Seasonal Climate Outlook

Date: December 2024

Summary

The current rainfall outlook for the South West Land Division (SWLD) from December 2024 to February 2025 shows the majority of models suggest above median rainfall. An above median outlook does not necessarily indicate substantial rainfall, as this period typically sees low precipitation. Warmer maximum and minimum temperatures are expected over this period.

Key points to consider:

- **Temperature Outlook:** The Bureau of Meteorology's Australian Community Climate Earth-System Simulator-Seasonal (ACCESS-S) forecasts a 60-80% chance of exceeding maximum median temperatures for December 2024 to February 2025, with the higher chances along the coast. The forecast skill ranges from 65%-75%. For minimum temperatures, there is an 80% chance of exceeding the median, with a forecast skill of 65-100%.
- **El Niño Southern Oscillation (ENSO):** ENSO is currently neutral, with all climate models projecting neutral conditions through to April 2025.
- **Indian Ocean Dipole (IOD):** The IOD is also neutral, with all 5 models predicting neutral conditions until March 2025. The IOD remains usually remains inactive from November to May during the Australian monsoon season.
- **Southern Annular Mode (SAM):** SAM is also currently negative but forecast to remain neutral until the end of November. SAM has no impact on the SWLD during summer.
- **Rainfall outlook Skill:** Rainfall outlooks have low skill during summer in the SWLD due to the influence of localized thunderstorms and tropical cyclones, which are difficult to capture in long term climate models.

Rainfall Outlook for the South West Land Division

A summary of 19 national and international models shows that, for the SWLD from November 2024 to January 2025, 6 models suggest a neutral chance of exceeding median rainfall, and the remaining 13 models predict above-median rainfall.

An above median outlook does not necessarily indicate substantial rainfall, as this period typically sees low precipitation. However, localized thunderstorms can occasionally bring heavy rain to small areas.

Looking further ahead to autumn, March to May 2025, 4 out of 7 models indicate neutral chances of exceeding median rainfall, while the other 3 models indicate above-median rainfall. However, forecast accuracy decreases significantly with this longer lead time.

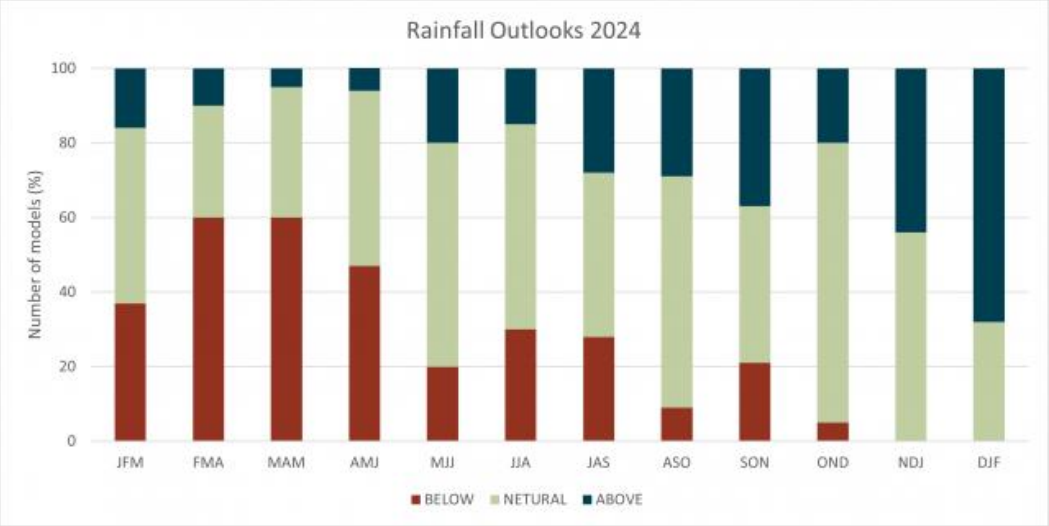

Fig 1. Model summary of rainfall outlook for the South West Land Division up to December 2024 to February 2025, with majority of models indicating above median rainfall.

