

How WA's Climate Has Changed

Climate is a key determinant of WA's environmental character, settlement, lifestyle, economy and infrastructure. A multitude of common-place lifestyle decisions, year-to-year decisions of business and resource management operations, and strategic decisions about the future, are based on what we have come to expect of regional climate behaviour.

Global Overview

We are aware that global climate has fluctuated widely over the Earth's history. However, from around the time of settled agriculture, some 10,000 years ago, human societies around the globe have enjoyed relative comfort and climatic stability in an inter-glacial period.

In recent decades however, significant changes to global climate, in particular

increases in temperature (**Figure 1**), have been observed. These increases have been linked to the enhanced greenhouse effect as they continue to develop in directions consistent with human-induced changes to the composition of the atmosphere. The Intergovernmental Panel on Climate Change has concluded that there is a 90 percent chance that the observed temperature increases are caused by anthropogenic greenhouse gas emissions.

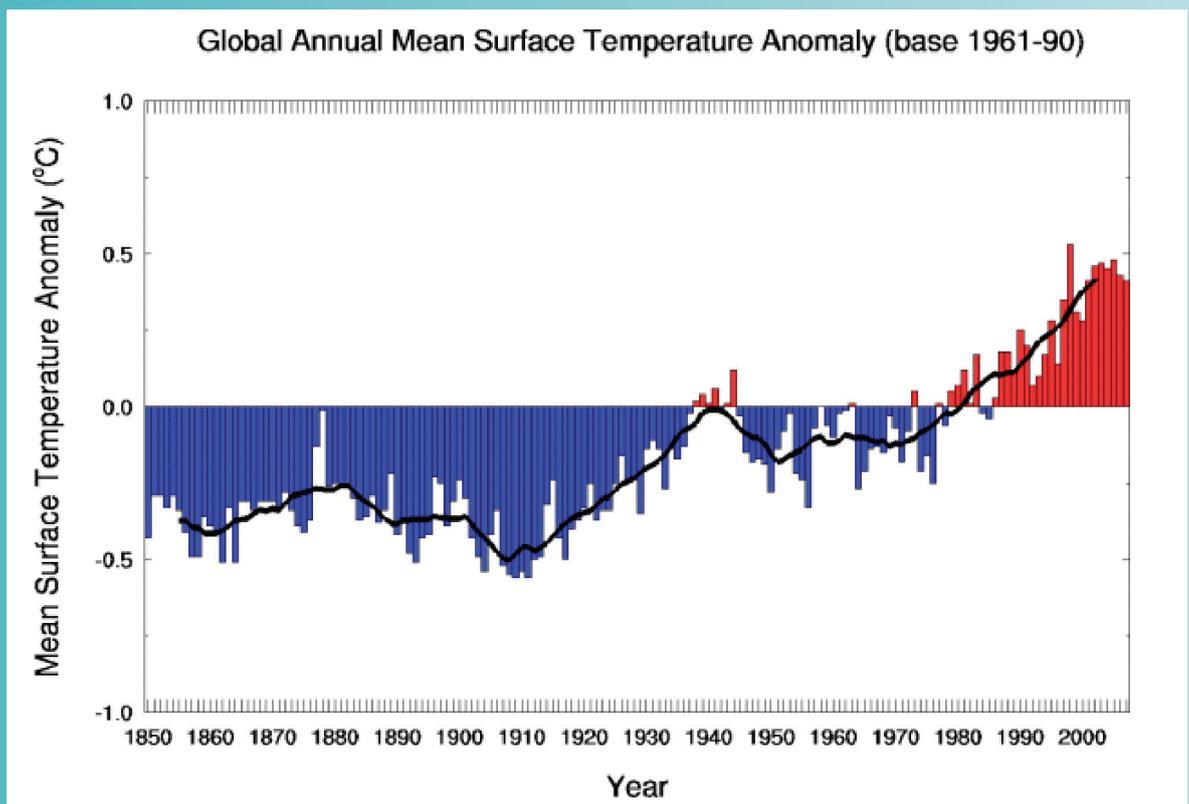


Figure 1 Global annual mean surface temperature anomaly (BoM(a), 2009)

Observed changes in WA temperature and rainfall

Like global temperatures, WA temperatures have also increased since 1910. The strongest trend has been observed since the 1950s (**Figure 2**), though in the far north of WA there has been a slight cooling in average temperatures. Across the state as a whole, mean annual temperatures have increased since 1910 by approximately 0.8°C.

