

Monthly Climate Statement – July 2022

Key messages

- A La Niña climate pattern has persisted into winter with key ENSO indices remaining well within La Niña thresholds.
- DES provides an objective outlook for summer rainfall based on the evolving sea-surface temperature pattern in the Pacific Ocean from March to October each year.
- The SST pattern in the Pacific Ocean at the beginning of July, when compared to past years, indicates a higher than normal probability that summer (November to March) rainfall across most of Queensland will be above the long-term median.

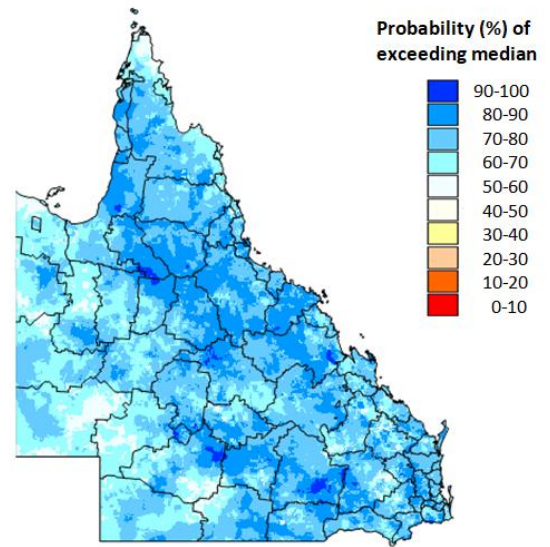
The Department of Environment and Science (DES) monitors sea-surface temperature (SST) anomalies in key regions of the Pacific Ocean over autumn, winter and spring, and provides objective outlooks for summer (November to March) rainfall on this basis. Based on the evolving SST pattern in the Pacific Ocean, **the Science Division of DES considers that the probability of exceeding median summer (November to March) rainfall is currently higher than normal for most of Queensland.**

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 SST anomalies in the central equatorial Pacific Ocean. Following the La Niña event over last summer, key ENSO indices continue to remain well within La Niña thresholds. In particular, the most recent three-month average value of the SOI* was very positive (+18.1 for April to June) and the corresponding three-month average SST anomaly in the Niño 3.4 region** was cooler than average (-0.9°C).

The current DES outlook for summer rainfall in Queensland is based on an objective analysis of SST gradients across key regions of the Pacific Ocean, including those regions related to ENSO. On this basis, the Science Division of DES considers that the probability of exceeding median summer (November to March) rainfall is currently higher than normal for most of

Queensland (see map below). The outlook for summer rainfall is updated monthly, factoring in any change to the ENSO-related SST pattern.

Probability of exceeding median summer rainfall
for November 2022 - March 2023, as at 1 July 2022



Readers are reminded that seasonal outlooks are expressed in terms of probabilities. The probabilities shown in the above map are based on an objective analysis of historical data and show the summer rainfall outcome in years when SST conditions were closest to the current year. This analysis may, for example, show that above-median summer rainfall occurred in 60 per cent of those years. However, this also means that summer rainfall was at, or below, the long-term median in 40 per cent of those years. Therefore, an outlook which states that there is 'a 60 per cent probability of above-median rainfall' should also be interpreted as there being 'a 40 per cent probability of median or below-median rainfall'.

For more information, please contact Ken Day at: ken.a.day@des.qld.gov.au.

* www.longpaddock.qld.gov.au/soi/soi-data-files (monthly SOI 1887-1989 base period)
** www.cpc.ncep.noaa.gov/data/indices (monthly OISST.v2.1 1991-2020 base period)