



**Australian Government**  
**Bureau of Meteorology**

**HEAD OFFICE**  
Bureau of Meteorology  
GPO Box 1289 Melbourne VIC 3001 Australia

## **SPECIAL CLIMATE STATEMENT 19**

### **A prolonged spring heatwave in central and south-eastern Australia**

*First Issued 24th November 2009*  
*Updated 2<sup>nd</sup> December 2009*

*National Climate Centre*

Cite: National Climate Centre, 2009. A prolonged spring heatwave over central and south-eastern Australia, Bureau of Meteorology, Special Climate Statement 19.

---

Australia's National Meteorological Service

700 Collins Street Docklands Tel: +61 3 9669 4000 Fax: +61 3 9669 4699 [www.bom.gov.au](http://www.bom.gov.au)

ABN 92 637 533 532

## Introduction

An exceptionally prolonged heatwave has affected large parts of central and south-eastern Australia during November 2009, resulting in the month being the hottest November on record for many areas. Temperatures well above average began to influence much of the region on the weekend of 7-8 November. The hot spell continued largely unbroken, except in some southern and coastal areas, until 15 November. Slightly cooler conditions then prevailed on 16-17 November, particularly in Victoria and southern South Australia, before the heat returned from the 18<sup>th</sup>, with the highest temperatures of the whole event between November 18 and 20. The most intense heat of the event broke down across Victoria and South Australia from the 20<sup>th</sup> onwards as a trough crossed the region, bringing widespread substantial rain on the 21<sup>st</sup> and 22<sup>nd</sup>. However, very hot conditions persisted in much of New South Wales, and southern Queensland, through the weekend of 21-22 November. Conditions gradually cooled after that, with temperatures mostly close to normal through the last week of the month.

The first stage of the event, broadly from 7-15 November, was more exceptional for its duration than its intensity. Few records were set for individual high temperatures, but many were set, especially in South Australia, for the number of consecutive days above high temperature thresholds such as 35 or 40°C. Prolonged hot spells are rare in November, compared with summer and early autumn, in southern Australia for a number of reasons; most significantly, that the subtropical high pressure belt is normally much further north in November than it is between December and March, allowing frontal systems to influence the southern continent on a regular basis instead of passing to the south as is more typical later in the summer.

Individual November record high temperatures became much more widespread in the second stage of the event; in central Australia from the 17<sup>th</sup> and further south and east from the 18<sup>th</sup> onwards. During this phase of the event NSW state records for November were broken for both maximum and minimum temperatures. Tibooburra's 46.4°C on the 18<sup>th</sup> broke the previous record of 46.1°C set at Coonamble on 19 November 1944, before Wanaaring lifted the record further by reaching 46.8°C on the 20<sup>th</sup>. White Cliffs Airport fell to only 33.3°C overnight on the 19<sup>th</sup>, well above the previous record of 31.7°C at Cobarr on 18 November 1944. November record high maximum temperatures have been set during the event over 10.2% of Australia, including 41% of New South Wales and 29% of South Australia, with 68 long-term stations setting records for highest November maximum temperature during the event, and 39 for minimum temperature.

As a result of the prolonged heatwave, mean monthly temperatures, both maxima and minima, were exceptionally high over much of south-eastern Australia. The mean monthly temperature for New South Wales was 4.61°C above normal, the largest monthly anomaly ever recorded for an Australian state. The Victorian mean temperature anomaly of +4.36°C also broke the previous record. While conditions were less extreme in the north and west of the continent, it was still Australia's hottest November on record, with a mean temperature anomaly of +1.87°C.

## An extended period of extreme heat

The duration of this event was exceptional, especially in South Australia and parts of western Victoria. In Adelaide, there were eight consecutive days above 35°C. This is far in excess of the previous November record of four (see Table 1)<sup>1</sup>. This is now the third exceptional prolonged heatwave that has occurred in Adelaide in the last 20 months; the two longest runs of consecutive days above 35°C have been fifteen in March 2008 and nine in January-February 2009 (see Special Climate Statements 15 and 17 respectively). The November 2009 event equals the pre-2008 record

<sup>1</sup> A heatwave is locally defined in Adelaide as five consecutive days of 35°C or above or three consecutive days above 38°C. This was the first time such an event has occurred in spring.

for any time of year. Adelaide also experienced persistently high overnight temperatures during the event, easily breaking the November record for consecutive nights above 20°C. Conditions were even more extreme close to Adelaide, with six consecutive days above 40°C at Murray Bridge, a record for any time of year. Murray Bridge had never previously had even two consecutive days above 40°C in any previous November.

Records for consecutive days above thresholds were also widespread through most of the rest of the southern half of South Australia, particularly the south-east and the Eyre Peninsula. Ceduna had six consecutive days above 40°C (equalling their all-time record for any month) and Kyancutta eight, while Cape Borda (Kangaroo Island) broke its November record high temperature on four successive days. Port Lincoln set an all-time record for any time of year with a run of eight consecutive days of 30°C or above and Mount Gambier's nine consecutive days above 30°C was second only to a run of eleven days in January-February 1956. Other areas to set similar records included northern and western Victoria (e.g. Nhill, Bendigo, Kerang) and southern inland New South Wales (e.g. Hay and Deniliquin). Melbourne missed out on equalling its November record of six consecutive days above 30°C when the temperature peaked at 29.8°C on the 12<sup>th</sup>.

During the second stage of the event, as the heat intensified in inland Australia, more records were set at some locations for consecutive days above 40°C, especially in northern South Australia, northern New South Wales and southern inland Queensland, with locations such as St. George and Walgett more than doubling their existing records for consecutive November days above 40°C. There were also a number of new records set for consecutive nights above thresholds, most notably at Gunnedah where the four consecutive nights above 25°C from 20-23 November was a record for any time of year.

