Monthly Climate Statement – September 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 all of Queensland.
- Sea-surface temperatures anomalies in the south-western Pacific are much warmer than normal, and such anomalies tend to favour above average summer rainfall in Queensland.
- The Bureau of Meteorology is currently indicating a higher than normal probability of drier than average conditions for the period leading into summer.
- DES will update rainfall probabilities for summer in October and November, based on the evolving sea-surface temperature pattern during this period.

Summary as at 12 September 2019

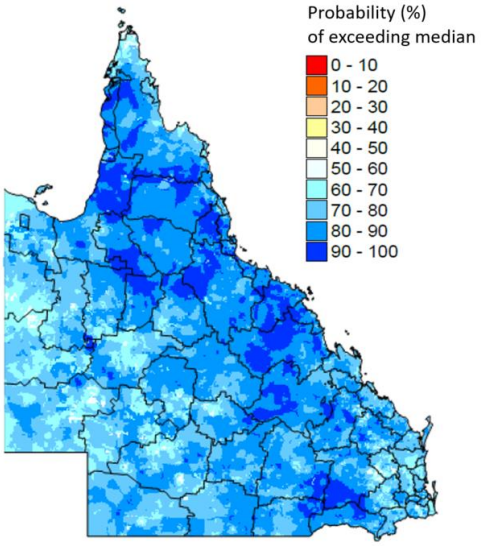
The Department of Environment and Science (DES) monitors sea-surface temperature (SST) anomalies in key regions of the Pacific Ocean over autumn, winter and spring, and provides objective outlooks for summer (November to March) rainfall on this basis. **The Science and Technology Division of DES considers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

The most closely monitored driver of Queensland rainfall is the El Niño-Southern Oscillation (ENSO) phenomenon. At this time of year, 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. The SST anomaly in the Niño 3.4 region of the central Pacific has cooled over the last three-month period, from a value which was close to El Niño thresholds in June (+0.6°C), to a value which is now well-within ENSO-Neutral thresholds (+0.2°C for August). Although ENSO is in a neutral state, the SOI has remained quite negative, averaging -6.3 from June to August.

DES also monitors an index based on the SST pattern across the south-western Pacific which, at this time of year, is strongly correlated with Queensland summer rainfall. SST anomalies in the south-western Pacific are currently much warmer than normal, and such anomalies tend to be very persistent, favouring above average rainfall in Queensland over the following summer.

The Bureau of Meteorology's outlook currently (as at 12 September) indicates a higher than normal probability of drier than average conditions for September to November. Looking further forward, DES considers that the probability of exceeding median rainfall for the summer season (November to March) is currently higher than normal for all of Queensland (see map below). This outlook is based on an objective analysis of the evolving Pacific Ocean SST pattern. DES will update the outlook for summer rainfall in October and 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 September 2019



Readers should note that seasonal outlooks are stated 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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