CottonInfo: Moisture Manager, 17 November

Welcome to the CottonInfo Moisture Manager

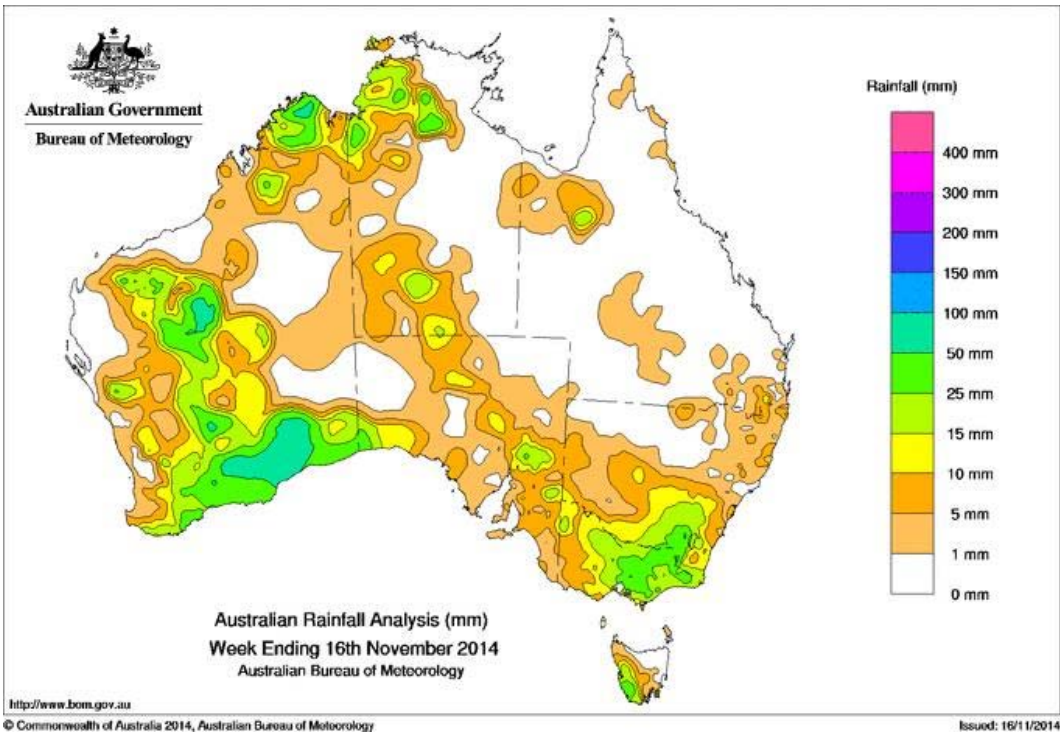
In this edition:

Latest weather news:

- A weak rain event forecast for central and northern growing areas at the end of November.
- El Niño-Southern Oscillation drivers continue in the neutral-negative range; the 30 day average SOI = -11 exceeding El Niño thresholds hampering general moisture supply to Australia.
- The Southern Annular Mode currently in negative phase reducing moisture circulation patterns from a warmer-than-normal Tasman Sea. The SAM forecast to trend more towards neutral through November.
- Australian Sea surface temperatures characterised by cool waters in key regions in Australian north and east, reducing tropical convection activity.

- The MJO not likely to impact positively on the Australian region in November.

