

Far North Prescribed Wells Area

2019–20 groundwater status overview



Far North PWA

GAB (J-K) aquifer



LEGEND

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

Regional context

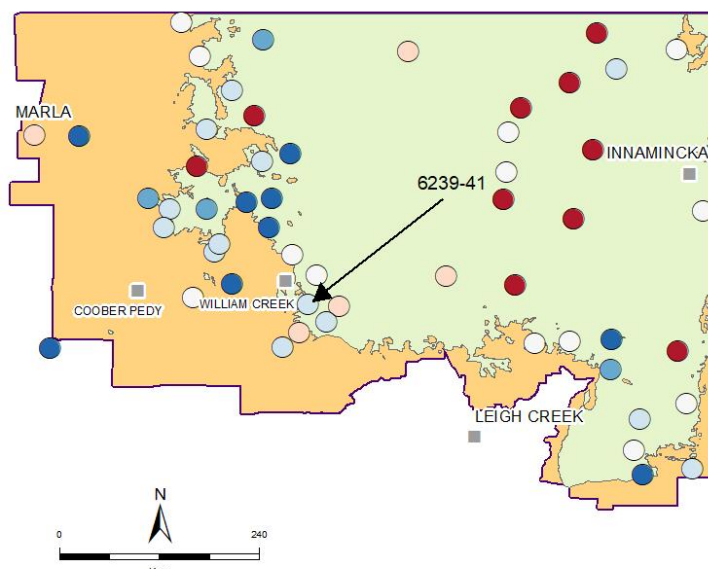
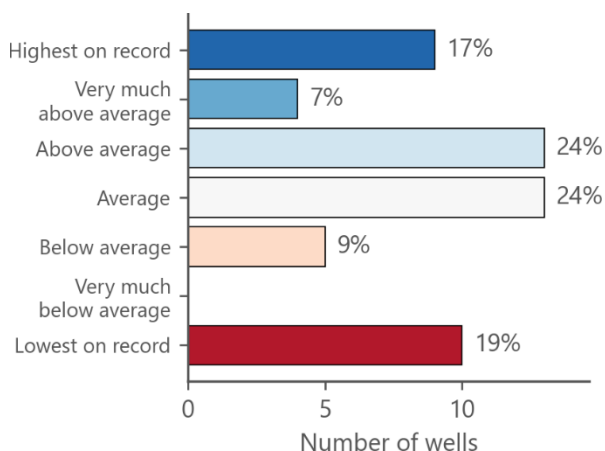
The Far North PWA is located in the South Australian Arid Lands Landscape Region where groundwater resources are managed by the Water Allocation Plan for the Far North PWA (adopted in 2021). Groundwater in the Far North PWA is vital to the viability of the mining, petroleum, pastoral and tourism industries and the provision of community water supplies.

Groundwater in the Far North PWA is predominantly sourced from the Cadna-owie Formation and Algebuckina Sandstone (and lateral equivalents), which form a single hydrogeological unit known as the Jurassic-Cretaceous (J-K) aquifer. The J-K aquifer contains the largest and regionally most important groundwater resource within the Far North PWA.

Groundwater levels

Water levels in the majority of GAB (J-K) aquifer monitoring wells (72%) in 2020 are at 'average' to 'highest-on-record' levels

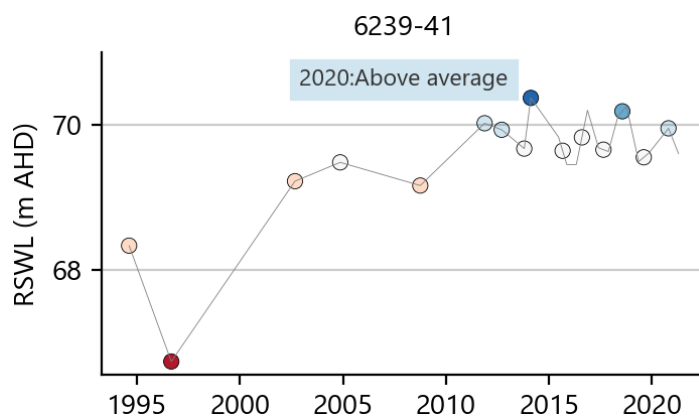
- 17% of monitoring wells, mainly located in the western part of the basin, recorded 'highest-on-record' water levels
- 19% of monitoring wells recorded 'lowest on record' water levels – these wells are predominantly located in the east and north-east of the PWA
- Five-year trends in water level show that the majority of wells (78%) have rising or stable water levels
- A summary of water levels in 2020 compared to their historical levels is shown below.



- Groundwater level monitoring well
- Locality
- Far North PWA
- Artesian groundwater
- Non-artesian groundwater



Long-term water levels at a monitoring site south-east of William Creek (unit number 6239-41, below) shows a gradual rise since 1996, which is likely due to decommissioning in 1993 of the original free-flowing well at the same location. In 2020, the water level is ranked 'above-average'.