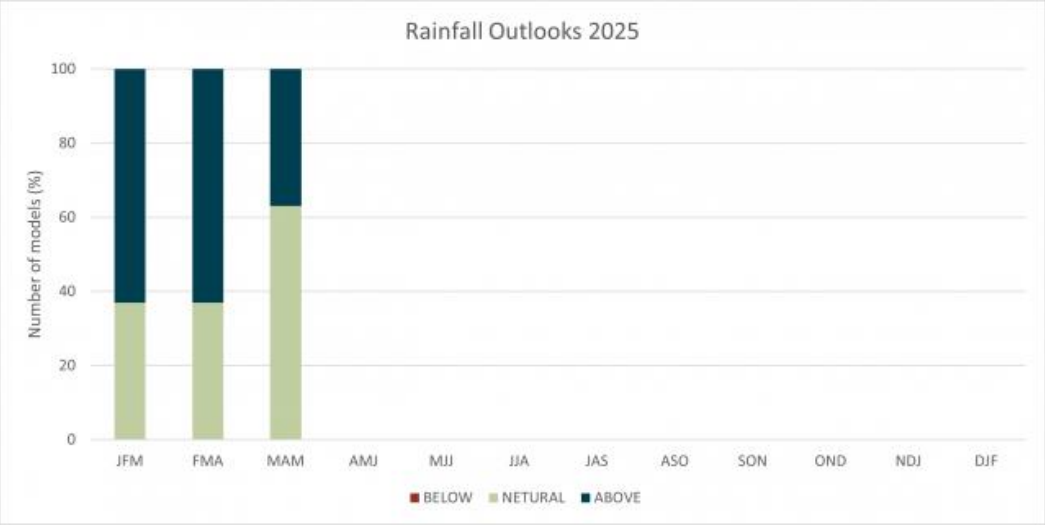

Fig 2. Model summary of rainfall outlook for the South West Land Division up to autumn, March to May 2025, with majority of models indicating a neutral chance of exceeding median rainfall.

Thermal time maps

Cumulative thermal time was calculated from 1st April to 31st October, for each year since 1975, as the sum of the daily average temperatures for the season to date. The current season was then mapped as the change from the historical median (1975-2023) to give an indication of the expected crop growth rate.

These graphs provide a snapshot of the current season allowing growers to assess water requirements of their crops and to gauge potential water stress. Including historical data puts the season in context in terms of the likely growth rate of crops or pasture. If you take 20°C as being an average day, then you can determine the difference from the median in days. Rushy Pool (near Narrogin) was 23 days behind the median, and Goodlands 42 days in front.

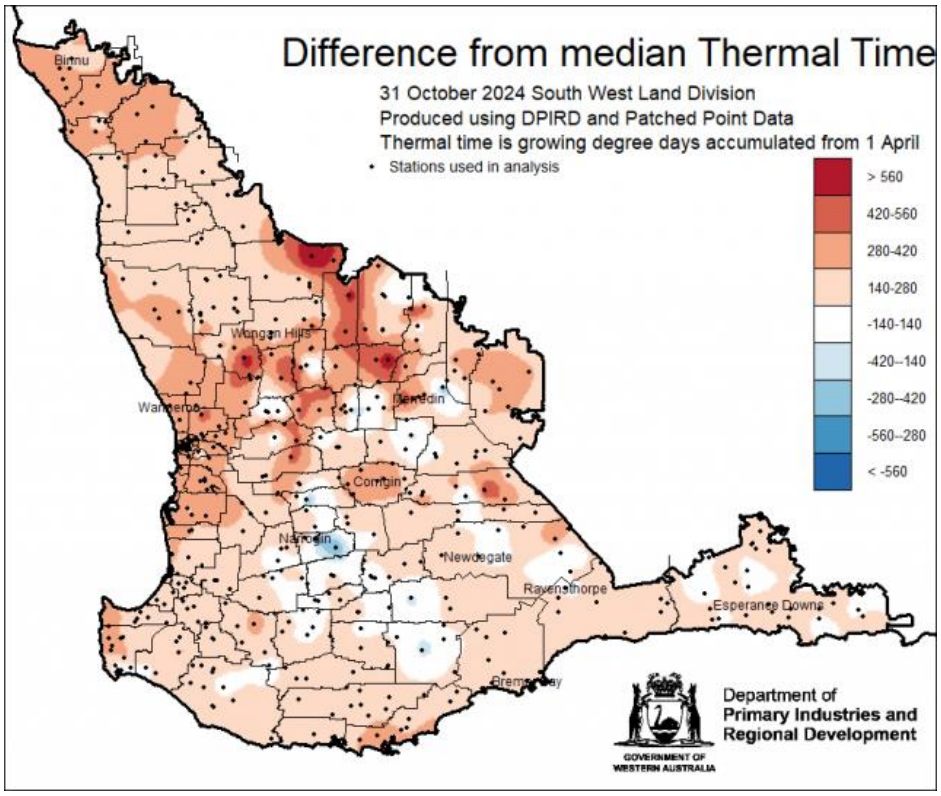

Fig.3. Difference from median thermal time map of the South West Land Division 31 October 2024. This map indicates growing degree days difference from long term median. Most parts had faster growing degree days than normal.

