

Seasonal Climate Outlook

Date: August 2024

Key points to consider:

- **Temperature Outlook:** The Bureau of Meteorology's Australian Community Climate Earth-System Simulator-Seasonal (ACCESS-S) forecasts near-normal maximum temperatures from August to October, with a 40-80% chance of exceeding median temperatures (80% chance for the southwest corner). Skill is 75-100% consistent. The minimum temperature outlook indicates warmer-than-normal night-time temperatures with an 80% chance of exceeding the median. Skill is 55-75% consistent. However, frost remains likely in low-lying areas.
- **The El Niño Southern Oscillation (ENSO):** Remains neutral, with 4 out of 7 climate models indicating a La Niña from November. ENSO events have minimal influence on South West Land Division past the winter-spring period. ENSO forecast skill historically increases after mid-autumn, but model forecasts are still showing a large spread of possible conditions.
- **The Indian Ocean Dipole (IOD):** Currently neutral, the Bureau's ACCESS-S model indicates the development of a short-lived positive IOD for the month of August, which would reduce rainfall and increase temperatures in the SWLD. Four of five models are indicating a negative IOD from October, which would increase rainfall for the eastern grainbelt. Historically, IOD forecast skill is low beyond two months, and models still show a wide range of possible outcomes.
- **Southern Annular Mode (SAM):** Currently negative, the position of SAM is increasing the number of cold fronts reaching the SWLD. It is forecasted to return to neutral for most of August.
- **Recent Rainfall Activity:** Cold fronts became active in mid-July, pushing rainfall inland. Despite this, much of the central and southern grainbelt has recorded below decile 3 rainfall since the start of the growing season on 1 April.
- **Short-Term Rainfall Forecast:** The Bureau's Water and the Land indicates 5-50 mm of rain for the SWLD during the first week of August.

Rainfall outlook for the South West Land Division

A summary of 21 national and international models reveals that 13 models suggest neutral chances of exceeding median rainfall for the SWLD from August to October 2024, with two indicating below-median rainfall and six indicating above.

Looking further ahead, the majority of models predict a neutral chance of exceeding median rainfall for spring, September to November. It's important to note that a neutral outlook does not imply average rainfall but rather normal climatic conditions, where anything is possible.

Further ahead, for October to December and November 2024 to January 2025, the models are suggesting an equal chance of below median rainfall, and neutral chance of exceeding median rainfall. However, the forecast skill is poor with such a long lead time.

