McLaren Vale Prescribed Wells Area

2019–20 groundwater status overview

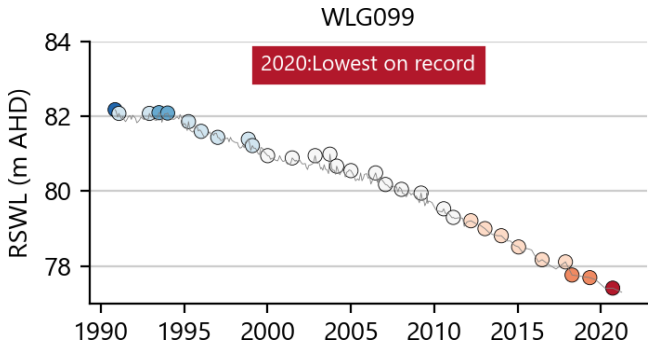
McLaren Vale PWA	Fractured rock aquifers	
	Maslin Sands	
	Port Willunga Formation	

LEGEND

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

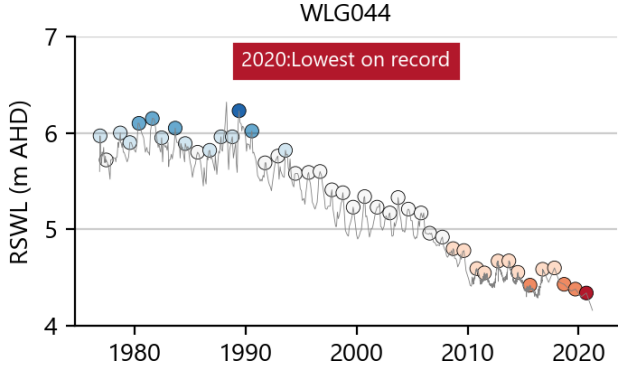
In 2020, water levels in the Port Willunga Formation aquifer are mostly classified 'Lowest on record'

- The majority of monitoring wells that are classified 'Lowest on record' are located to the east of McLaren Vale, where the aquifer is unconfined and rates of groundwater extraction are greatest.
- Five-year trends (2016-20) show that water levels in the majority of wells (93%) are declining.
- Monitoring well WLG099 (below) indicates that water levels near McLaren Flat have been gradually declining since the mid-1990s.



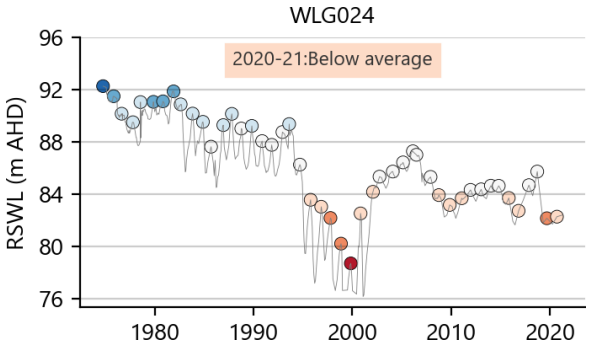
In 2020, groundwater levels in the Maslin Sands aquifer are mostly classified 'Average' through 'Lowest on record'

- Water levels in 31% of monitoring wells are classified 'Average' while 25% are classified 'Lowest on record'.
- Five-year trends (2016–20) show that water levels in the majority of wells (87%) are declining.
- Monitoring well WLG044 (below) indicates that groundwater levels north of Aldinga have been gradually declining since around 1990.



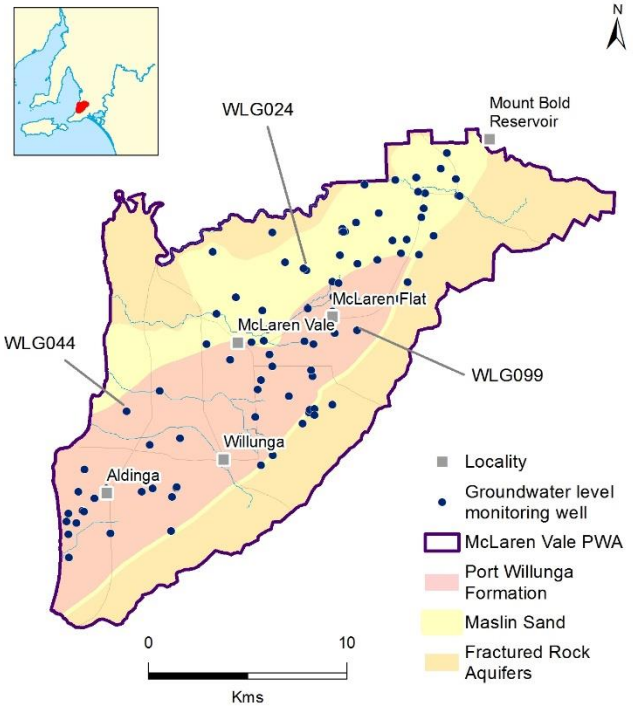
In 2020, water levels in the fractured rock aquifer are mostly classified 'Average' through 'Lowest on record'

- Five-year trends (2016–20) show that water levels in the majority of wells (84%) are declining.
- Monitoring well WLG024 suggests that water levels north of McLaren Flat have shown some recovery from historical lows that were measured around 2000.



Regional context

The McLaren Vale Prescribed Wells Area (PWA) is located approximately 35 km south of Adelaide and lies mostly within the Hills and Fleurieu Landscape region. A water allocation plan was adopted in 2000 and provides rules for the management of the regional-scale groundwater resources.



