CottonInfo: Moisture Manager, 3 November

Welcome to the CottonInfo Moisture Manager

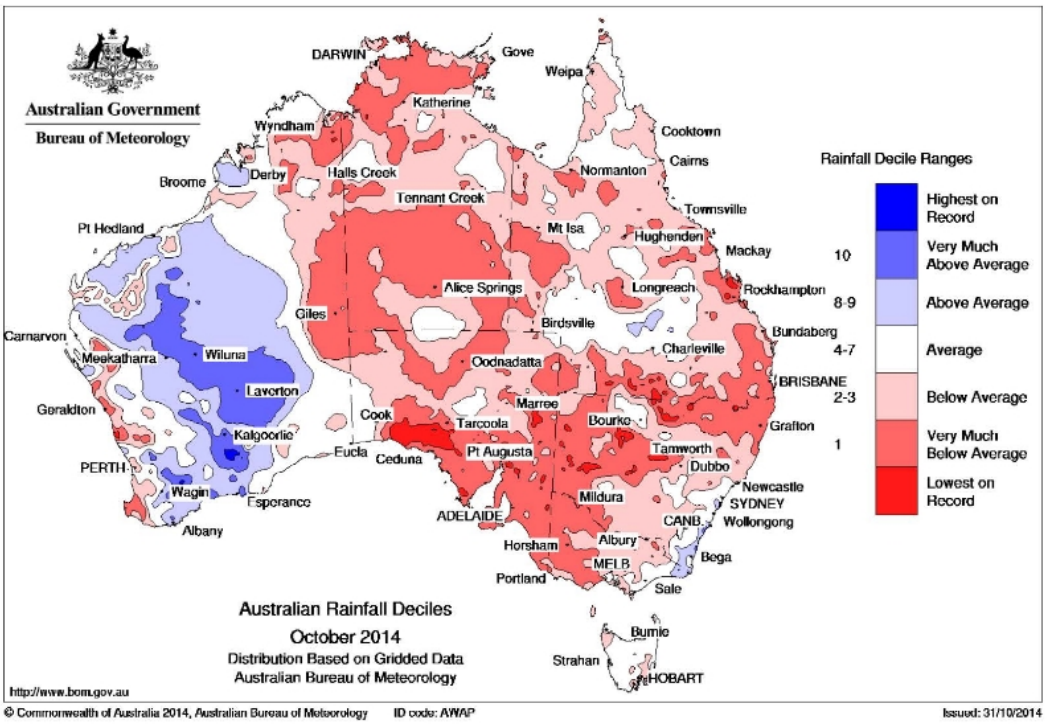
In this edition:

Latest weather news:

- Introducing 'Mojo' – the latest climatedog animation explaining the Madden-Julian Oscillation! Check him out below...
- El Niño-Southern Oscillation drivers continue in the neutral-negative range through November. The 30 day average SOI = -8 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.
- Multi-week rainfall models offering little hope for a decent rain event in the first half of November.
- 2014-15 summer: What can we expect from the monsoon this year? Part

2: Madden-Julian Oscillation.

