

# Monthly Climate Statement – May 2019

## Key messages

- The Science and Technology Division of DES considers that the probability of exceeding median summer (November to March) rainfall is currently higher than normal for much of Queensland.
- The current outlook for summer rainfall does not factor in the state of the El Niño-Southern Oscillation (ENSO), which tends to be in transition at this time of year.
- The outlook for summer rainfall will be updated from June to November, factoring in the evolving ENSO-related SST pattern during this period.
- The Bureau of Meteorology currently have an 'El Niño Alert' in place for the winter and spring period.

## Summary as at 13 May 2019

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. **The Science and Technology Division of DES considers that the probability of exceeding median summer (November to March) rainfall is currently higher than normal for much of Queensland.**

With respect to drivers of Queensland rainfall, the most closely monitored phenomenon is the El Niño-Southern Oscillation (ENSO). Climate scientists monitor several ENSO indices, including the atmospheric Southern Oscillation Index (SOI) and SST's in the central equatorial Pacific Ocean. Over the last three-month period (February to April), SSTs in the central equatorial Pacific Ocean have been warmer than average (+0.8°C) and the average value of the SOI has been negative (-7.8). Whilst these values are indicative of those associated with an El Niño, the Bureau of Meteorology (BoM) consider that the current atmospheric response is insufficient to declare an El Niño event. The BoM currently has an 'El Niño Alert' in place for the winter and spring period.

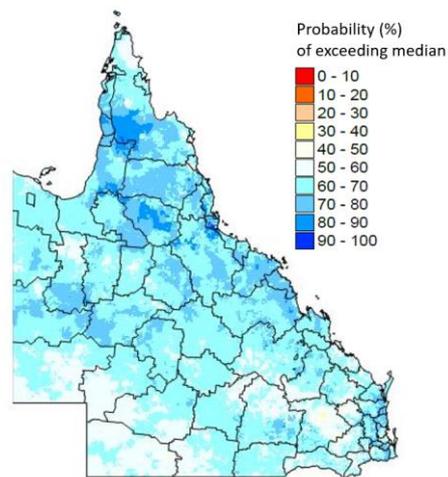
At this time of year, the ENSO phenomenon tends to be in a state of transition. As such, the relationship between ENSO indices in autumn and rainfall over the season ahead is very weak. Hence, in terms of seasonal forecasting, autumn is known as the 'predictability gap'. ENSO indices tend to be more persistent over winter, spring and summer providing a basis for seasonal forecasting over that period.

## The 'autumn predictability gap'

El Niño and La Niña events tend to form in the austral winter or spring, persist through summer and break down in autumn. Seasonal outlooks are possible due to the persistence of the ENSO signal, and associated rainfall and climate patterns, over spring and summer. The lack of persistence of the ENSO signal from autumn to winter leads to low predictability, known as the 'autumn predictability gap' or 'autumn predictability barrier'.

SST anomalies in the extra-tropical Pacific are more persistent and, at this time of year, are correlated with Queensland rainfall over the following summer. The current DES outlook for summer rainfall in Queensland is based on an objective analysis of this extra-tropical SST pattern (see map). DES will provide an updated outlook for summer rainfall in June. This outlook will begin to factor in the evolving ENSO-related SST pattern.

**Probability of exceeding median summer rainfall**  
for November 2019 – March 2020, as at 1 April 2019



It should be noted that seasonal outlooks are probabilistic, rather than deterministic, in nature. For example, if an outlook is described as having a 60 per cent probability of above median rainfall, there is also a 40 per cent probability of below median rainfall. 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.

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