

6. Significant Events

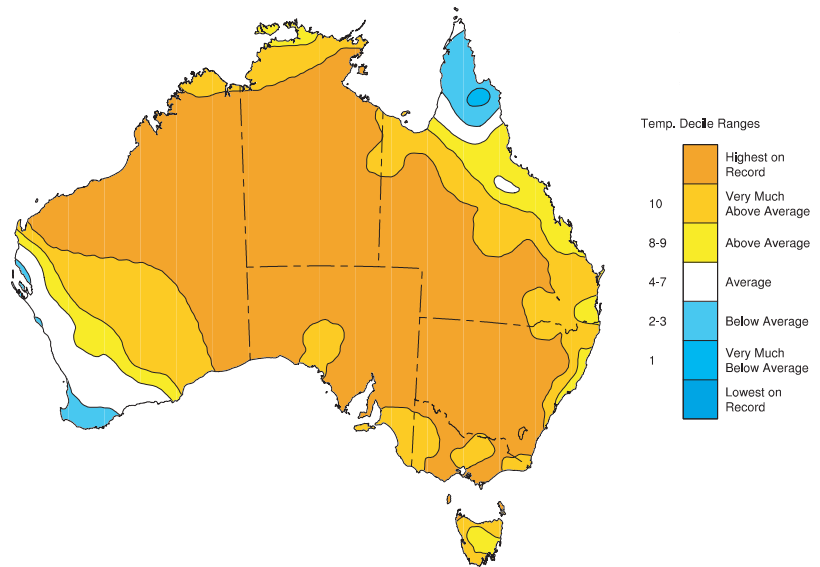
Heatwaves: The summer of 2004/05 was extremely hot over the Pilbara and much of the Gascoyne in northwest WA. With a mean January maximum of 44.8°C, Nyang Station in the Gascoyne established a new Australian January record and also equalled Australia's hottest ever month (February 1998, also at Nyang). At Marble Bar, the mean summer maximum temperature of 43.4°C was its highest on record (since 1901), and was only 0.2°C below the Australian record set at Nyang in 1997/98.

A prolonged burst of heat affected much of western Queensland and parts of far northwest NSW during the second half of February and very early March. Charleville in southwest Queensland had fifteen consecutive days of 37.8°C (100°F) or higher from 16th February to 2nd March, its longest spell of such heat on record.

The entire month of April was extraordinary in terms of widespread high temperatures. Australia-wide maximum temperatures were an astounding 3.11°C above normal for the month. This was not only 0.7°C above the previous April record, but the largest anomaly for any month since Australia-wide monthly temperature records began in 1950, substantially higher than the previous record (+2.68°C) set in October 1988. Equally remarkable was the widespread nature of the high temperatures, with 85% of the continent experiencing decile 10 maximum temperatures.

For 53% of the continent, this was the highest mean April maximum temperature on record. With minimum temperatures also at record levels (2.05°C above average), the April mean temperature anomaly was +2.58°C, 0.85°C above the previous April record set in 2002 and 0.26°C above the previous record for any month (June 1996). The April mean temperature (see map) was highest-on-record for 66% of the continent, with 86% of the continent experiencing mean temperatures for the month in the highest 10% of recorded values.

May continued in a similar vein, with an Australian maximum temperature anomaly of +1.95°C, the second warmest May on record (after 2002). With such warm temperatures in April and May, it was of little surprise that the autumn Australia-wide mean temperature anomaly of +1.62°C was more than 0.5°C above the previous record of +1.10°C, set in 1958.



April Mean Temperature Deciles

Much of eastern and parts of central Australia were affected by a notable heatwave during late December 2005 and early January 2006. Temperatures of 39°C or higher were very widespread over the NT, Queensland, SA, NSW and northern Victoria from 21st December, apart from a brief respite in SA, NSW and Victoria over Christmas. Many site records for December were set on either the 23rd, 30th or 31st, when hot northwest winds brought heatwave conditions to the coast. In Melbourne it reached 42.9°C on 31st December, its highest December maximum since 1898 and the highest on record at the current site and using current instrument standards. Furthermore, the 31st saw the temperature reach 45°C at twelve Victorian stations, an unprecedented event for December. Adelaide's maximum of 42.5°C on 30th December was a December record for the Kent Town site, and the highest December maximum at any central Adelaide site since 1939. SA also saw a number of very high minimum temperatures on 31st December as a trough crossed the state during the morning, with Port Augusta (33.2°C) setting a new state record for December.