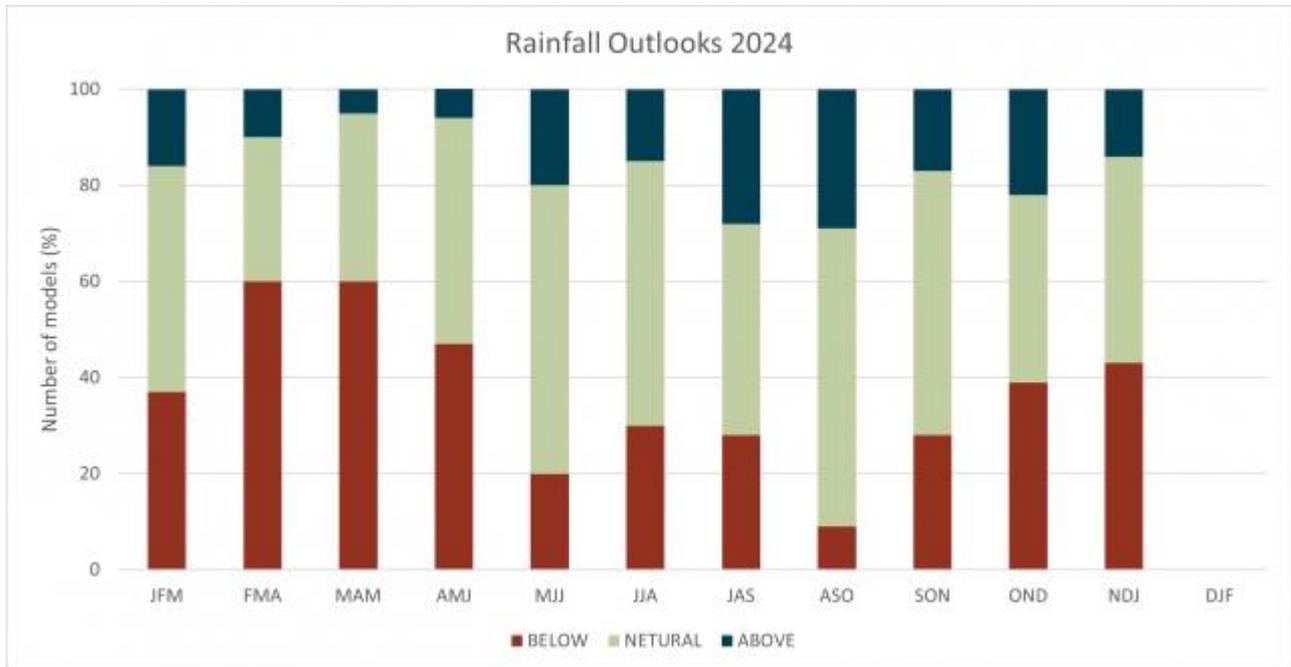
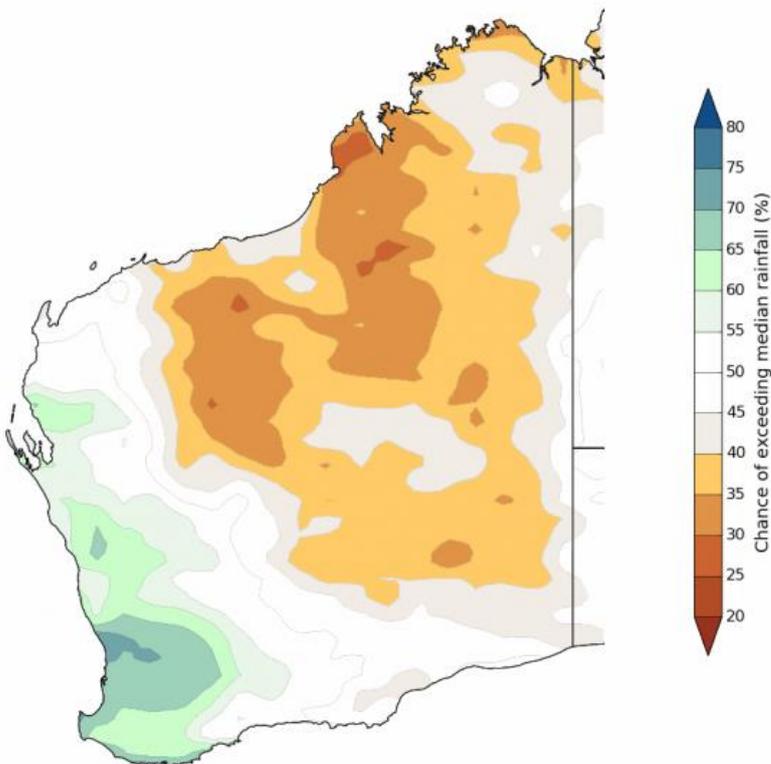


Fig 1. Model summary of rainfall outlook for the South West Land Division up to November 2024 to January 2025, with majority of models indicating a neutral chance of exceeding median rainfall.

The Bureau of Meteorology's ACCESS model current outlook for August to October is a 50-70% chance of exceeding median rainfall. Skill is 45-75% accuracy, with less skill in the interior. Together with the forecast for near normal temperatures, indicates that the finish to the growing season will be mild, with wetter conditions and average temperatures.

Chance of exceeding the median rainfall for August to October 2024



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Model: ACCESS-S2

Base period: 1981-2018

Model run: 22/07/2024

Issued: 25/07/2024

Fig 2. Bureau of Meteorology ACCESS model chance of exceeding the median rainfall for August to October 2024 for Western Australia. Indicating 50-75% chance of exceeding median rainfall.

