McLaren Vale Prescribed Wells Area

2020–21 Groundwater status overview

McLaren Vale PWA	Fractured rock aquifers	○
	Maslin Sands	○
	Port Willunga Formation	●

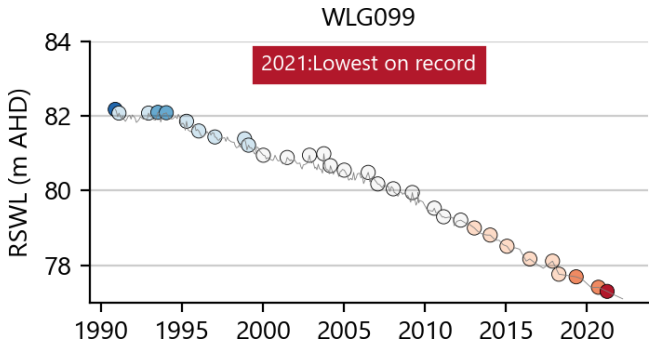
LEGEND

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

Groundwater levels

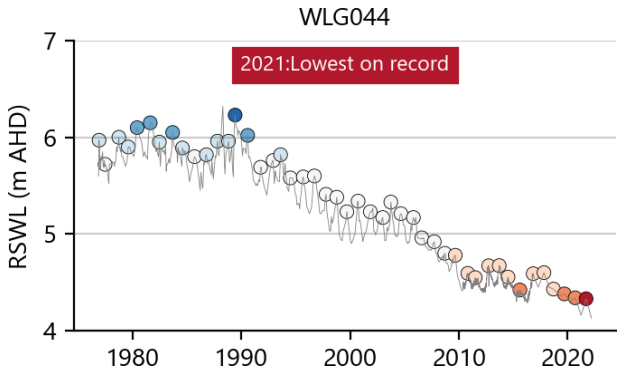
Water levels in the Port Willunga Formation aquifer are mostly classified 'Lowest on record' in 2021.

- The majority of monitoring wells with 'Lowest on record' levels are located to the east of McLaren Vale, where the aquifer is unconfined and irrigation extraction is concentrated.
- The majority of monitoring wells (88%) show declining five-year water level trends.
- The figure below shows long-term groundwater levels in a well near McLaren Flat, showing a gradual decline of water levels since the mid-1990s, which may be due to lower rainfall and sustained extraction of groundwater.



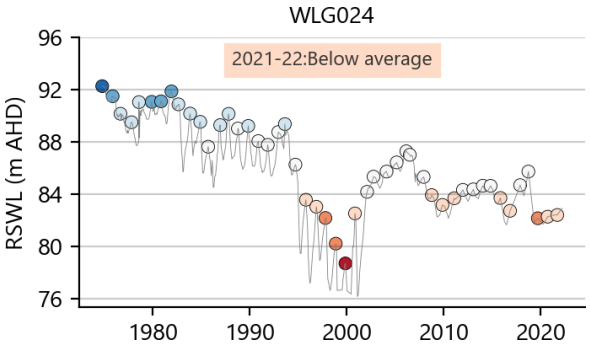
Pressure levels in the Maslin Sands aquifer are mainly classified 'Average' to 'Lowest on record' in 2021.

- In the Maslin Sands aquifer, water levels in 57% of monitoring wells are 'Below average' or lower.
- In the period 2017 to 2021, 81% of monitoring wells show declining water levels.
- The figure below shows a long-term decline in Maslin Sands groundwater levels near Aldinga.



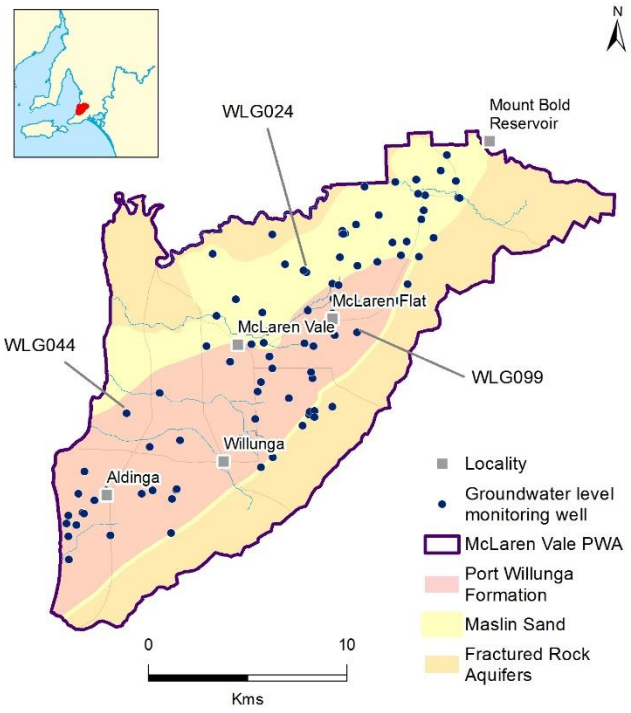
Water levels in the fractured rock aquifers are classified 'Average' in 47% of wells, and 'Below average' or lower in 41% of wells in 2021.

- The majority of monitoring wells (92%) show declining five-year water level trends.
- The figure below shows groundwater levels since monitoring began in 1974.