Cold Snaps: Despite the generally mild winter, three major low-elevation snow events occurred during the season. The first affected the Central and Northern Tablelands of NSW and adjoining southern Queensland on 22nd and 23rd June. Some 3-4 cm of snow fell in the Guyra-Walcha-Niangla area (Northern Tablelands), and at 3pm on the 23rd, Guyra's temperature was only 0.2°C, making it one of the coldest outbreaks in central and northern NSW in about 20 years. In what was described as one of the heaviest snowfalls in decades, a cold outbreak on 8th and 9th July dumped about 40 cm of snow on the Monaro district of NSW. Roofs collapsed and tree branches were brought down under the weight of the snow, and some rural communities were isolated for two days.

The winter's most significant event occurred during 10th and 11th August over Tasmania, Victoria and parts of southern NSW and the ACT. Snow fell at sea level at many locations in Victoria's central district and southwest Gippsland, making it the most significant low-level snow event in Victoria since August 1951. Much of western and southern Tasmania also had snow to sea level, and this was the heaviest snow seen around Hobart since 1994. Numerous roads were closed on the morning of the 10th, mostly in the west of the state, isolating several towns until at least the 12th. A burst of snow shower activity in southern Tasmania on the morning of the 11th closed more roads in the south and southeast, including all roads linking Hobart with areas to the south. A total of 25 schools were closed, mostly in the south, affecting 6,500 children. A number of vehicle accidents occurred as a result of icy and slippery roads, including a school bus carrying 25 children that slid off the Lyell Highway near Strahan on the 10th.

Moderate to heavy snowfalls were recorded in the Snowy Mountains and on the Brindabella Ranges near Canberra, closing some roads in the ACT. Light snow settled in some western suburbs of Canberra.

Drought: The first five months of 2005 were extremely dry for much of Australia, with 44% of the country experiencing rainfall in the lowest 10% of recorded totals (*i.e.*, decile 1). While such a short term dry for Australia is not unusual, the dry start to 2005 followed only patchy or poor recovery during the intervening period after the devastating 2002-03 El Niño-related Australian drought. Over January to May, the Australian average rainfall of only 168 mm was the second lowest, after 1965, in a record dating from 1900. The prime agricultural areas of southern Queensland, central and northern NSW, and southern SA were hit particularly hard. Widespread heavy rain in June and July removed many of these deficiencies, and by the end of the year the only deficiencies of any consequence dating from January were situated between Bourke (NSW) and Charleville (Qld), and in far north Queensland.

Floods/Heavy Rain: An intense low-pressure system developed over Gippsland on 2nd February resulting in 48 hours of gales, heavy rain, flooding and exceptionally low temperatures across southeastern Australia. Snow even fell in the alpine regions. Many stations in the Melbourne region received falls in the 150-200 mm range, with nearly all of this occurring on the two days 2nd and 3rd February. The highest totals within 50 km of Melbourne were 196 mm at both Mount Gisborne and Dunns Hill (Dandenong Ranges). On the wettest day, 3rd February, twenty stations with 50 years or more of record set all-time daily rainfall records. Melbourne, with 113 mm, was one of these (previously 108 mm on 29th January 1963). Another 36 stations set daily records for February, mostly in Victoria, but with some in southern NSW. Extreme low maximum temperatures occurred in many locations in southern inland NSW and northern Victoria on the 2nd and 3rd. A new Australian record low maximum temperature for February (-0.2°C) was set at Mt Hotham on the 3rd, breaking the previous record of 1.0°C set at Mt Baw Baw on 16th February 1998. A NSW state record also occurred at Thredbo Top Station (0.3°C), the previous record being 2.0°C at the same location on 22nd February 1993. Associated with these low temperatures, the alpine areas of NSW and Victoria received their heaviest February snowfalls since at least 1993. Several towns with long-term temperature records established new low maximum temperatures for February; in some instances the old record was smashed by an astonishing 3 to 5°C .

Torrential rain fell over southern WA from 31st March to 2nd April in association with a rapidly intensifying low. The heaviest rainfall was recorded at Broomehill near Katanning where 142 mm fell in the 24 hours to 9 am on the 1st. Further heavy rain on the 1st towards the south coast broke many daily and 48-hour records for the area. Kendenup recorded 126 mm to 9 am on the 2nd, and Albany recorded 186 mm in the three days to the 2nd, including a daily fall of 108 mm on the 2nd. Flooding was widespread in the area. Many low maximum temperature records for March were set on the 31st; the 10.7°C at Manjimup was a record low for WA.

