



Australian Government

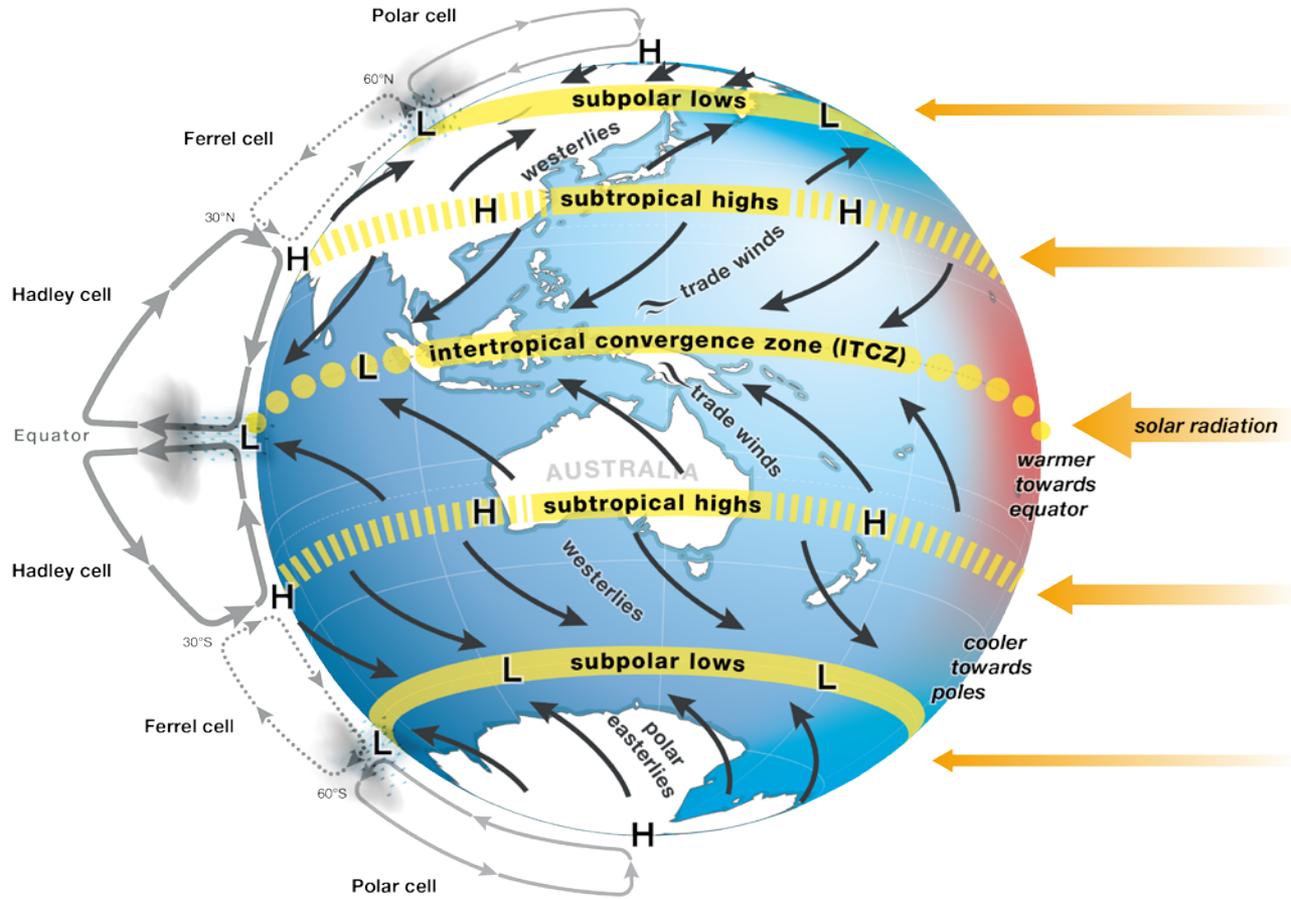
Bureau of Meteorology

Rainfall Patterns for WA

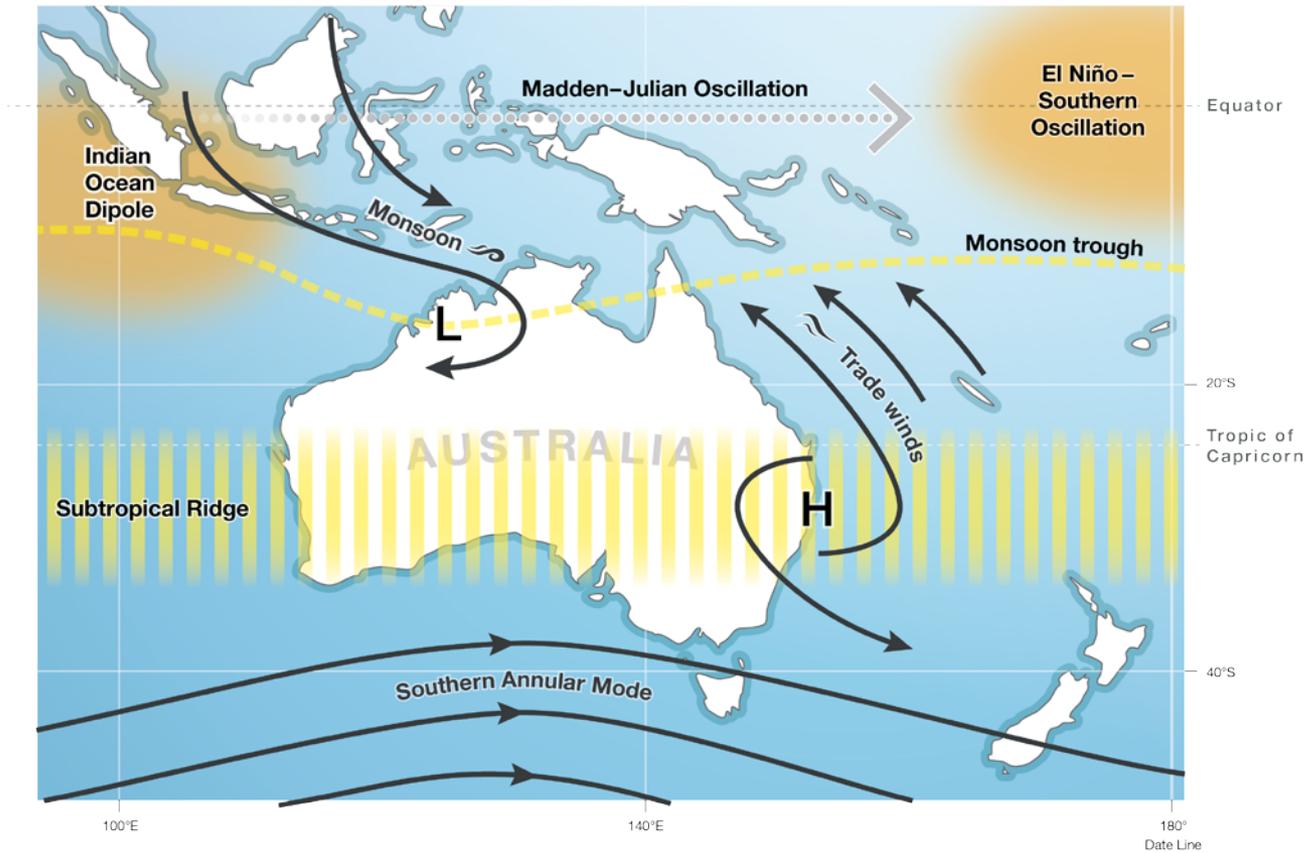
Neil Bennett

Manager Media and Communication – Western Australia region

Global circulations



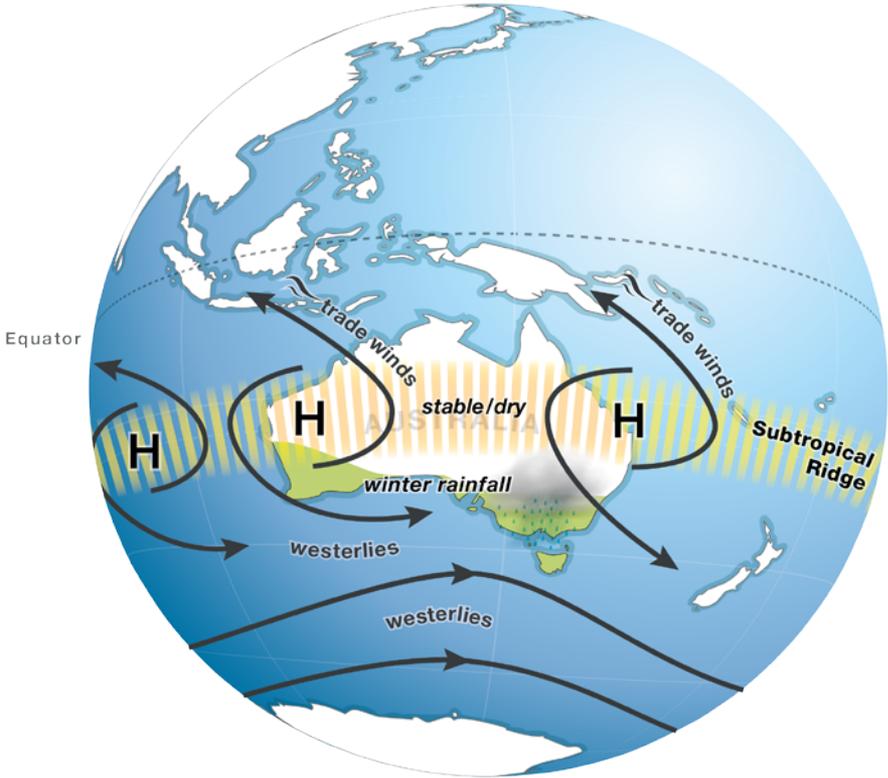
Australian climate influences



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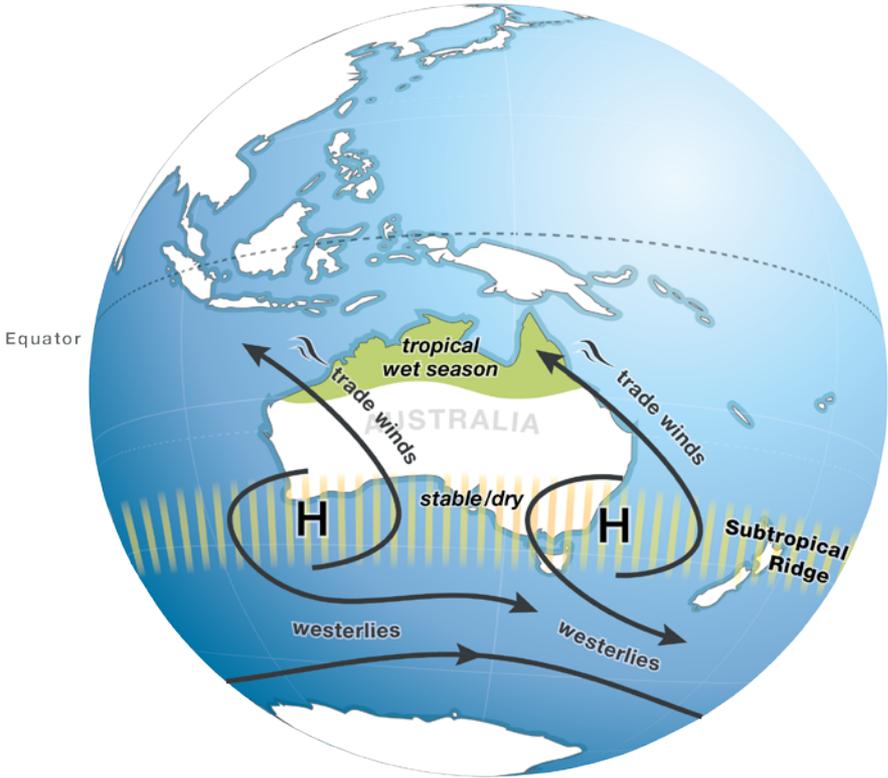
Subtropical Ridge

Winter



Subtropical Ridge

Summer

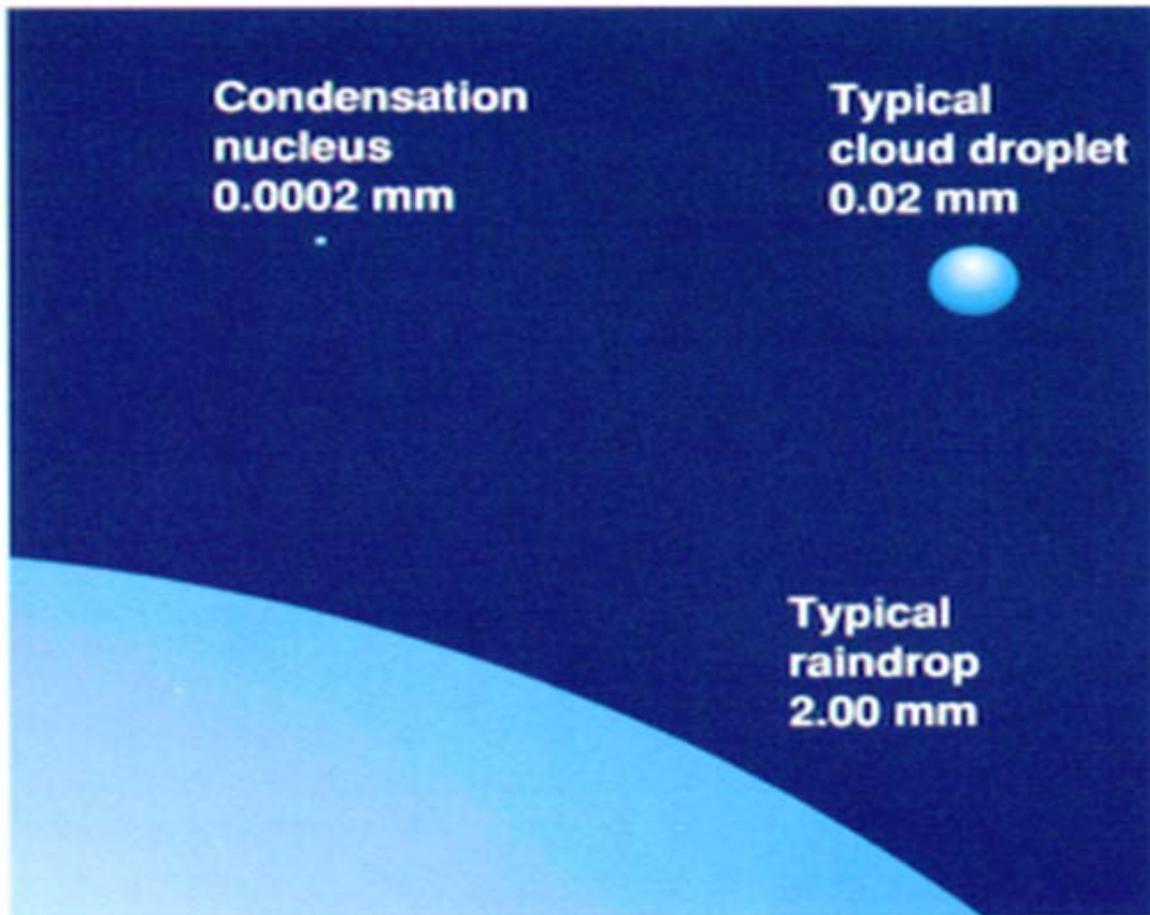




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Why does it rain?