#### Very high average monthly temperatures

With abnormally hot conditions prevailing for much of the month, average temperatures for November were well above long-term normals<sup>2</sup>, especially during the day (Figure 1). Maximum temperatures were at least 5°C above normal over much of inland New South Wales away from the far west; most of Victoria, except for the coastal fringe; South Australia south and east of Port Pirie; and were more than 7°C above normal in parts of central New South Wales. Overnight minimum temperatures were slightly less extreme, but still 4 to 6°C above normal over much of inland New South Wales, northern Victoria and eastern South Australia.

Monthly mean temperature anomalies in the southeastern states were well beyond anything previously experienced in the historical record (Table 3). New South Wales' mean temperature was 4.61°C above normal, the largest monthly anomaly ever recorded for an Australian state, breaking the record of +3.97°C set in South Australia in June 1957. This record was also surpassed by Victoria (+4.36°C)<sup>3</sup>. In both states November was hotter than a normal January, and Victoria's mean monthly temperature of 20.39°C has been surpassed by only one December (1994). Both states broke their November records by more than a degree, while South Australia (+3.20°C) and Tasmania (+2.43°C) also set November records. Despite more moderate conditions in the north and west, the extreme heat in the south-east was sufficient to give Australia its hottest November on record, 1.87°C above normal.

<sup>2</sup> The standard reference period for calculation of long-term normals is 1961-90, unless otherwise stated. State area-averaged temperature anomalies commence in 1950.

<sup>3</sup> Previous record anomalies for any month: mean temperature NSW +3.49°C (Jan 2006) and Victoria +3.16°C (Jan 1981); maximum temperature NSW +4.12°C (Aug 1982), Victoria +3.82°C (Nov 1982) and Tasmania +2.92°C (Feb 2001); minimum temperature NSW +3.48°C (Jan 2006) and Victoria +3.25°C (Jun 1991).

Records were also set for maximum temperatures, with New South Wales (+4.99°C) and Victoria (+4.92°C), both setting records for the largest anomaly ever recorded for an Australian state (previously +4.38°C in South Australia in August 1982). Tasmania's anomaly of +3.18°C was the largest ever recorded for any month in that state. Nationally, maximum temperatures for November were the second-highest on record, falling 0.05°C short of the record set in 2006.

The set of records was completed by minimum temperatures, which were the highest on record for November for Australia (anomaly +1.61°C), as well as for New South Wales (+4.22°C), Victoria (+3.81°C) and South Australia (+3.36°C). The New South Wales and Victorian anomalies were records for those states for any month but fell short of the national record of +4.38°C, set in South Australia in January 2006.

At the station level, 136 long-term stations had their highest mean maximum temperature on record for November (Table 2), and 118 had their highest mean minimum temperature. Of these stations, 80 had their largest monthly maximum temperature anomaly on record for any month, and 49 their largest monthly minimum temperature anomaly. Maximum temperature records covered 16% of Australia (Figure 2), including all of Victoria and 71% of New South Wales, while minimum temperature records covered 9% of Australia, including 88% of Victoria and 27% of New South Wales and South Australia. Monthly maximum temperature anomalies reached +7.9°C at Cowra Research Centre and +7.8°C at Bathurst, which fell just short of the largest monthly anomaly recorded at an Australian station, +8.1°C at Rutherglen Viticultural College in October 1914. Some stations, particularly in the Adelaide region, set November record mean maximum temperatures by more than 3°C.

Despite more moderate conditions in September and October, the exceptional November was sufficient to lift mean spring temperatures to record levels in New South Wales, Victoria and Tasmania (Table 4). Nationally it was the third-hottest spring on record, while the combined winter-spring period was easily the hottest on record, with the six-month anomaly of +1.22°C well ahead of the previous record of +0.91°C set in 1988.

#### Large numbers of days above thresholds

The prolonged hot spell has seen numerous records broken for the total number of November days above thresholds (Table 5), with some set before the month was half over. Before 2009 Adelaide had never had more than six days of 35°C or above in any November. This year the temperature exceeded 35°C on eight consecutive days and eleven days above 35°C have been recorded in total. Numerous other locations, principally in South Australia (especially in the south-east and on the Eyre Peninsula) and northern Victoria, also broke similar records. A number of stations have also experienced a record number of nights above 20°C or 25°C. Cape Borda has equalled its record for the greatest number of nights of 20°C or above for any month of the year.

#### Scattered individual records in the first week, becoming more widespread in the second, especially in NSW

During the first part of the event, the length of the event was more notable than individual extreme high temperatures. Nevertheless, a few extreme records for individual days were still set (Table 6), especially at some of the more exposed coastal stations on the Great Australian Bight and Kangaroo Island. At Cape Borda, the previous November record was exceeded on four successive days from the 11<sup>th</sup>, peaking at 36.2°C on the 14<sup>th</sup>. During the early part of this period records were also set locally in northern Tasmania.

More extensive record high temperatures then developed over inland areas from the 16<sup>th</sup>, including central Australia, north-eastern South Australia and western New South Wales. A few November records were also set near the coasts of northern New South Wales and southern Queensland on the 17<sup>th</sup> as winds turned temporarily offshore. More extensive record-setting (Figure 3) occurred on the 18<sup>th</sup>, with record high maximum temperatures set over 16% of South Australia and 14% of New South Wales. Marree reached 47.4°C, the highest temperature of the event and the second-highest November temperature ever recorded in South Australia. Further records were set on the 19<sup>th</sup>; including a November record of 43.0°C at Adelaide and an all-time record of 44.0°C at Elliston on the Eyre Peninsula.