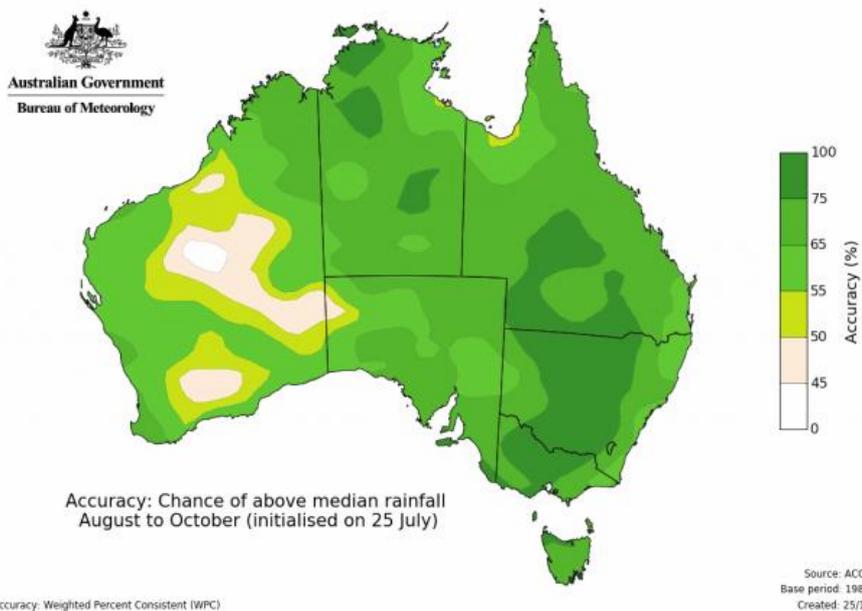


Fig 3. Bureau of Meteorology's ACCESS accuracy map for August to October rainfall, indicating 45-75% skill.

Frost Occurrence Maps

Average frost occurrence maps can give you an idea of the risk of frost on your farm. Frost occurrence map for 1-29 July 2024 compared to the average map for 1975-2023 indicates that for the majority of the SWLD, the number of nights below 2°C is lower than average. However, Wickepin North has had 11 nights below 2°C for 1-29 July, higher than the long term average of 7. Coldest temperature for 1-29 July was -2.9°C in Salmon Gums.

Generally, for the majority of the South West Land Division, August has fewer number of nights below 2°C on average than July. The station with the highest average number of nights below 2°C is Wandering with 10 nights (and has only 9 nights on average for July). Note that this map is for the average, and temperatures can vary greatly year to year. Drier conditions result in less cloud cover, leading to cooler temperatures.

The frost occurrence and severity maps are created using data from 332 Bureau of Meteorology and 175 DPIRD stations. Both sets of weather stations measure air temperature in a shaded enclosure (usually a Stevenson Screen) at a height of approximately 1.2 m above the ground. So, maps are showing the occurrence of nights below 2°C, as temperature of 2°C at 1.2 m is equivalent to 0°C on the ground, which is cold enough to significantly damage cereal crops.

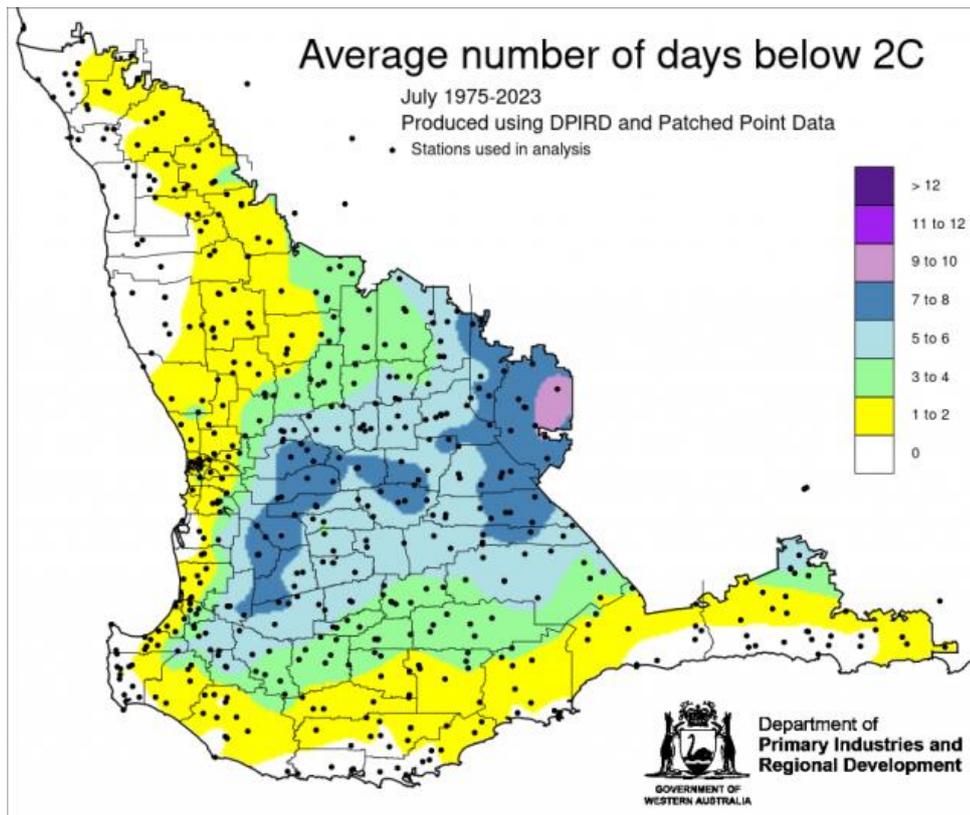


Fig 4. Average number of days below 2°C for July 1975-2023 for the South West Land Division. Southern Cross has the most number of days with frost potential, with average 9 nights.

