

## Monthly Climate Statement — November 2013

### Key messages

- Currently, more than 60 per cent of Queensland is drought declared under State Government processes.
- For this summer (November to March) there is a higher than normal probability of 'near-average' to 'above-average' rainfall for much of Queensland.
- For Southeast Queensland in particular, this outlook is an improvement on last month.
- Near-average tropical cyclone activity is likely in Queensland this coming cyclone season (November to April), consistent with ENSO-neutral conditions.

- The observed [sea-surface temperature \(SST\) anomaly](#) (-0.3 °C) in the key Niño 3.4 region of the central equatorial Pacific remained in the ENSO-neutral range in October and is currently near-zero.
- Most [international global climate models](#) indicate that central equatorial Pacific SSTs should remain within the 'ENSO-neutral' range for the rest of this year and for the coming summer.

Extensive areas of inland Queensland have experienced extremely-low rainfall and warmer than average temperatures over the past twelve months. As at 29 October, over 60 per cent of Queensland was [drought declared](#) under State Government processes. Balonne and Maranoa are the most recent regional council areas to be fully drought declared.

### Findings for November 2013

The Science Delivery Division of the Department of Science, Information Technology, Innovation and the Arts (DSITIA) notes that, **for this summer (November to March), there is a higher than normal probability of 'near-average' to 'above-average' rainfall for much of Queensland.**

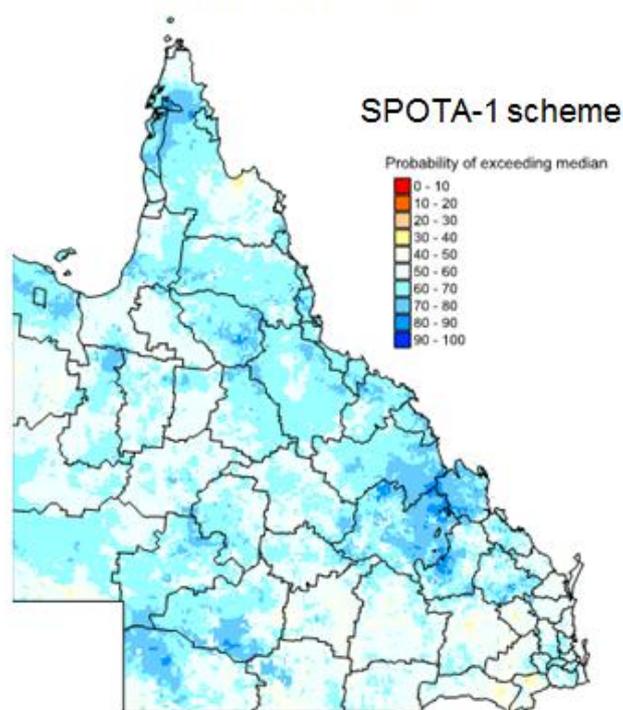
Furthermore, the Bureau of Meteorology has indicated, in its recent ['Tropical Cyclone Seasonal Outlook for the Coral Sea'](#), that a 'typical' tropical cyclone season (November to April) is expected for Queensland and the Coral Sea.

Seasonal forecasts 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 (e.g. the Pacific Decadal Oscillation (PDO)).

Currently:

- The Southern Oscillation Index ([SOI](#)), a key atmospheric measure of ENSO, fell from a slightly positive value (+4.3) in September to a slightly negative value (-2.1) in October. The three-month mean SOI value from August to October 2013 was +0.7, remaining in the ENSO-neutral range.

**Probability of Exceeding Median Summer Rainfall**  
November 2013 – March 2014 based on the SPOTA-1 Index  
as at November 1, 2013



## Rainfall Outlook

There are various approaches used to provide rainfall outlooks. These approaches tend to differ in terms of methodology and, for this reason, each approach may convey a different outlook, particularly for specific locations.

DSITIA places emphasis on two statistical schemes:

- the experimental long-lead [SPOTA-1 scheme](#), which integrates SST information, including indices of ENSO and the PDO; and
- the [SOI Phase scheme](#), which relies solely on the SOI, an atmospheric measure of ENSO.