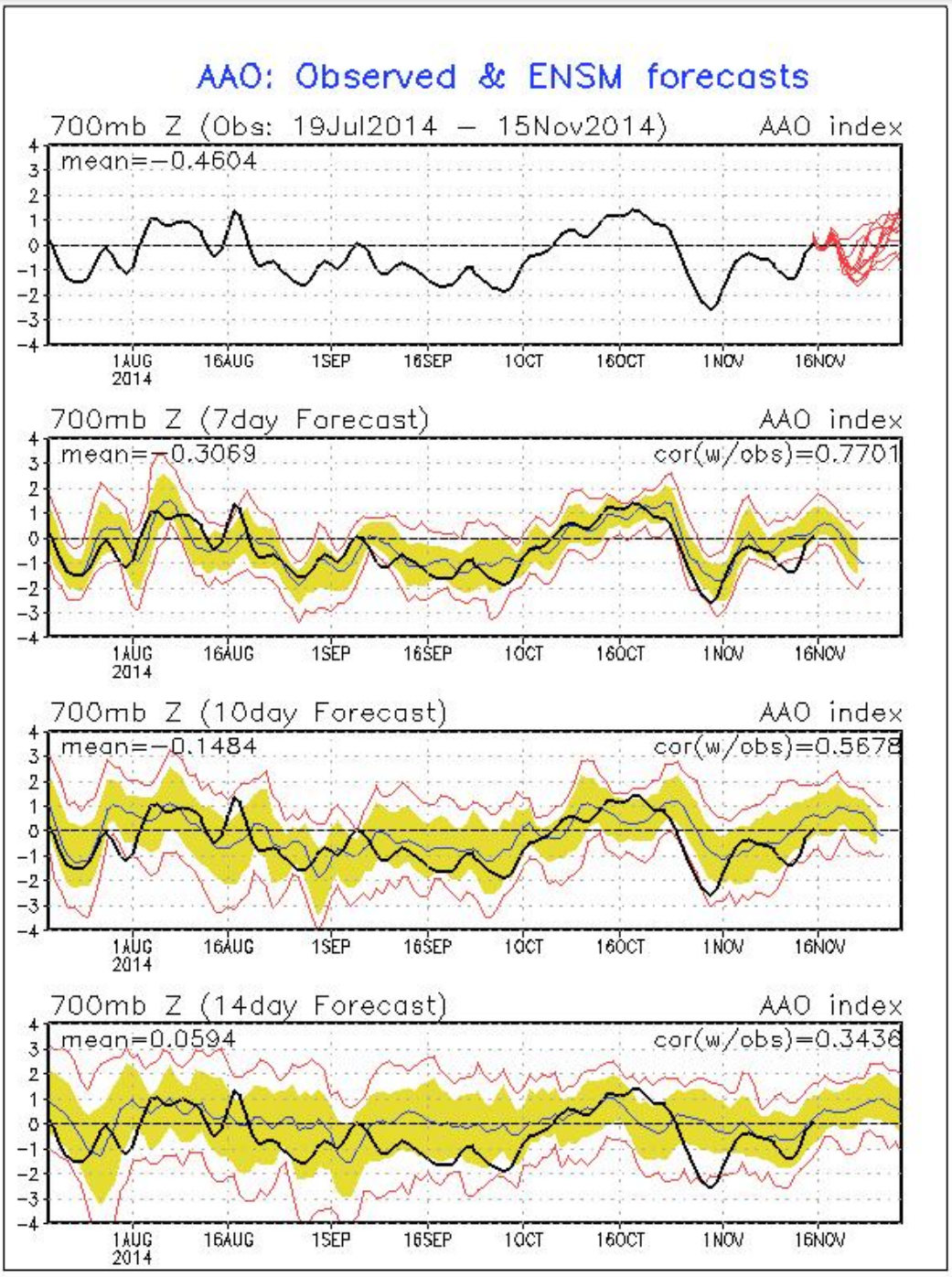
Observed rainfall totals (for the week ending 16 Nov):



The Southern Annular Mode:

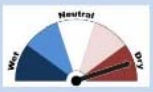
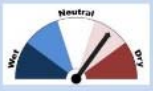
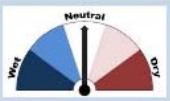
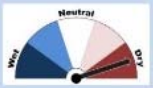
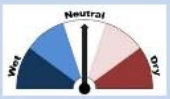
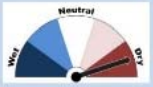
- The SAM is a significant driver of eastern Australian climate during November.
- The SAM influences moisture circulation patterns from the Tasman and Coral Sea regions into fronts and troughs forming in inland regions.
- A positive SAM, historically has had a positive influence on spring rainfall. The chart below shows the SAM currently in a negative phase trending towards neutral to positive.

The Southern Annular Mode (or Antarctic Oscillation Index) Observed and Forecasts (Source: NOAA (US)):



Summary of climate indicators:

For more information on what the climatic indicators mean, click here.