Need to convert water vapour (gas) into rain (liquid), snow or hail (solid).

Do this by cooling air.

If air rises it cools

If sufficient water vapour and condensation nuclei in area, then cloud droplets form.

Note – warm air holds more water vapour than cold air



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How air rises

Over an object (mountain)

By frontal activity

By convection (air being heated)

In WA we don't have many mountains!

Winter rainfall – frontal (typically)

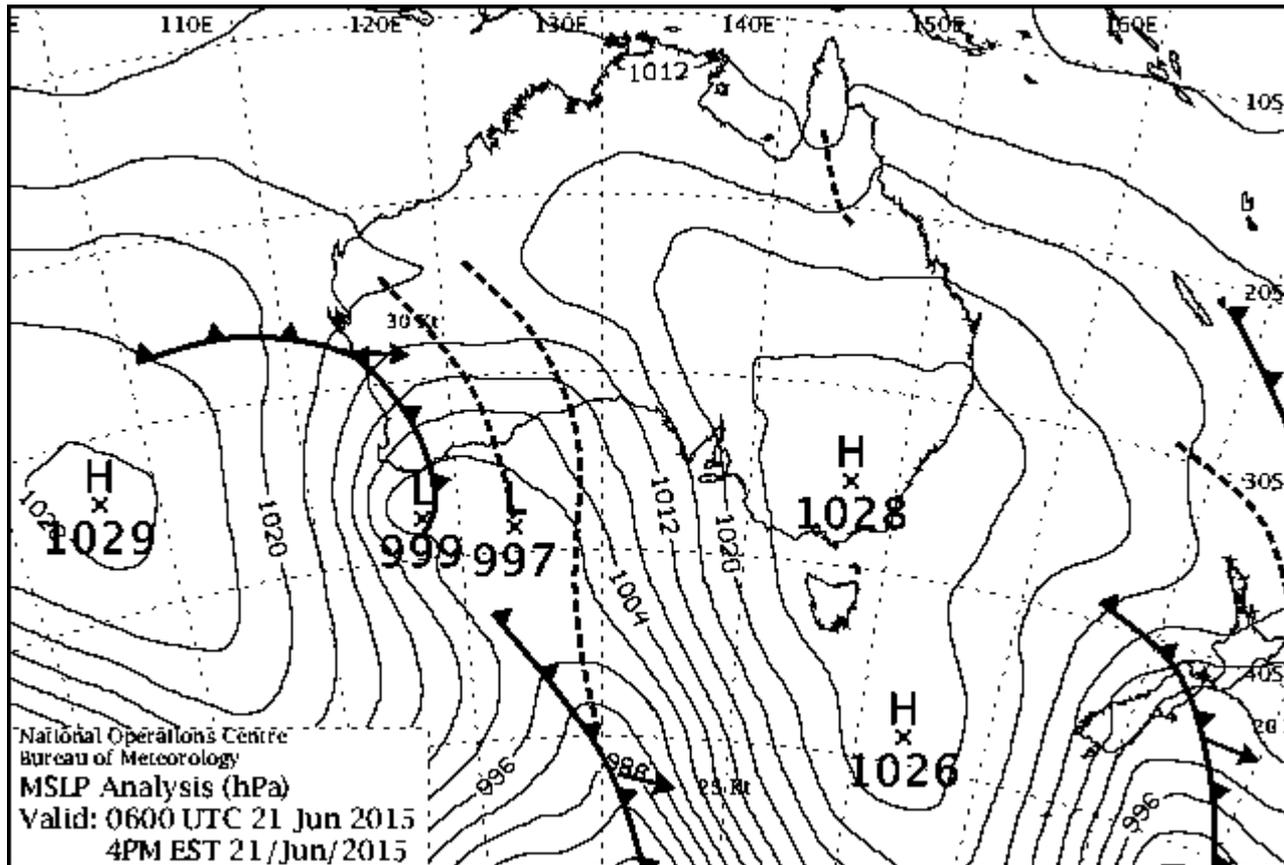
Summer rainfall – convective (typically)