The experimental SPOTA-1 scheme provides long-lead probabilities of summer (November to March) rainfall for Queensland from mid-April through to mid-November each year. An updated outlook for summer 2013/14 is now available. This outlook takes into account a monthly ENSO index, as well as an index of March SST anomalies which reflect the current 'cool' phase of the PDO. For this summer (November to March), the SPOTA-1 scheme currently indicates that there is a higher than normal probability of 'near-average' to 'above-average' rainfall for much of Queensland.

DSITIA's SOI Phase scheme provides probabilities of rainfall for the coming three-month season based on SOI values over the previous two months. The SOI Phase scheme currently indicates that the [probability of above-median rainfall for the next three-month period](#) (November to January) is 50 to 60 per cent for much of eastern Queensland and 40 to 50 per cent elsewhere. This analysis is based on the SOI being in a 'Consistently Near-Zero' phase at the end of October, as discussed further in the [Commentary on Rainfall Based on 'Phases' of the SOI](#).

The SPOTA-1 and SOI Phase schemes indicate probabilities based on historical relationships. It is important to understand the probabilistic nature of seasonal outlooks and to ensure that long-term risk management is undertaken. For example, if an outlook indicates a 70 per cent probability of above-median rainfall, this also means there is a 30 per cent probability of below-median rainfall.

An increased risk of above- or below-median rainfall in Queensland will not necessarily result in above- or below-median rainfall occurring throughout all of the state (see [Australia's Variable Rainfall poster](#), or the Department's [archive of historical rainfall maps](#)).

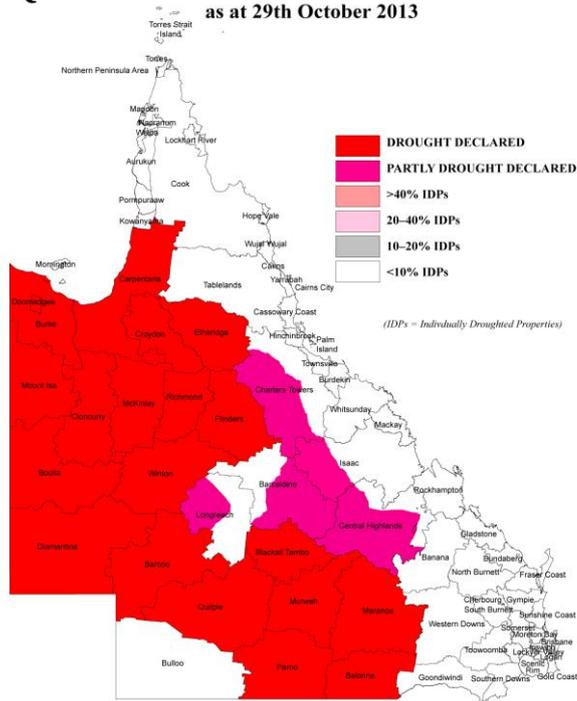
Each climate outlook scheme may have its own particular following. Although such schemes cannot provide outlooks with absolute certainty, users of the information who follow a skilful scheme should benefit from doing so in the long-term. Users should consider the historical track record of any scheme, and such information is becoming increasingly available. DSITIA's Long Paddock website provides an archive of [SPOTA-1 reports](#) and [past commentaries](#) on the SOI Phase scheme.

Whilst DSITIA places emphasis on the SPOTA-1 and SOI-Phase analyses, a much wider range of information from national and international agencies is also considered. DSITIA pays particular attention to the Bureau of Meteorology's '[ENSO Wrap-Up](#)' which is updated fortnightly on the Bureau's website.

ENSO influences other climate variables apart from rainfall (e.g. temperature, pan evaporation and vapour pressure). This means that the impact of ENSO on crop or pasture growth can be stronger than on rainfall alone. The impact of ENSO on pasture growth, for example, is also dependent upon current pasture condition and soil water status. DSITIA's [AussieGRASS](#) model takes these factors into account in producing [seasonal pasture growth probabilities](#).

### QUEENSLAND DROUGHT SITUATION

as at 29th October 2013



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