Tintinara-Coonalpyn Prescribed Wells Area

2019–20 groundwater status overview

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

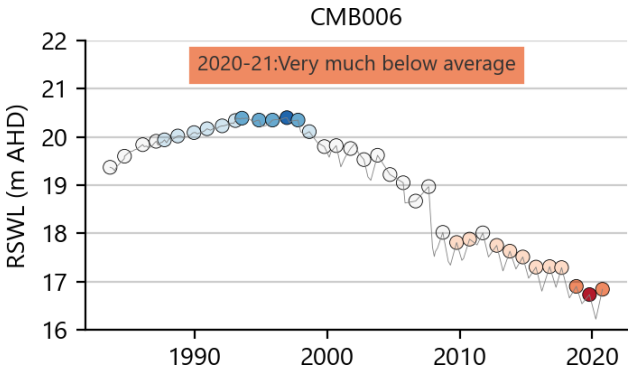
LEGEND

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

Groundwater level

In the plains area in 2020, water levels in the majority of wells in the unconfined aquifer (84%) are classified 'Below average' or lower, compared to their respective historical record

- Water level trends from 2016–20 show declining trends in 91% of wells.
- The figure below shows a declining trend in water levels since 1996 that corresponds with a prolonged period of low rainfall, particularly since 2004.

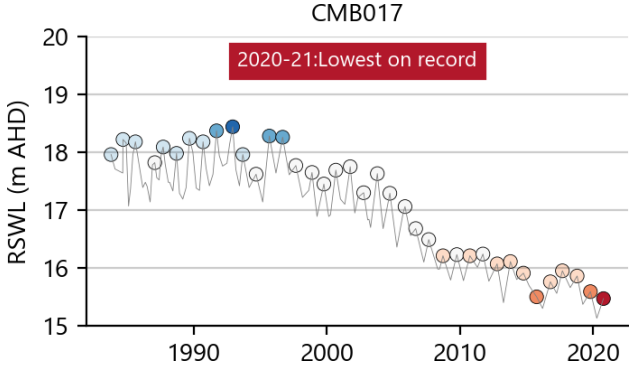


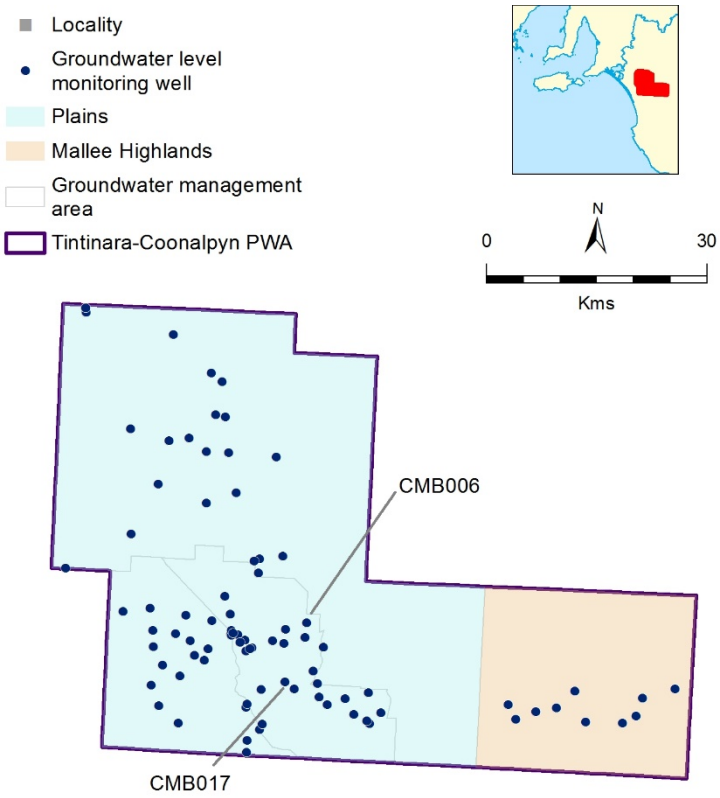
In the Mallee highlands area in 2020, water levels in all wells in the unconfined aquifer are classified 'Below average' or lower, and 38% of wells are classified 'Lowest on record'

- Five-year trends (2016–20) show water levels in the majority of wells in the unconfined aquifer (87%) are declining.