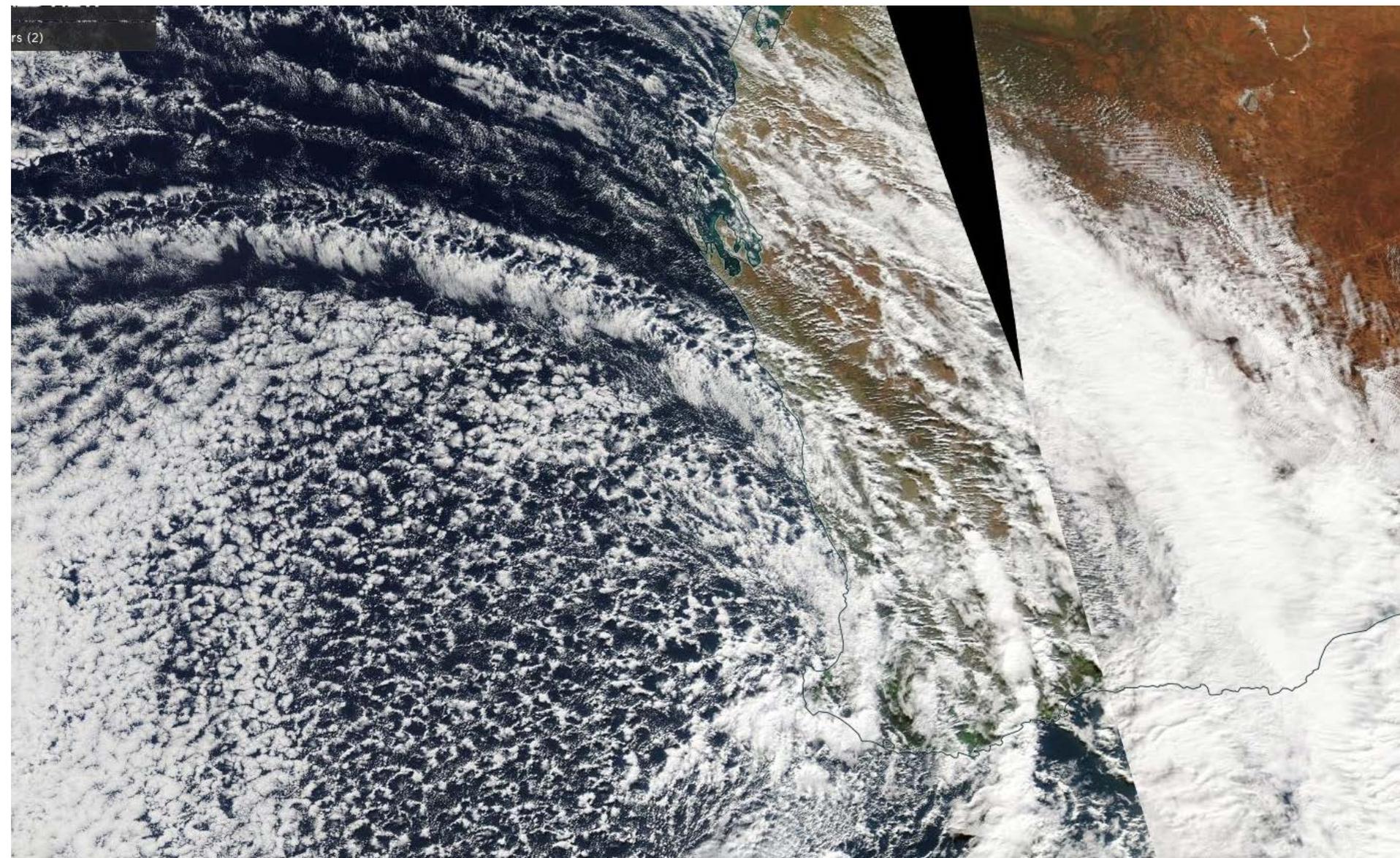


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Frontal rainfall

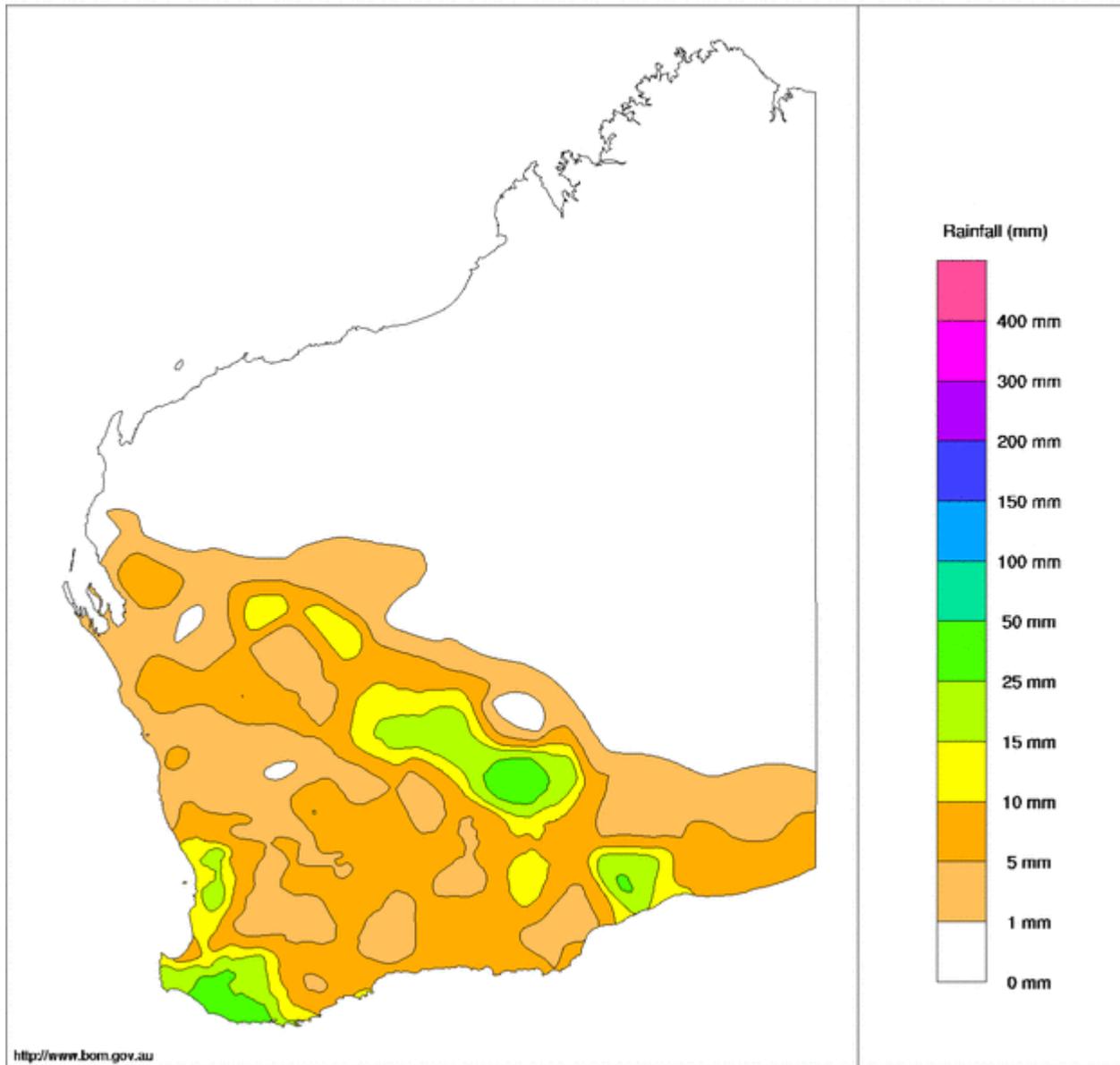




June 21st 2015

