

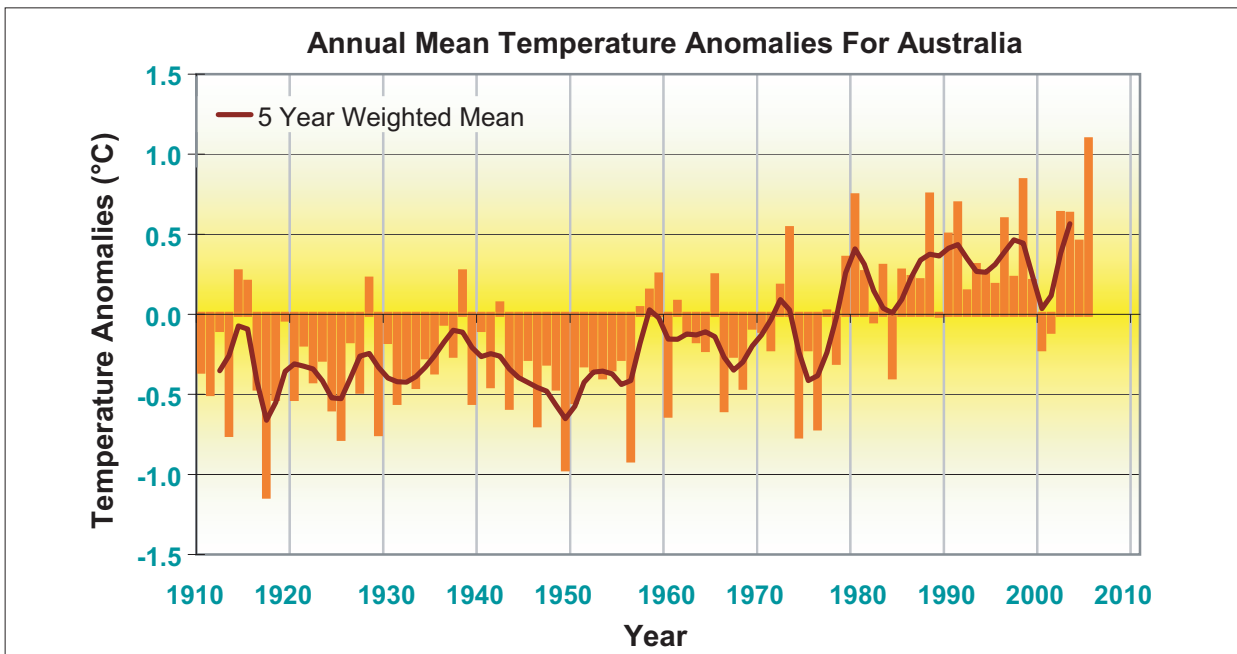
1. Overview

Australia's hottest year on record

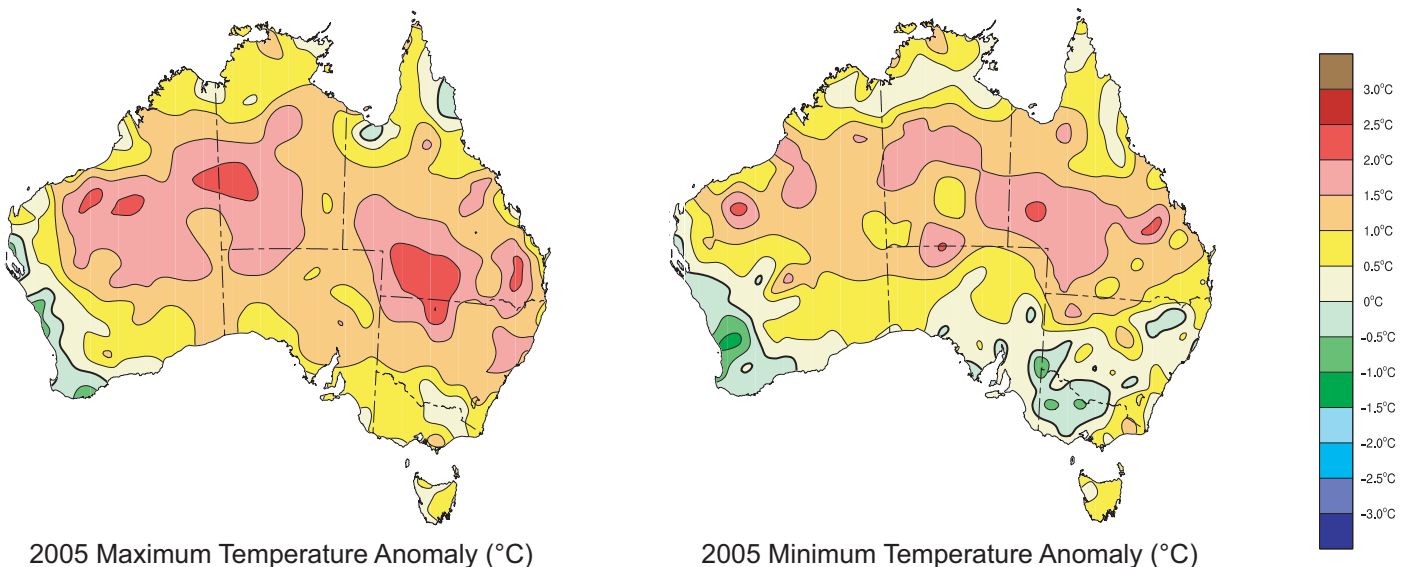
Australia recorded its warmest year on record in 2005. Data collected by the Bureau of Meteorology indicate that the nation's annual mean temperature for 2005 was 1.09°C above the standard 1961-90 average, making it the warmest year since reliable, widespread temperature observations became available in 1910. The previous record departure of +0.84°C was set in 1998. While these temperature departures may seem relatively small, a 1°C increase in mean temperatures is equivalent to many southern Australian towns shifting northward by about 100 km.

A record mean temperature was set because both daytime and night-time temperatures were high: the annual mean maximum temperature was 1.21°C above average (equal highest), while the mean minimum temperature was 0.97°C above average (second highest). Temperatures were consistently above average throughout the year, but autumn was particularly warm. April had the largest Australian mean monthly temperature anomaly ever recorded, with a monthly anomaly of +2.58°C breaking the previous record of +2.32°C set in June 1996.

Despite some regional variations, the warm conditions in 2005 were remarkably widespread. Apart from Victoria and Tasmania, all States and the NT recorded 2005 mean temperatures among their top two warmest years on record. The only region recording a cooler than normal year was a coastal strip of WA extending from Cape Leeuwin to Carnarvon.