Heat occurrence maps

Maps of the South West Land Division, showing the number of days below 32°C from August to November, can highlight areas where heat stress is a concern. Temperatures above 32°C during the flowering and grain-filling stages can negatively impact yield by reducing pollen viability, which subsequently reduces grain size, weight, and alters protein content. The map showing the average number of days above 32°C from August to November for 2000–2023 indicates that the Central West forecast district experiences the most heat days, with the season typically ending in September as a result. For instance,

Mullewa records an average of 25 days above 32°C. 2024 has been similar to the average map with Mullewa having 28 days above 32°C to the end of November.

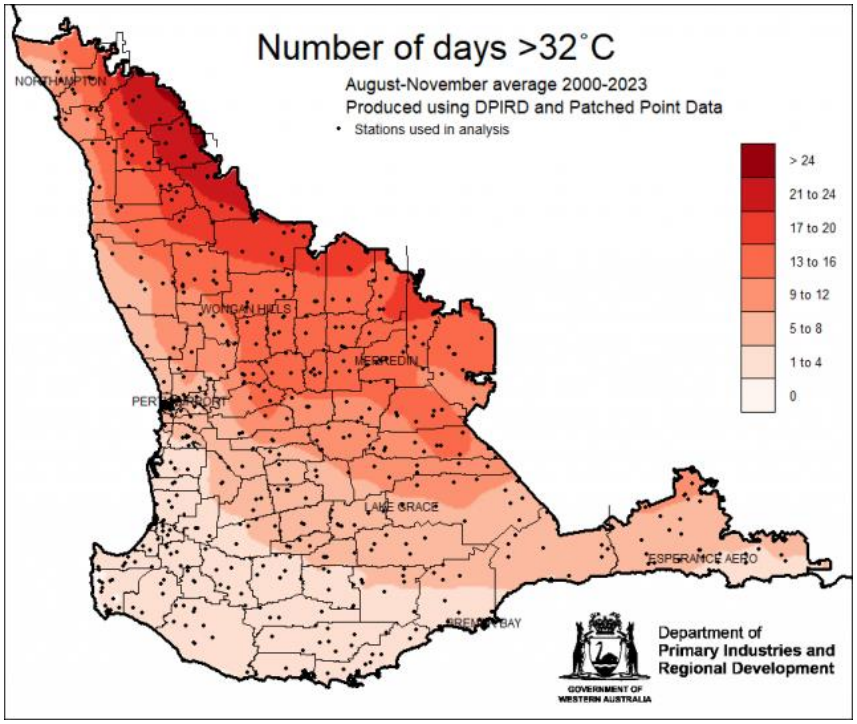

Figure 4. Average number of days above 32°C for August-November 2000-2023 for the South West Land Division. Mullewa has the highest average, with 25 days above 32°C.

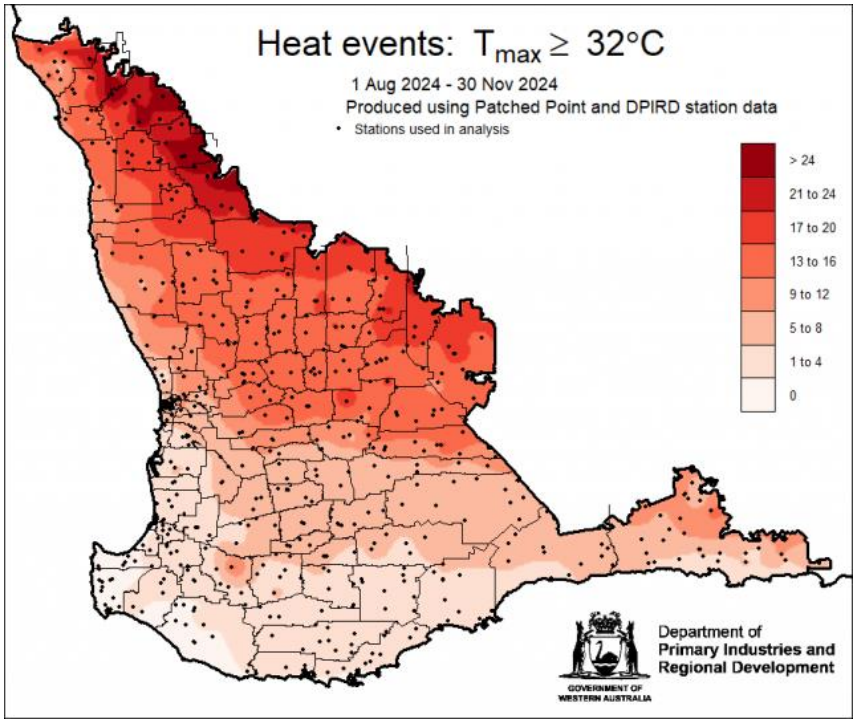

Figure 5. Number of days above 32°C for 1 August- 30 November 2024 for the South West Land Division. Bindoo has the highest number of days with heat stress, with 30 days above 32°C.

