

# Monthly Climate Statement – July 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 is based on sea-surface temperatures across the Pacific Ocean, including those regions related to the El Niño-Southern Oscillation (ENSO).
- The outlook for summer rainfall will be updated from August to November based on the evolving SST pattern during this period.

## Summary as at 12 July 2019

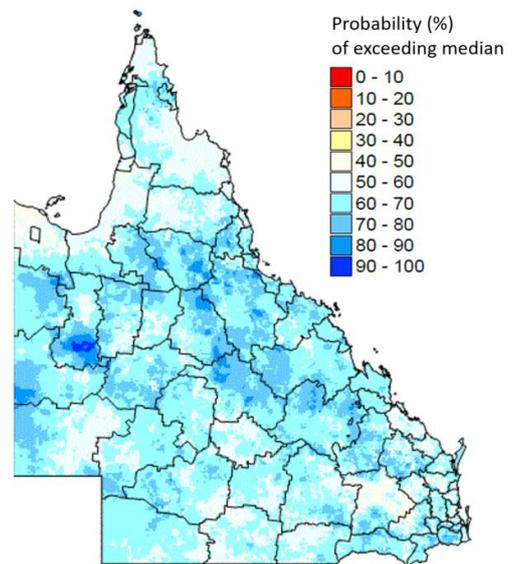
The Department of Environment and Science (DES) monitors sea-surface temperature (SST) anomalies in key regions of the Pacific Ocean over autumn, winter and spring, and provides objective outlooks for summer (November to March) rainfall on this basis. **The Science and Technology Division of DES considers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

The most closely monitored driver of Queensland rainfall is the El Niño-Southern Oscillation (ENSO) phenomenon. From this time of year, and through spring, the relationship between ENSO and rainfall tends to strengthen. Climate scientists monitor several ENSO indices, including the atmospheric Southern Oscillation Index (SOI) and SST anomalies in the central equatorial Pacific Ocean. SST anomalies in the central Pacific are warmer than normal (+0.7°C for June), and the SOI is negative (average -6.6 for April to June). Although these values are close to 'El Niño' thresholds, weekly SST anomalies in the central Pacific had shown a cooling trend through June. Consequently, the Bureau of Meteorology re-set their ENSO Outlook from 'El Niño Watch' to 'Inactive'. The above ENSO indices are at levels which tend to favour drier than normal conditions in winter. However, at this time of year the values of these indices are not strongly correlated with summer rainfall.

DES also monitors SST anomalies in the extra-tropical Pacific Ocean, which, at this time of year, are correlated with Queensland rainfall in the following summer. SST anomalies in the South West Pacific are currently much warmer than normal, and such anomalies tend to be very persistent. All else being equal, warm SST anomalies in the South West Pacific tend to favour above average rainfall in Queensland over the following summer.

As noted, DES considers that the probability of exceeding median summer rainfall is currently higher than normal for much of Queensland. This outlook is based on an objective analysis of the SST pattern across the Pacific Ocean as a whole. DES will update the outlook for summer rainfall each month from August to November, factoring in any change to the Pacific Ocean SST pattern over this period.

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



Readers should note that seasonal outlooks are stated in terms of probabilities. For example, an outlook may be stated as 'a 60 per cent probability of above median rainfall'. Such a statement should be interpreted as also meaning 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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