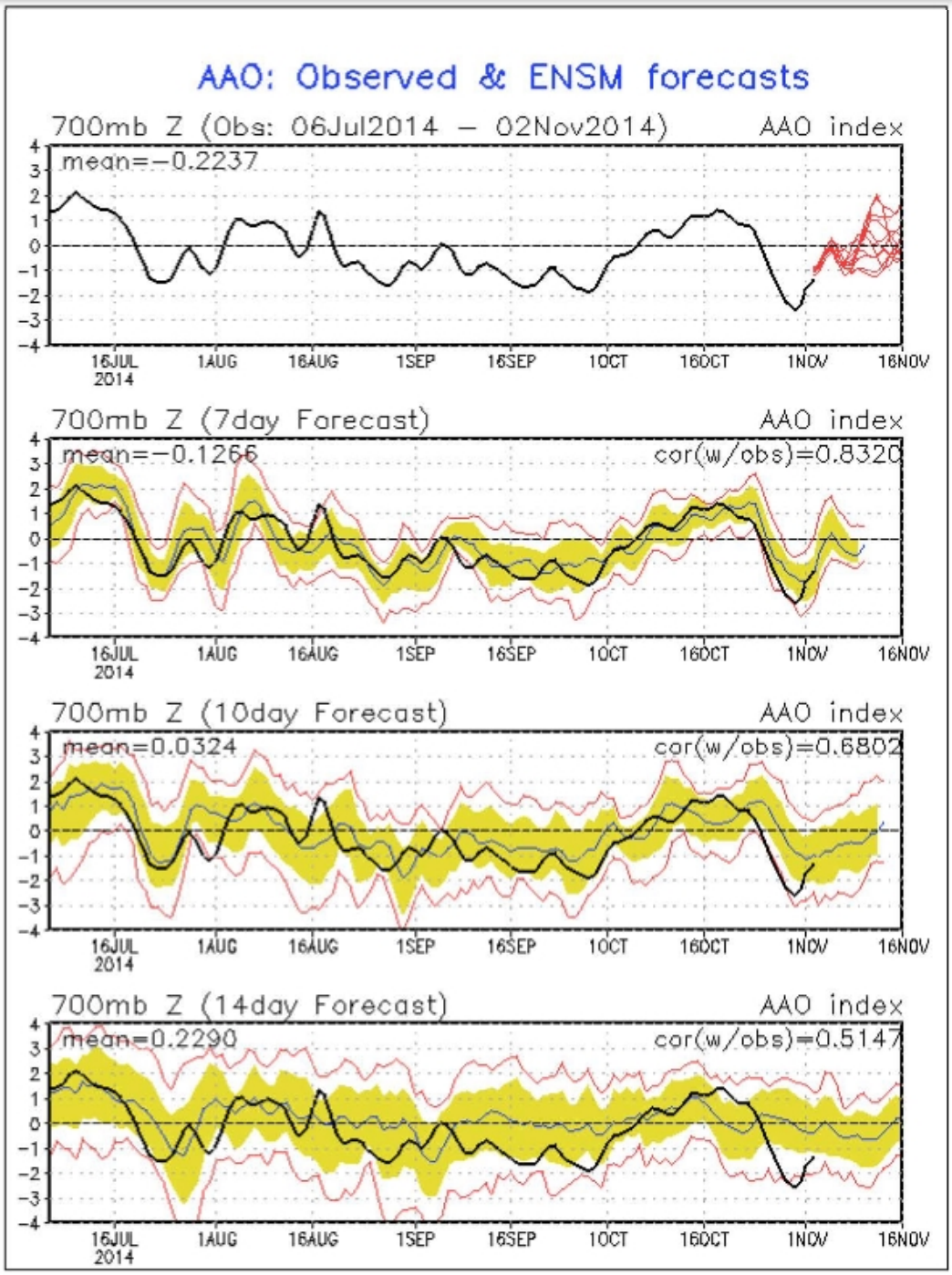
Observed rainfall deciles (for the month of October):



The Southern Annular Mode:

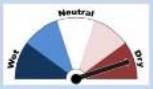
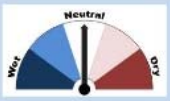
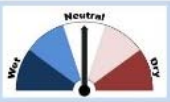
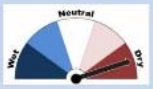
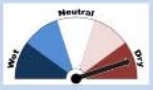
- The SAM is a significant driver of eastern Australian climate during November.
- The SAM influences moisture circulation patterns from the Tasman and Coral Sea regions into fronts and troughs forming in inland regions.
- A positive SAM, historically has had a positive influence on spring rainfall.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

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	0.0		Neutral
	Indian Ocean	+0.2		Neutral
Mean Sea Level Air Pressure 	Southern Oscillation Index	-8		Dry
	Southern Annular Mode	-1.5		Neutral
Tasman Sea Upper Atmospheric Air Pressure 	Blocking	-40		Neutral

Rainfall and temperature guidance summary:

Source	Model Released	Temperature Forecast	Precipitation Outlook
BOM Extreme Heat Model	2 Nov	50-70% chance of extreme heat 13-26 Nov all cotton areas	N/A
POAMA Multi-week	2 Nov	Above average Q'ld & NSW	Dry NSW/Q'ld (Nov)
NCEP 16-Day	3 Nov	N/A	No substantial rain events predicted
JMA (JPN)	30 Oct	Hot 10-16 November all areas	Light rain event Nov 17-30

What sort of monsoon can we expect this summer?

Following on from last fortnight's Moisture Manager - in the second part of this series, we take a look at the second key driver of summer rainfall: the Madden-Julian Oscillation.

Part 1: Madden-Julian Oscillation (MJO)

What is the MJO?

The MJO is a tropical disturbance that propagates eastward around the global tropics with a cycle on the order of 30-60 days. The MJO has wide ranging

impacts on the patterns of tropical and extra tropical precipitation, atmospheric circulation, and surface temperature around the global tropics and subtropics.

There is evidence that the MJO influences the El Niño-Southern Oscillation cycle. It does not cause El Niño or La Niña, but can contribute to the speed of development and intensity of El Niño and La Niña episodes.

