



Seasonal Climate Outlook

Date: June 2024

Summary

The current rainfall outlook for the South West Land Division (SWLD) from winter (June to August) through to spring (September to November) indicates neutral chances of exceeding median rainfall, with an equal likelihood of below or above median rainfall. Warmer temperatures than usual are anticipated to persist.

Key points to consider:

- The Bureau of Meteorology's temperature outlook for winter (June to August 2024) and extending to July to September indicates above-average maximum and minimum temperatures, with an 80% chance of exceeding median temperature.
- The El Niño Southern Oscillation (ENSO) remains neutral, with climate models indicating this neutrality is likely to continue until at least July 2024.
- Indian Ocean Dipole (IOD) is currently neutral. Forecasts from the Bureau and other meteorological agencies suggest a weaker positive IOD than earlier forecasts.
- Southern Annular Mode (SAM) is currently negative and is expected to remain negative during the first two weeks of June. A negative SAM can enhance rainfall over parts of southern Australia during winter.
- Rainfall in May was below average due to a strong high-pressure system that persisted, acting as a blocking high. This system finally moved in late May, allowing cold fronts to move across the SWLD.
- The Bureau's Water and the Land is indicating 15-100 mm rain for the SWLD for the first week of June from a series of cold fronts.

Rainfall Outlook for the South West Land Division

A summary of 20 national and international models reveals that 11 models suggest neutral chances of exceeding median rainfall for the SWLD for winter (June to August) 2024. Looking further ahead, the majority of models also predict a neutral chance of exceeding median rainfall right through to 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.



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

Southern Annular Mode

The Southern Annular Mode (SAM) is a climate driver that can influence rainfall and temperature in Australia.

SAM refers to the non-seasonal north-south movement of the strong westerly winds that blow almost continuously in the mid- to high-latitudes of the southern hemisphere. This belt of westerly winds is also associated with storms and cold fronts that move from west to east, bringing rainfall to southern Australia.

SAM has three phases: neutral, positive and negative. Each positive or negative SAM event tends to last for around one to two weeks, though longer periods may also occur. The time frame between positive and negative events is quite random, typically ranging from a week to a few months.

SAM has a strong influence on SWLD climate in winter, with a positive SAM repressing rainfall, and a negative SAM enhancing rainfall.

As of 29 May, SAM is currently negative and is expected to remain negative during the first two weeks of June. The influence of SAM increases from little influence over autumn to increased influence in winter.



Fig2. Bureau of Meteorology ACCESS-S2 forecast for the Southern Annular Mode, indicating negative SAM for first 2 weeks of June. Negative SAM is favourable for rainfall in winter.

Outlook for Spring (September to November)

The European Centre for Medium-Range Weather Forecasts (ECMWF) rainfall outlook for spring (September to November) indicates a 40-60% chance of exceeding the median. This suggests that a range of rainfall outcomes is possible for spring. Encouragingly, this outlook contrasts with last year's prediction for below-median rainfall.

The temperature outlook, however, indicates warmer than normal conditions, with a 70-80% chance of exceeding median temperature for spring. This may mean that frost events are less likely this year, but potential increase in heat stress during spring.



Fig3. European Centre for Medium-Range Weather Forecasts rainfall forecast for spring, September to November 2024. Indicating 40-60% chance of exceeding median rainfall for the South West Land Division.



Fig4. European Centre for Medium-Range Weather Forecasts temperature outlook for spring September to November 2024. Indicating 60-70% chance of exceeding median temperature for the South West Land Division.

The European Centre for Medium-Range Weather Forecasts (ECMWF) produces monthly forecasts in the form of box and whisker bar charts. The ECMWF model is run 51 times, with the grey colours indicating the normal climatology (for years 1993-2016) and the purple colours indicating the forecast.

The latitude -27° S to -36° S and longitude of 114° E to 124° E roughly corresponds to the South West Land Division. The outlook indicates below median rainfall for June, July and August, with above median rainfall for September, October and November.



Fig 5. European Centre for Medium-Range Weather Forecasts precipitation anomalies box and whisker bar charts for monthly rainfall from May through to November. Forecast is indicating the possibility of above median rainfall for spring.

Recent Climate

Rainfall for the growing season (from 1 April) has been below average for the South West Land Division. A cold front on 28 May brought widespread rainfall to the SWLD, with 73 mm of rain recorded in Bunbury.



Fig6. Rainfall map for 1 April to 29 May 2024 for the South West Land Division. Indicating rainfall for the south west corner, but lower amounts for the Central West and Central Wheatbelt.



Fig7. Rainfall decile map for 1 April to 29 May 2024 for the South West Land Division. Indicating decile 1-3 rainfall for the majority.

The latest DPIRD soil water map based on the Ritchie two-layer fallow evaporation model, which runs from the first of November in the previous year. The mean of ten different soil types is mapped, indicating that there are currently low levels of plant available water in the soil.



Fig8. Plant available soil water map using the two-layer Ritchie soil water model up to 27 May 2024. Indicating that a large part of the South West Land Division is has very limited soil water.

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