The most extensive record-breaking, however, occurred on the 20<sup>th</sup> as the extreme heat spread to much of New South Wales. Records were broken across many inland parts of the state away from the far south and west, including a new state record for November (46.8°C) at Wanaaring, and 46.6°C at Bourke. The area of record-breaking maximum temperatures covered 31% of the state in total. Canberra also equalled its November record (38.9°C) on this day.

Overnight minimum temperatures also set records during the later part of the event, especially over inland New South Wales where numerous stations failed to drop below 30°C on one or more occasions between the 19<sup>th</sup> and the 22<sup>nd</sup>. On the 20<sup>th</sup> Katoomba (24.7°C) fell only 0.3°C short of its all-time record high temperature for any month.

#### Contacts for further information

The following climate meteorologists may be contacted for further information about this event:

Blair Trewin (03-9669 4623, 0413 849 309)

Karl Braganza (03-9669 4344)

Andrew Watkins (03-9669 4360)

For queries specific to particular states:

NSW: Clinton Rakich (02-9296 1555)

SA: Darren Ray (08-8366 2664)

Tasmania: Ian Barnes-Keoghan (03-6221 2042)

Victoria: Harvey Stern (03-9669 4949)

NT: Todd Smith (08-8920 3813)

WA: Glenn Cook (08-9263 2237)

Queensland: Tamika Tihema (07-3239 8660)

#### General notes

Values in this statement are final values for November, subject to the Bureau's normal quality control processes.

Maximum temperatures prior to 1910 have not been considered for inclusion unless they are known to have been measured in a standard Stevenson screen or similar.

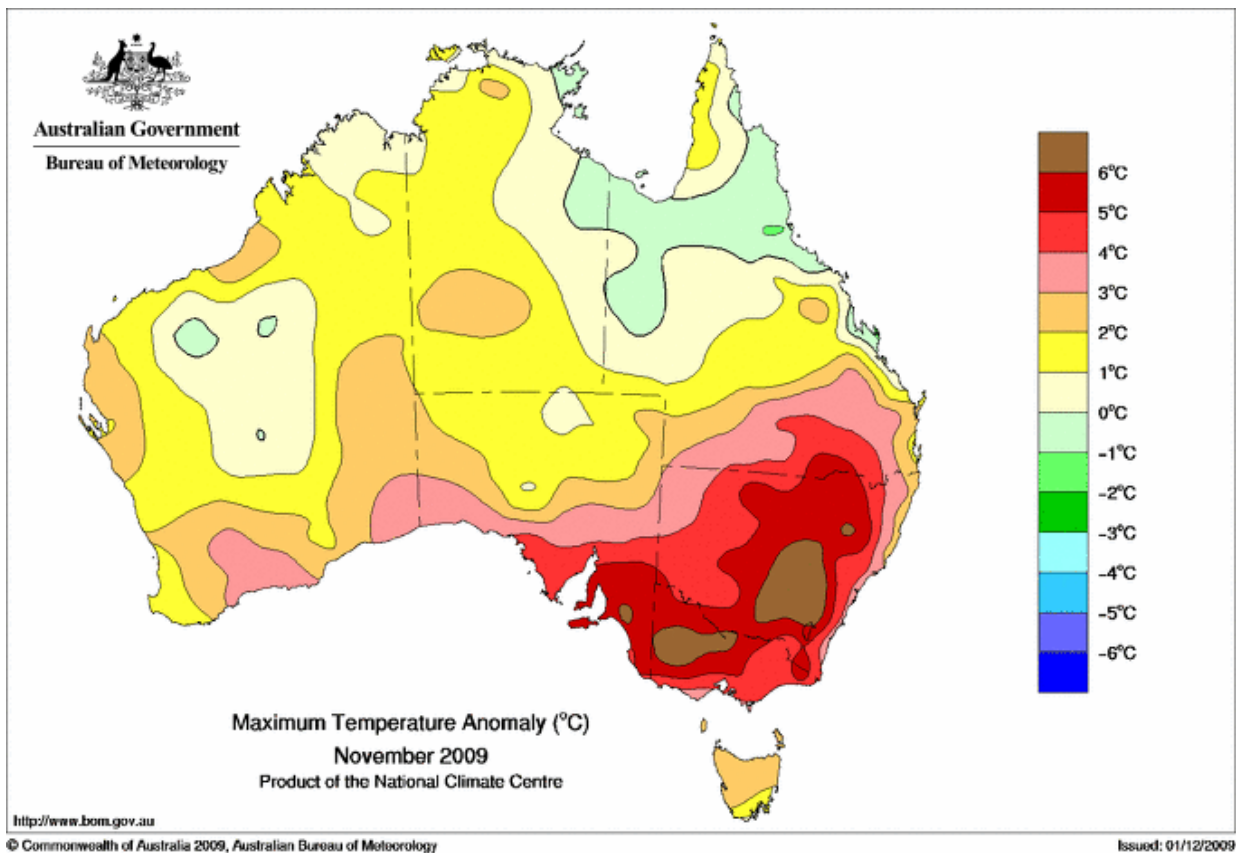
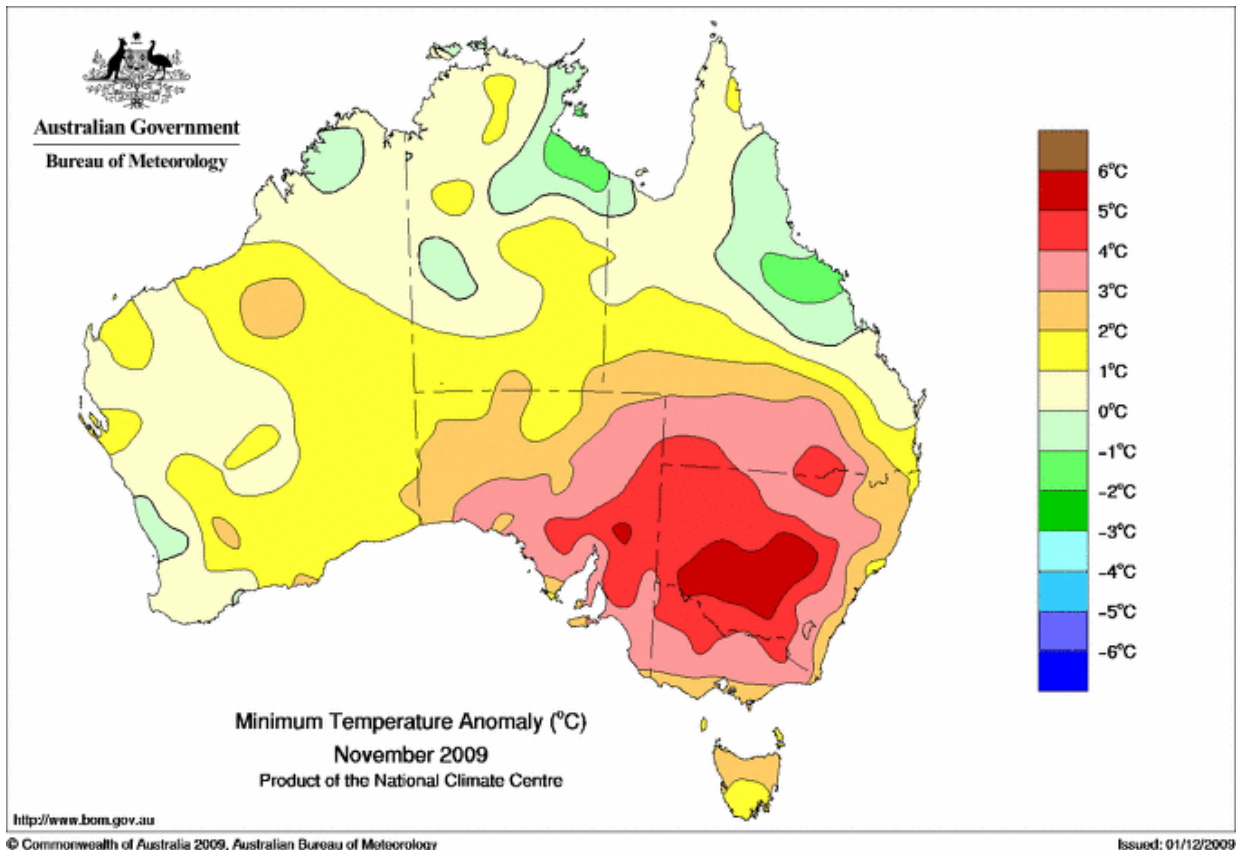