Recent climate

Rainfall in November has been very much above average for the majority of the South West Land Division. From isolated thunderstorms and low pressure troughs. Causing delays to harvest, and reports of grain sprouting.

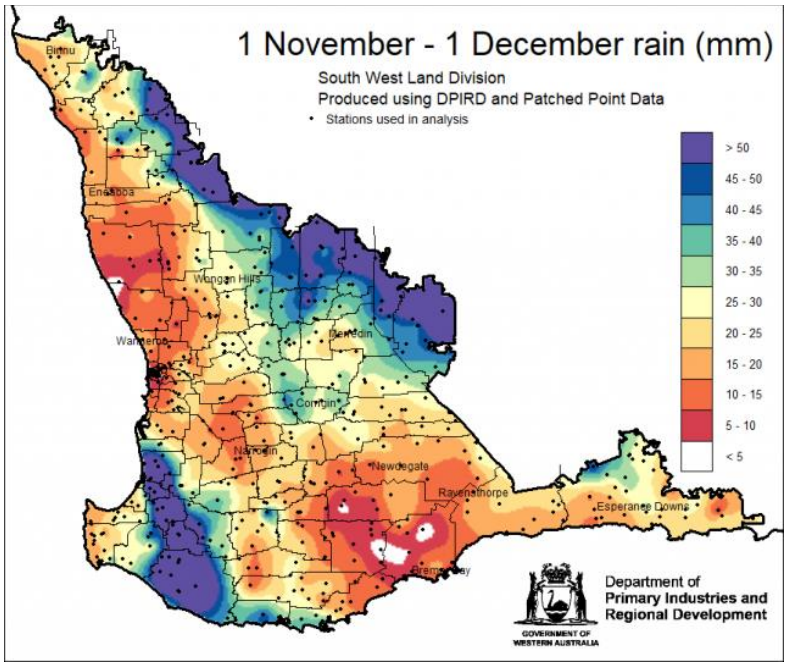

Figure 6. Rainfall map for 1 November to 1 December 2024 for the South West Land Division. Dardanup (Waterloo) station received 120 mm and Perenjori 102 mm.

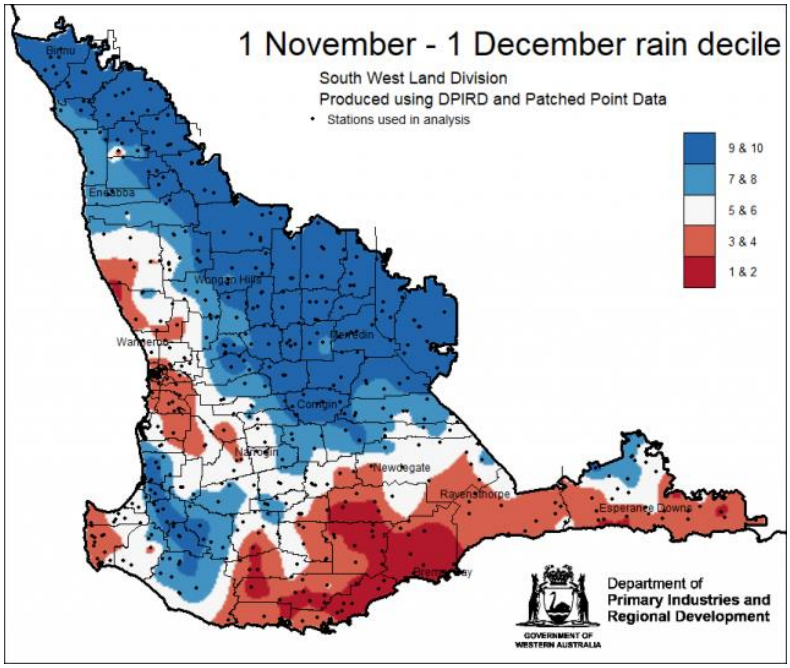

Figure 7. Rainfall decile map for 1 November to 1 December 2024 for the South West Land Division. Indicating decile 8-10 rainfall for the majority.

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