

McLaren Vale Prescribed Wells Area

2018–19 groundwater status overview



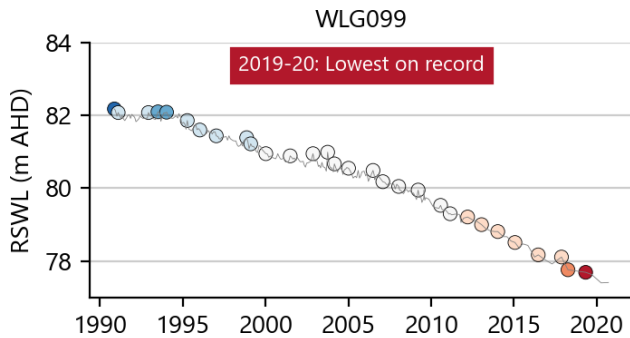
McLaren Vale PWA		
Fractured rock aquifers		
Maslin Sands		
Port Willunga Formation		

LEGEND

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

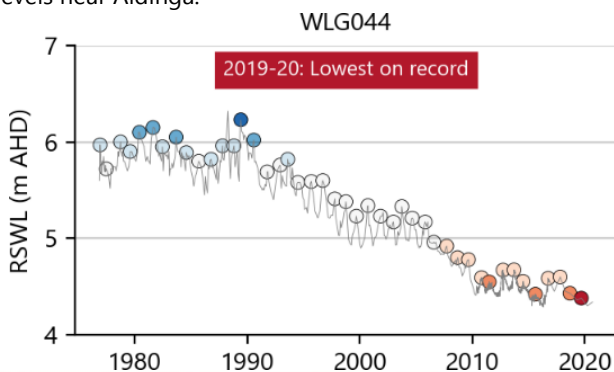
Water levels in Port Willunga Formation aquifer monitoring wells are mainly at 'lowest on record' levels in 2019

- All monitoring wells are at their lowest levels on record to the east of McLaren Vale, where the aquifer is unconfined and irrigation extraction is concentrated
- In the western part of the aquifer, where the aquifer is confined, groundwater levels are generally more stable and most wells recorded stable or rising 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.



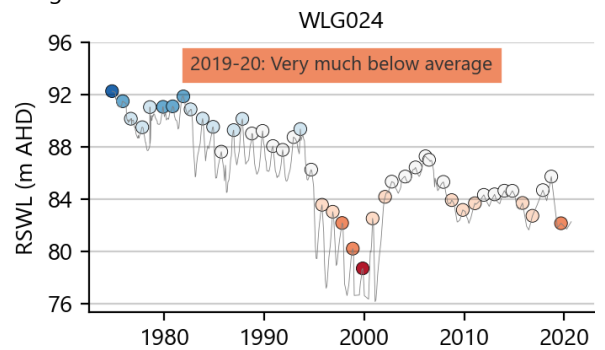
Pressure levels in Maslin Sands aquifer monitoring wells are mainly at 'average' to 'lowest on record' levels in 2019

- In the Maslin Sands aquifer, water levels in 31% of monitoring wells are at 'average' levels while 38% are at 'lowest levels on record'. Declines in water levels may be due to an extended duration of the pumping season following generally below-average rainfall during 2018–19. 50% of wells showed rising trends over the last five years
- In the period 2015–19, 75% of monitoring wells recorded rising or stable water levels
- The figure below shows a long-term decline in groundwater levels near Aldinga.



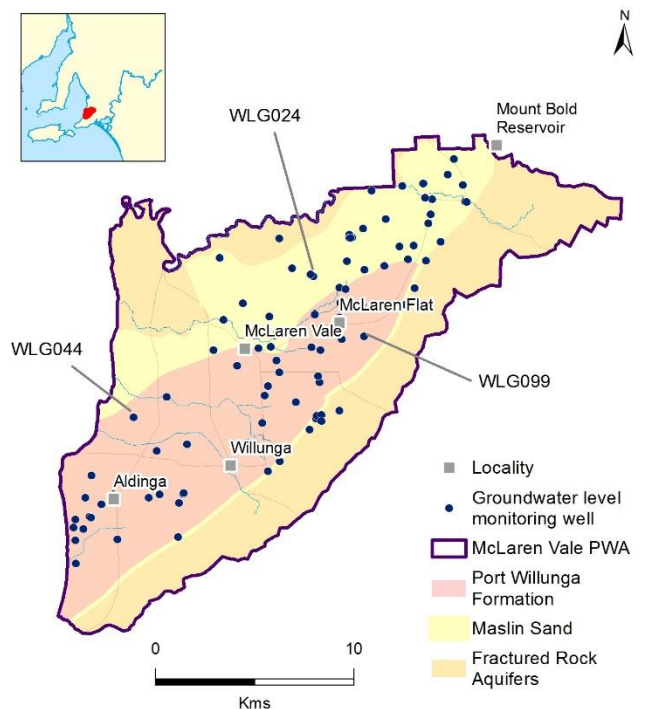
Water levels in fractured rock aquifer monitoring wells are mainly at 'average' to 'lowest on record' levels in 2019

- This is likely due to below-average rainfall during 2018–19. Groundwater levels in this aquifer are generally very responsive to rainfall patterns
- The figure below shows groundwater levels since monitoring began in 1974.