Figure 1. Minimum (top) and maximum (bottom) temperature anomalies for November 2009.

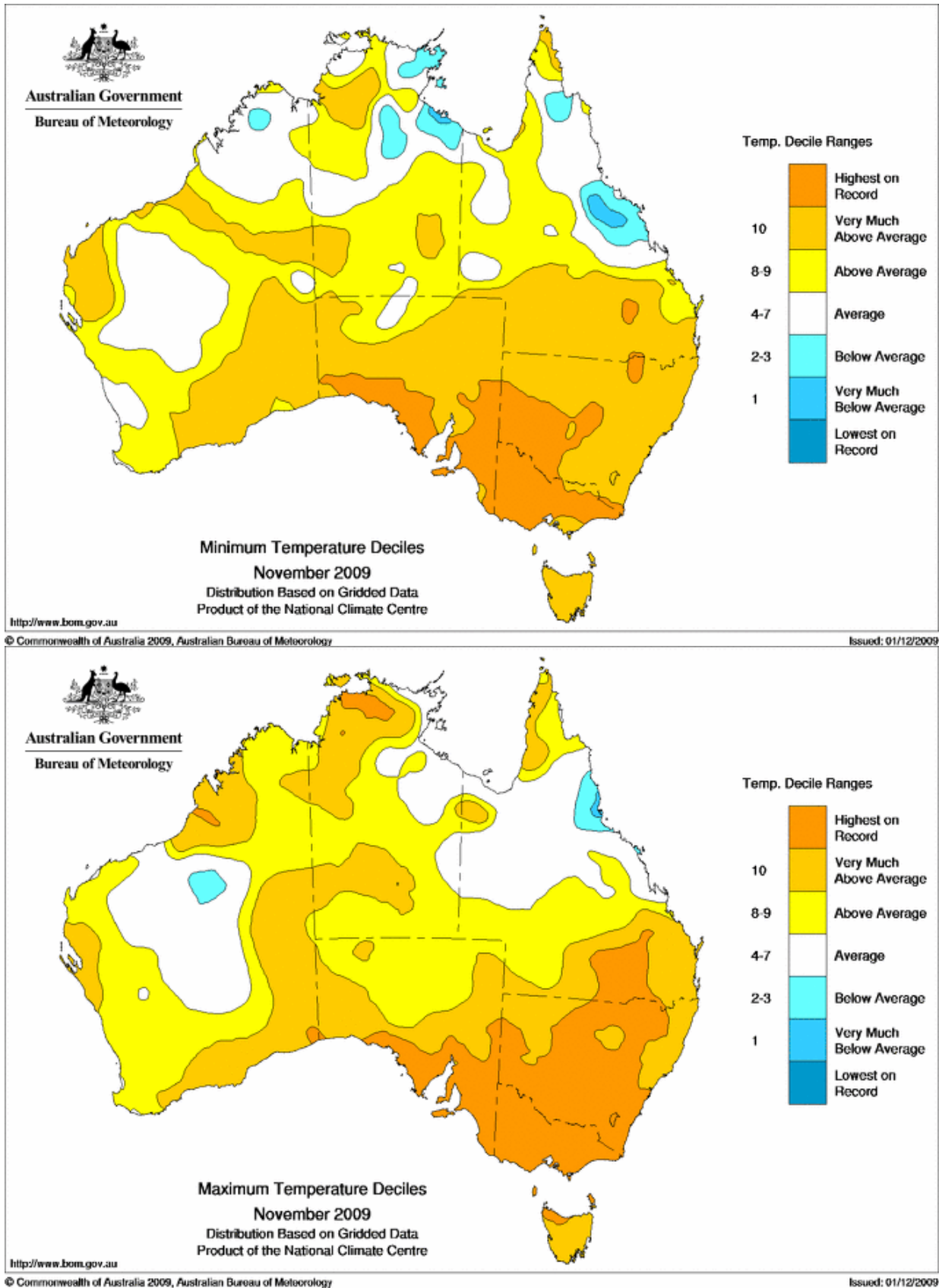


Figure 2. Minimum (top) and maximum (bottom) temperature deciles for November 2009.

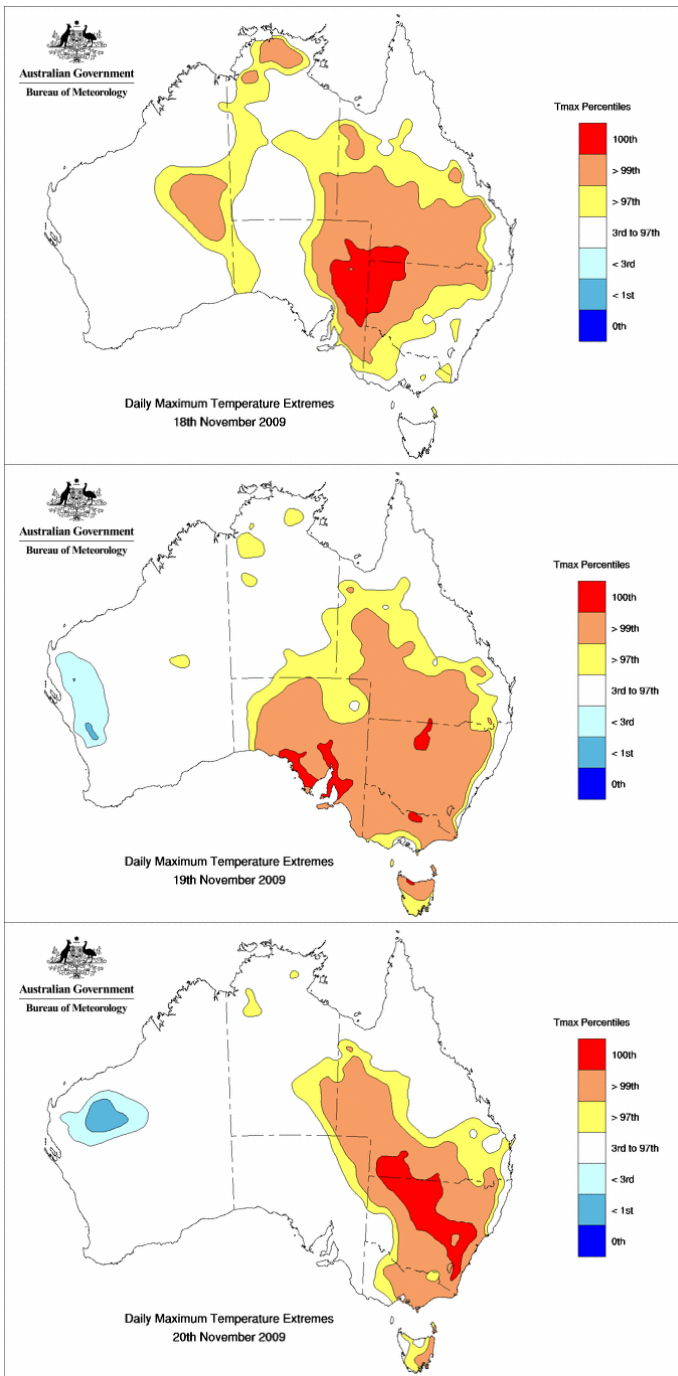


Figure 3. Area of record high November maximum temperatures (darkest red) on 18 (top), 19 (middle) and 20 (bottom) November 2009.



