

Monthly Climate Statement — October 2016

Key messages

- Leading indicators of summer rainfall in Queensland point to a higher than normal probability of above-average summer rainfall for most of the state.
- This outlook is based on sea-surface temperature anomalies related to the El Niño-Southern Oscillation.
- Trends in both the Southern Oscillation Index and sea-surface temperature anomalies over recent months, coupled with more extreme values in September, indicate a developing La Niña climate pattern.

Summary as at 15 October 2016

The Department of Science, Information Technology and Innovation's (DSITI's) seasonal outlooks for the Queensland summer are based on the state of the El Niño-Southern Oscillation (ENSO) phenomenon prior to summer, and on factors which alter the impact of ENSO on Queensland rainfall (i.e. the more slowly changing extra-tropical sea-surface temperature pattern in the Pacific Ocean).

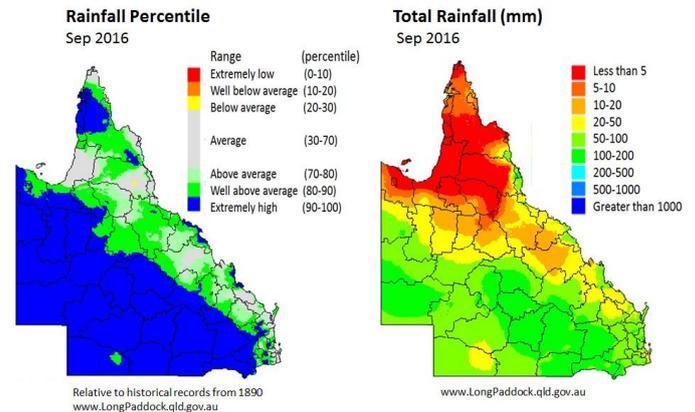
The Science Division of DSITI considers that, for most of Queensland, the probability of exceeding median summer (November to March 2016/17) rainfall is currently higher than normal. This view is based on an analysis of tropical and extra-tropical Pacific Ocean sea-surface temperatures (SSTs).

'El Niño', 'La Niña' and 'ENSO-neutral' are phases of the ENSO climate pattern, with a strong influence on Queensland summer rainfall. DSITI closely monitors key ENSO indicators over winter and spring, a period when El Niño and La Niña events tend to form. Trends in both the Southern Oscillation Index (SOI) and SST anomalies over recent months, coupled with more extreme values in September, indicate a developing La Niña climate pattern.

- The three-month (July to September) average value of the SOI was +7.4. [Monthly values of the SOI](#) for July, August and September were +3.7, +4.7 and +13.8 respectively. As at 13 October, the 30-day average SOI value was +9.5.
- Monthly SST anomalies in the Niño 3.4 region of the central equatorial Pacific for July, August and September were -0.5°C, -0.5°C and -0.6°C respectively. As at 8 October, the weekly Niño 3.4 region SST anomaly was -0.9°C.

Recent rainfall

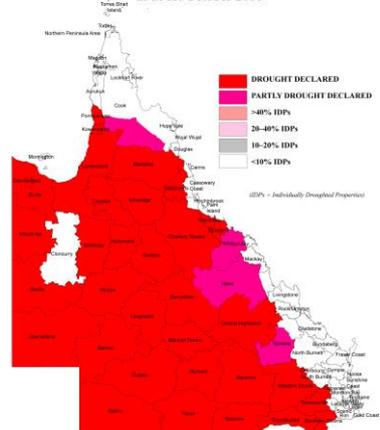
Rainfall totals across much of southern and western Queensland were extremely high for September, with many southern and western areas receiving totals of more than 50 mm (see maps below).



Drought status of Queensland shires

As a result of protracted dry conditions over previous summers [eighty-four per cent of Queensland remains drought declared](#) under state government processes (see map below).

QUEENSLAND DROUGHT SITUATION as at 1st October 2016



Outlook for summer (Nov-Mar 2016/17)

DSITI monitors tropical and extra-tropical Pacific Ocean SSTs and, on this basis, provides a long-lead outlook for the coming summer (November to March). An initial summer rainfall outlook based solely on extra-tropical Pacific Ocean SSTs is produced in April and subsequently updated monthly until the beginning of summer (November). The accuracy of this long-lead outlook increases as the evolving ENSO-related SST pattern is taken into account from May through to October.

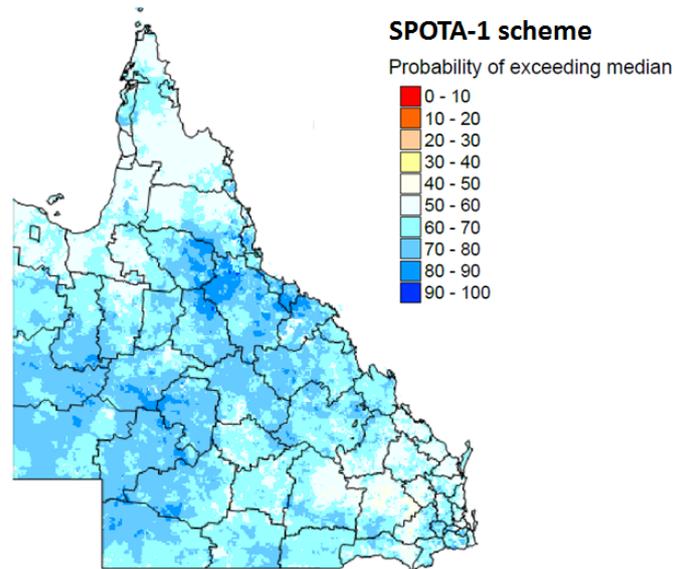
As at 1 October 2016, DSITI's long-lead outlook for summer (November to March 2016/17) indicates a higher than normal probability of exceeding median rainfall for most of Queensland (see adjacent map). A final update will be provided in November.

It should be noted that seasonal outlooks are probabilistic, rather than deterministic, in nature. For example, if an outlook is described as having a 50 to 70 per cent probability of below median rainfall, there is also a 30 to 50 per cent probability of above median rainfall. Although outcomes with a high probability may be more likely, it does not mean that less probable events will not occur in any given year. Furthermore, an increased probability of above-median rainfall for Queensland will not necessarily result in above-median rainfall throughout all of the state.

The Bureau of Meteorology has advised that eastern Queensland is most likely to experience a near-average tropical cyclone season (November to April). On average, two tropical cyclones have made landfall in Queensland during the tropical cyclone season.

Probability of Exceeding Median Summer Rainfall

November 2016 – March 2017
based on the SPOTA-1 Index
as at October 1, 2016



For more information, please visit:
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