

QUEENSLAND CLIMATE ASSESSMENT REPORT

Current climate and seasonal outlook information to support sustainable grazing land, water, catchment and environmental management in Queensland.

SEASONAL CONDITIONS SUMMARY

FINDINGS AS AT 17 December 2025

- Twelve-month rainfall to the end of October 2025, averaged over the main grazing lands of Queensland, was 28 per cent above the long-term average (1890 to 2020).
- Rainfall over the last three- and six-month periods has been above-average in far-northern Queensland but average to below-average over the remainder of the State.
- The tropical Pacific Ocean temperature and atmospheric anomalies are now coupled, a condition consistent with La Niña.
- As at 1 November 2025, the Science Division of DETSI considers that the probability of exceeding median summer (November 2025 to March 2026) rainfall for much of Queensland is currently in the near-average to above-average range.

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Historical Rainfall Variability and Drought Situation

Figure 1 shows 12-month rainfall averaged over the region of Queensland shown on the grey map (top right). This region carries over 80 per cent of the State's cattle and sheep herd and covers only 60 per cent of Queensland's land area. In each graph, rainfall is expressed as a percentage difference from the long-term (1890 to 2020) average. The upper graph shows the running 12-month rainfall anomaly since 1890, indicating the long-term history of wet and dry periods over this region. The lower graph focuses on changes since 2010 and shows, at selected times, those parts of Queensland drought-declared under State Government processes. Twelve-month rainfall to the end of November 2025, averaged over the main grazing lands of Queensland, was 28 per cent above the long-term average (1890 to 2020). Queensland currently has [no local government areas which are officially drought-declared](#).

