Western Mount Lofty Ranges Prescribed Water Resources Area

2018–19 surface water and groundwater status overview

WMLR PWRA	Fractured rock aquifers	○
	Permian sand	○
	Tertiary limestone	○
	Surface water (Torrens and Onkaparinga)	○
	Surface water (Angas & Bremer)	○

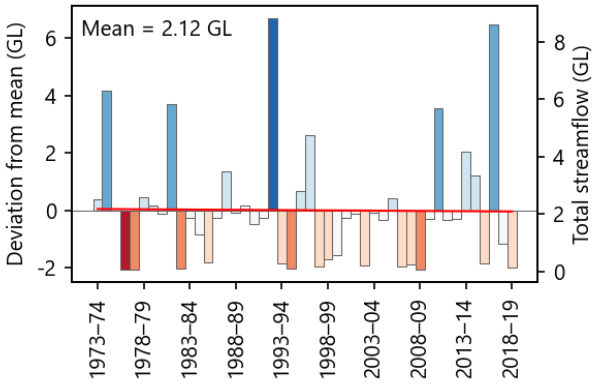
LEGEND

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

Streamflow

Streamflow was lower than average for 7 out of 8 gauging stations in 2018–19, with 2 recording 'very much below average'

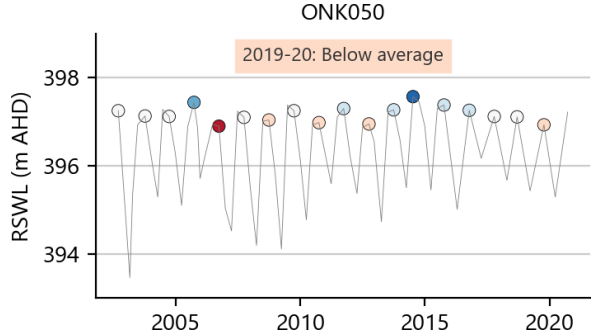
- 8 streamflow gauging stations are used as representative of the central (River Torrens and Onkaparinga River) and southern areas (Fleurieu Peninsula) of the PWRA (Onkaparinga River data presented below)
- Long-term data trends at the representative gauging stations show a stable or increase in streamflow.

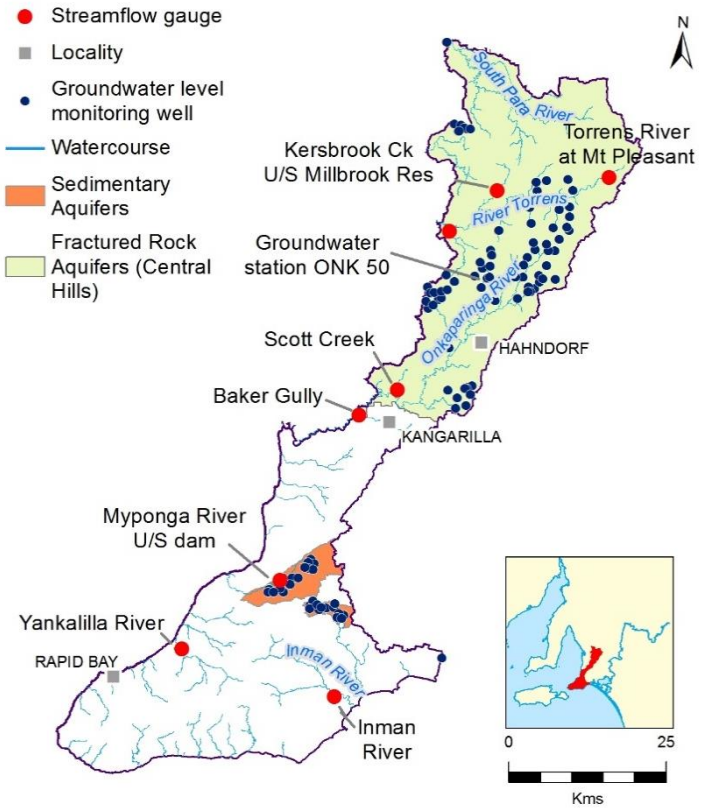


Groundwater level

Recovered water levels in more than 50% of fractured rock aquifer monitoring wells recorded 'below-average' or 'lowest-on-record' levels

- Water levels in the Permian Sand aquifer and Tertiary limestone aquifer were generally at 'average' levels
- Water levels in more than 50% of monitoring wells in fractured rock aquifers recorded 'below-average' to 'lowest-on-record' levels. See below for an example hydrograph.





Regional context

The Western Mount Lofty Ranges (WMLR) PWRA relies on both surface water and groundwater resources which are managed under a Water Allocation Plan adopted in 2013. The PWRA includes the McLaren Vale Prescribed Wells Area, which is reported on separately and not included in this overview.

