Monthly Climate Statement – August 2018

Key messages

- The Department of Environment and Science (DES) provides long-lead outlooks for summer rainfall in Queensland based on sea-surface temperature (SST) anomalies across the Pacific Ocean.
- Pacific Ocean SST anomalies currently indicate, for most of Queensland, a higher than normal probability of exceeding median rainfall over the coming summer.
- DES will update this outlook for summer rainfall each month from September to November, taking into account any change in the Pacific Ocean SST pattern.

Summary as at 13 August 2018

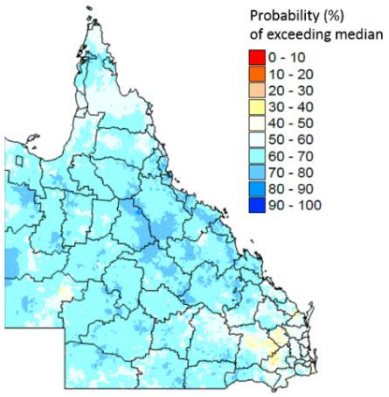
The Department of Environment and Science (DES) monitors sea-surface temperature (SST) anomalies in key regions of the Pacific Ocean over autumn, winter and spring, and provides objective outlooks for summer (November to March) rainfall on this basis. **The Science Division of DES considers that the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

At this time of year, the relationship between the El Niño-Southern Oscillation (ENSO) and rainfall for the season ahead tends to strengthen. Key ENSO indices include the atmospheric Southern Oscillation Index (SOI) and SST anomalies in the central equatorial Pacific. The average value of the SOI over the last three months (May to July) was close to zero (-0.6). However, SST anomalies in the central equatorial Pacific have warmed over this period (from -0.1°C in May to +0.4°C in July).

Although the SOI and SSTs in the central equatorial Pacific remain within the ENSO-neutral range, the Bureau of Meteorology currently maintain an 'El Niño Watch'. Although the development of El Niño conditions over coming months is a possibility, DES currently maintains a positive outlook for summer rainfall as noted above. The adjacent map, which is based on historical relationships between Pacific Ocean SST anomalies and rainfall, currently indicates, for most of Queensland, at least a 60% probability of summer (November to March) rainfall exceeding the long-term median.

The currently favourable outlook for summer rainfall across most of Queensland is largely due to warmer than average SST anomalies in the south-western Pacific. Whilst national and international agencies focus on changes in SST anomalies in the central equatorial Pacific, DES also monitors SST anomalies in the south-western Pacific, which are an equally important indicator of Queensland summer rainfall. Whilst SST anomalies in the central Pacific are currently slightly warmer than average, SST anomalies in the south-western Pacific are much warmer than average (+0.9°C in July). Unlike the central equatorial Pacific, warm SST anomalies in the south-western Pacific have, historically, tended to lead to above-average rainfall in Queensland in the following summer.

Probability of exceeding median summer rainfall
for November 2018 – March 2019, as at 1 August 2018



DES will update the above outlook each month from September to November. Should El Niño conditions emerge, and warm SST anomalies in the central equatorial Pacific approach the same warm levels as those in the south-western Pacific, the currently favourable outlook for summer rainfall will moderate.

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.

For more information please visit the Queensland Government Long Paddock website at: www.longpaddock.qld.gov.au/seasonal-climate-outlook. Alternatively please contact Stuart Burgess at: stuart.burgess@des.qld.gov.au.