Department of Primary Industries

NSW Climate Summary - April 2014

Summary

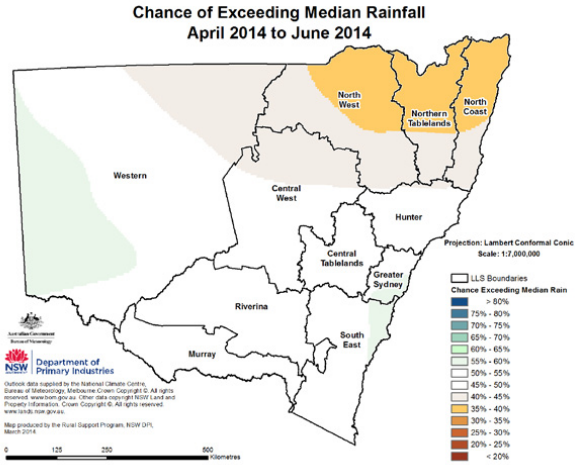
Seasonal outlook	Current Outlook	Previous Outlook
Rainfall (quarter)	Neutral (Drier – north/north-east)	Neutral (Possibly drier – northern NSW)
Max Temperature (qtr)	Warmer (Neutral – western NSW)	Neutral (Possibly warmer – coastal NSW)
Min Temperature (qtr)	Warmer	Warmer
ENSO		
ENSO (overall)	Neutral – El Niño likely	Neutral
SOI	Neutral (negative trend)	Neutral
Pacific Ocean (NINO3.4)	Neutral (warming trend)	Neutral (warming trend - winter)
Indian Ocean (IOD)	Neutral	Neutral
Southern Annular Mode (SAM/AAO)	Weakly-moderately positive/neutral	Weakly positive/neutral

Source: Derived from information provided by the Australian Bureau of Meteorology and the US National Oceanic & Atmospheric Administration.

Seasonal outlook

(Source: Bureau of Meteorology)

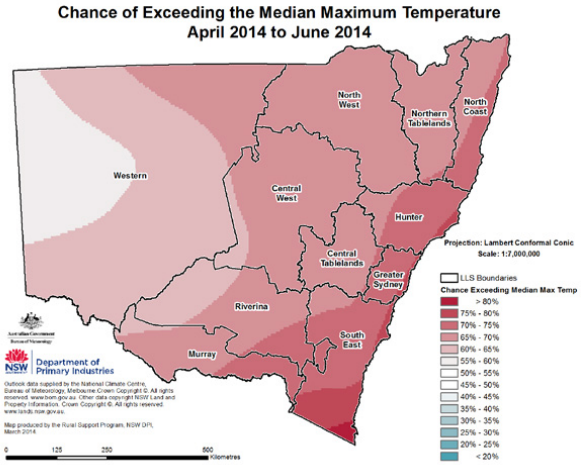
Over April to June, the chances of wetter or drier conditions are equal across the central areas of the State. There is a slightly increased chance of drier conditions across the north, with drier than normal conditions likely over the north eastern corner.

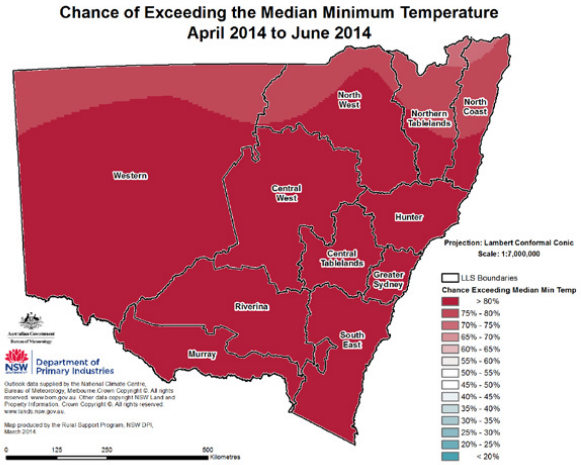


There is a slightly increased chance of wetter conditions in the far west and south west, and between the central and upper south coast.

These probabilities indicate that for every ten years with similar climate patterns, across most of NSW about five April to June periods would be expected to be wetter than normal and five drier than normal.

Warmer than normal daytime temperatures are likely between April to June over most of NSW, with an increasing probability to the east and south east. Warmer than normal overnight temperatures are likely.