Station number	Location	Threshold (°C)	Number of days	Previous record <sup>4</sup>
<b>Maximum temperature</b>				
11004/11052	Forrest	40	5 (10-14/11)	3 (3 occasions, most recent 24-26/11/1997) (Nov)
		35	10 (6-15/11)	6 (3 occasions, most recent 10-15/11/2007) (Nov)
15590	Alice Springs	35	15 (7-21/11)	13 (2-14/11/1979, 18-30/11/2006) (Nov)
16001	Woomera	35	13 (7-19/11)	10 (10-19/11/2003) (Nov)
17031	Marree	40	10 (11-20/11)	7 (12-18/11/1980, 22-28/11/1997) (Nov)
		45	4 (15-18/11)	2 (17-18/11/1944, 29-30/11/2004) (Nov)
17043/17114	Oodnadatta	40	8 (12-19/11)	7 (3 occasions, most recent 24-30/11/2006) (Nov)
18012	Ceduna	<b>40</b>	6 (10-15/11)	3 (22-24/11/1982, 30/10-1/11/1987) (Nov)
				6 (18-23/11/1982, 17-22/2/1997) (all months)
18044	Kyancutta	40	8 (8-15/11)	5 (16-20/11/1938) (Nov)
18070/18192	Port Lincoln	<b>30</b>	8 (8-15/11)	4 (25-28/11/2004) (Nov)
				7 (3 occasions, most recent 27/1-2/2/2009) (all months)
18103/18120	Whyalla	35	9 (7-15/11)	4 (20-23/11/1966, 21-24/11/1982) (Nov)
19036/19066/ 16092/18201	Port Augusta	40	7 (9-15/11)	4 (26-29/11/2004) (Nov)
		35	9 (7-15/11)	8 (6-13/3/2008) (all months)
		30	15 (6-20/11)	7 (24-30/11/2004, 24-30/11/2006) (Nov)
21043	Port Pirie	40	5 (11-15/11)	12 (9-20/11/2007) (Nov)
		35	9 (7-15/11)	3 (22-24/11/1982, 24-26/11/1997) (Nov)
		30	15 (6-20/11)	7 (11-17/11/1980) (Nov)
23000/23090	Adelaide	35	8 (8-15/11)	12 (9-20/11/2007) (Nov)
		30	10 (7-16/11)	4 (23-26/11/1894) (Nov)
23321/23373	Nuriootpa	35	7 (9-15/11)	7 (31/10-6/11/1902) (Nov)
		30	13 (7-19/11)	4 (20-23/11/1966, 27-30/11/1990) (Nov)
24016/24048	Renmark	30	9 (7-15/11)	8 (13-20/11/2007) (Nov)
24521	Murray Bridge	<b>40</b>	6 (10-15/11)	8 (13-20/11/2007) (Nov)
				1 (14 occasions) (Nov)
26021	Mount Gambier	30	9 (7-15/11)	5 (18-22/2/1997) (all months)
				4 (20-23/11/1959, 18-21/11/2000) (Nov)
				11 (31/1-10/2/1956) (all months)
26026	Robe	30	4 (8-11/11)	2 (8 occasions, most recent 31/10-1/11/1987) (Nov)
		25	9 (7-15/11)	5 (23-27/11/1894) (Nov)
43034/43109	St. George	40	7 (16-22/11)	3 (3 occasions, most recent 27-29/11/1997) (Nov)

Table 1. Selected locations with a record number of consecutive days/nights at or above given thresholds for November. Where a threshold is shown in bold this indicates that a record for any month has been broken or equalled.

<sup>4</sup> All-months records only shown where these have been approached or broken. November records include all spells that ended in November, including those which started in October.

Station number	Location	Threshold (°C)	Number of days	Previous record <sup>5</sup>
<b>Maximum temperature</b>				
44021	Charleville	40	6 (17-22/11)	4 (31/10-3/11/1995, 17-20/11/2003) (Nov)
47007	Broken Hill	35	11 (9-20/11)	6 (3 occasions, most recent 25-30/11/2004) (Nov)
48013/48239/ 48245	Bourke	40	7 (15-21/11)	6 (25-30/11/1919) (Nov)
52026/52088	Walgett	40	8 (15-22/11)	5 (25-29/11/1997, 25-29/11/2006) (Nov)
53027/53048/ 53115	Moree	40	7 (16-22/11)	3 (3 occasions, most recent 27-29/11/1997) (Nov)
56017/56242	Inverell	35	8 (16-23/11)	5 (16-20/11/1944) (Nov)
65012/65070	Dubbo	30	15 (15-29/11)	13 (14-26/11/1914) (Nov)
		35	8 (15-22/11)	6 (3 occasions, most recent 24-29/11/1997) (Nov)
72091/72161	Cabramurra	20	13 (8-20/11) <sup>6</sup>	9 (13-21/11/2007) (Nov)
72150	Wagga Wagga	30	16 (7-22/11)	10 (12-21/11/2007) (Nov)
74128/74258	Deniliquin	35	8 (9-16/11)	6 (22-27/11/1997) (Nov)
		30	15 (6-20/11)	11 (19-29/11/1959) (Nov)
75031	Hay	35	8 (9-16/11)	6 (3 occasions, most recent 25-30/11/2004) (Nov)
76031	Mildura	30	15 (6-20/11)	13 (17-29/11/2000) (Nov)
78031/78015	Nhill	35	7 (9-15/11)	4 (3 occasions, most recent 25-28/11/2000) (Nov)
		30	12 (6-17/11)	11 (10-20/11/2007) (Nov)
79023	Horsham	35	9 (7-15/11)	4 (20-23/11/1966) (Nov)
80023	Kerang	35	7 (9-15/11)	6 (22-27/11/1997) (Nov)
		30	12 (6-17/11)	11 (10-20/11/2007) (Nov)
81003/81123	Bendigo	30	9 (7-15/11)	6 (22-27/11/1997) (Nov)
82039	Rutherglen	30	11 (7-17/11)	10 (7-16/11/1914) (Nov)
86071	Melbourne	25	10 (6-15/11)	7 (4 occasions, most recent 14-20/11/2000) (Nov)
89002	Ballarat	25	9 (7-15/11)	7 (21-27/11/1997) (Nov)

<b>Minimum temperature</b>				
16001	Woomera	20	13 (8-20/11)	8 (13-20/11/2007) (Nov)
		25	5 (12-16/11)	2 (3 occasions, most recent 19-20/11/2007) (Nov)
19036/19066/ 16092/18201	Port Augusta	25	3 (13-15/11)	2 (26-27/11/1980, 1-2/11/1987) (Nov)
21043	Port Pirie	20	9 (8-16/11)	4 (6 occasions, most recent 26-29/11/2003)
22801/22823	Cape Borda	20	8 (8-15/11)	3 (31/10-2/11/1987) (Nov)
		<b>20</b>	8 (8-15/11)	8 (23-30/3/1994) (all months)
23000/23090	Adelaide	20	9 (8-16/11)	5 (26-30/11/2004) (Nov)
55024	Gunnedah Res Ctr	25	4 (20-23/11)	2 (19-20/11/1968) (Nov)
		20	4 (20-23/11)	3 (3 occasions, most recent 2-4/2/2006) (all months)
86071	Melbourne	15	9 (7-15/11)	7 (14-20/11/1975, 16-22/11/2000) (Nov)

Table 1 (cont.). Selected locations with a record number of consecutive days/nights at or above given thresholds for November. Where a threshold is shown in bold this indicates that a record for any month has been broken or equalled.