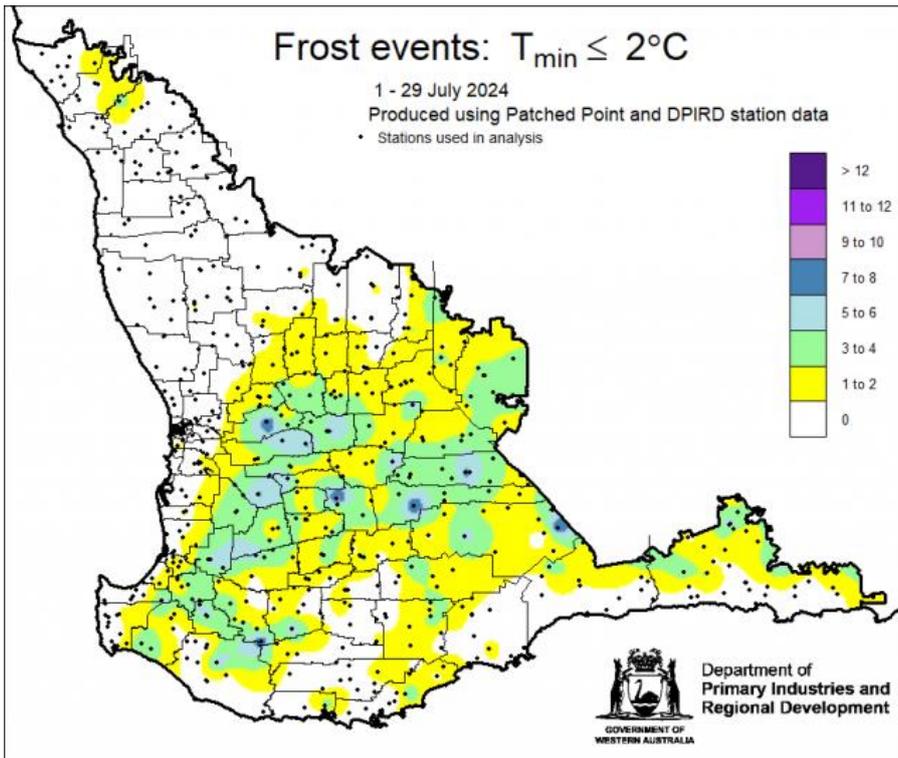


Fig 5. Number of days below 2°C for 1-29 July 2024 for the South West Land Division. Wickepin North had the most number of days with frost potential, with 11 nights below 2°C.