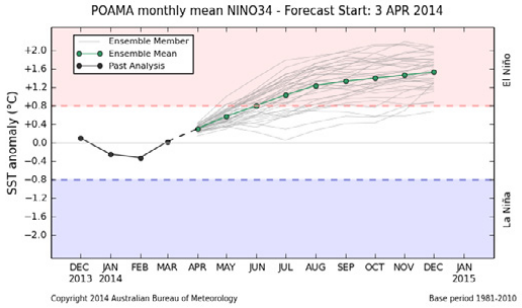
ENSO

(Source: Bureau of Meteorology & International Research Institute for Climate and Society)

The Pacific Ocean remains in a neutral ENSO state (neither El Niño nor La Niña) but there is an increased

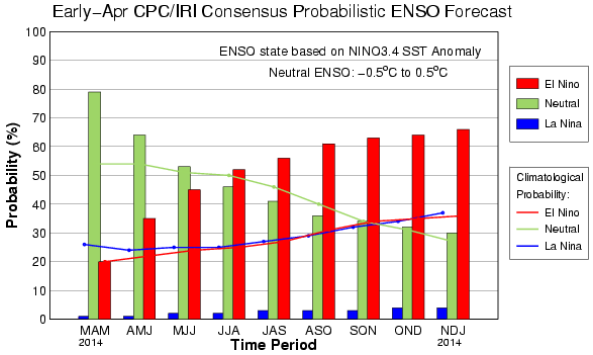
The seasonal outlooks presented in this report are obtained from the Australian Bureau of Meteorology & other sources. These outlooks are general statements about the likelihood (chance) of (for example) exceeding the median rainfall or minimum or maximum temperatures. Such probability outlooks should not be used as categorical or definitive forecasts, but should be regarded as tools to assist in risk management & decision making. Changes in seasonal outlooks may have occurred since this report was released. Outlook information was up to date as at 31st March-10th April 2014.

risk of El Niño conditions developing in winter and spring. Warming has been occurring in the tropical Pacific, and other indicators are showing El Niño-like trends. The Bureau of Meteorology's POAMA model indicates a 73% chance of sea surface temperatures in the NINO3.4 region reaching El Niño levels in July.



Currently the CPC/IRI consensus ENSO forecast probabilities indicate that 64% of global climate models suggest ENSO neutral conditions are likely over April to June, with 52% indicating El Niño conditions are likely to develop between June and August.

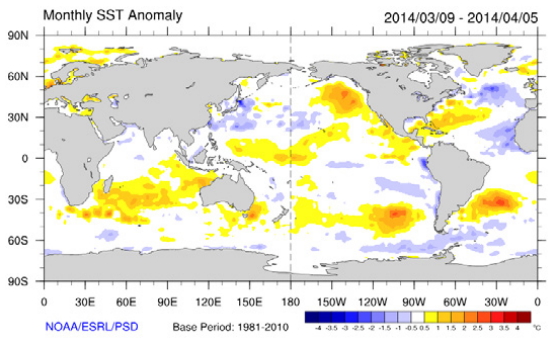
However forecast skill is low at this time of year and forecasts should therefore be treated with some caution.



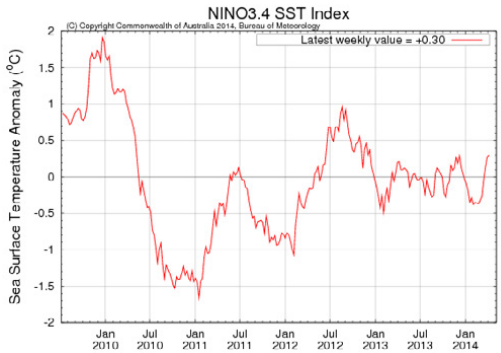
Monthly Sea Surface Temperatures

(Source: NOAA & Bureau of Meteorology)

Warming of the sea surface occurred during February and March.

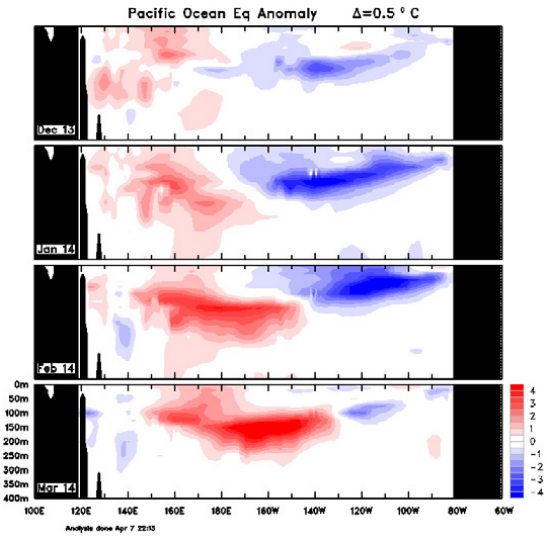


The monthly temperature index value in the NINO3.4 region is 0°C, an increase of 0.3°C since February. For the week ending 6th April, the temperature is now +0.3°C. Much of the equatorial Pacific is now average to warmer than average. Cooler anomalies in the eastern Pacific have weakened.