In the confined aquifer in 2020, water levels in the majority of wells (65%) are classified 'Average'

- Five-year trends (2016–20) show water levels in the majority of wells in the confined aquifer (80%) are declining.
- The figure below shows the long-term water level decline slowing 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 3400 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 each area's groundwater hydrology.

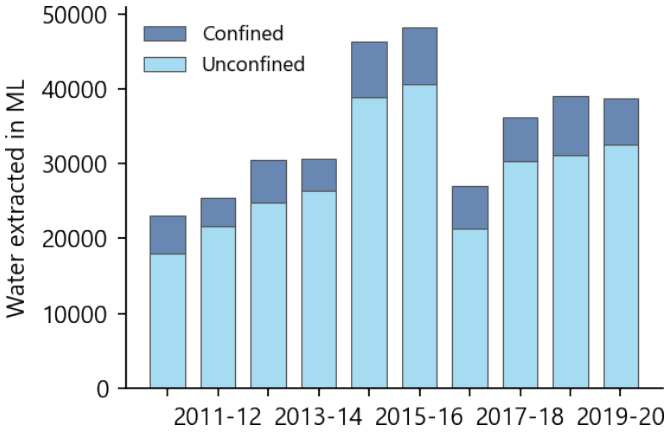
Government of South Australia
Department for Environment and Water

Tintinara-Coonalpyn PWA 2019–20 groundwater status overview

Water extraction

In 2019–20, total licensed groundwater extractions are 38 712 ML

- Groundwater is used widely for irrigation, industry and stock and domestic uses.
- Licensed groundwater extraction from the unconfined aquifer is 32 568 ML, an increase of 5% compared to 2018–19.
- Licensed groundwater extraction from the confined aquifer is 6143 ML, a decrease of 22% compared to 2018–19.
- The figure below shows licensed extractions from the unconfined and confined aquifers over the past nine years.



Salinity

In 2020, groundwater salinity in the unconfined aquifer is less than 2500 mg/L

- Salinity from a total of three wells in the unconfined aquifer measured 1290, 2027 and 2321 mg/L.
- Ten-year trends show salinity in the majority of wells in the unconfined aquifer (67%) has varied less than 10%, while salinity in 33% of wells has decreased by greater than 20%.

In 2020, salinity measurements from nine wells in the confined aquifer show median salinity of 1521 mg/L

- Salinity in the confined aquifer ranges between 972 mg/L–4082 mg/L.
- In general, the highest salinities 3000–4500 mg/L) are measured towards the south-west of the Tintinara-Coonalpyn PWA.
- Ten-year trends in the confined aquifer show salinity is declining in the majority of wells (73%); trends vary from a decrease of 0.71% per year to an increase of 0.55% per year (median rate of 0.10% decrease per year.
- These data include three confined aquifer wells that are located just outside of the boundary of the Tintinara-Coonalpyn PWA.

Climate

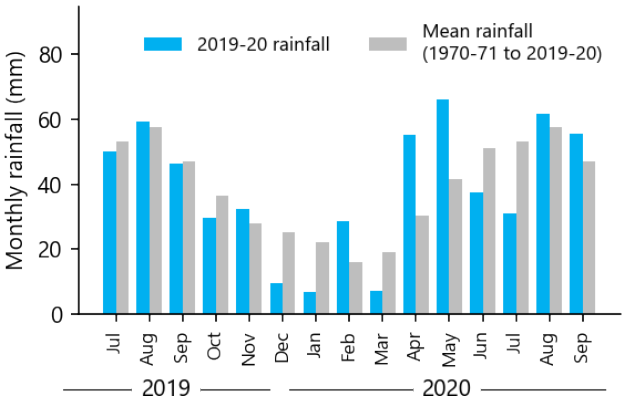
Surface water and groundwater resources in the prescribed areas of the Limestone Coast Landscape region are highly dependent on rainfall.

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, decreased irrigation extractions, with potential decline 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 was lower than average for 2019–20

- Rainfall at Tintinara (BoM Station 25514) was 429 mm, which is equal to the long-term average (1970–2020).
- Above-average monthly rainfall occurred in February, April and May 2020 (Figure 3.10), while December 2019, and January and March 2020 are considerably below average.
- Recent rainfall at Tintinara is shown for July 2019 to September 2020 (see below) – monthly totals are shown in blue, compared to long-term monthly averages (1970-2020) in grey.



More Information

This fact sheet is a high level summary of information provided in the 2019–20 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/

Government of South Australia
Department for Environment and Water