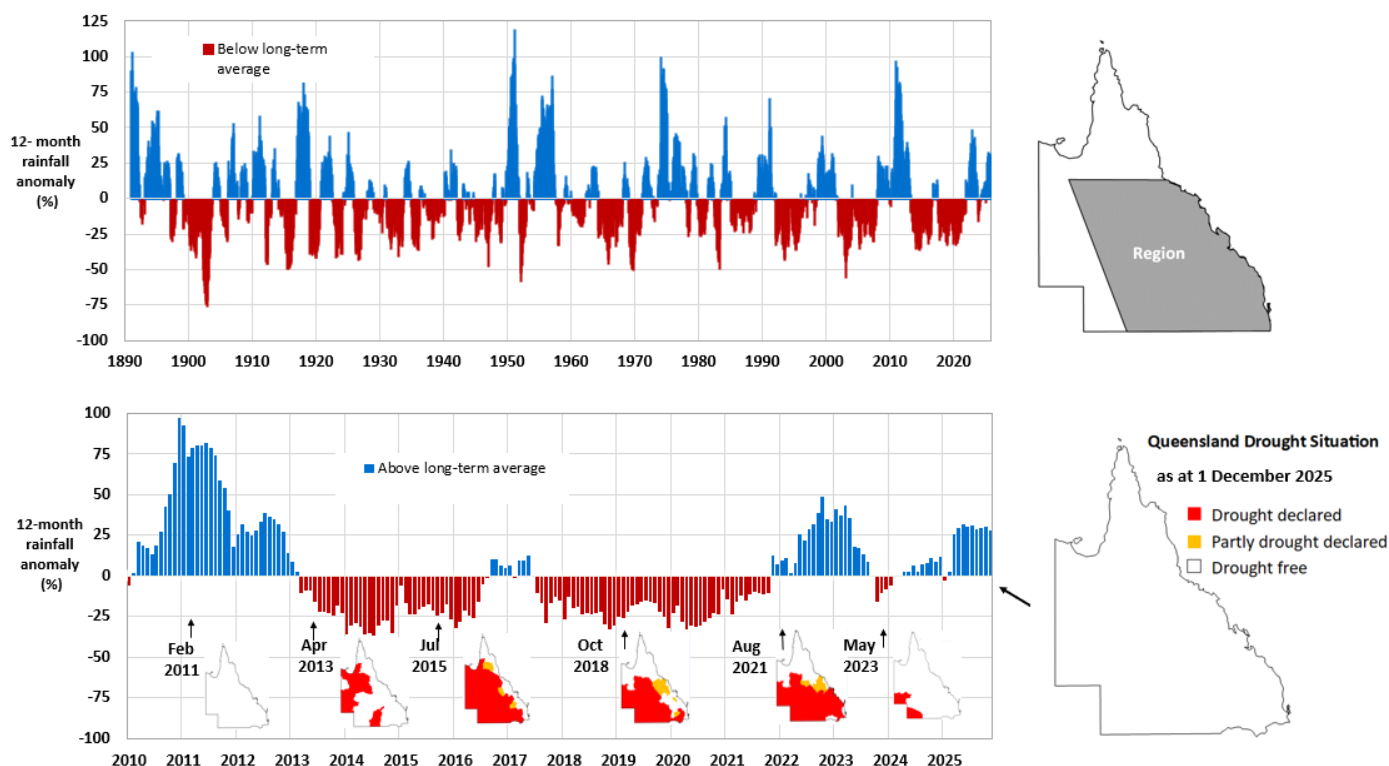


Fig.1: Historical 12-month rainfall anomalies

(Rainfall data source: <https://www.longpaddock.qld.gov.au/silo/>)

Rainfall and Pasture Growth Update

Figures 2 and 3 are products of the [AussieGRASS Environmental Calculator](https://www.longpaddock.qld.gov.au/aussiegrass/) (Carter et al. 2000). Figure 2 shows rainfall over the last three-, six- and 12-month periods (up to November 30, 2025) ranked against historical values. Rainfall over the last three- and six-month periods has been mostly average to above-average over the northern half of the State while average to below-average over southern half of Queensland. Over the last 12-month period rainfall percentiles were generally average to extremely high in most of Queensland.

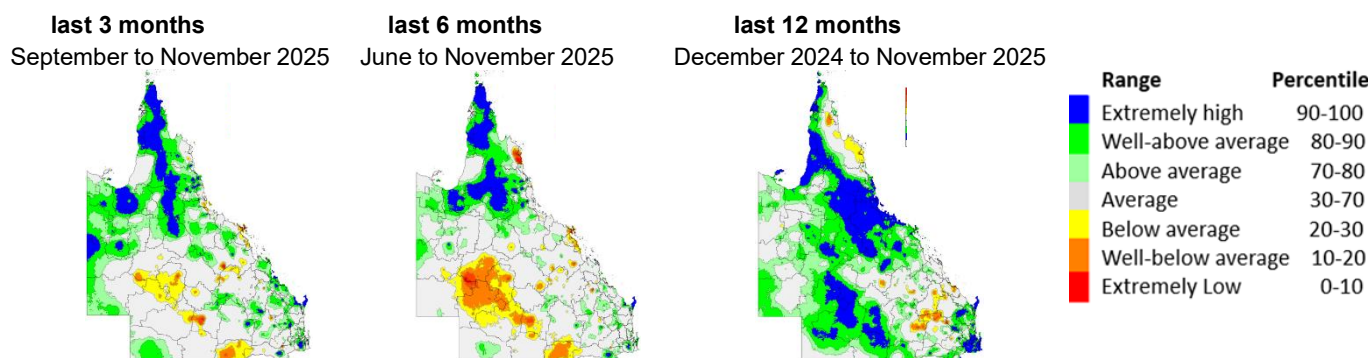


Fig. 2: Rainfall percentiles (base period 1890 to current)

(Source: <https://www.longpaddock.qld.gov.au/aussiegrass/>)

Figure 3-shows calculated pasture growth percentiles over the last three-, six-, and 12-month periods. The pattern of calculated pasture growth percentiles over the last three-, six-, and 12-month periods has broad similarities for much of the state to that of rainfall percentiles (above), ranging from extremely low to extremely high depending on region and length of period considered.