Western Australian Rainfall Totals (mm) 22nd June 2015

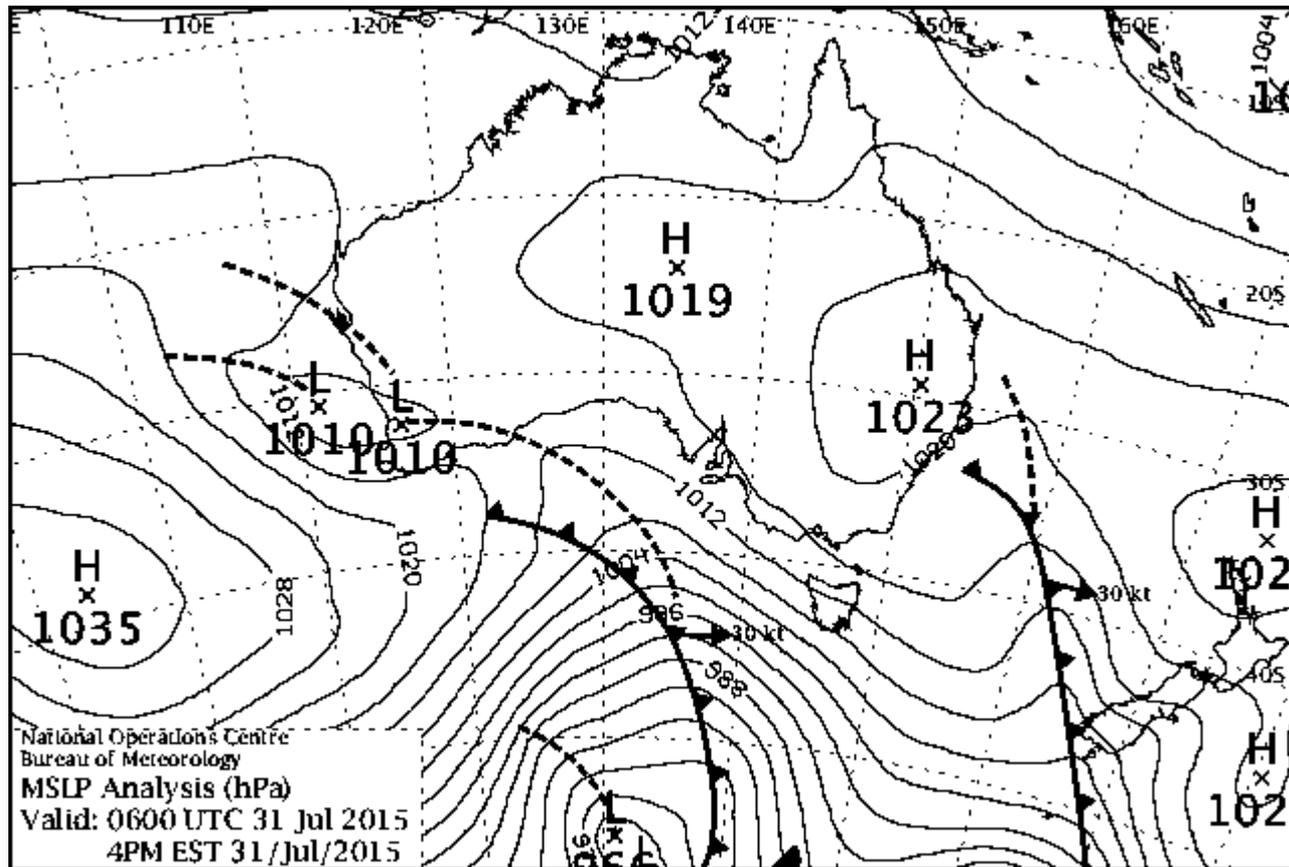
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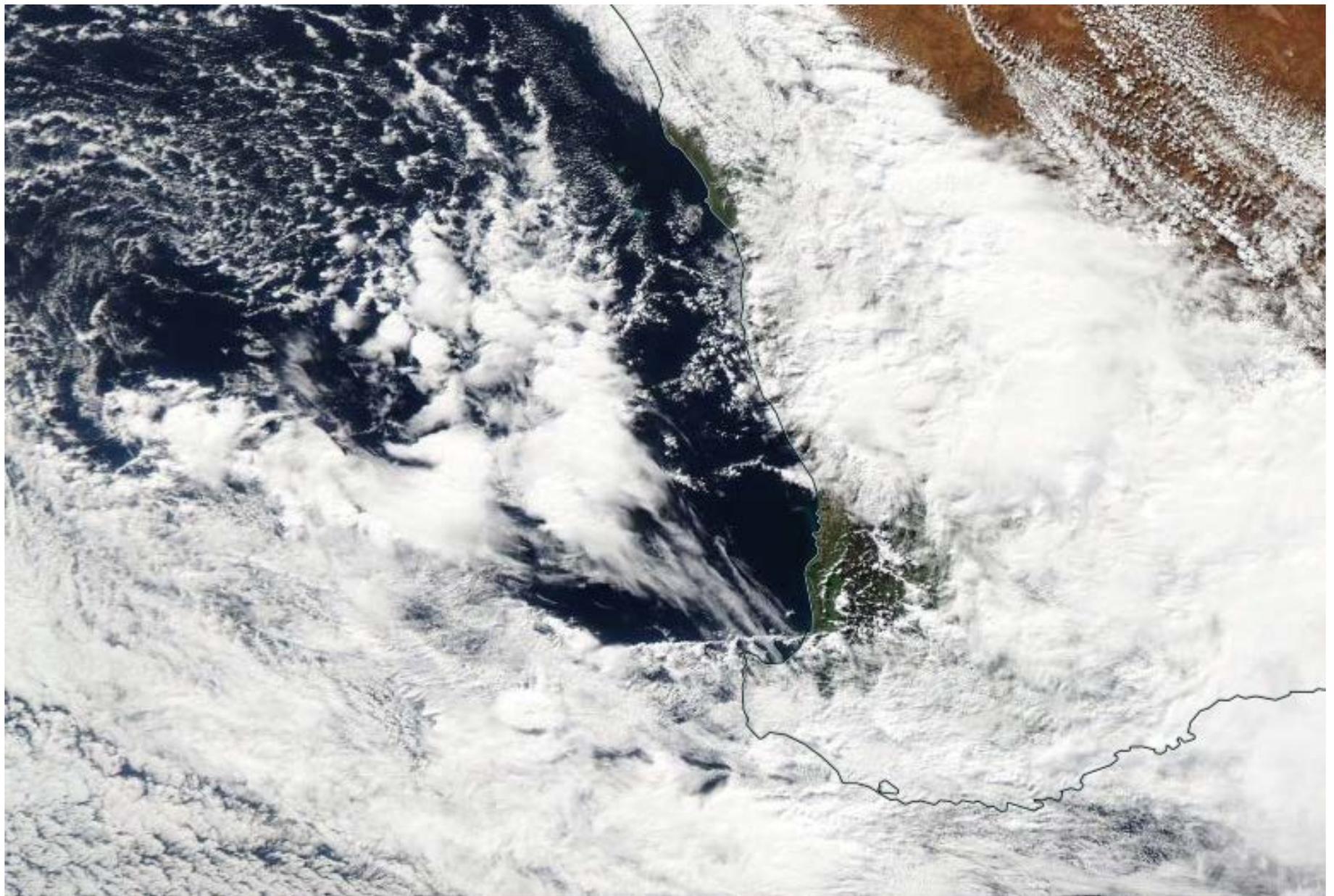