There are three main sedimentary groundwater systems within the PWRA: the Permian sand, Tertiary limestone and Quaternary aquifers.

Several important watercourses drain the northern and central parts of the PWRA, including: Little Para, Torrens, Onkaparinga and Myponga Rivers. The south-western part of the PWRA includes the Fleurieu Peninsula, which is characterised by smaller coastal catchments and numerous wetlands. The most south-easterly parts of the PWRA comprise the Hindmarsh and Inman River catchments.

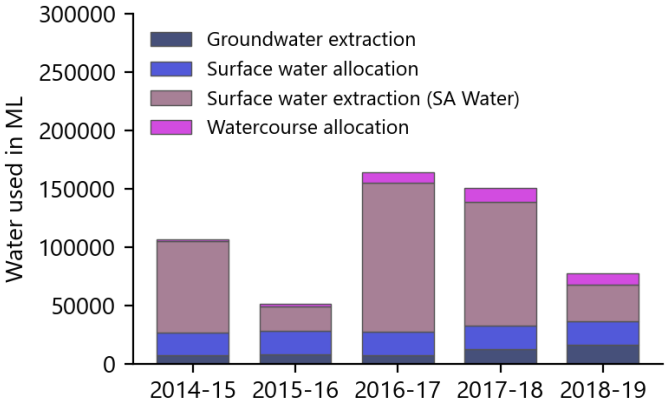
Government of South Australia
Department for Environment and Water

WMLR PWRA 2018–19 surface water and groundwater status overview

Water use

SA Water's extraction from the reservoirs within the WMLR PWRA is the most significant component of water use

- Water use for irrigation, commercial, stock and domestic purposes comes from a variety of sources. These include pumping and diversions from watercourses and aquifers, interception and storage by farm dams and imported water from the SA Water mains
- Water consumption in 2018–19 was 99 895 ML, including licensed surface water sources: 20 151 ML, licensed watercourse extraction: 9660 ML, non-licensed surface water demand: 4956 ML, forestry: 17 413 ML, SA Water: 31 781 ML and groundwater: 15 934 ML
- SA Water's extraction is related to rainfall. In high rainfall years, SA Water extracts the majority of its public water supply from the WMLR. In dry years, the River Murray provides a larger percentage of SA Water's total extraction
- In 2018–19, 79% of groundwater was extracted from fractured rock aquifers, 4% from the Permian Sand aquifer and 17% from the Tertiary limestone aquifer in the Myponga and Hindmarsh Tiers basins.



Salinity

Surface water salinity in 2018–19 remained within historical ranges. The majority of wells (61%) within the fractured rock aquifers showed a stable groundwater salinity trend

- The majority of surface water salinity levels in both the Onkaparinga and Torrens (Sixth Creek) Rivers are below 1000 mg/L in 2018–19
- Salinity levels were variable on the Onkaparinga River but remained within the historical ranges, with peak levels reaching 922 mg/L
- All monitoring wells with salinity data in the fractured rock aquifers show decreasing or stable salinities over the period 2015–2019
- Historically, data shows that salinity of less than 1000 mg/L typically occurs within the Permian Sands and Tertiary Limestone. However, no data was recorded in 2019.

Climate-driven trends in water resources

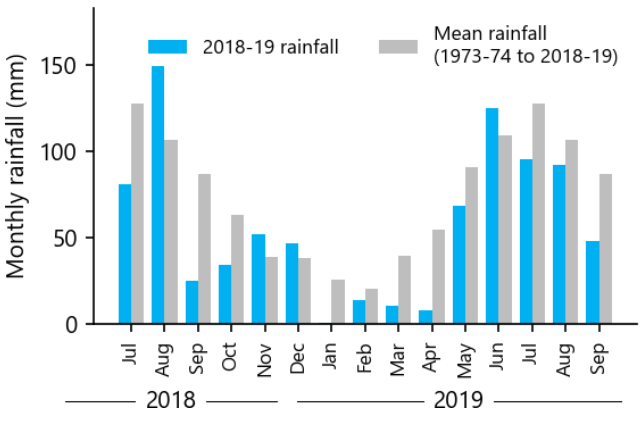
Climate is one of the primary drivers of trends in the local water resources. Surface water and groundwater resources in the WMLR PWRA are highly dependent on rainfall.

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 shallow aquifers. 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 typically ranges from 400 mm in the lower elevations to over 1000 mm in parts of the Western Mount Lofty Ranges
- Rainfall at Mount Bold measured 613 mm, which was lower than the average of 799 mm (shown below)
- Rainfall at Hindmarsh Valley measured 774 mm and was also lower than average
- Predominantly drier than average conditions were observed during the 2018–19 period with the exception of August, November and December in 2018. May 2019 experienced almost twice the monthly average
- Long-term data trends indicate a decline in rainfall.



More Information

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

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