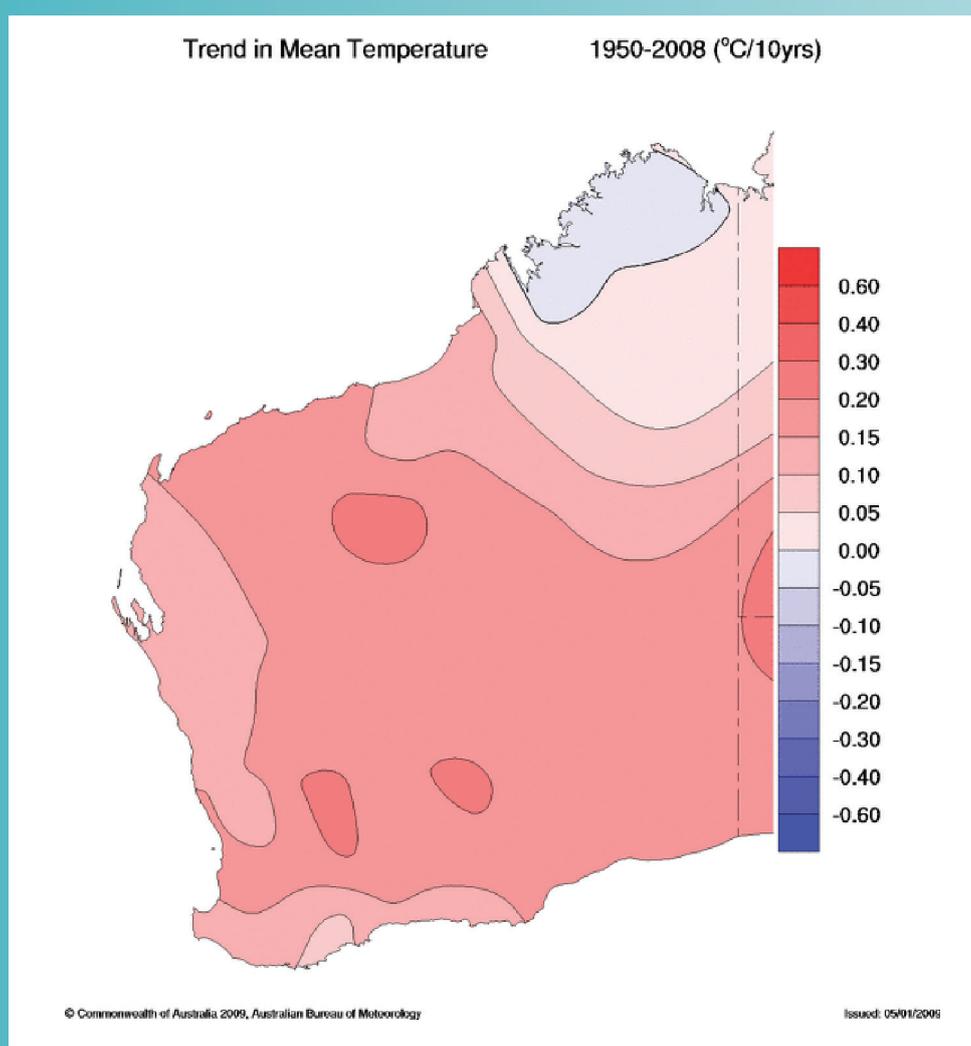


Figure 2 Trend in annual mean temperature 1950-2008 (BoM (b), 2009)

In south-west WA, a drying trend has been observed (**Figure 3**). The rainfall decline has been most apparent in late autumn and early winter, with a major drop in rainfall totals occurring in the 1970s, and possibly another more recently in the 1990s. Averaged across south-west WA, step decrease in total annual rainfall of almost 10% was seen in the mid-1970s, though individual locations would have experienced a greater decrease.