Regional context

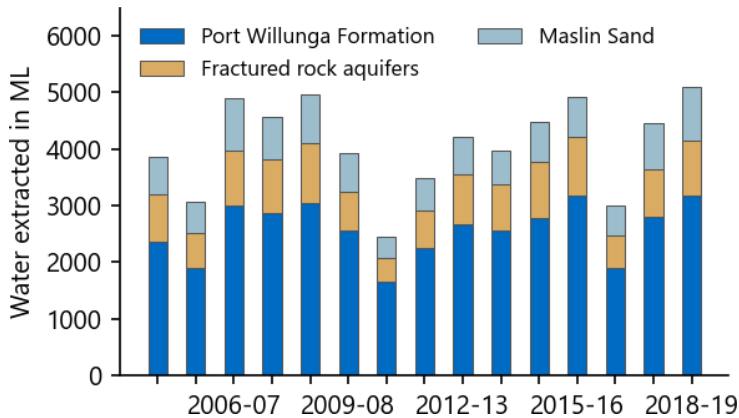
The McLaren Vale Prescribed Wells Area (PWA) is located approximately 35 km south of Adelaide within the Hills and Fleurieu Landscape Region. It is a regional-scale resource which is managed under a water allocation plan adopted in 2000.



Water extraction

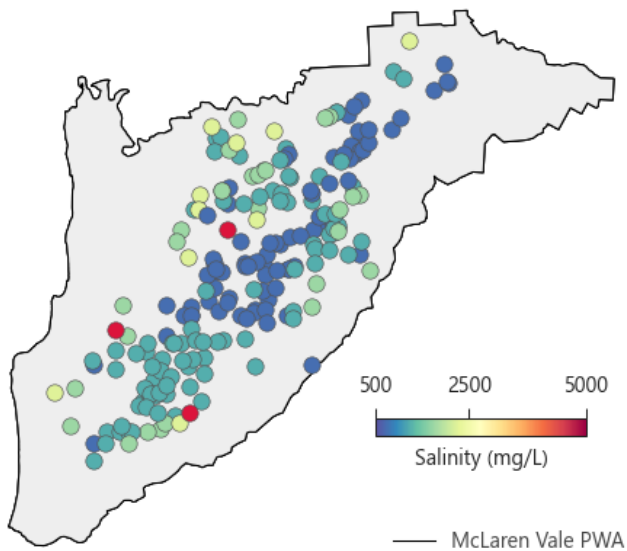
Total groundwater use (excluding stock and domestic use) in 2018–19 was 5096 ML, the highest since 2004–05

- Water use was higher than previous years due to irrigation demand; this is likely to be due to the lower-than-average summer rainfall
- Most of the groundwater extraction occurred from the Port Willunga Formation aquifer (62%), with 19% pumped from the Maslin Sands aquifer and 19% from the fractured rock aquifers.



Salinity

Since 2017, irrigators have submitted groundwater samples that DEW has tested for salinity. The results have improved the understanding of temporal and spatial salinity variability. In 2019, salinity results from 165 irrigation wells in the McLaren Vale PWA ranged between 251 mg/L and 3448 mg/L with a median of 1121 mg/L.



More Information

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

Climate-driven trends in water resources

Climate is one of the primary drivers of trends in the local water resources. Groundwater resources in McLaren Vale Prescribed Wells Area 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 was lower than average for 2018–19

- Rainfall at Willunga (597 mm) was marginally less than the long-term (1979–80 to present) average of 605 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., 1982–86, 2007–09 and 2014–16)
- The annual rainfall in 2018–19 at Mount Bold Reservoir (613 mm) was significantly less than the long-term average of 804 mm
- Mount Bold Reservoir rainfall station has observed a marginally declining rainfall trend (-2 mm/y) over the long-term record (1979–80 to 2018–19)
- The figure below shows monthly rainfall at Willunga in blue for July 2018 to September 2019 compared to monthly averages in grey.

