

# Monthly Climate Statement — August 2015

## Key messages

- Rainfall over the last six-month period (February to July) has been extremely low (less than the 10<sup>th</sup> percentile) across large parts of northern, central and western Queensland.
- At least eighty per cent of Queensland remains drought declared under State Government processes.
- The El Niño event has strengthened and is likely to persist into spring and through summer.
- For most of Queensland, there is an increased probability of below median August to October rainfall, with a similar outlook for summer (November to March 2015/16).
- Rainfall probabilities will continue to be updated each month.

- From 1950 to current, the only El Niño events with a July Niño 3.4 region SST anomaly equal to or exceeding +1.6 °C were those of 1987 (+1.6 °C) and 1997 (+1.7 °C).
- Most [international global climate models](#) currently indicate that central equatorial [Pacific Ocean SSTs](#) should continue to warm in the coming months, with at least a 90 per cent probability of El Niño conditions persisting into spring and through summer.

## What if the El Niño continues to develop?

Currently, [more than 80 per cent of Queensland remains drought declared](#) under state government processes (see map below). The high probability of the current El Niño event developing further into spring and, with it, the threat of another dry summer for some regions, poses a risk of current drought conditions (see map below) becoming more protracted. This risk should be factored into decision making and allocation of resources. In this context, DSITI's long-lead outlook for summer rainfall (opposite page) should be taken into consideration.

## Findings as at 15 August 2015

The Science Division of the Department of Science, Information Technology and Innovation (DSITI) considers that, **for most of Queensland, there is an increased probability of below median August to October rainfall, with a similar outlook for the coming summer (November to March 2015/16).**

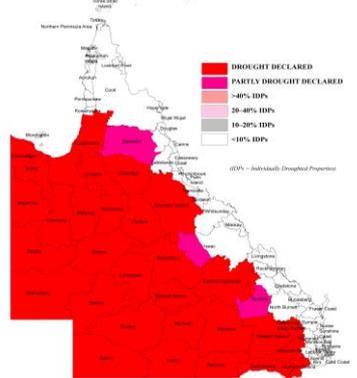
DSITI's seasonal outlooks for Queensland are based on the current and projected state of the El Niño–Southern Oscillation (ENSO) phenomenon and on factors which alter the impact of ENSO on Queensland rainfall, i.e. the more slowly changing extra-tropical sea surface temperature (SST) pattern in the Pacific Ocean.

At this time of year, and over the coming months, the prevailing ENSO pattern, as measured by indices such as the Southern Oscillation Index (SOI) or central equatorial Pacific Ocean SST anomalies, offers a useful basis for providing seasonal outlooks for winter, spring and summer.

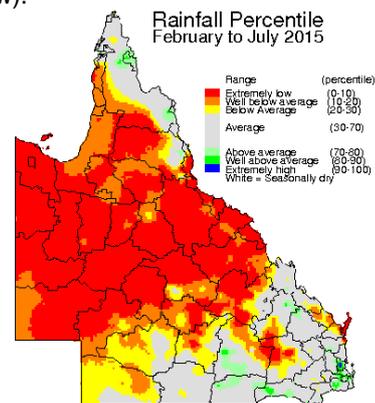
Currently:

- The monthly value of the [SOI](#) was -10.3 in June and -13.8 in July, remaining negative for the 14<sup>th</sup> consecutive month. As at 12 August, the 30-day mean SOI value was -18.4 and the 90-day mean value was -11.6.
- The monthly SST anomaly in the Niño 3.4 region of the central equatorial Pacific Ocean warmed from +1.32 °C in June to +1.60 °C in July. As at 8 August the weekly SST anomaly was +1.9 °C, remaining well-above El Niño thresholds.

## QUEENSLAND DROUGHT SITUATION



Rainfall over the last six-month period (February to July) has been extremely low (less than the 10<sup>th</sup> percentile) across much of northern, central and western Queensland (see map, below).