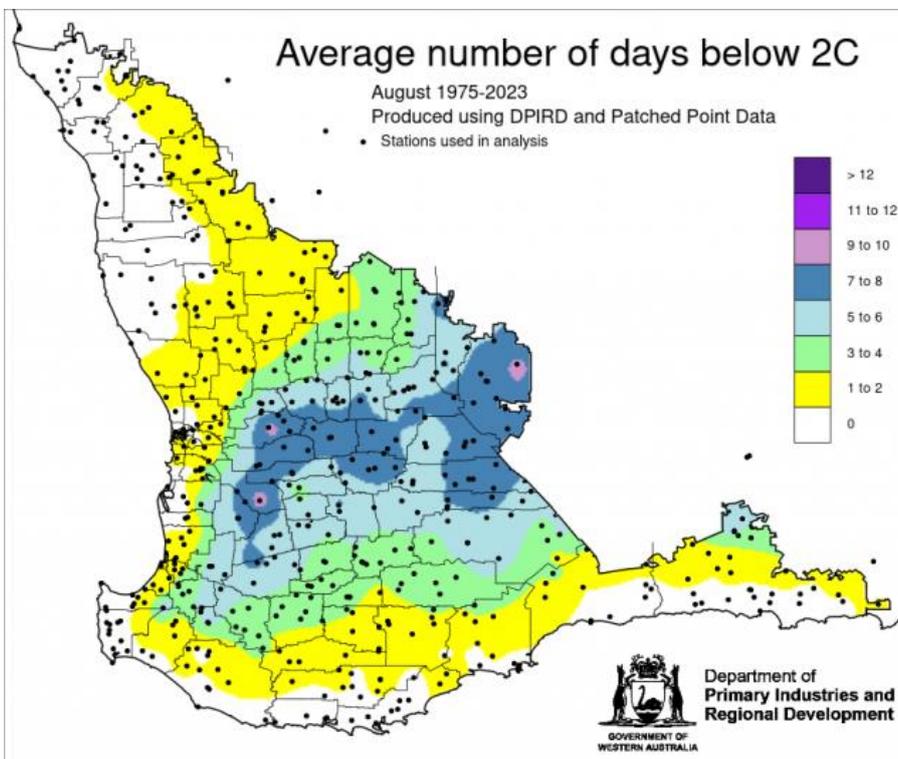


Fig 6. Average number of days below 2°C for August 1975-2023 for the South West Land Division. Wandering had the greatest average number of days with frost potential, with 10 nights.

Recent Climate

The highest rainfall total since 1 April in the South West Land Division is Myalup, near Bunbury, with 643 mm. 55 out of 543 locations are currently tracking at decile 1, with Lake Grace having only received 69 mm so far, this growing season.

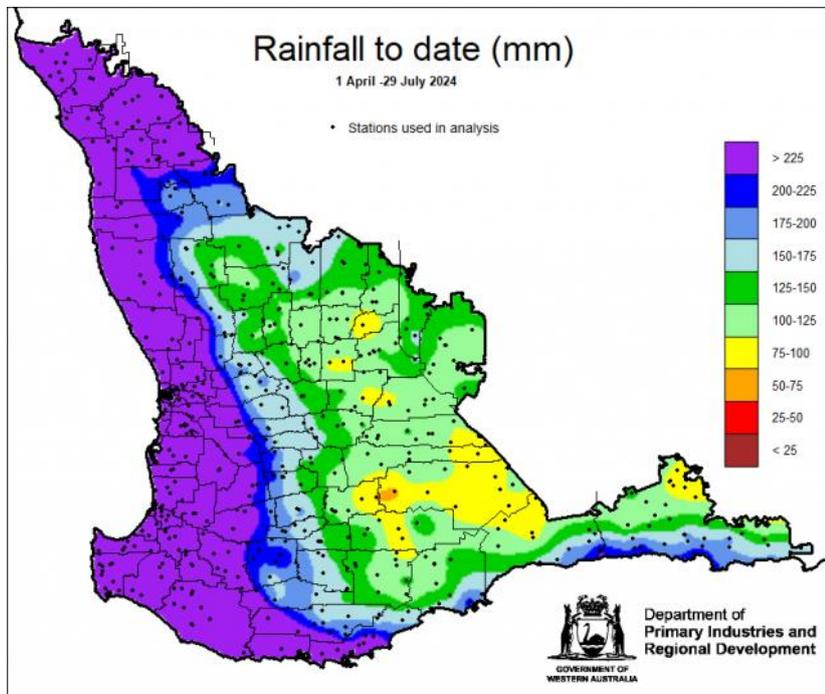


Fig7. Rainfall map for 1 April to 1 July 2024 for the South West Land Division. Indicating less than 100mm for the majority of the wheatbelt.