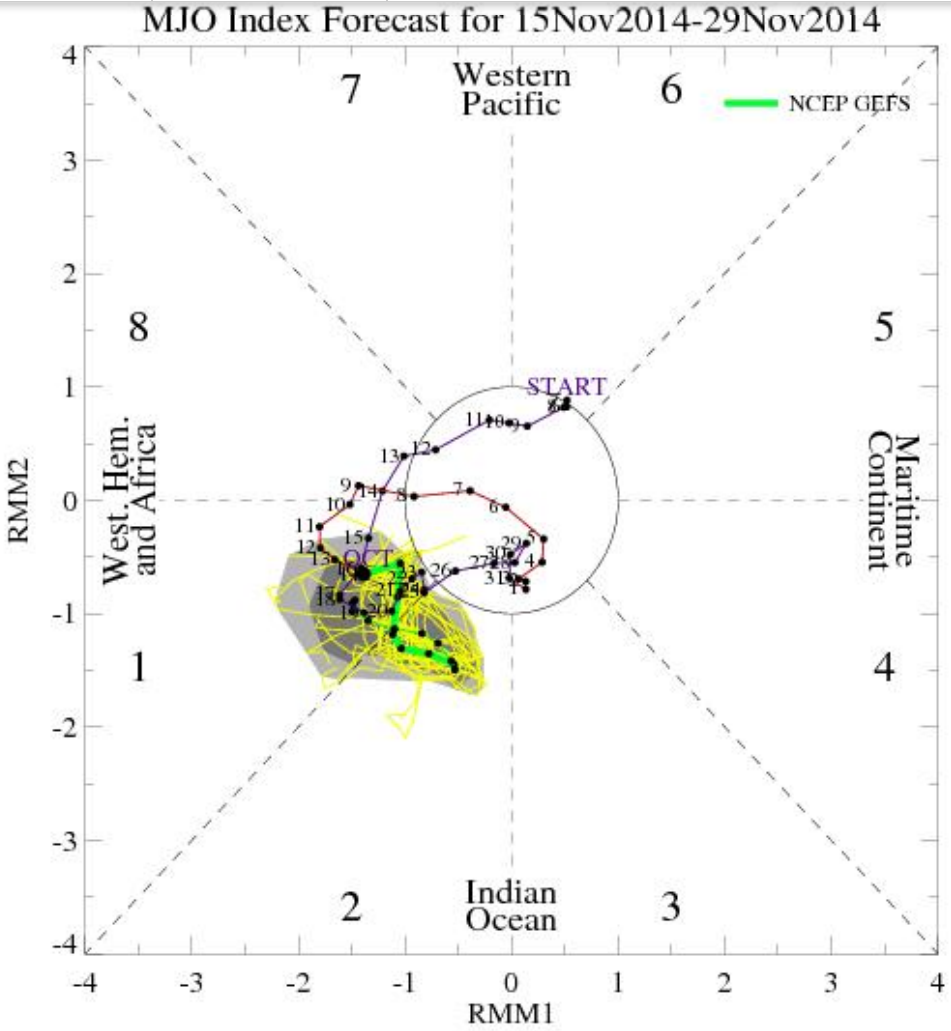
Measure	Indicator	Current Status		Forecast Trend
Sea Surface Temperature Indices 	Pacific Ocean – Niño 3.4	+0.6		Dry
	Pacific Ocean – Composite Index	+0.3		Dry
	Indian Ocean	0.0		Neutral
Mean Sea Level Air Pressure 	Southern Oscillation Index	-11		Dry
	Southern Annular Mode	0.0		Neutral
Tasman Sea Upper Atmospheric Air Pressure 	Blocking	-40		Neutral/dry

Rainfall and temperature guidance summary:

Source	Model Released	Temperature Forecast	Precipitation Outlook
BOM Extreme Heat Model	16 Nov	Nov week 3 & 4: normal December: normal (No heat waves)	N/A
POAMA Multi-week	16 Nov	Average QLD & NSW	Weak rain event 27 Nov to 10 Dec
NCEP 16-Day	16 Nov	N/A	Weak rain event 27 Nov to 2 Dec
JMA (JPN)	14 Nov	Above ave temps in QLD and Nth NSW: 21-27 Nov	Light rain event 21-27 Nov

Madden-Julian Oscillation (MJO)

Tracking the path of the MJO can assist in timely changes in weather patterns during the Australian monsoon. The following chart shows the MJO currently in the western Indian Ocean (green line) into phase 2. Phase 5 and 6 represent the eastern Australian region.