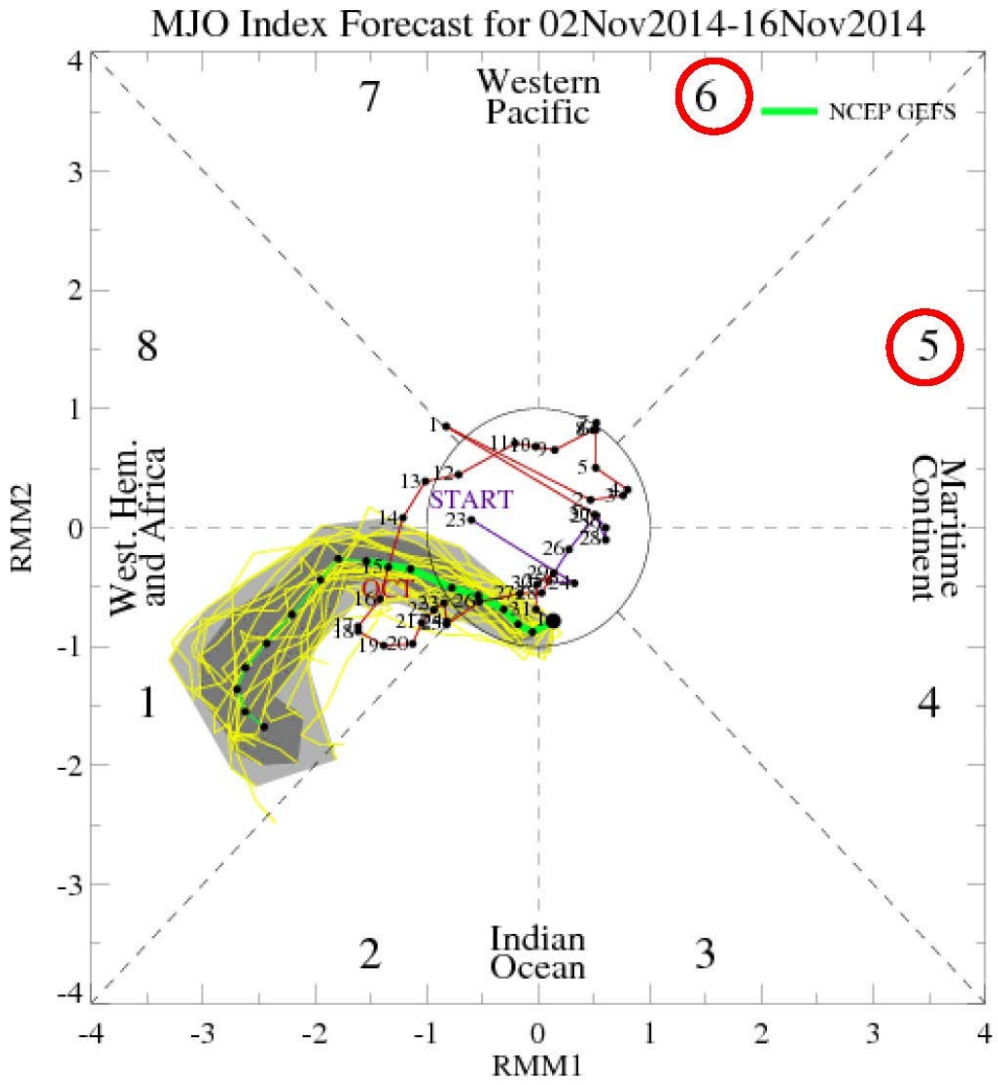
Meet Mojo - the new climatedog!
The Climatedog animation series has gained a new four legged friend, Mojo. The series uses humourous animations of sheepdogs to explain complex climate drivers and atmospheric features to farmers. Mojo is the newest dog in the pack, depicting the behaviour of the Madden-Julian Oscillation. Check Mojo out here.

How do researchers track the MJO?
Scientists have classified a series of MJO phases as the low pressure trough associated with the MJO rotates around the world. There are a range of international agencies monitoring the MJO. These have been compiled together on this website.

How on earth do I interpret the below MJO chart?

- Each phase (1-8) represent a region of the globe.
- Generally speaking (varies slightly for each month) the MJO passes eastern Australia during phases 5 and 6 (circled).
- The MJO traditionally moves ANTI-clockwise through different phases.
- The FURTHER away from the centre circle, the stronger the MJO event. Observations inside the circle are considered weak or benign MJO events.
- The lime green line represents the forecast path of the MJO (the solid red line is observed MJO).
- Scientists have discovered when the MJO is in phase 1, there is a correlation with dry weather in Australia.

For MJO phase explanations, click here.



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.