Tintinara–Coonalpyn Prescribed Wells Area

2020–21 Groundwater status overview

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

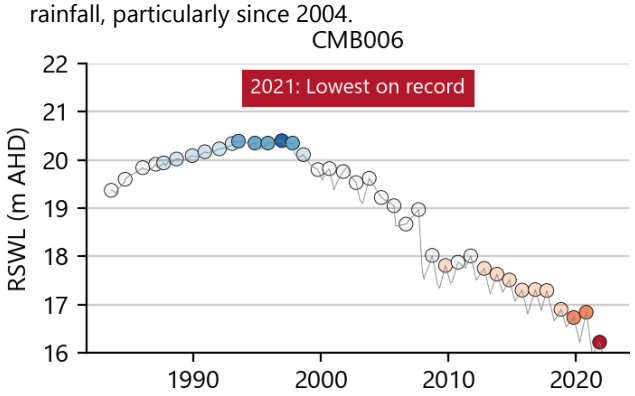
LEGEND

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

Groundwater levels

In the plains area in 2021, water levels in most wells in the unconfined aquifer (52%) are classified 'Below average' or lower.

- Water levels from 2017 to 2021 show declining trends in 86% of wells.
- The figure below shows a declining trend in water level since 1996 that corresponds with a prolonged period of low rainfall, particularly since 2004.

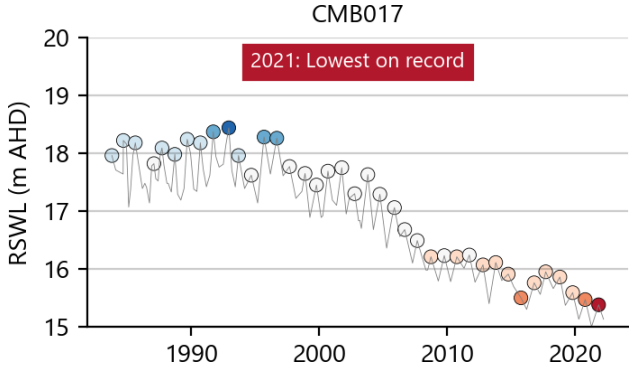


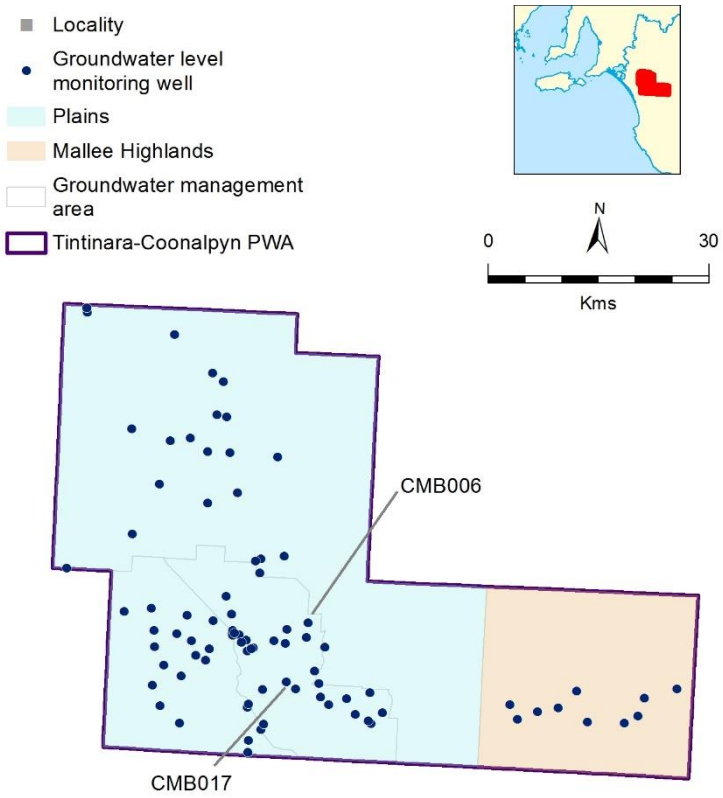
In the Mallee highlands area in 2021, water levels in all wells in the unconfined aquifer are classified 'Below average' or lower – 57% of wells are classified 'Lowest on record'.

- Five-year trends (2017 to 2021) show water levels in the majority of wells in the unconfined aquifer (86%) are declining.

In the confined aquifer in 2021, water levels in the majority of wells (65%) are classified 'Below average' or lower.

- Five-year trends (2017 to 2021) show water levels in the majority of wells in the confined aquifer (61%) are declining.
- The figure below shows long-term water level decline, albeit at a slowing rate since 2010.





Regional context

The Tintinara–Coonalpyn Prescribed Wells Area (PWA) is located within the Limestone Coast Landscape region, around 150 km south-east of Adelaide, and spans an area of approximately 3,400 km^2. The PWA contains the townships of Tintinara and Coonalpyn and intersects the southern extent of the Ngarkat Conservation Park. The Water Allocation Plan for the Tintinara-Coonalpyn PWA provides for sustainable management of the region's groundwater resources.