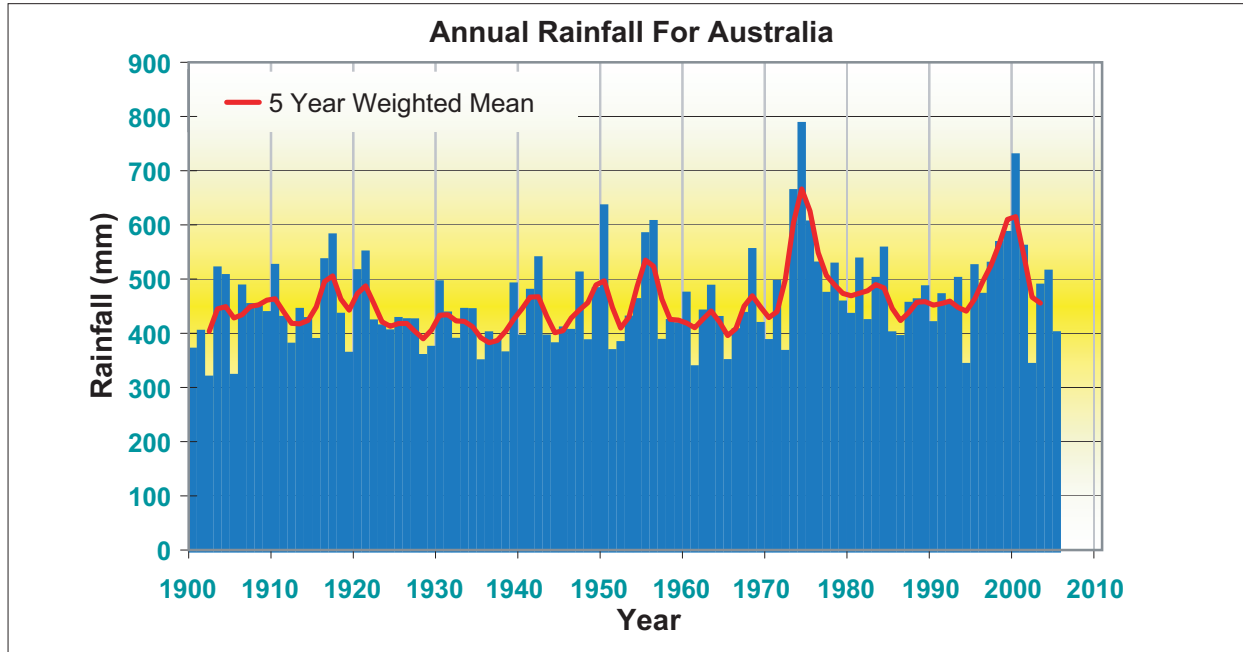


Australian annual mean temperature anomalies (based on 1961-90 normal) since 1910



Unlike other notably warm years, such as 1991 and 1998, temperatures during 2005 were not boosted by a significant El Niño event, making the record warmth even more unusual. The 2005 record is yet another sign that our climate is warming. Since 1979, all but four years have been warmer than the 1961-90 average in Australia.

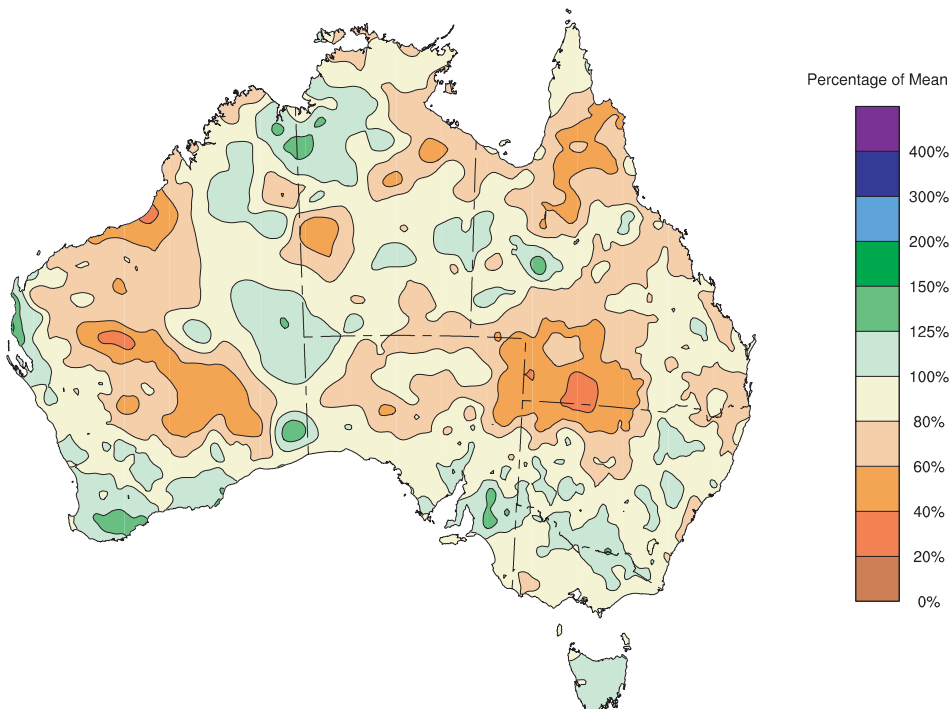
Australian temperatures have increased by approximately 0.9°C since 1910, consistent with global warming trends. Scientific studies have linked global and Australian temperature increases to the enhanced greenhouse effect. Whilst this warming trend is expected to continue into the decades ahead, annual temperatures are influenced by numerous factors, including natural variability, so 2006 will not necessarily be warmer than 2005.