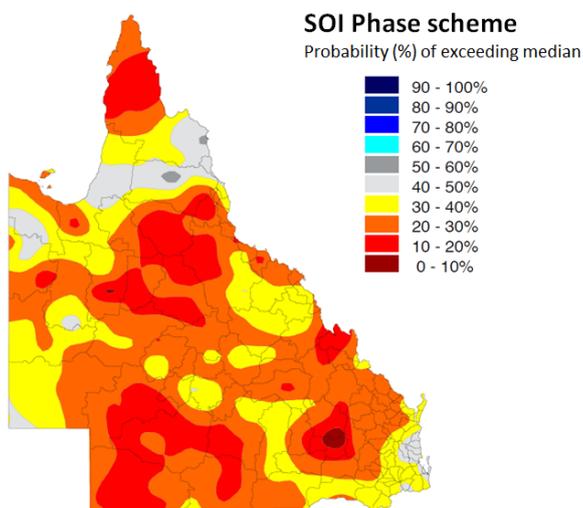
Map is Relative to Historical Records from 1890  
www.Long@adcock.qld.gov.au

## Seasonal rainfall outlook (Aug-Oct 2015)

Based on previous years when the SOI has been in a 'Consistently Negative' phase at the end of July, the probability of rainfall being above median for the next three-month period (August to October) is less than 40 per cent for most of Queensland and less than 20 per cent for some regions (see map below). While the probability of exceeding median rainfall is close to 50 per cent in parts of Cape York, median August to October rainfall is typically low in that region.

### Probability of Exceeding Median Rainfall

for August to October  
based on a Consistently Negative SOI phase  
during June / July



## Summer rainfall outlook (Nov-Mar 2015/16)

DSITI scientists have shown that extra-tropical SST anomalies, when measured in specific regions of the Pacific Ocean in March each year, provide a useful basis for long-lead forecasting of summer (November to March) rainfall in Queensland. The accuracy of this outlook increases as the evolving ENSO-related SST pattern is also taken into account from May through to October. This understanding has been incorporated in an experimental system known as [SPOTA-1 \(Seasonal Pacific Ocean Temperature Analysis version 1\)](#), which has been operationally evaluated by DSITI scientists for over a decade.

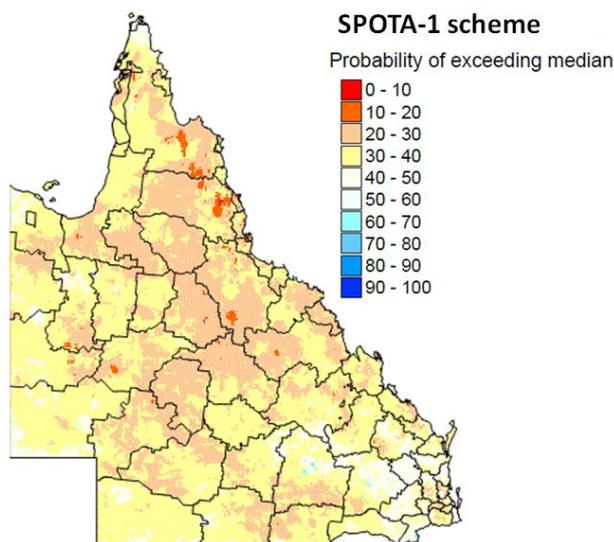
As at 1 August 2015, DSITI's updated long-lead outlook for the coming summer (November to March 2015/16) continues to indicate a lower than normal probability of exceeding median rainfall for most of Queensland, due to much warmer than average SSTs in the central equatorial Pacific. DSITI's long-lead outlook for summer rainfall will be reassessed in September, and then updated monthly until November, by factoring in further developments in ENSO conditions.

It should be noted that:

- The current long-lead outlook is based on both extra-tropical and central equatorial Pacific Ocean SST anomalies.
- The current El Niño pattern is likely to persist over spring and summer (November to March). This means that there is a high probability of below median rainfall for most of Queensland until the end of summer.
- The BoM, in their [12 May Newsroom release](#) noted that "while El Niño increases the risk of drought, it does not guarantee it, reporting that of 26 [El Niño events since 1900](#), 17 have resulted in widespread drought".

### Probability of Exceeding Median Summer Rainfall

November 2015 – March 2016  
based on the SPOTA-1 Index  
as at August 1, 2015



### Why is SPOTA-1 labelled "experimental"?

The SPOTA-1 system is currently labelled "experimental" and will continue to be labelled as such until the details of the system, including its operational track record, are published in the international peer reviewed scientific literature. Until then, further details on the current outlook and access to previous outlooks (since 2001) are currently provided on a password protected area of the Long Paddock website (see the link above to request password access).

For more information, please visit: [www.longpaddock.qld.gov.au/seasonalclimateoutlook](http://www.longpaddock.qld.gov.au/seasonalclimateoutlook)  
or contact Stuart Burgess at: [stuart.burgess@dsiti.qld.gov.au](mailto:stuart.burgess@dsiti.qld.gov.au).