<sup>5</sup> All-months records only shown where these have been approached or broken. November records include all spells that ended in November, including those which started in October.

<sup>6</sup> No maximum temperature was reported on 11 November due to an instrument fault but the temperature had already reached 20°C before the fault occurred.

Station number	Location	2009 value (°C)	Anomaly (°C)	Previous record (°C)	November record (°C)	Previous record anomaly (°C)
<b>Maximum temperature</b>						
3003	Broome	35.5	+1.9	35.4 (1944)		+3.0 (Feb 1988)
14198	Jabiru	38.8	+2.3	38.6 (2004)		+2.6 (Feb 1990)
14938	Mango Farm	38.1	+1.5	37.7 (2006)		+2.5 (Dec 1986)
16001	Woomera	33.2	+3.5	33.1 (1982)		+5.4 (Jan 1979)
18012	Ceduna	30.2	+4.0	29.1 (1980)		+5.5 (Mar 2008)
18040	Kimba	31.2	+4.4	30.6 (1982)		+5.5 (Jan 2001)
18044	Kyancutta	32.7	+4.0	31.9 (1982)		+6.0 (Mar 1940)
18069	Elliston	28.3	+5.1	25.8 (1980)		+5.5 (Mar 2008)
<b>18070/18192</b>	<b>Port Lincoln</b>	26.9	+4.7	25.2 (1911, 1922)		+4.6 (Jan 2001)
18079	Streaky Bay	30.4	+4.6	29.2 (2007)		+4.6 (Jan 2001)
18103/18120	Whyalla	30.7	+4.9	29.3 (1982)		+7.0 (Jan 2001)
<b>18115</b>	<b>Neptune Island</b>	22.5	+3.6	20.9 (1982)		+2.7 (Feb 1997)
<b>19036/19066/16092/18201</b>	<b>Port Augusta</b>	33.5	+5.2	31.9 (2003)		+4.8 (Jan 2001)
19062	Yongala	30.1	+4.4	29.7 (1982)		+4.7 (Jan 1939)
21043	Port Pirie	32.2	+4.8	31.3 (1927)		+6.2 (Jan 1939)
21046/21133	Snowtown	32.0	+5.2	31.4 (1911)		+5.7 (Jan 2001)
<b>22008</b>	<b>Maitland</b>	30.0	+6.1	27.6 (2003)		+4.8 (Jan 2001)
22015	Price	29.6	+4.5	28.9 (1982)		+5.2 (Feb 2000)
<b>22046</b>	<b>Warooka</b>	28.4	+6.3	26.7 (1982)		+3.6 (Mar 2008)
<b>22801/22823</b>	<b>Cape Borda</b>	25.0	+5.7	23.8 (2007)		+4.7 (Jan 2001)
<b>22803</b>	<b>Cape Willoughby</b>	23.4	+4.5	20.7 (1982)		+3.3 (Mar 2008)
<b>23000/23090</b>	<b>Adelaide</b>	30.8	+7.2	28.4 (1902, 1911)		+5.8 (Mar 1940)
<b>23013</b>	<b>Parafield</b>	32.1	+6.8	28.9 (2007)		+6.0 (Jan 2001)
<b>23020/23122</b>	<b>Roseworthy</b>	32.3	+6.8	29.8 (1921, 2007)		+6.1 (Mar 2008)
<b>23034</b>	<b>Adelaide Airport</b>	29.8	+6.0	26.9 (2003)		+4.6 (Jan 2001)
<b>23083</b>	<b>Edinburgh</b>	32.0	+6.6	28.9 (2000)		+5.8 (Jan 2001)
<b>23321/23373</b>	<b>Nuriootpa</b>	29.5	+5.3	28.6 (1982)		+4.8 (Jun 1957)
23343	Turretfield	31.1	+5.7	29.5 (1982)		+5.7 (Jan 2001)
<b>23733</b>	<b>Mount Barker</b>	28.5	+6.0	26.8 (1982)		+5.8 (Mar 2008)
<b>24016/24048</b>	<b>Renmark</b>	33.3	+5.4	32.0 (1982)		+4.6 (Jan 2001)
<b>24511</b>	<b>Eudunda</b>	29.9	+5.8	28.5 (1982)		+5.4 (Jan 2001)
<b>24518</b>	<b>Meningie</b>	28.4	+5.7	25.6 (1982)		+4.6 (Mar 2008)
<b>24521</b>	<b>Murray Bridge</b>	31.9	+6.7	29.0 (1982)		+5.6 (Mar 2008)
25507	Keith	30.8	+5.9	28.7 (1982)		+6.8 (Dec 1950)
25509	Lameroo	31.0	+5.0	30.0 (1982)		+5.5 (Mar 1940)
<b>26021</b>	<b>Mount Gambier</b>	26.2	+5.5	24.2 (1959)		+4.1 (Jan 1961)
<b>26026</b>	<b>Robe</b>	24.2	+4.3	22.0 (2000)		+3.5 (Feb 1983)
35149	Brigalow Res Stn	34.9	+3.5	34.8 (1968)		+5.1 (Aug 2009)
39004	Baralaba	35.6	+2.9	34.9 (1994)		+4.6 (Feb 2006)
40068	Double Island Point	29.5	+3.9	28.6 (2004)		+4.0 (Sep 2003)
41095	Stanthorpe	28.6	+3.8	28.5 (1957)		+5.4 (Aug 2009)
41175	Applethorpe	28.1	+4.8	27.7 (2002)		+5.3 (Mar 1998)
41359	Oakey	32.5	+4.4	31.4 (2002)		+5.5 (Aug 2009)
43015	Injune	35.4	+3.9	35.3 (1968)		+5.9 (Aug 2009)
43020	Surat	35.9	+4.1	35.4 (1982)		+6.7 (Aug 2009)
<b>43034/43109</b>	<b>St. George</b>	37.0	+5.3	36.1 (1946)		+4.5 (Jan 1940)
44010	Bollon	36.6	+4.0	36.5 (1919)		+5.7 (Aug 2009)
44021	Charleville	36.5	+3.8	36.2 (1946)		+6.2 (Aug 2009)
47007	Broken Hill	32.5	+4.6	31.9 (1959)		+6.1 (Jan 1939)
<b>48031</b>	<b>Collarenebri</b>	37.5	+6.2	37.2 (1919)		+6.0 (Jan 1932)
49019	Ivanhoe	35.1	+5.2	34.1 (1959)		+7.0 (Mar 1940)
<b>50031</b>	<b>Peak Hill</b>	33.9	+6.1	32.7 (2002)		+5.5 (Aug 1982)