Australian annual mean rainfall (mm) since 1900

Warmer-than-normal temperatures were not confined to Australia in 2005, with many other regions reporting an exceptionally warm year. According to a preliminary estimate released by the World Meteorological Organization (WMO) on 15th December 2005, the global mean temperature for 2005 was about 0.48°C above average, putting 2005 amongst the four warmest years globally since reliable, widespread records commenced in 1861.

In addition to being warm, the early months of 2005 were also very dry over much of Australia. The January-May period was the second driest on record. From June onwards rainfall reverted to near- to above-normal levels over much of Australia, but the lack of sustained above-normal rainfall led to the continuation of multi-year water shortages in parts of Australia, particularly in Queensland and the southeast.



2005 rainfall compared with the 1961-1990 annual average.

In reference to the 1961-90 annual mean, most of Australia was drier than average in 2005 (see map left), with substantial parts of Queensland and WA having less than 80% of the annual mean. However, in comparison with the historical record (see page 12), large areas recorded annual totals in the "average" range (deciles 4-7). Exceptions to this pattern occurred in Queensland and across a broad zone through central WA, where totals in deciles 1 to 3 were common, including a few small patches of driest on record.

The national-average annual rainfall in 2005 was about 399 mm, substantially below the long-term average of 472 mm and the 2004 value of 512 mm. Australia's area-averaged rainfall is calculated from a network of around 5,000 rainfall stations, most of which are staffed by volunteer observers. Observations from this network reveal that, when compared to their respective historical records, Tasmania was the wettest State in 2005, while Queensland and WA were the driest.

Capital city statistics (inside back cover) show that, with the exception of Perth, all recorded maximum and minimum temperatures above the long-term average. Melbourne recorded its equal warmest year on record for maximum temperatures, with a departure from normal of +1.4°C. Both Brisbane and Canberra were also the same margin above average. Melbourne was also the driest capital with 590 mm falling on 130 days, while Darwin was the only centre to exceed 1,000 mm for the year; it had 1,360 mm on 115 days, nearly 350 mm below normal. In relation to the long-term record, Brisbane and Sydney were the driest in that their totals were in the lowest 10% of all annual totals. The extremes in temperature for the year were 42.9°C at Melbourne on 31st December and -4.7°C at Canberra on 2nd June.

	Rainfall (mm)			Maximum Temperature (°C)			Minimum Temperature (°C)		
	2005 total	Normal	Rank (of 106)	2005 anomaly	Normal	Rank (of 96)	2005 anomaly	Normal	Rank (of 96)
Australia	399	472	78 th	+1.21	28.55	1 st	+0.97	15.07	2 nd
New South Wales/A.C.T.	498	566	57 th	+1.34	23.91	4 th	+0.62	10.75	8 th
Northern Territory	477	548	61 st	+1.45	31.88	1 st	+1.42	18.45	2 nd
Queensland	478	630	88 th	+1.26	29.86	3 rd	+1.24	16.57	3 rd
South Australia	206	236	57 th	+1.40	26.71	1 st	+0.70	12.20	4 th
Tasmania	1250	1168	24 th	+0.38	14.71	12 th	+0.53	5.99	4 th
Victoria	616	654	61 st	+0.77	19.86	6 th	+0.22	8.34	16 th
Western Australia	306	352	72 nd	+0.98	29.27	2 nd	+0.85	15.66	3 rd

Summary of 2005 mean rainfall and temperatures for Australia and States/Territories. Normal values are calculated using 1961-90 averages. Ranks are from highest to lowest. Mean annual temperatures can be calculated from the average of mean maximum and minimum temperatures.