Extremely high rainfall and gale force winds occurred over the Gold Coast and far northern NSW on the 29th and 30th June in association with an upper trough system and east coast low. Some spectacular falls were generated, with the highest totals in the 24 hours to 3pm on the 30th being Loder Creek Dam (587 mm), Carrara (585 mm), Evandale (578 mm) and Biggera (563 mm). These were the heaviest June daily rainfalls seen in Queensland since the record-setting event of 1967. In NSW, major flooding occurred on the Richmond-Wilsons and Brunswick Rivers. Major flooding was also experienced around Tweed Heads, with 382 mm to 9 am on the 30th being its wettest day on record. During the deluge, 377 mm fell between 5 am and 12.30 pm, of which 115 mm fell from 9 am to 11 am. The 48-hour total ending 1st July was 613 mm.

Very heavy rain fell over the northward-facing escarpment of Tasmania's Central Plateau in the 24 hours to 9 am on 31st August. Breona registered 251 mm, the highest August daily rainfall recorded in Tasmania, and major flooding was reported throughout the Meander and North Esk River basins.

Severe Local Storms: The west coast of WA was hit by three separate outbreaks of tornadoes, each in association with the passage of a vigorous cold front. The first occurred on 16th May when several tornadoes hit southern suburbs of Perth, as well as Bunbury. The second tornado outbreak caused significant damage in Geraldton on 16th August, while the third outbreak occurred in the southwest (including areas near Perth) on 17th September.

The October to December period was exceptionally stormy over the eastern states, particularly Queensland and NSW. In Queensland it was the most active thunderstorm season on record. During this three-month period, severe storms with flash flooding, violent winds and sometimes damaging hail, were almost a daily occurrence somewhere across eastern Australia. In the Brisbane area alone there were twenty severe thunderstorms; the average is four. Some of the more noteworthy events are as follows: 12th October - severe thunderstorms produced large damaging hail on the northern Gold Coast and the northern Sunshine Coast. The main severe cell developed near Rathdowney early in the afternoon and moved northeast with hail ranging up to 7 cm in diameter (cricket ball size) reported from Pacific Pines, Oxenford and Helensvale. More than 2,000 cars were reported damaged, many with windows broken. Traffic on the Gold Coast Motorway came to a standstill after numerous accidents. 25th November - a tornado was reported at Mulgildie (Qld), south of Monto; twelve homes were partially or completely unroofed, farm sheds demolished and a piggery flattened. 27th November - a widespread outbreak of severe thunderstorms in the southeast quarter of Queensland, especially around Brisbane and Gladstone. A tornado was observed at Narangba, an outer northern suburb of Brisbane. Trees were completely sheared off and garden sheds blown away. A caravan was overturned, and tiles and iron sheets were torn off roofs.

A. Heavy rain 2nd & 3rd Feb. Melbourne (A1) broke all-time 24-hour record with 113.4 mm. Also severe winds, especially in northern Tas.

B. Heavy rain in southern WA 31st March-2nd April, including 186 mm at Albany (B1).

C. Very dry autumn; driest on record in SA & Victoria.

G. Very hot summer in Pilbara & Gascoyne; mean max temp of 44.8°C in Jan at Nyang (G1) equalled the record for any month in Australia.

H. Hot second half of Feb in southern inland Qld; Record run of 15 days over 100°F (37.8°C) from 16th Feb to 2nd March at Charleville (H1).

I. Very cold summer days on 2nd & 3rd Feb; Max -0.2°C at Mt Hotham (I1) on 2nd, the first sub-zero Feb max on record in Australia. Kerang (I2) max of only 11.7°C on the 2nd, broke its old record by 5.3°C.

J. A brief but intense heatwave affected SE Qld from 5th-8th Oct, with max temps 8 to 12°C above average. Amberley (J1) recorded 40.2°C on the 6th, its earliest >40°C day on record, followed by 39.9°C on 7th & 8th.

M. Eyre Peninsula, 11th Jan: Nine people killed & around 110 injured in major bushfires at Wangary (M1). More than 145,000 hectares burned, causing around \$A26 million damage. Significant fires also occurred in the Mt Lofty Ranges near Adelaide.

N. Tropical cyclone *Ingrid*, 6th-17th March: The first cyclone to reach category 3 in three states. 445 mm of rain in 24 hours at Emma Gorge (N1) as *Ingrid* made final landfall in WA.