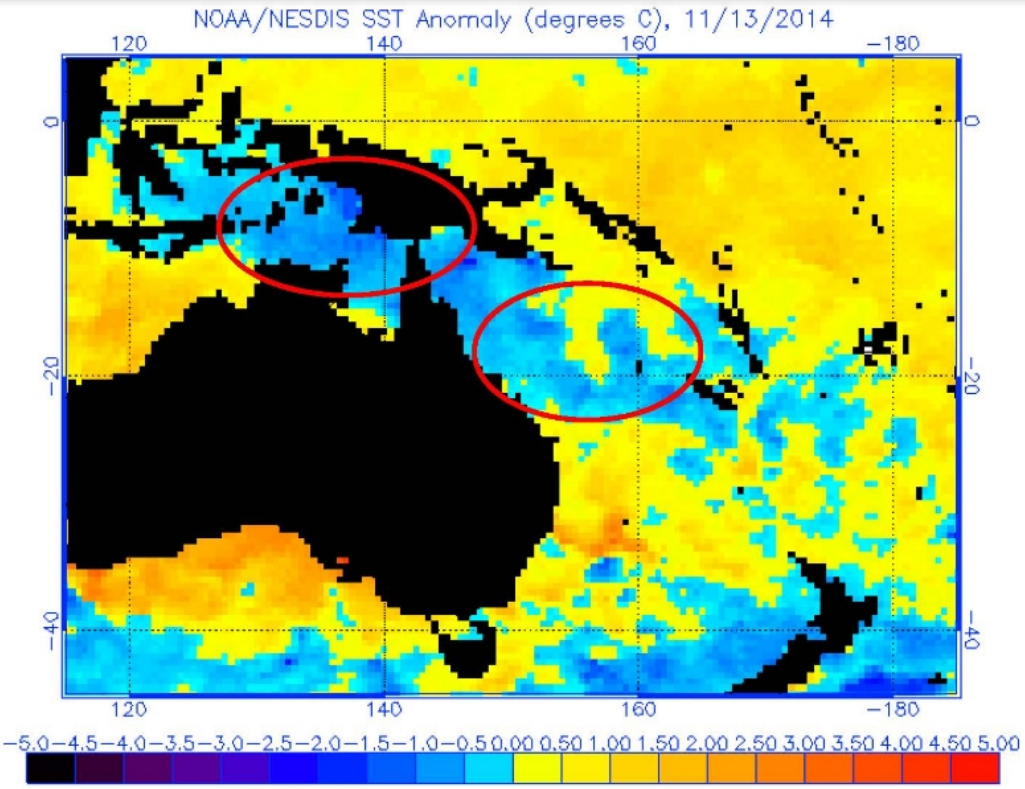


Why won't it rain? The impact of Sea Surface Temperatures

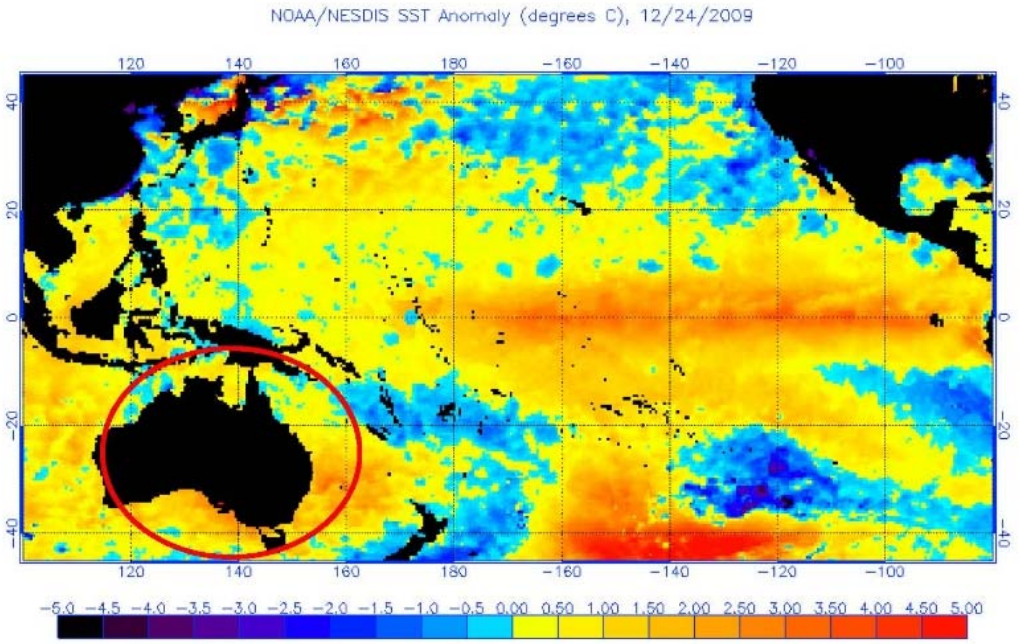
The Niño 3.4 ENSO sea surface temperatures have been following a similar path to the last defined El Niño in 2009. The 2009 calendar year finished with scorching November and December temperatures and low rainfall, until a memorable wet Christmas day in many parts of eastern Australia. This was the start of a change in fortunes resulting an above average 2010 rainfall year.

As the impact of ENSO phases out through many growing areas it is worth reviewing other influences on summer rainfall. Local sea surface temperatures can have a large bearing on moisture supply. Moisture from an anomalous warm Coral and Arafura Seas has been found to supply many fronts, lows and tropical rain events in all cotton areas during the growing season.

The current SST's are characterised by cold water in both the Coral Sea and Arafura Sea's (circled) and warm Indian Ocean and Tasman Sea locations, as pictured below (Australian SST's, 13 Nov 2014 Source: NOAA):



In contrast, the SST map from December 24, 2009 shows warm SST's around the entire Australian continent (Australian SST's 24 Dec 2009, Source: NOAA). The distribution of local Sea Surface Temperatures in the coming months can influence our summer growing season. These can be viewed at the hyperlinks provided.



Before relying on the material in any important matter, users should carefully evaluate its accuracy, currency, completeness and relevance for their purposes, and should obtain any appropriate professional advice relevant to their particular circumstances. Next update: 3 November.
Header photo courtesy Cotton Australia and Jamie Condon.