<http://www.bom.gov.au>



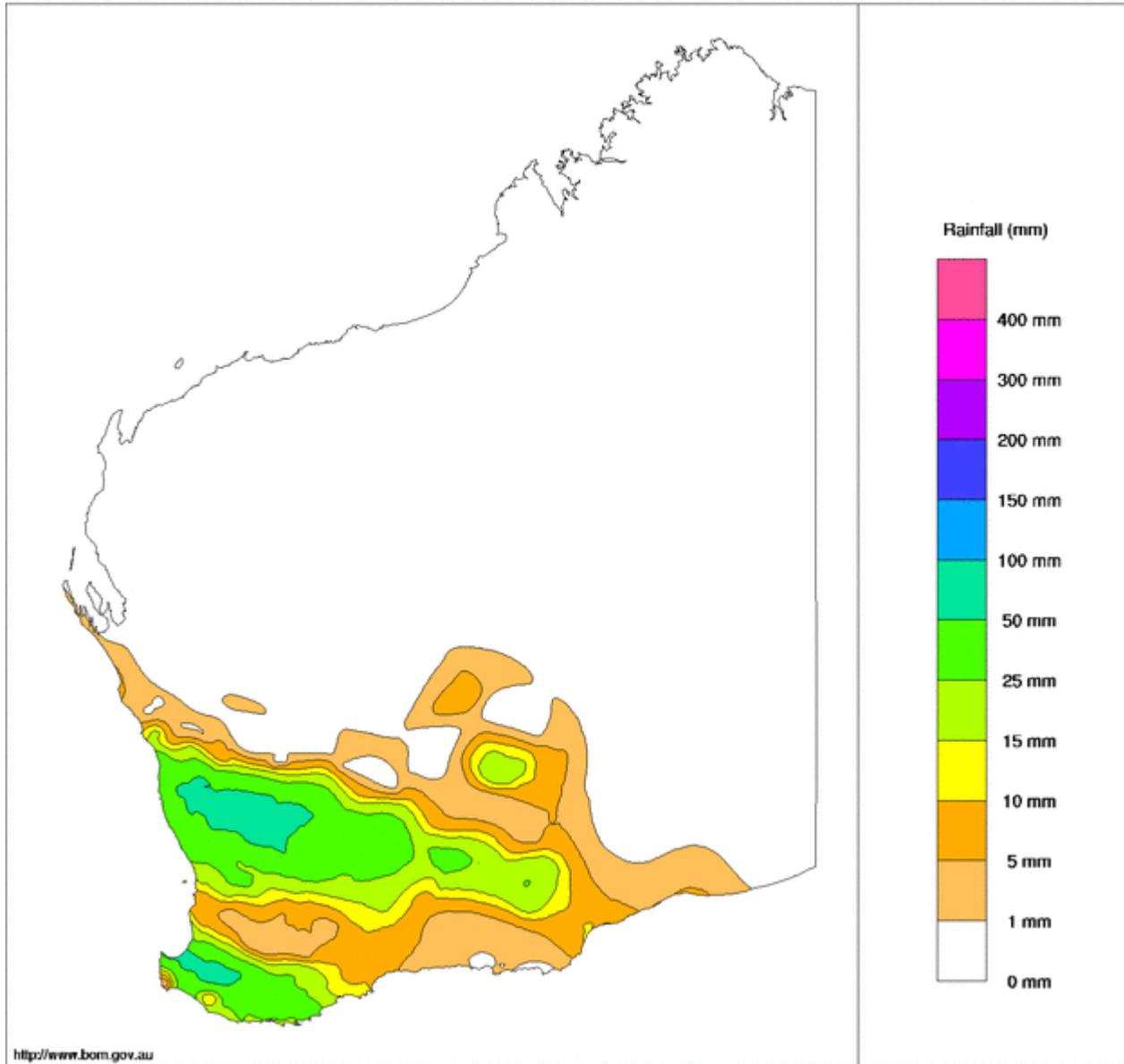
Cut Off Low





Western Australian Rainfall Totals (mm) 31st July 2015

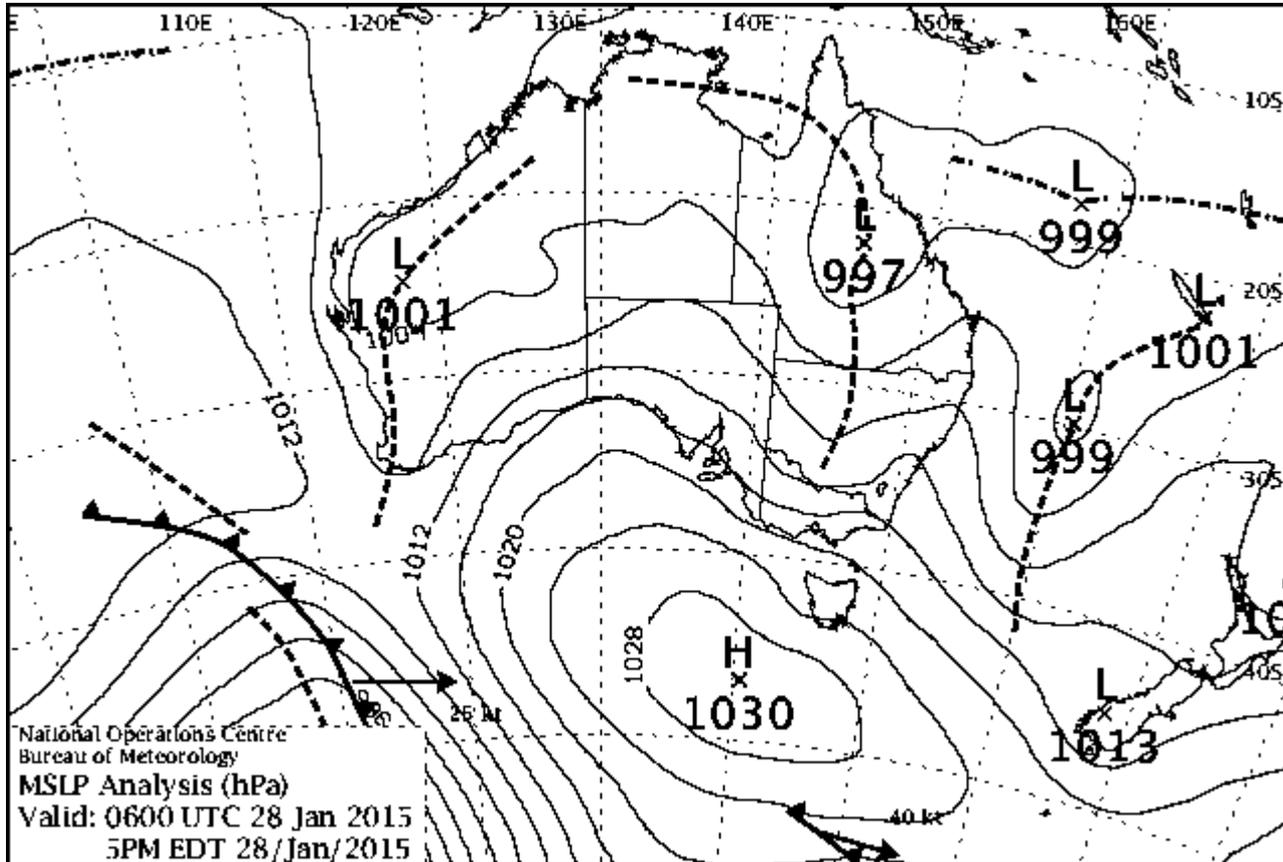
Australian Bureau of Meteorology



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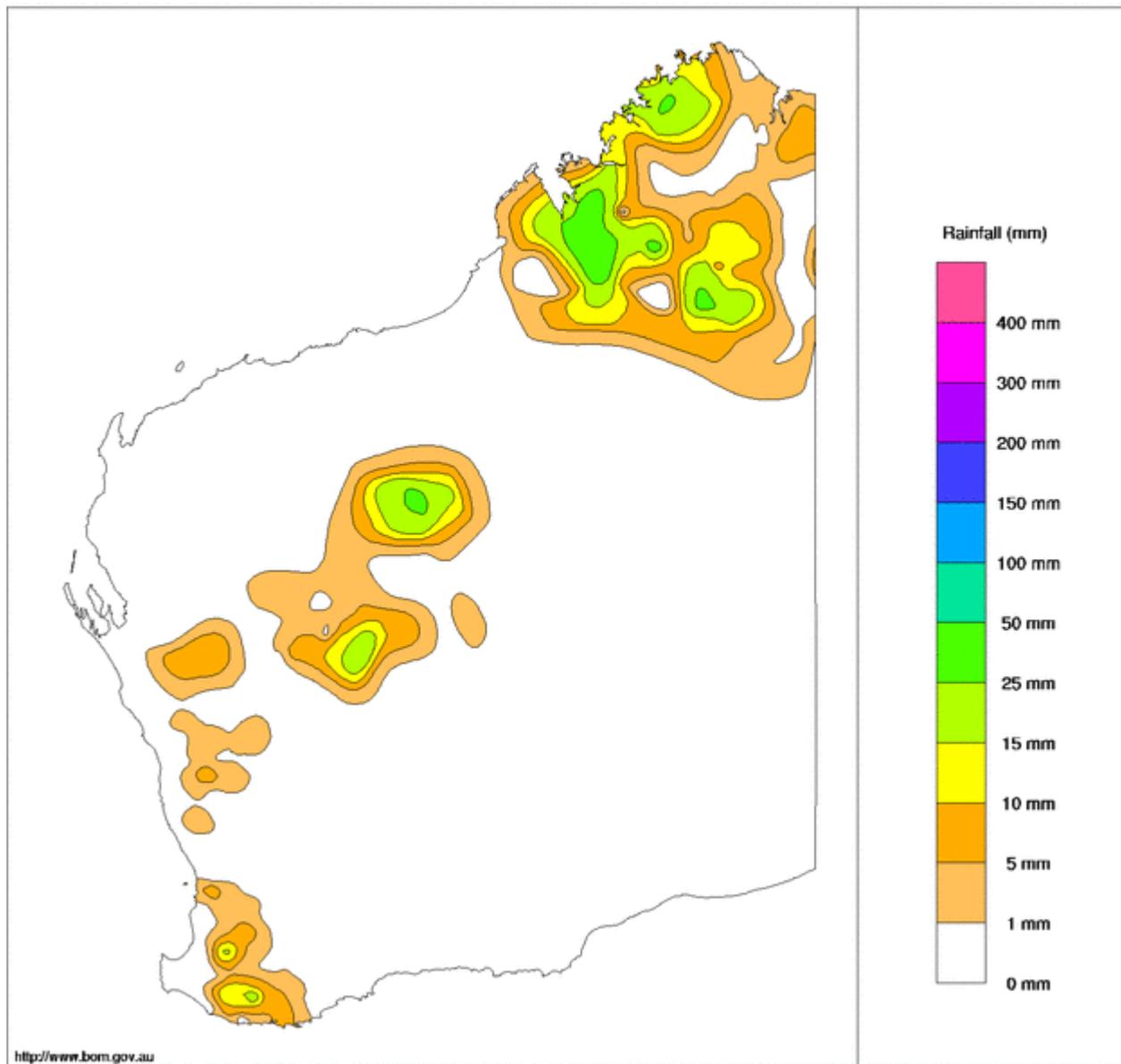
Convective Rainfall