Groundwater resources in the region occur in the shallower unconfined Quaternary and Tertiary limestone aquifer and also in the deeper Tertiary confined sand aquifer. Around 85% of groundwater extractions are sourced from the unconfined aquifer. Resource assessment areas for the unconfined aquifer are divided into the plains and Mallee highlands areas, based on differences in groundwater hydrology in each area.

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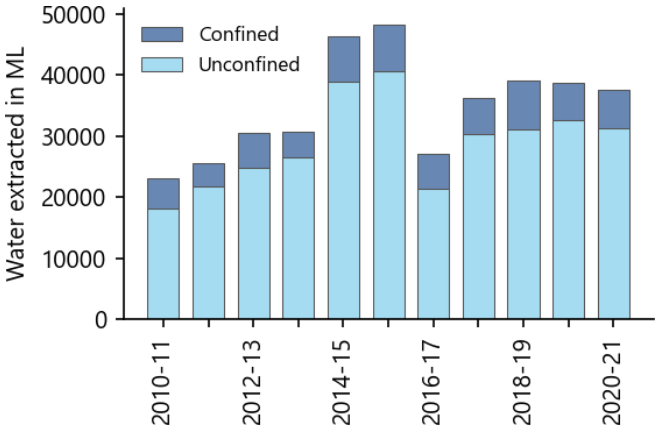
Tintinara–Coonalpyn PWA 2020–21 Groundwater status overview

Water use

In 2020–21, total licensed groundwater extractions are 37,611 ML.

- Groundwater is main source of water for irrigation, industry and stock and domestic uses.
- Licensed groundwater extraction from the unconfined aquifer is 31,310 ML, a decrease of 4% compared to 2019–20.
- Licensed groundwater extraction from the confined aquifer is 6,301 ML, an increase of 3% compared to 2019–20.
- The figure below shows licensed extractions from the unconfined and confined aquifers.



Salinity

In 2021, groundwater salinity in the unconfined aquifer shows a median salinity of 2,326 mg/L.

- Salinity at 11 wells ranges between 1,298 mg/L and 3,960 mg/L.
- In the 10 years to 2021, all wells show stable salinity (±10%). The 10-year salinity trends vary from a decrease of 0.6% per year to an increase of 0.5% per year, with a median rate of 0.1% decrease per year.

In 2021, salinity measurements from nine wells in the confined aquifer show a median salinity of 1,488 mg/L.

- Salinity in the confined aquifer ranges between 988 mg/L and 4,078 mg/L.
- In general, the highest salinities (3,000 to 4,500 mg/L) are measured towards the south-west of the Tintinara–Coonalpyn PWA.
- Ten-year trends in the confined aquifer show salinity is stable in 9 out of 11 wells (82%); trends range from a decrease of 1.1% per year to an increase of 1.1% per year.
- These data include 3 confined aquifer wells that are located just outside of the boundary of the Tintinara–Coonalpyn PWA.

Climate

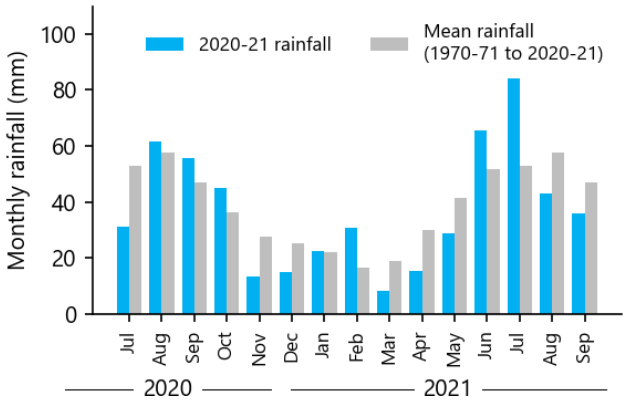
Surface water and groundwater resources in the prescribed areas of the Limestone Coast Landscape region are highly dependent on rainfall.

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, and decreased irrigation extractions, with potential decrease or stabilisation of salinity.

Below-average rainfall also results in reduced recharge to the unconfined aquifer that, coupled with increased water extractions, can cause groundwater levels to decline. Conversely, above-average rainfall can cause increased recharge and lower water extraction, resulting in potential increases in water levels. These changes are often more pronounced in the plains areas where the watertable is relatively shallow. Water levels in deeper confined aquifers are not directly governed by rainfall but can show similar trends to unconfined aquifers during drier or wetter periods purely through variations in rates of extraction.

Rainfall is below average for 2020–21

- Rainfall at Tintinara (BoM Station 25514) is 392 mm, which is 8% below the long-term average (1970 to 2021) of 427 mm.
- Monthly rainfall was above-average from August through to October 2020, and also in February, June and July 2021.
- The long-term trend in rainfall (1970 to 2021) is declining at Tintinara.
- Rainfall at Tintinara is shown below for July 2020 to September 2021 – monthly totals are shown in blue, compared to long-term monthly averages (1970 to 2021) in grey.



More Information

This fact sheet is a high level summary of information provided in the 2020–21 Water Resources Assessment for the prescribed areas of the Limestone Coast. Full details of the assessment can be found at:
https://www.waterconnect.sa.gov.au/

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