Regional context

The McLaren Vale Prescribed Wells Area (PWA) is located approximately 35 km south of Adelaide within the Hills and Fleurieu Landscape region. It is a regional-scale resource which is managed under a water allocation plan adopted in 2007. The Water allocation plan is currently under review.

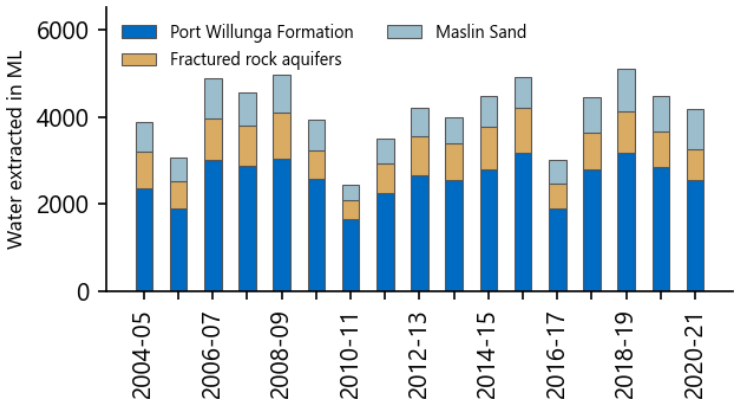


McLaren Vale PWA 2020–21 Groundwater status overview

Water use

Total groundwater use (excluding stock and domestic use) in 2020–21 was 4,186 ML.

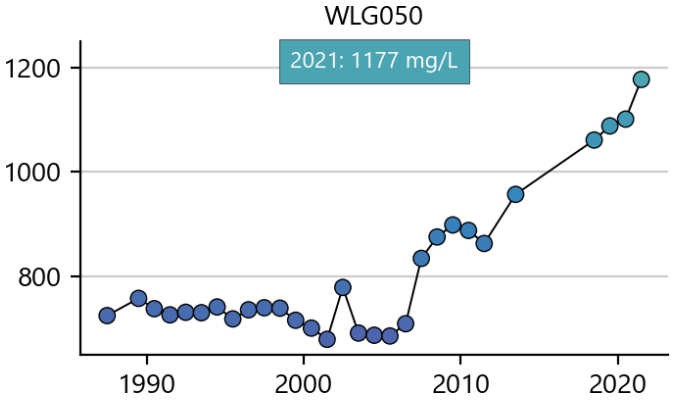
- Groundwater extraction in 2020-21 is 6% lower than the preceding water-use year.
- Most of the groundwater extraction is from the Port Willunga Formation aquifer (61%), with 22% pumped from the Maslin Sands aquifer and 17% from the fractured rock aquifers.



Salinity

In 2021, groundwater salinity from 244 wells ranges from 265 to 3,511 mg/L with a median of 1,086 mg/L.

- 15-year salinity trends in the Port Willunga Formation aquifer are increasing in most wells (75%) with the median trend being an increase of 0.33%/year.
- 15-year salinity trends in the Maslin Sands aquifer are increasing in the majority of wells (66%) with the median trend being an increase of 0.20%/year.
- 15-year salinity trends in the fractured rock aquifers are increasing in the majority of wells (57%), with the median trend being an increase of 0.13%/year.
- Rising salinities occur toward the northern boundary of the Maslin Sands aquifer. These increases may be due to upward leakage of the saline groundwater from the underlying fractured rock aquifer (see example below).



Climate

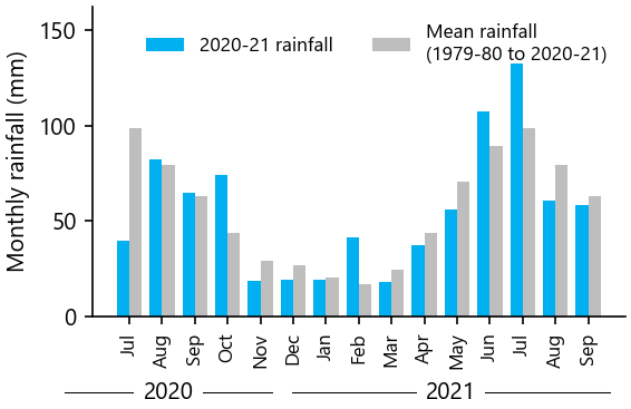
Climate is one of the main drivers of trends in the local water resources. Groundwater resources in McLaren Vale PWA are highly dependent on rainfall.

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 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.

Rainfall is lower than average for 2020–21.

- Rainfall at Willunga (576 mm) is 5% less than the long-term (1979–80 to present) average of 606 mm.
- The long-term rainfall trend has been stable. There have been notable periods of above-average rainfall (e.g., 1992–93 and 2016–17) and below-average rainfall (e.g., 1982 to 1986, 2007 to 2009 and 2014 to 2016).
- The annual rainfall in 2020–21 at Mount Bold Reservoir (755 mm) is 6% less than the long-term average of 806 mm.
- Mount Bold Reservoir rainfall station has observed a marginally declining rainfall trend (2 mm/y) over the long-term record (1979–80 to 2020–21).
- The figure below shows monthly rainfall at Willunga in blue for July 2020 to September 2021 compared to monthly averages in grey.



More Information

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

Government of South Australia
Department for Environment and Water