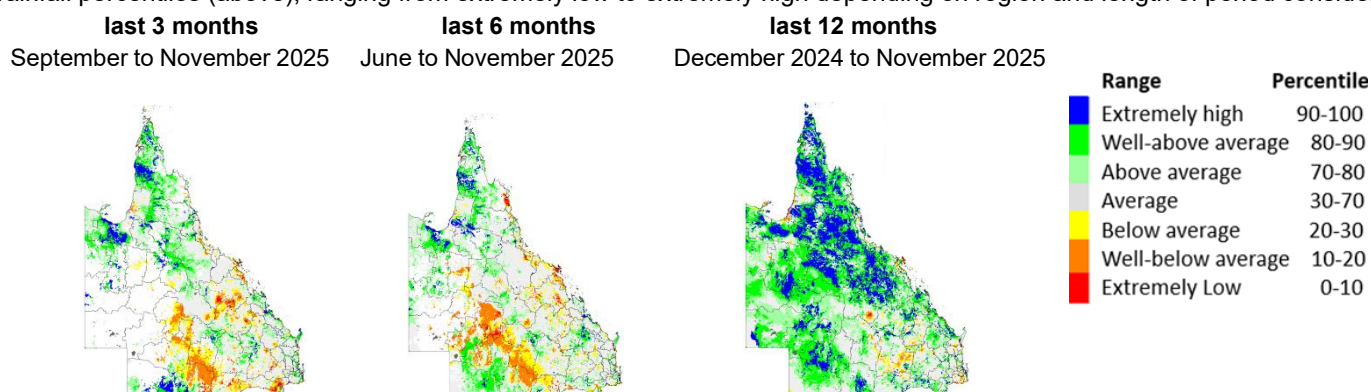


Fig. 3: Pasture growth percentiles (base period 1957 to current)

White shading indicates areas that normally have "seasonally low" pasture growth.
(Source: <https://www.longpaddock.qld.gov.au/aussiegrass/>)

Season-to-Date Rainfall versus November to March historical records

Rainfall for November 2025 period, averaged across Queensland's major grazing lands region (grey region on the map in Fig.4), totalled 64 mm, and is slightly above the long-term median for November to March period. The season is very close to the same period last year for November 2024.

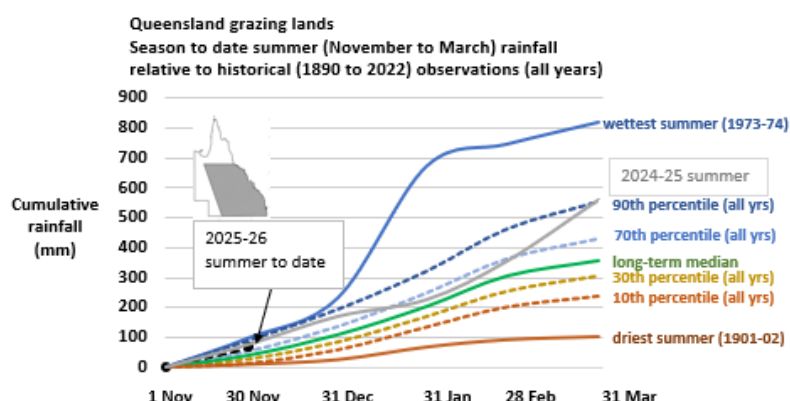


Fig. 4: November 2025 to March 2026 season accumulated rainfall as at 1 December 2025, compared to historical values.

Percentiles based on season-to-date rainfall at the end of each month since 1 November (based on data from 1890 to 2024).

Data source: <https://www.longpaddock.qld.gov.au/silo/>

El Niño-Southern Oscillation (ENSO)

The most closely monitored driver of Queensland rainfall is the El Niño-Southern Oscillation (ENSO) phenomenon. Climate scientists monitor several ENSO indices, including the atmospheric [Southern Oscillation Index](#) (SOI) and sea-surface temperature (SST) anomalies in the central equatorial Pacific Ocean.

The most recent three-month average value of the SOI, (+8.7 for September to November 2025, Fig. 5) is now in La Niña range (> 6 ; Fig 5). Over the same period, the SST anomaly in the Niño 3.4 region of the central equatorial Pacific (-0.53°C , Fig. 5) has reached La Niña levels with below-average SST anomalies across most of the central equatorial Pacific (Fig. 6). The Bureau and other international climate models currently predict that La Niña is likely to continue until early 2026 before returning to neutral levels.