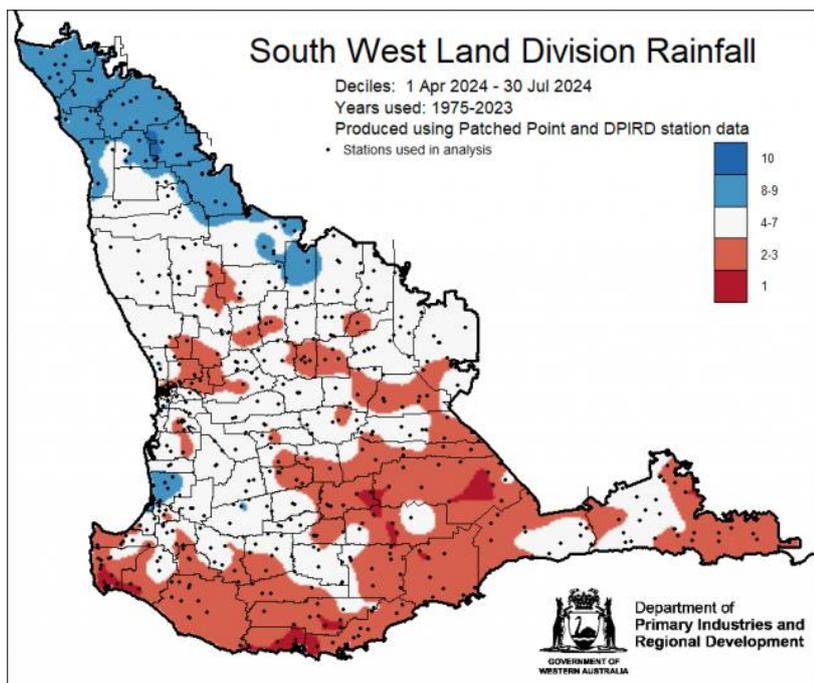


Fig 8. Rainfall decile map for 1 April to 30 July 2024 for the South West Land Division. Indicating decile 1-3 rainfall for southern areas, decile 8-10 for northern wheatbelt and area around Myalup, north of Bunbury, decile 4-7 elsewhere.

The latest DPIRD plant available soil water map is using the Food and Agriculture Organization of the United Nations (FAO) crop factor method. This method assumes that post-germination, there are four stages of crop growth.

On any day during the crop lifecycle, the crop coefficient for the crop's growth stage is multiplied by the potential evaporation to give an estimate of plant evapotranspiration. Coefficients have been selected to suit WA wheat cropping.

The mean of ten different soil types is mapped, indicating that there is low soil water storage for the majority of the South West Land Division, with higher amounts (above 80 mm) along the west coast, south-west corner and the northern grainbelt.

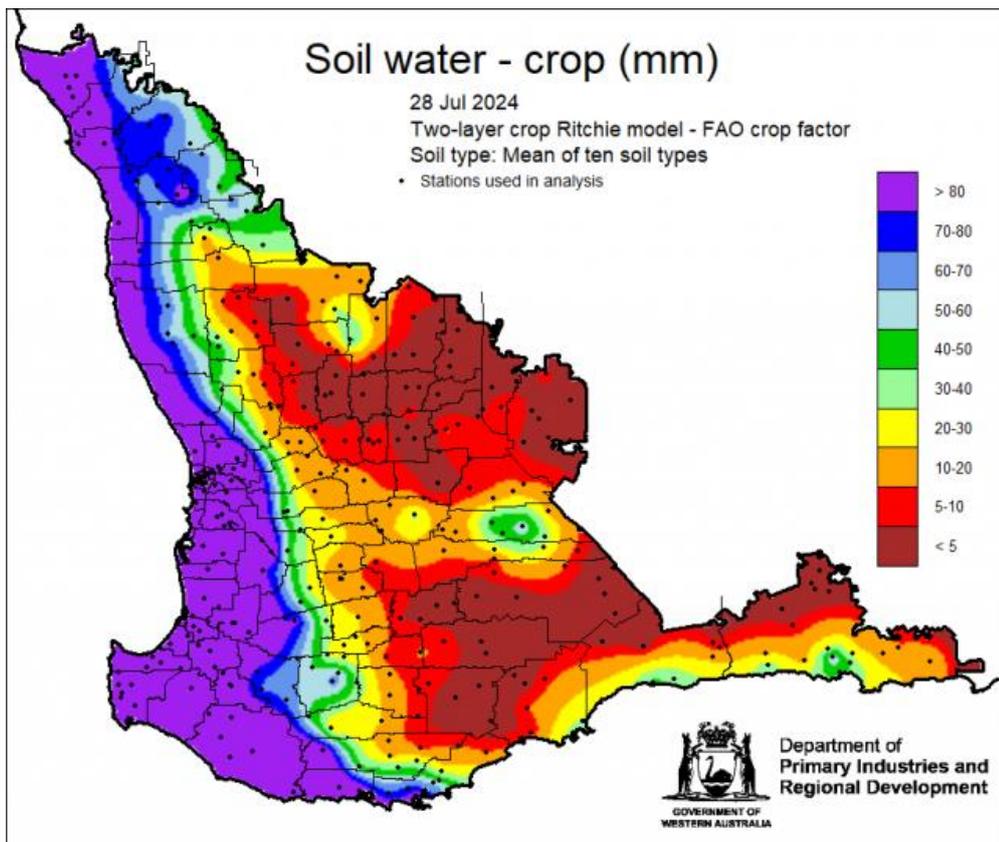


Fig 9. Plant available soil water map using the two-layer Ritchie soil water model FAO crop factor up to 28 July 2024. Indicating that a large part of the South West Land Division has low soil water.

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