Useful links:

www.ioci.org.au

www.bom.gov.au

www.csiro.au

www.dec.wa.gov.au/climatechange

www.climatechangeinaustralia.gov.au

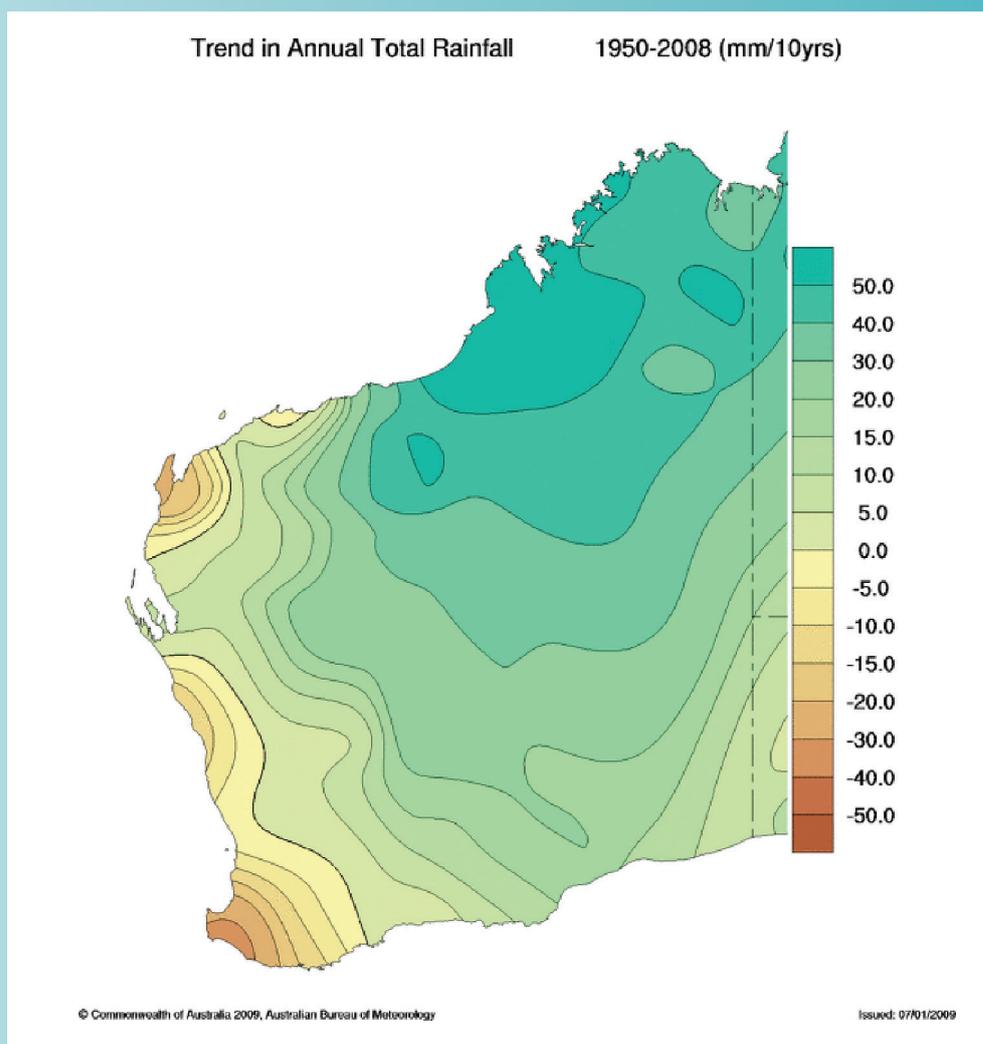


Figure 3 Trend in annual rainfall from 1950-2008

These maps are interpolated from high quality station data (BoM (c), 2009)



References

Bureau of Meteorology (BoM)
(a) ***Timeseries - Global Climate Variability and Change***
Commonwealth of Australia 2009,
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http://www.bom.gov.au/cgi-bin/silo/reg/cli_chg/g_timeseries.cgi
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(b) ***Trend maps - Australian Climate Variability and Change: Trend in Mean Temperature***
Commonwealth of Australia 2009,
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http://www.bom.gov.au/cgi-bin/silo/reg/cli_chg/trendmaps.cgi?variable=tmean®ion=wa&season=0112&period=1950
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(c) ***Trend maps - Australian Climate Variability and Change: Trend in Annual Total Rainfall***
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