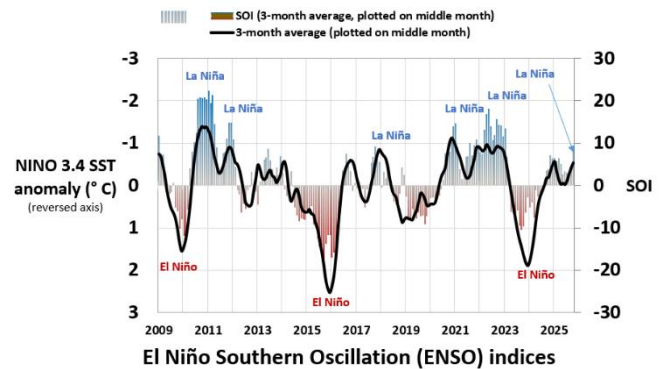


Fig. 5: El Niño Southern Oscillation (ENSO) Indices

SST source: www.cpc.ncep.noaa.gov/data/indices
(NINO3.4 SST, monthly OISST.v2.1 (1991 to 2020 base period))
SOI source: www.longpaddock.qld.gov.au/soi/soi-data-files
(monthly SOI 1887-1989 base period)

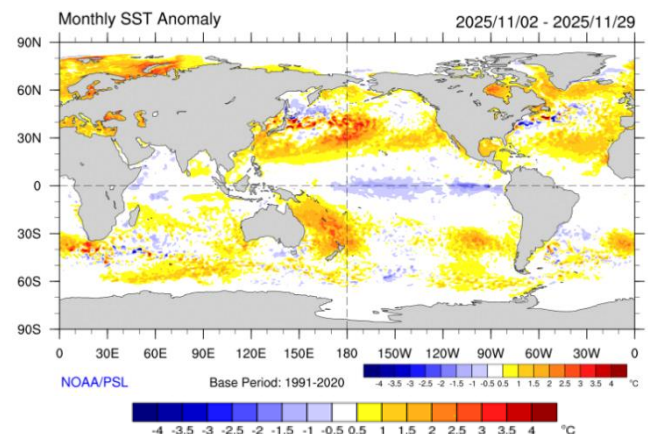


Fig. 6: Pacific Ocean sea-surface temperature anomalies ($^{\circ}\text{C}$)
for 2 to 29 November 2025 based on NOAA OISST.v3.1 SST data (1991 to 2020 based period) Map source: <https://psl.noaa.gov/map/clim/sst.shtml>

Madden-Julian Oscillation (MJO)

The [Madden-Julian Oscillation \(MJO\)](#) is a broad area of tropical convection (cloud and rainfall) which tracks east from the western Indian Ocean toward the eastern Pacific Ocean. This MJO cycle tends to recur on average every 30 to 60 days (intraseasonal), distinct from El Niño and La Niña events which typically persist for three to nine months. In Queensland, the MJO has its greatest influence on rainfall during the tropical cyclone season (November to April), particularly in northern parts of the State, as its passage can enhance the strength of the northern Australian monsoon and increase the chance of tropical cyclones. For example, two tropical cyclones made landfall in Queensland during the 2023-24 season ('Jasper' on 13 December and 'Kirrily' on 25 January), both occurred when the MJO was active in Australian-Western Pacific longitudes, unlike tropical cyclone Alfred which made landfall on 8 March 2025. The MJO is currently over the central tropical Pacific, a position which typically enhances rainfall across parts of north-eastern Australia. BoM and other international models suggest the MJO is likely to rapidly weaken in the coming days as it moves into tropical Americas and becoming indiscernible for Australia.