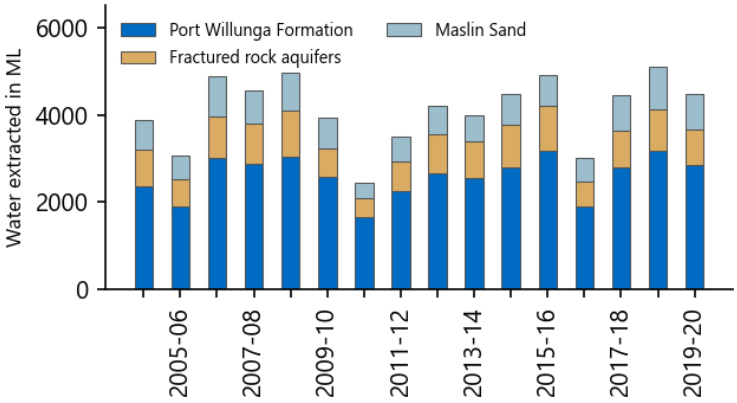
Government of South Australia
Department for Environment and Water

McLaren Vale PWA 2019–20 groundwater status overview

Water extraction

In 2019–20, total licensed groundwater extraction from all aquifers is 4071 ML

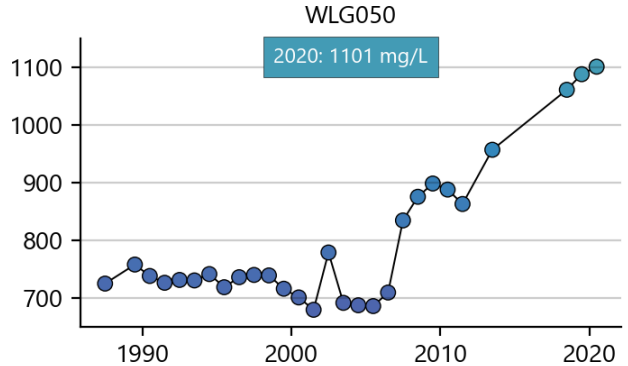
- Groundwater extraction in 2019-20 was 12% lower than the preceding water-use year; this is likely due to above-average rainfall.
- The greatest rates of extraction are sourced from the Port Willunga Formation aquifer (64%), with 18% sourced from the Maslin Sands aquifer and 18% from the fractured rock aquifers.



Salinity

In 2020, salinity samples from 163 wells range between 206–3316 mg/L, with a median of 1086 mg/L

- Fifteen-year trends show salinity in the Port Willunga Formation aquifer is increasing in most wells (76%). Average rates of change vary from 5.61% decrease per year to 2.85% increase per year, with a median rate of 0.35% increase per year.
- Fifteen-year trends show salinity in the Maslin Sands aquifer is increasing in most wells (84%). Average rates of change vary from 5.98% decrease per year to 4.83% increase per year, with a median rate of 0.39% increase per 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).



- Fifteen-year trends show salinity in the fractured rock aquifers is increasing in most wells (57%). Average rates of change vary from 0.61% decrease per year to 1.25% increase per year, with a median rate of 0.14% increase per year.

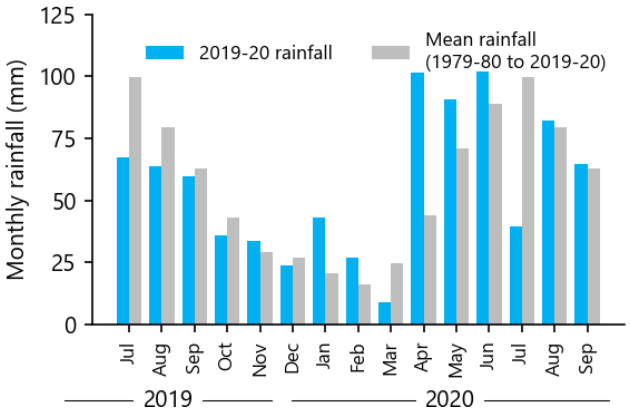
Climate

Climate is an important driver of trends in the local groundwater resources. Groundwater levels in the confined aquifers of the McLaren Vale PWA can be indirectly influenced by variations in rainfall. Namely, below-average rainfall can increase the need for irrigation and therefore lead to higher rates of groundwater extraction. This can lead to an increase in salinity in areas prone to inter-aquifer leakage. Conversely, above-average rainfall can result in decreased rates of extraction, and salinity may stabilise or decrease.

Below-average rainfall also results in reduced recharge to the unconfined aquifers. Increased rates of groundwater extraction can cause groundwater levels to decline, even in deeper confined aquifers. Conversely, above-average rainfall can result in increased recharge and lower rates of extraction, potentially resulting in rising groundwater levels.

In 2019–20, rainfall was above average at Willunga and Mount Bold Reservoir

- In 2019–20, rainfall at Willunga (Bom station 23753) is 658 mm, which is 9% greater than the long-term average (1979-2020) of 606 mm.
- In 2019–20, rainfall at Mount Bold Reservoir (Bom station 23734) is 851 mm, which is 6% greater than the long-term average (1979-2020) of 807 mm.
- Monthly rainfall totals at Willunga (below) are shown for July 2019 to September 2020 (blue), relative to corresponding long-term monthly average (1979-2020) (grey).



More Information

This fact sheet is a high level summary of information provided in the 2019–20 Water Resources Assessment for the McLaren Vale PWA. Full details of the assessment can be found at: https://www.waterconnect.sa.gov.au/

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