Monthly Sub Surface Temperatures

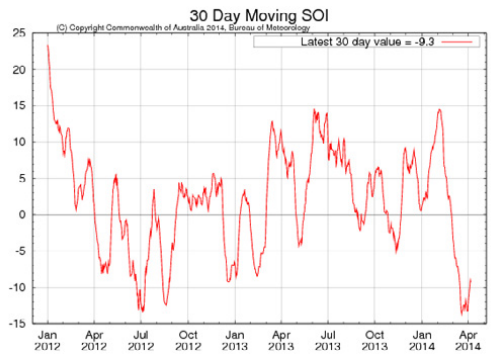
Sub surface temperatures show the development of a strong warm anomaly in the western Pacific, which has strengthened and moved eastwards (a downwelling oceanic Kelvin wave) over the last three months, reducing the size and strength of cooler anomalies in the east. The temperature of this anomaly is up to 6°C above normal. If it causes warming of the sea surface in the east, El Niño conditions are more likely.



Southern Oscillation Index (SOI)

(Source: Bureau of Meteorology & Queensland Department of Science, Information Technology, Innovation & the Arts)

The Southern Oscillation Index (SOI) fell sharply between January to March, but has now stabilised at around -9.3. If it remains at this level for a few months, it will indicate that the ocean and atmosphere are reinforcing each other in the development of an El Niño.



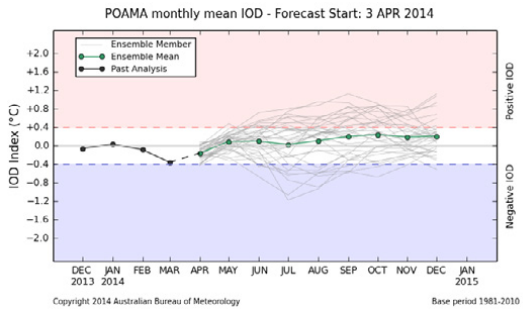
Values of between -8 and +8 indicate neutral conditions, sustained values above +8 may indicate a La Niña event, and sustained values below -8 may indicate an El Niño event.

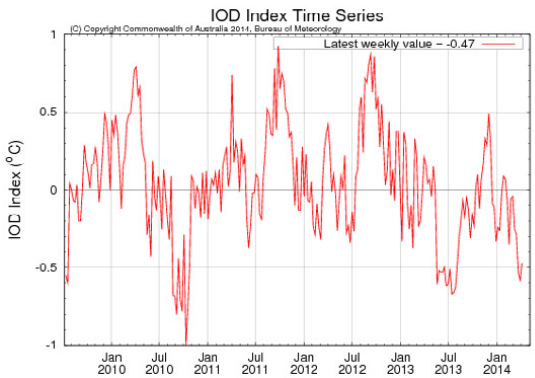
Indian Ocean Dipole (IOD)

(Source: Bureau of Meteorology)

The Indian Ocean Dipole (IOD) remains neutral. The latest IOD index value is -0.47°C for the week ending 6th April, and the Bureau of Meteorology's POAMA model and most climate models surveyed by the Bureau of Meteorology favour a neutral IOD over the coming six months. However, the chances of a positive IOD event will increase if an El Niño event occurs.

The IOD has little effect on Australian climate until autumn or winter. A negative IOD increases the chances of above normal rainfall during winter and spring across southern and much of western and central NSW.

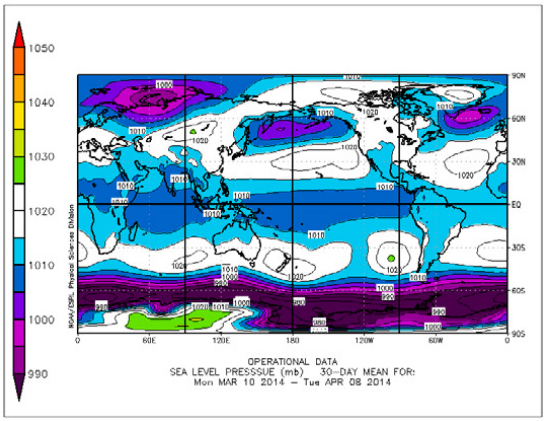




Sub-Tropical Ridge (STR)

(Source: NOAA & Bureau of Meteorology)

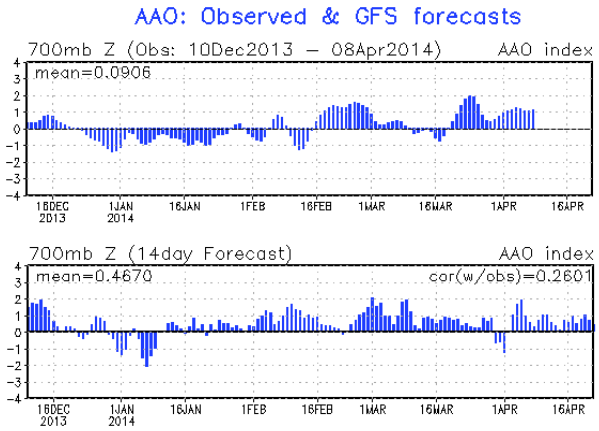
The sub-tropical ridge (STR) remained near the southern edge of the continent during the month, as indicated on NOAA and Bureau of Meteorology mean sea level pressure charts. The sub-tropical ridge is a zone of high pressure which between November to April is normally located south of Australia, and tends to suppress cold front activity. During winter, it generally moves northwards allowing cold fronts to extend further into southern Australia.