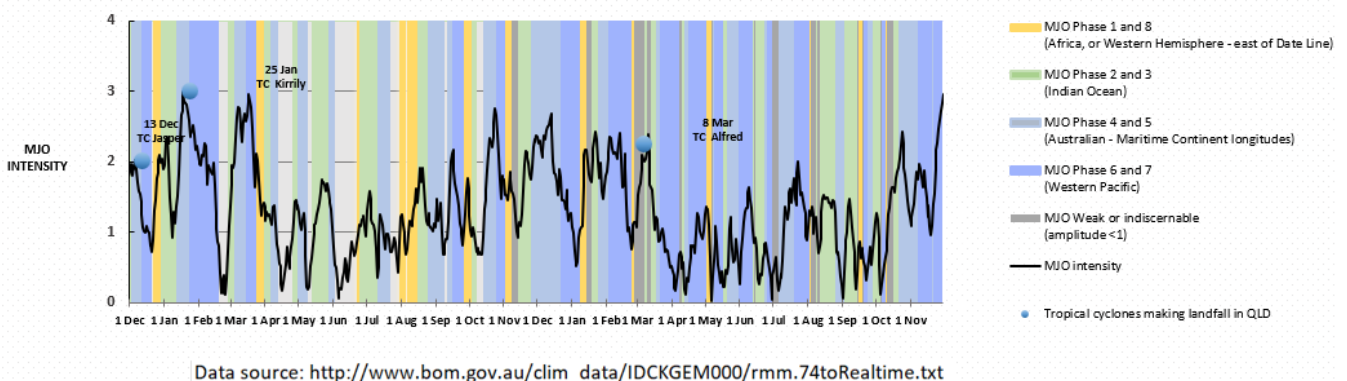


Fig. 7: Madden-Julian Oscillation intensity and phase-location

The graph shows the general location (coloured bars) and intensity (grey line) of the MJO from 1 December 2023 to 29 November 2025.
Data source: http://www.bom.gov.au/clim_data/IDCKGEM000/rmm.74toRealtime.txt

Long-lead Summer Rainfall Outlook

(produced on 5 November, based on SPOTA-1)

The Department of the Environment, Tourism, Science and Innovation (DETSI) monitors SST anomalies in key regions of the Pacific Ocean over autumn, winter, and spring and provides objective outlooks for summer (November to March) rainfall on this basis.

The current DETSI outlook for summer rainfall in Queensland is an objective analysis of historical conditions using an index based on SST anomalies measured in key regions of the extra-tropical Pacific Ocean, which factors-in the evolving ENSO-related SST pattern in the central and southwest Pacific. Historical SST gradients across these regions, from March to October, have been related to rainfall over much of Queensland in the following summer. On this basis, as at 1 November, the Science Division of DETSI considers that the probability of exceeding median summer (November to March) rainfall is within the near- to above-normal range (50 to 80 per cent) for much of Queensland. (Figs. 8 and 9).

This is the final DETSI outlook leading up to 2025/26 summer rainfall season (November to March).

Three-month Rainfall Outlooks

based on international dynamical models

The maps in Figure 10 show rainfall probabilities for upcoming three-month periods, based on dynamical climate modelling, sourced from a range of international climate agencies. Rainfall probabilities differ for each model, on both a spatial and temporal basis, due to the different methodologies used.

For December to February period, the BoM and most international global climate models indicate a normal to higher-than-normal probability of above median rainfall for coastal Queensland with a normal to below-normal probability for below median rainfall over the rest of the State.

Dynamical model outlook sources:

Australian Bureau of Meteorology <http://www.bom.gov.au/jsp/sco/archive/>

UK Met Office: <http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob>

European C3S (Copernicus Climate Change Service) multi-model: https://climate.copernicus.eu/charts/c3s_seasonal/ (C3S multi-system (7))

NOAA North American Multi-model Ensemble -USA: <https://www.cpc.ncep.noaa.gov/products/NMME/seasnom.shtml> (Global prate)

Probability of exceeding median summer rainfall for November 2025 - March 2026, as at 1 November 2025

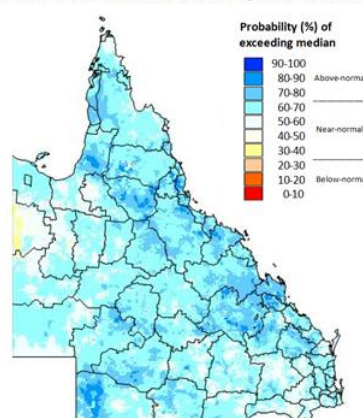


Fig. 8: Probability of exceeding median summer rainfall (for November 2025 to March 2026) as at 1 November 2025
Produced by the DETSI SPOTA-1 system.

