

## Monthly Climate Statement – August 2020

### Key messages

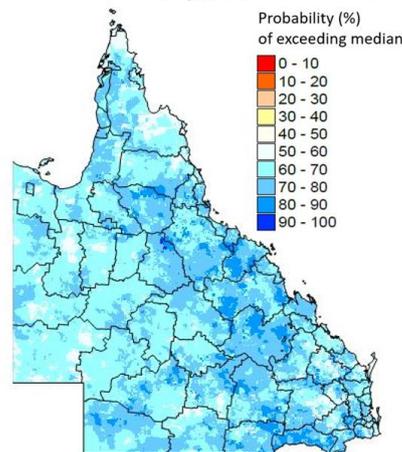
- The Science and Technology Division of DES considers that the probability of exceeding median summer (November to March) rainfall is currently higher than normal across Queensland.
- The current outlook for summer rainfall is based on sea-surface temperatures across the Pacific Ocean, including those regions related to the El Niño-Southern Oscillation (ENSO).
- The outlook for summer rainfall will be updated from September to November, factoring in the evolving ENSO-related sea-surface temperature pattern during this period.
- The Bureau of Meteorology ENSO Outlook remains at 'La Niña Watch'.

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 across 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. The SOI rose from a quite negative value in June (-9.3) to a positive value in July (+4.3). The most recent three-month average SOI value (-0.8 for May to July) is well-within the ENSO-neutral range. Sea-surface temperature anomalies in the central equatorial Pacific have been slightly cooler than average over the last three-month period (-0.3°C for May to July). The Bureau of Meteorology ENSO Outlook currently remains at 'La Niña Watch', as many climate models project further cooling of SSTs in the central equatorial Pacific during the lead up to summer.

The relationship between SST in the central equatorial Pacific and summer rainfall in Queensland begins to strengthen over winter and through spring. The SST gradient from the central equatorial Pacific to the southwestern Pacific is a particularly useful long-lead indicator of summer rainfall in Queensland. The current DES outlook for summer rainfall in Queensland (below) is based on an objective analysis of SST gradients across key regions of the Pacific Ocean. 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 across Queensland.

**Probability of exceeding median summer rainfall**  
for November 2020 - March 2021, as at 1 August 2020



Sea-surface temperature anomalies in the central equatorial Pacific tend to 'lock in' over the winter, spring and summer seasons. This persistence provides a basis for seasonal forecasting. DES will provide updates of the outlook for summer rainfall from September to November, factoring in any change to the ENSO-related SST pattern during this period.

Readers should note that seasonal outlooks are expressed in terms of probabilities. For example, an outlook may be stated as 'a 60 to 70 per cent probability of above-median rainfall'. Such a statement should be interpreted as also meaning a 30 to 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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