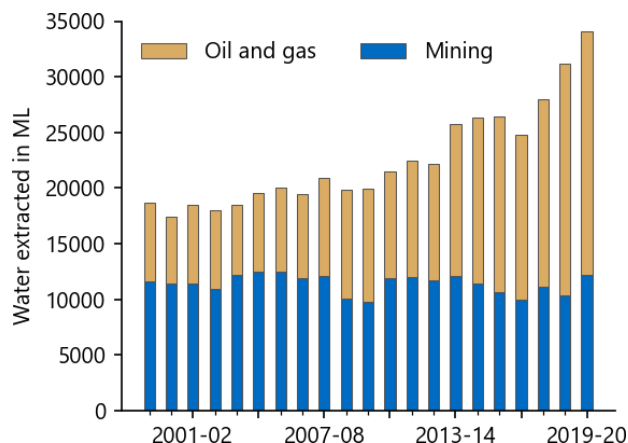


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Department for Environment and Water

Water extraction

The Great Artesian Basin provides 75% of groundwater supplies in the Far North PWA

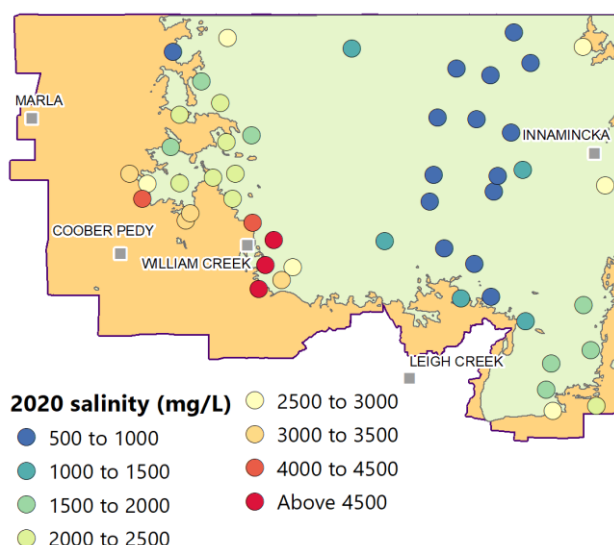
- Groundwater is predominantly extracted for mining, petroleum, stock and domestic purposes. Groundwater extraction for mining, petroleum and town water supply purposes is generally metered
- Groundwater use for mining and petroleum purposes in 2019-20 was 9% greater than the previous water use year and 49% greater than the twenty-year average.



Groundwater salinity

Trends in groundwater salinity were decreasing at most monitoring sites in the ten years to 2020

- In 2020, results from 50 wells in the GAB J K aquifer show groundwater salinities vary from 515 to 5262 mg/L, with a median of 1838 mg/L
- In the ten years to 2020, the majority of wells show a trend of decreasing salinity (86%) along the margin of the artesian section of the Basin with a median rate of 0.43% decrease per year (see below)



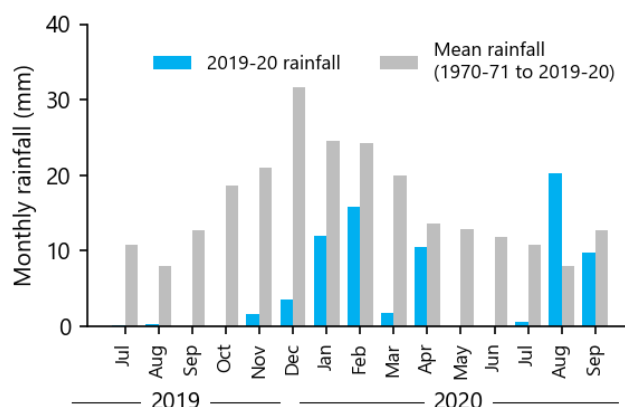
Climate-driven trends in water resources

The local rainfall in the South Australian portion of Great Artesian Basin, within the Far North PWA, has very little influence on groundwater pressure levels as the aquifer is confined.

Rainfall occurrence and intensity is episodic, sometimes with very little rainfall for many years, while intense rainfall can deliver annual amounts in a single event. Rainfall is generally less than 250 mm per year.

Rainfall was below-average for 2019–20

- Rainfall at Marree (BoM station 17031) was 63.5 mm, 64% less than the long-term (1980–2020) average of 176 mm/y
- Rainfall at Marla (BoM station 16085) was 45.4 mm, 164 mm less than the long-term (1980–2020) average of 210 mm/y
- The figure below shows monthly rainfall at Marla in blue for July 2019 to September 2020 compared to long-term monthly averages in grey.



Water allocation plan

A new water allocation plan was adopted in 2021

- The Water Allocation Plan, adopted in 2009, underwent a 10-year statutory review; the new plan was adopted in February 2021.
- A community and stakeholder consultation period took place from 12 November 2019 to 17 April 2020.

More Information

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