Western Australian Rainfall Totals (mm) 29th January 2015

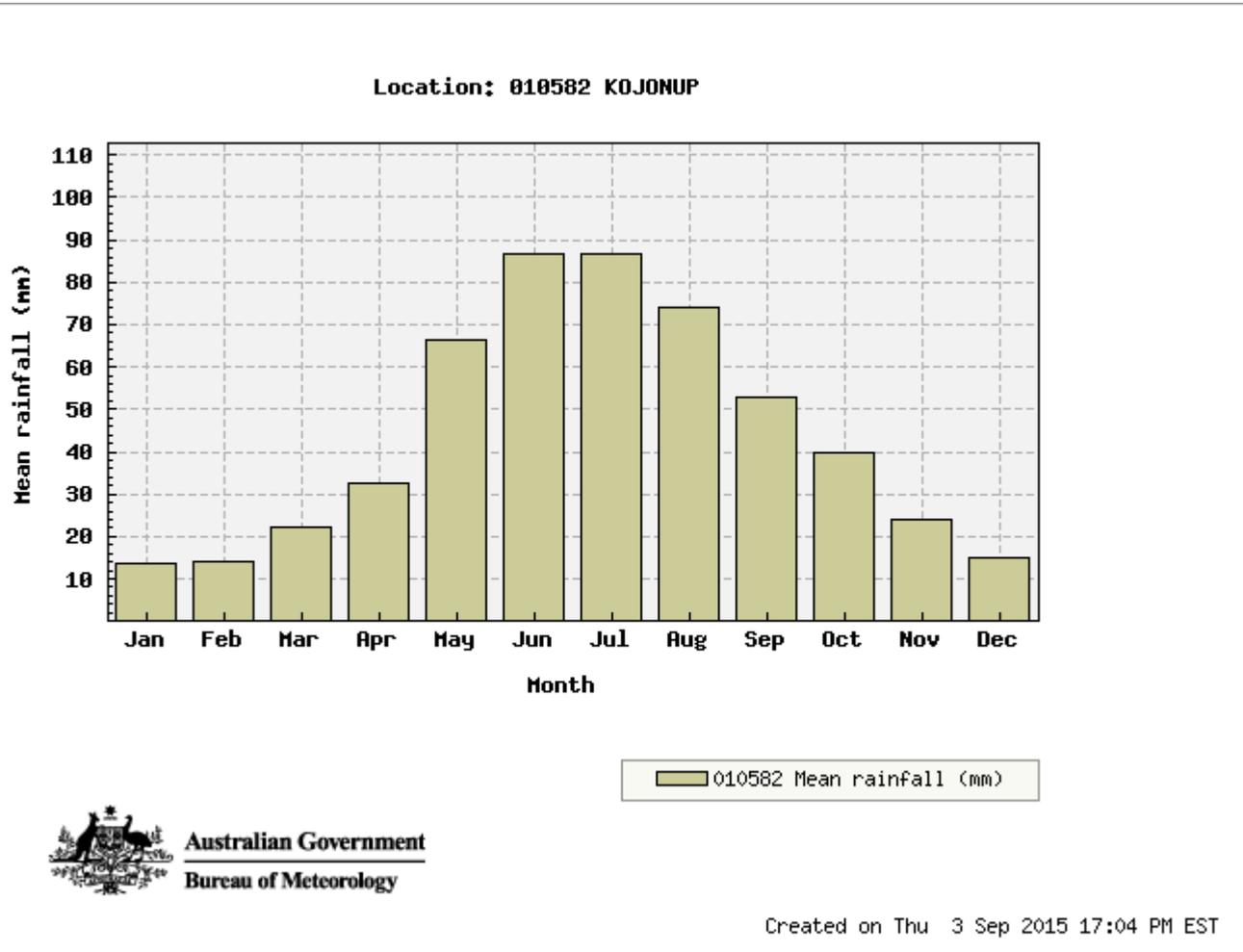
Australian Bureau of Meteorology



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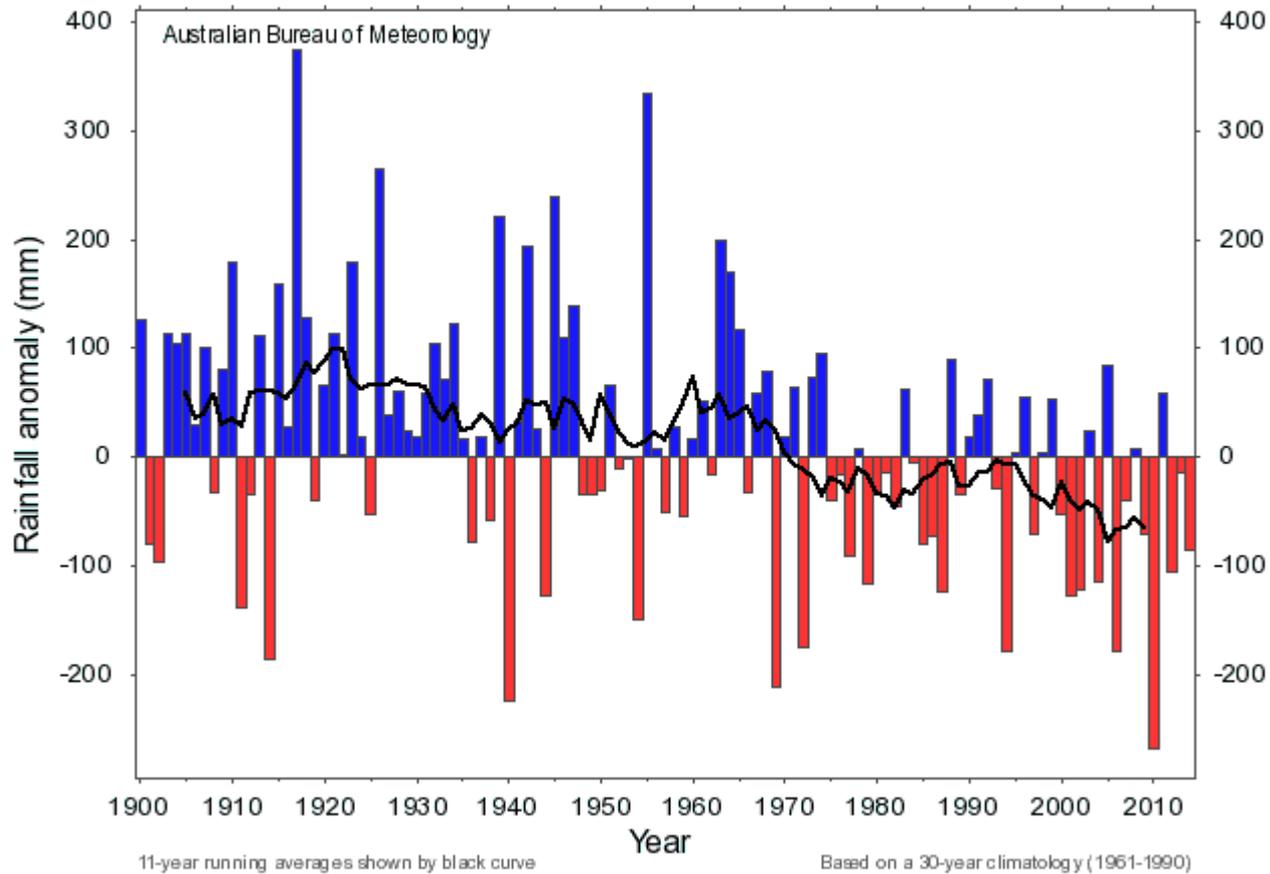
Kojonup Rainfall





