, with these divided into 'Plains' (Coonalpyn, Boothby and Tintinara GMAs) and 'Mallee Highlands' (Sherwood GMA) due to different hydrogeological characteristics and groundwater management needs.

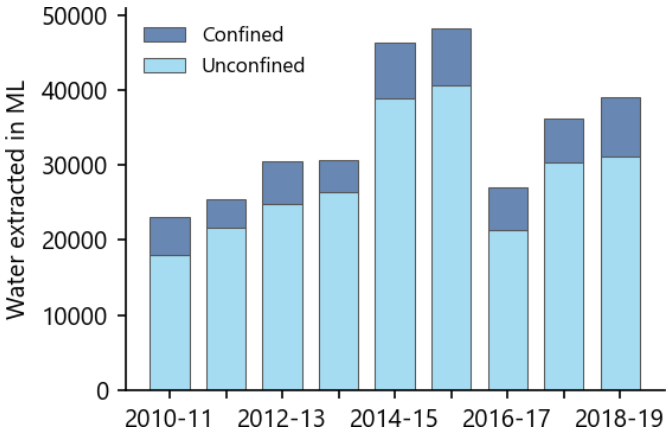
Government of South Australia
Department for Environment and Water

Tintinara-Coonalpyn PWA 2018–19 groundwater status overview

Water extraction

In 2018–19, total licensed groundwater extractions were 38 997 ML

- Groundwater is used widely for irrigation, industry and stock and domestic uses
- Licensed groundwater extractions from the unconfined aquifer were 31 157 ML in 2018–19. This is an increase of only 3% compared to 2017–18, despite a reduction in annual rainfall of 17% over the same period at Tintinara rainfall station
- Licensed groundwater extractions from the confined aquifer were 7839 ML in 2018–19. This is an increase of 33% compared to 2017–18, which corresponds to the 17% reduction in annual rainfall over the same period
- The figure below shows licensed extractions from the unconfined and confined aquifers over the last nine years.



Salinity

In 2019, groundwater samples collected from 5 unconfined aquifer wells had a median salinity of 2177 mg/L

- Salinities ranged from 1285 mg/L to 3692 mg/L
- For the two wells with sufficient data, salinity trends from 2015 to 2019 were stable.

In 2019, groundwater samples collected from 12 confined aquifer wells had a median salinity of 1622 mg/L

- Salinities ranged from 950 mg/L to 3996 mg/L
- Generally, the higher salinities are found in the south-western part of the Tintinara-Coonalpyn PWA
- For the four wells with sufficient data, salinity trends from 2015 to 2019 were stable
- This data includes three confined aquifer wells located in the north-western corner of the Tatiara PWA, just outside of the boundary of the Tintinara-Coonalpyn PWA.

Climate-driven trends in water resources

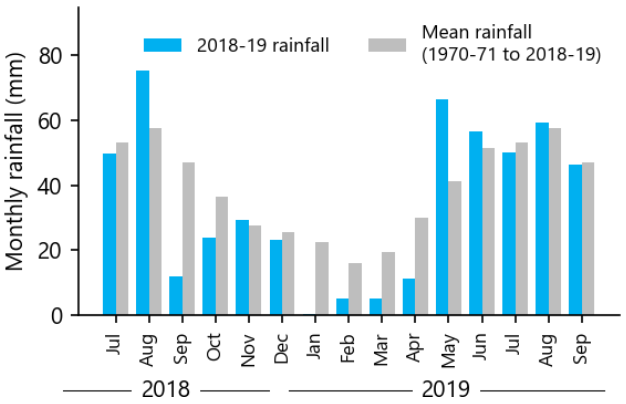
Climate is one of the primary drivers of trends in the local water resources. Surface water and groundwater resources in the prescribed areas of the South East are highly dependent on rainfall.

Below-average winter rainfall results in a reduction in annual streamflow volumes. Below-average summer rainfall can increase the need for irrigation and therefore lead to higher water extraction. This can in turn lead to an increase in salinity. Conversely, increased rainfall results in increased surface water availability, decreased irrigation extractions, with potential decline or stabilisation of salinity.

Below-average rainfall also results in reduced recharge to the unconfined aquifer. This coupled with increased water extractions can cause groundwater levels to decline even in deeper confined aquifers. Conversely, higher than average rainfall can cause increased recharge and lower irrigation extraction, resulting in potential groundwater level increase. These changes are more pronounced in the plains areas where the watertable is relatively shallow.

Rainfall was lower than average for 2018–19

- Rainfall at Tintinara (357 mm) was 15% below average (1970–71 to present)
- Above-average rainfall occurred in July, August and November 2018 and May and June 2019. The months of September and October 2018 and January through April 2019 saw significantly below-average rainfall
- Long-term data trends indicate a decline in rainfall
- The figure below shows monthly rainfall at Tintinara in blue for July 2018 to September 2019 compared to monthly averages in grey.



More Information

This fact sheet is a high level summary of information provided in the 2018-19 Water Resources Assessment for the Prescribed areas of the South East. Full details of the assessment can be found at: https://www.waterconnect.sa.gov.au/

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