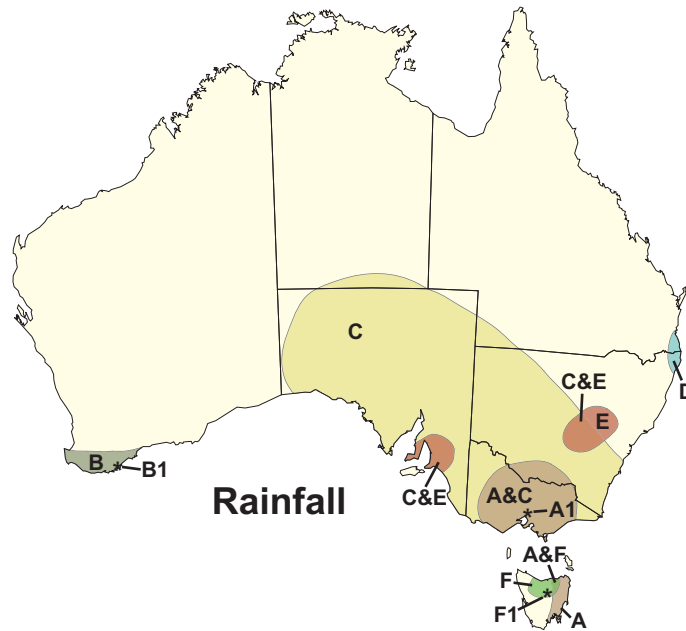
O. Tornado outbreaks around Perth on 16th May & 17th Sep.

P. Tornado outbreak around Geraldton on 16th Aug.

Q. Severe hailstorms in SE Qld on 12th & 13th Oct; 7 cm hail on the Gold Coast on the 12th with widespread damage.

R. Mt Hotham, 30th Aug: A new Victorian record wind gust of 198 km/h.

S. Canberra, 2nd Dec: The most significant severe thunderstorm to affect the city since 1992/93. One person died & there was widespread property damage.



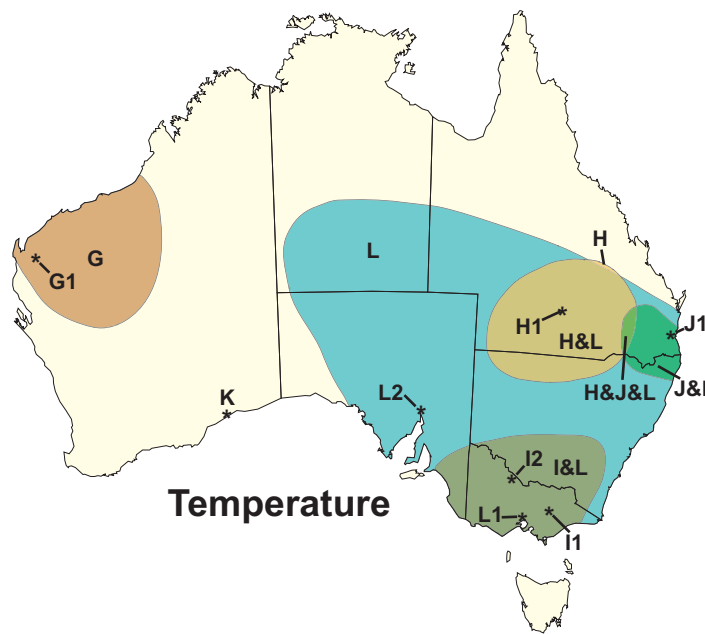
D. Extreme local rainfall on Gold Coast & northern NSW on 29th & 30th June. Several 24-hour totals over 500 mm; highest 587 mm at Loder Creek Dam.

E. Heavy rain (some 24-hour 100+ mm falls) & flooding in first week of Nov around Adelaide & central NSW.

F. Heavy rain & flooding in northern Tas on 31st Aug; 251 mm at Breona (F1) was a Tas. Aug 24-hour record.

K. Eyre recorded a minimum of 0.9°C on 2nd Dec and a maximum of 47.5°C on 19th Dec, giving a monthly temp range of 46.6°C, the largest reliably recorded in Australia.

L. Heatwave from 21st Dec. Many monthly site records broken, especially on the 30th & 31st in SA & Victoria; Melbourne (L1) had its hottest Dec day since 1898 with 42.9°C on the 31st. The minimum of 33.2°C Port Augusta (L2) on the same day, was a SA state Dec record.



T. Low-elevation snow events: North NSW/South Qld on 22nd & 23rd June, Monaro district in NSW on 8th & 9th July, and Tas & southern Vic on 10th & 11th Aug. This was the first widespread snow to sea-level in Victoria since Aug 1951. Low max temp records were set in four states - Vic: Mt Hotham (-6.7°C on 10th, T1) was an Australian Aug record; Tas: Mt Wellington (-5.0°C on 11th, T2) was a record for any month; Qld: Applethorpe (7.0°C on 12th, T3) was an Aug record; & NSW: Thredbo Top Station (-6.4°C on 11th, T4) equalled the Aug record.

U. Perth, 15th to 21st Jan: Smoke from a deliberately lit bushfire periodically engulfs the city, reducing visibility & causing a health hazard. Both Perth Airport & Jandakot Airport were closed at times to air traffic using visual flying rules.

V. Wilsons Promontory National Park, April: A bushfire that burned 6,143 hectares & continued throughout the month, was finally brought under control on the 29th.