SW WA Rainfall

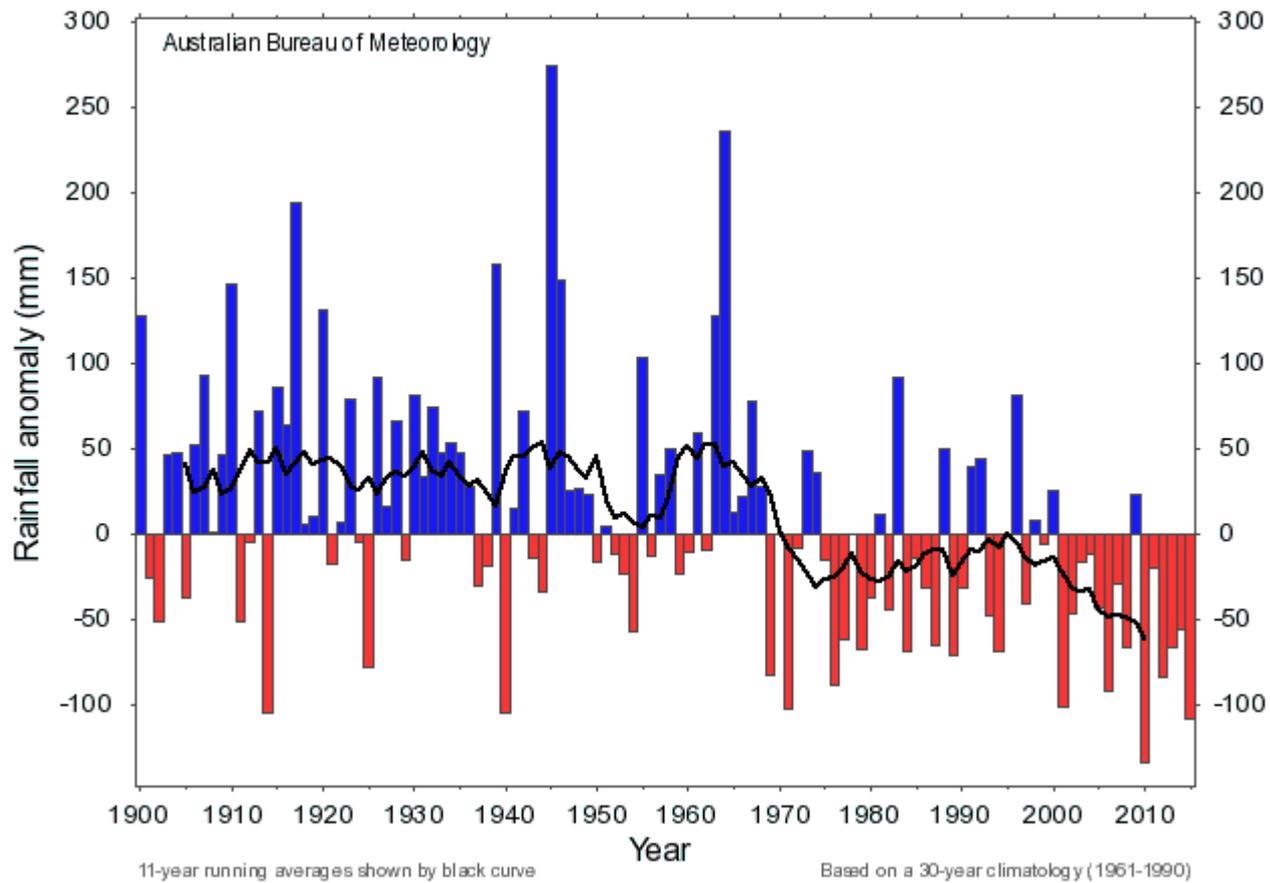
Annual rainfall anomaly - Southwestern Australia (1900-2014)





Winter Rainfall

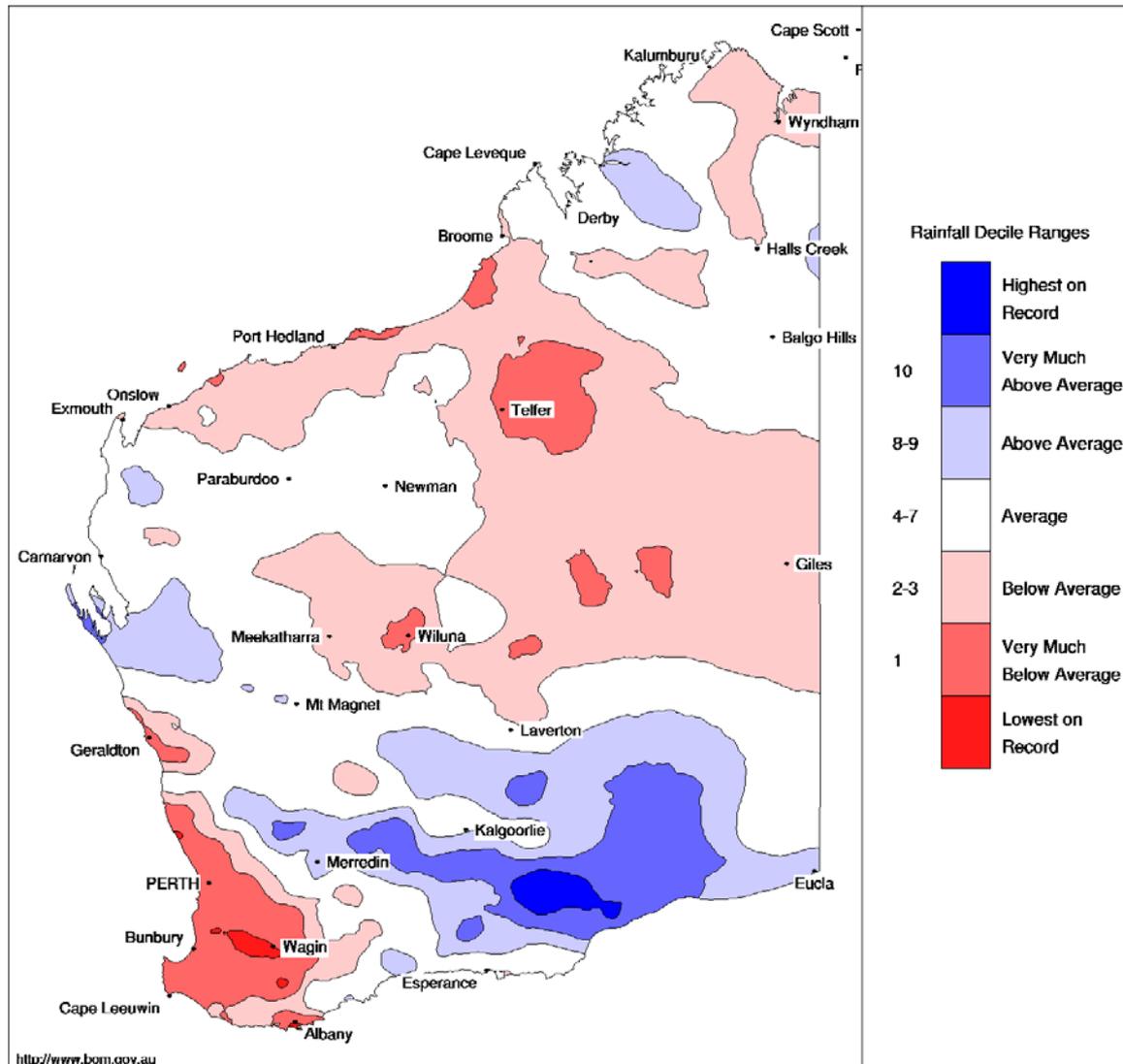
Winter rainfall anomaly - Southwestern Australia (1900-2015)