Southern Annular Mode (SAM)

(Source: Bureau of Meteorology [experimental] & NOAA)

The experimental Southern Annular Mode or Antarctic Oscillation (AAO) index is currently weakly positive at around +1.0. The outlook from POAMA indicates the SAM index is likely to remain weakly positive through mid-late April, decreasing to near neutral. The US National Oceanic and Atmospheric Administration (NOAA) outlook indicates the SAM index may increase to moderately positive, before decreasing to be weakly positive later in the month.



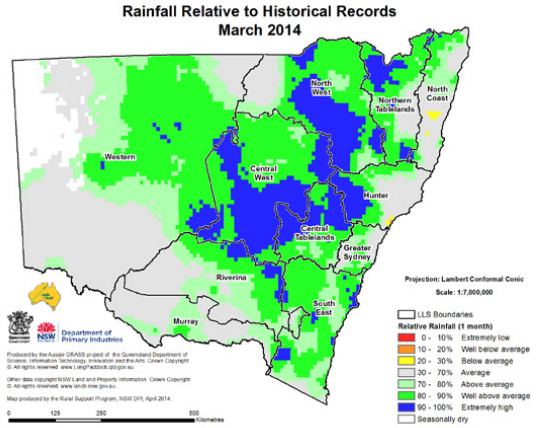
A negative SAM indicates an expansion of the belt of strong westerly winds towards the equator, resulting in more or stronger low pressure systems across southern Australia and potentially increased rainfall. A positive SAM indicates the contraction of the belt of strong westerly winds towards Antarctica and higher pressures over southern Australia, and can result in stable, drier conditions.

Conditions during March

Rainfall

(Source: Queensland Department of Science, Information Technology, Innovation & the Arts)

Over March, all of NSW received average to above average rainfall. Falls ranged from 50-200 mm over most of NSW with higher falls in some coastal areas. However, rainfall over the far west and parts of the north west was limited to 25 mm or less.



Soil moisture

(Source: CSIRO)

Modelled topsoil moisture was not available at the time of publication.

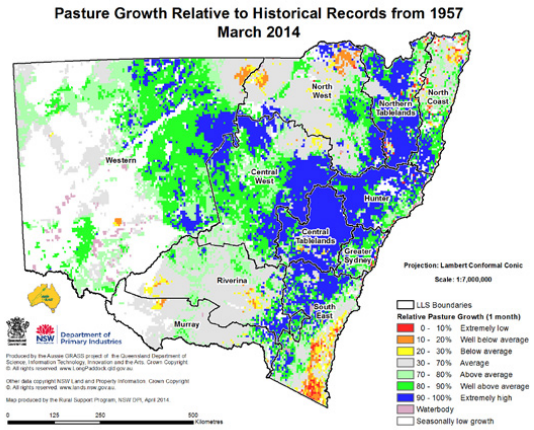
Pasture growth

(Source: Queensland Department of Science, Information Technology, Innovation & the Arts)

Relative pasture growth continued to improve in March, with many areas experiencing above average growth, particularly in improved pastures. This was a result of the rainfall, soil moisture and warm temperatures.

Only 3% of the State was below average in relative growth for the month, with 22% being average and 52% above average. Missing data over the west and south west accounted for the remainder.

Relative pasture growth was poor in areas of the north west and in the south east. Improvements in growth occurred across most of the central west, tablelands, slopes, the Hunter valley and areas of the far west.



More information

For more information, contact the NSW Department of Primary Industries on 02 6391 3100 or Local Land Services on 1300 795 299. Additional and more detailed information on seasonal conditions can be found in the NSW Seasonal Conditions Reports, available at http://www.dpi.nsw.gov.au/agriculture/emergency/seasonal-conditions/regional-seasonal-conditions-reports.

Acknowledgments

Information used in this report was sourced from the Bureau of Meteorology, CSIRO, Queensland Department of Science, Information Technology, Innovation and the Arts, the US National Oceanic and Atmospheric Administration, the International Research Institute for Climate and Society (Columbia University) and NSW Department of Primary Industries.

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