Summer (Nov to Mar) rainfall probabilities for Queensland regions, as at 1 November 2025

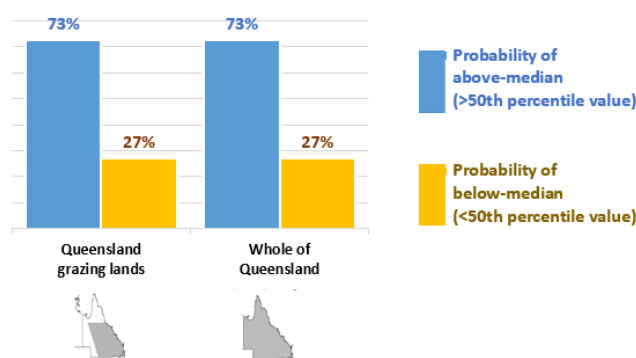


Fig. 9: Probabilities of above and below median summer rainfall (for November to March) as at 1 November 2025.

For the Queensland's major grazing region and the State as a whole, based on historical analogue year output from the DETSI SPOTA-1 system.

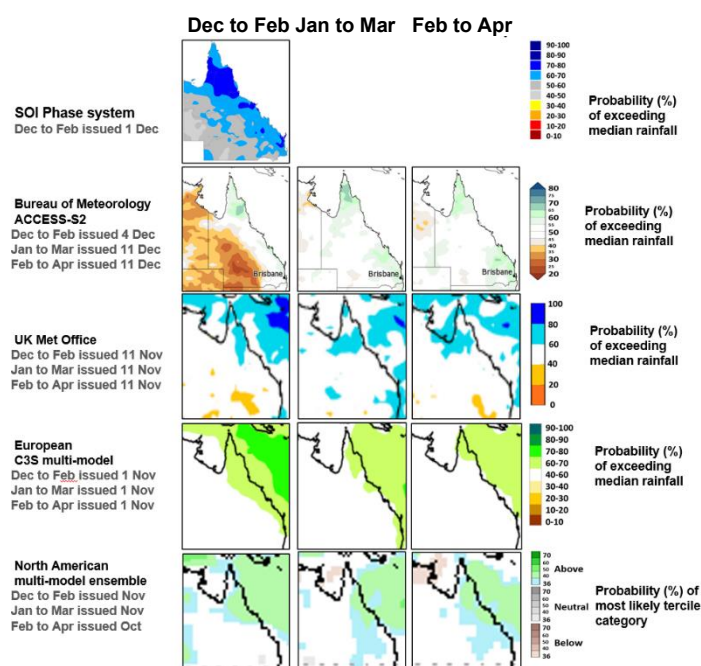


Fig. 10: Rainfall probabilities for December 2025 to April 2026, based on international dynamical models.

Three-month Rainfall Outlook

based on the SOI Phase system

The map in Figure 11 shows rainfall probabilities for the coming three-month period, based solely on a Consistently Positive 'phase' of the SOI at the end of November 2025, as determined by the SOI Phase system. The current phase of the SOI ([click for more detail](#)) is based on the most recent values of the SOI +12.1 for October and +14.0 for November 2025).

The map, which is based on 34 previous years (from 1889 to 2015) which had a 'Consistently Positive' phase of the SOI at the end of November 2025, indicates a generally 40 to 80 per cent probability of exceeding median December 2025 to February 2026 rainfall across much of Queensland.

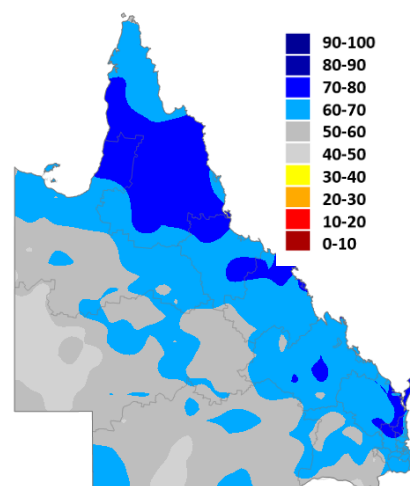
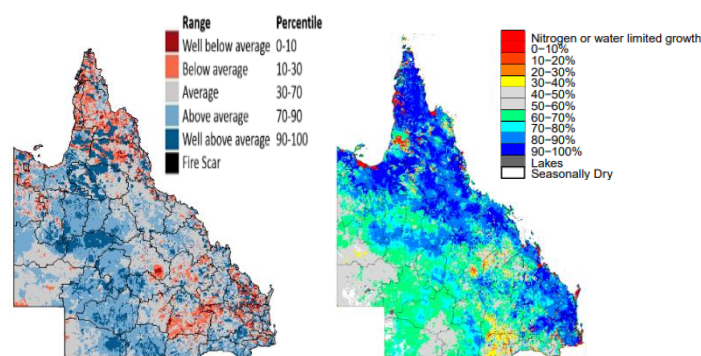