Winter Rainfall 2015

Western Australian Rainfall Deciles 1 June to 31 August 2015

Distribution Based on Gridded Data
Australian Bureau of Meteorology



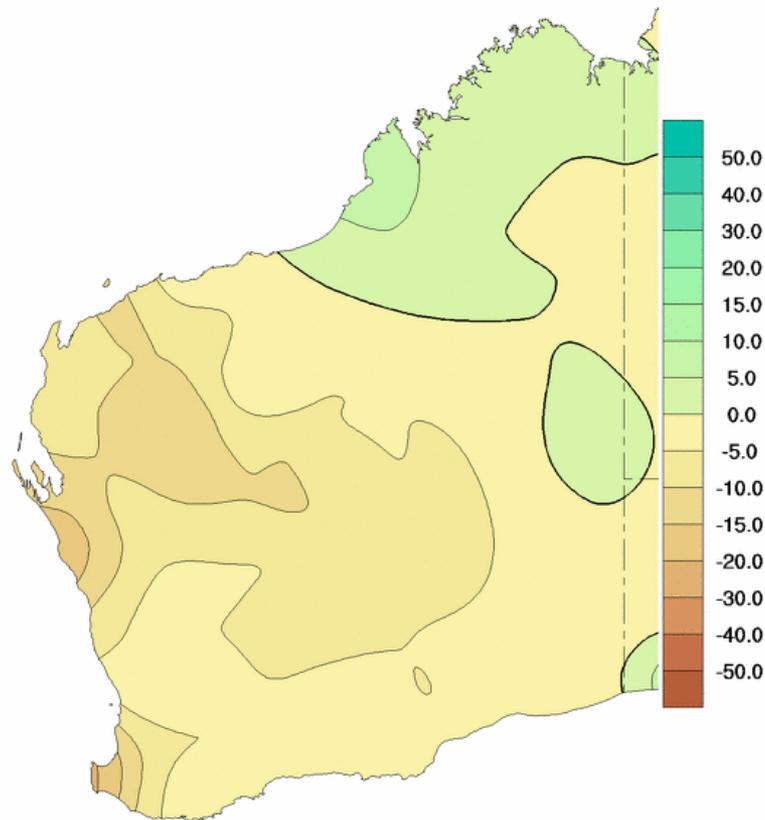


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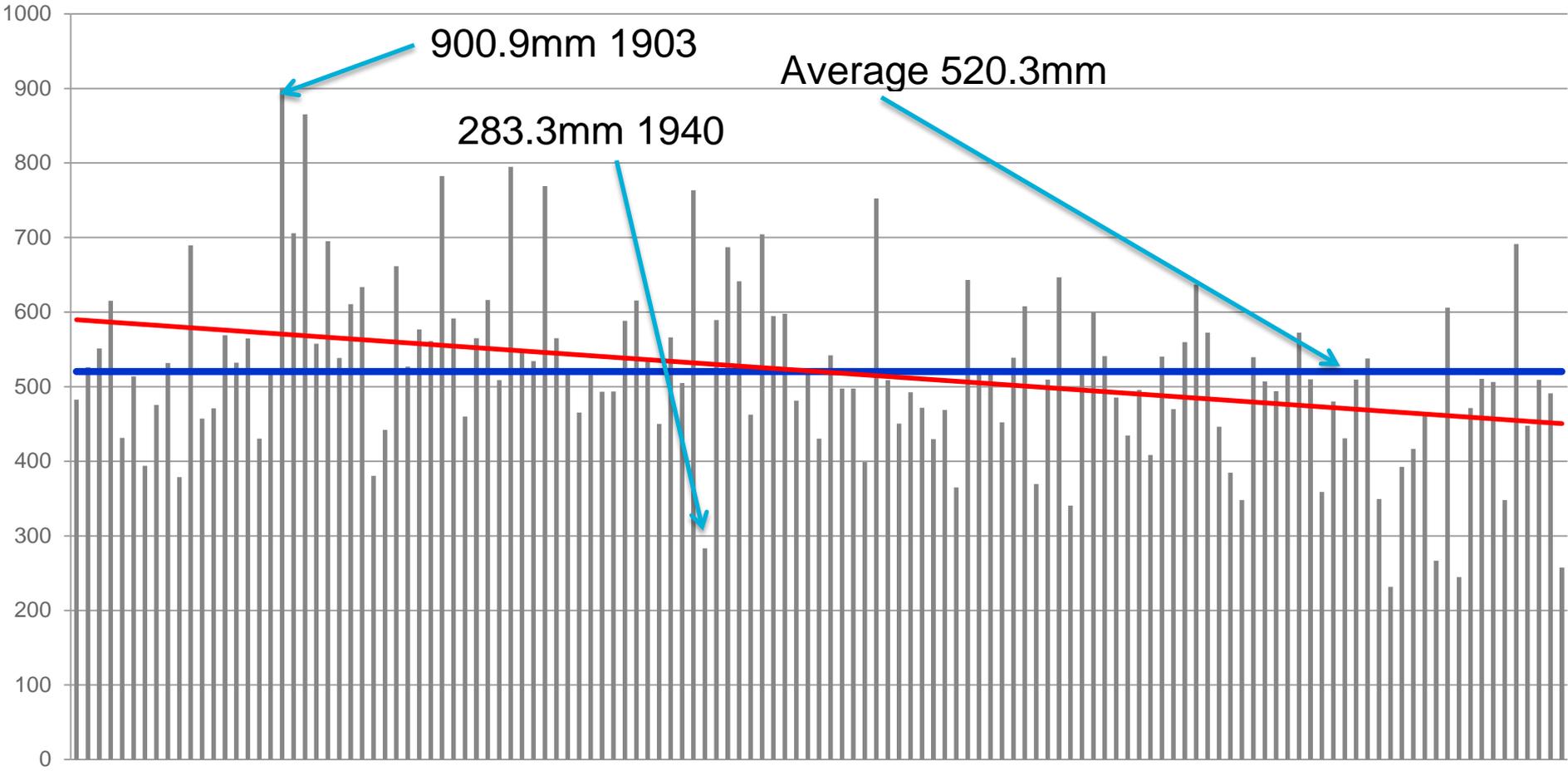
Winter Rainfall

Trend in Winter Total Rainfall 1970-2014 (mm/10yr)





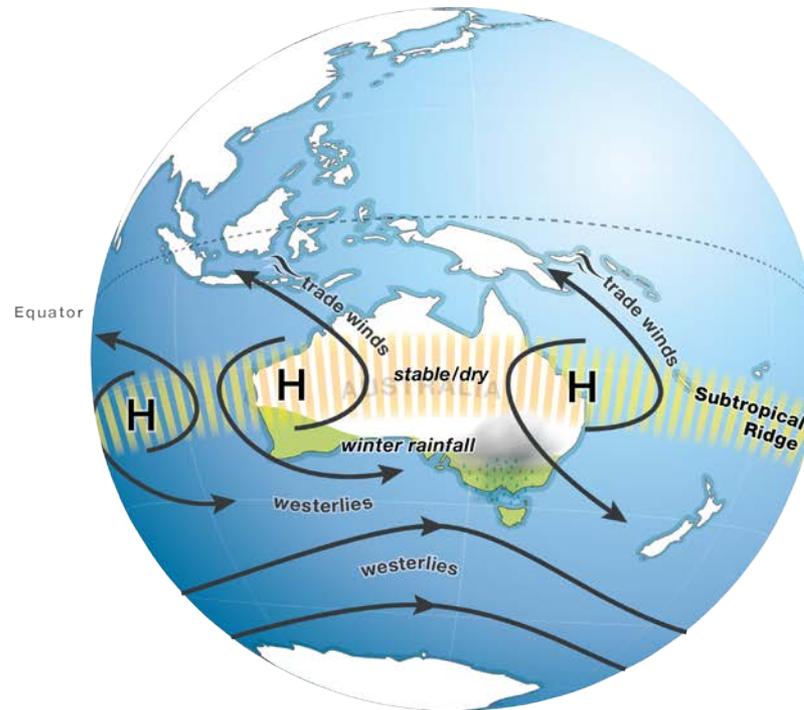
Kojonup Rainfall 1885 - 2015



Why is this so?

Subtropical Ridge

Winter



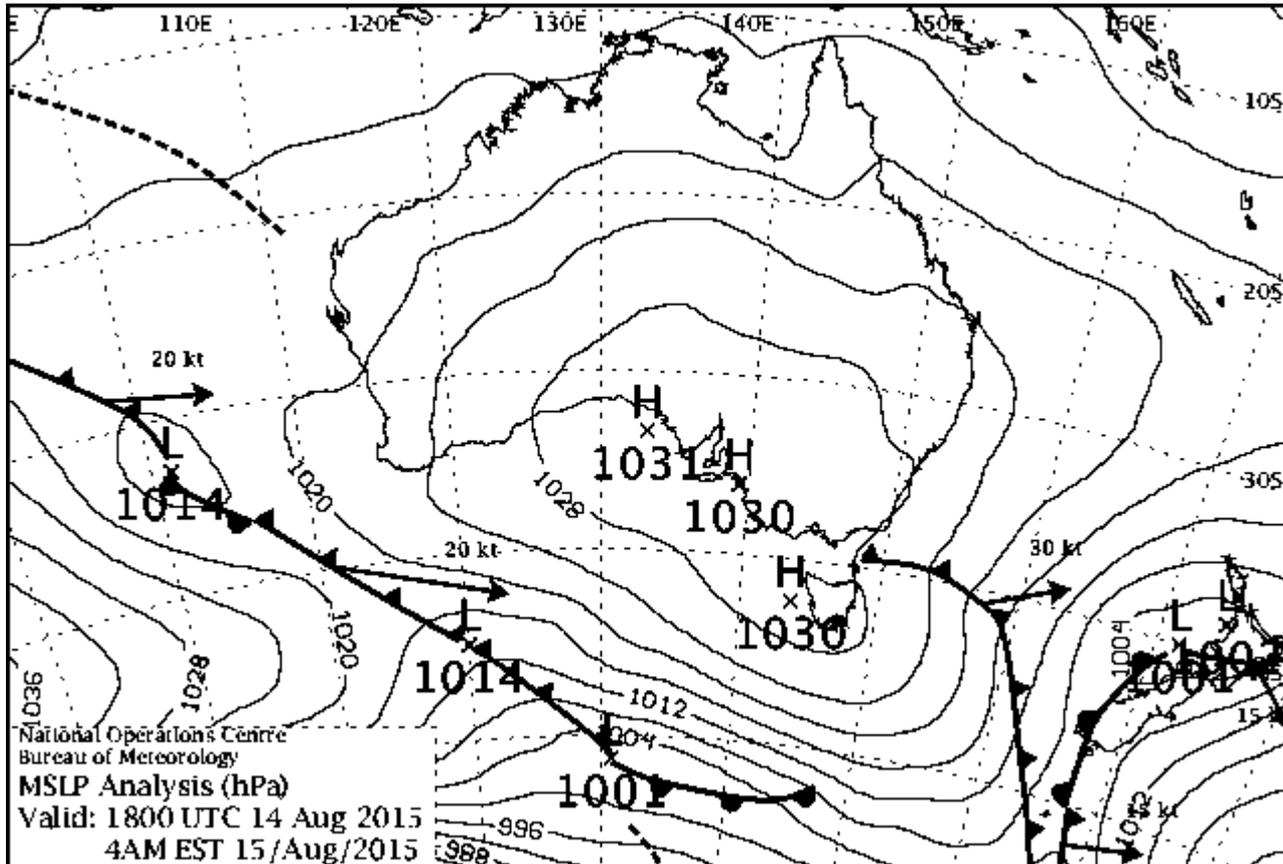
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Why is this so?



Average temperatures will continue to increase in all seasons (*very high confidence*).

More hot days and warm spells are projected with *very high confidence*. Fewer frosts are projected with *high confidence*.

A continuation of the trend of decreasing winter rainfall is projected with *high confidence*. Spring rainfall decreases are also projected with *high confidence*. Changes in other seasons unclear.

More time in drought is projected with *high confidence*

A harsher fire-weather climate in the future (*high confidence*).

Source: Climate Change in Australia

<http://www.climatechangeinaustralia.gov.au/en/>



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Thank you...

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