Fig. 11: Probability of exceeding median rainfall for December 2025 to February 2026 based on a 'Consistently Positive' phase of the SOI at the end of November 2025.

Pasture Outlook

Figures 12 and 13 are products of the [AussieGRASS Environmental Calculator](#). Calculated pasture ground cover at the end of November 2025 (Fig. 12) ranged from average to well-above average in most parts, except for parts of southeast Queensland and Cape York Peninsula with below average ground cover. Figure 13 shows that the probability of exceeding median pasture growth over December 2025 to February 2026 is normal to above-normal for most parts of Queensland. This calculation takes into account both current conditions (e.g., soil water content) and rainfall probabilities for the next three-month period) based on [SOI Phase analogue years](#).



Relative to historical records since 1957

Fig. 12:
Calculated pasture cover at 30 November 2025.

Fig. 13:
Probability of exceeding median pasture growth for Dec 2025 to Feb 2026 based on a 'Consistently Positive' phase of the SOI at the end of November 2025.

REFERENCES AND RESOURCES

References:

- Carter, J.O. *et al.* (2000). Aussie GRASS: Australian Grassland and Rangeland Assessment by Spatial Simulation. In 'Applications of seasonal climate forecasting in agricultural and natural ecosystems - the Australian experience.' (Eds. G. Hammer, N. Nicholls and C. Mitchell). Kluwer Academic Press, Netherlands, pp. 329-349.
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- Day, K.A. and McKeon, G.M. (2018). An Index of Summer Rainfall for Queensland's Grazing Lands. *Journal of Applied Meteorology and Climatology*, **57**, 1623-41. <https://doi.org/10.1175/JAMC-D-17-0148.1>
- McKeon, G. *et al.* (2004). 'Pasture Degradation and Recovery in Australia's Rangelands: Learning from History.' Queensland Department of Natural Resources, Mines, and Energy, Brisbane, Australia.
- Stone, R. and Auliciems, A. (1992), SOI phase relationships with rainfall in eastern Australia. *Int. J. Climatol.*, **12**: 625-636. <https://doi.org/10.1002/joc.3370120608>
- Stone, R., Hammer, G. & Marcussen, T. Prediction of global rainfall probabilities using phases of the Southern Oscillation Index. *Nature* **384**, 252–255 (1996). <https://doi.org/10.1038/384252a0>

Additional resources:

For further information on AussieGRASS, seasonal climate outlooks (including the SOI Phase scheme and the SPOTA-1 scheme) and Queensland drought declarations, visit the Long Paddock website, <https://www.longpaddock.qld.gov.au>.

MJO description: <https://www.climate.gov/news-features/blogs/enso/what-mjo-and-why-do-we-care>

General Disclaimer:

Information contained in this report is provided as general advice and the maps are designed to provide information relevant at a regional (shire) scale. More detailed information is required when making specific property scale management decisions. The State of Queensland, as represented by the Department of the Environment, Tourism, Science and Innovation, gives no warranty in relation to the data including without limitation, accuracy, reliability, completeness or fitness for a particular purpose.

It should be noted that seasonal outlooks are probabilistic and not deterministic in nature. For example, if an outlook indicates that there is an 80 per cent probability of exceeding median rainfall, should be interpreted as also meaning that there is a 20 per cent probability of rainfall being below the long-term median. In cases where outcomes with a high probability may be more likely, this does not mean that less probable events will not occur in any given year. Users should also consider sourcing information related to the historical track record of any outlook scheme, and such information is becoming increasingly available.

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