Table 2. Long-term stations (30 years or more of data) which set records for highest mean November maximum and minimum temperatures. Station numbers shown in bold indicate the largest temperature anomaly on record for any month.

Station number	Location	2009 value (°C)	Anomaly (°C)	Previous November record (°C)	Previous record anomaly (°C)
<b>Maximum temperature</b>					
<b>50052</b>	<b>Condobolin Ag</b>	34.3	+5.9	32.6 (2002)	+5.2 (Apr 2005)
<b>51039</b>	<b>Nyngan</b>	35.2	+5.2	34.5 (2002)	+5.1 (Aug 1995)
<b>52020</b>	<b>Mungindi</b>	37.2	+5.4	36.2 (1926)	+5.3 (Sep 2000)
52026/52088	Walgett	37.1	+5.8	36.7 (2002)	+6.1 (Jan 1952)
<b>54003</b>	<b>Barraba</b>	33.1	+5.5	32.4 (2002)	+5.1 (Aug 2009)
55024	Gunnedah Res Ctr	33.4	+5.1	33.3 (2002)	+5.7 (Jan 1952)
<b>55049</b>	<b>Quirindi</b>	33.7	+5.9	33.4 (1919)	+5.8 (Feb 1926)
<b>55054/55325</b>	<b>Tamworth</b>	33.6	+6.2	33.2 (1915)	+5.8 (Nov 1915)
<b>55136</b>	<b>Woolbrook</b>	29.5	+6.3	28.7 (2002)	+5.5 (Nov 2002)
<b>56011</b>	<b>Glen Innes PO</b>	28.2	+5.1	27.9 (1919)	+4.9 (Dec 1953)
<b>56013</b>	<b>Glen Innes Ag Res</b>	26.8	+4.8	26.0 (2002)	+4.7 (Sep 1980)
56017/56242	Inverell	32.0	+4.9	31.4 (1919)	+5.1 (Jan 1952)
56018	Inverell Res Ctr	31.2	+5.7	30.4 (1997)	+5.8 (Aug 1995)
57095	Tabulam	28.8	+4.0	28.2 (2002)	+4.7 (Oct 1988)
61078	Williamtown	28.5	+3.2	28.3 (2002)	+4.0 (Sep 1980)
<b>61089</b>	<b>Scone Soil Cons</b>	32.6	+5.1	32.3 (2002)	+4.8 (Nov 2002)
<b>62013</b>	<b>Gulgong</b>	32.6	+6.3	31.5 (1982)	+5.2 (Aug 1982)
<b>63005</b>	<b>Bathurst Ag</b>	30.5	+7.8	28.5 (1982)	+5.8 (Feb 1926)
<b>63023</b>	<b>Cowra Res Ctr</b>	33.4	+7.9	31.2 (2002)	+5.7 (Nov 2002)
<b>63063</b>	<b>Oberon</b>	25.1	+5.1	25.0 (1982)	+5.0 (Nov 1982)
<b>63231</b>	<b>Orange Airport</b>	27.6	+7.6	26.0 (2002)	+6.0 (Nov 2002)
<b>63254</b>	<b>Orange Ag</b>	27.1	+6.2	26.3 (2002)	+5.4 (Nov 2002)
<b>64009</b>	<b>Dunedoo</b>	33.9	+6.3	32.9 (2002)	+5.3 (Nov 2002)
65026	Parkes	34.1	+7.3	33.5 (1914)	+7.5 (Sep 1928)
<b>65091</b>	<b>Cowra Airport</b>	33.4	+7.1	31.8 (2002)	+5.5 (Nov 1982)
66037	Sydney Airport	27.2	+3.2	26.7 (1968)	+4.6 (Oct 1988)
66124	Parramatta	28.6	+3.4	28.4 (2002)	+5.3 (Oct 1988)
<b>66137</b>	<b>Bankstown</b>	28.6	+4.4	28.1 (1968)	+4.2 (Oct 1988)
<b>67019</b>	<b>Prospect</b>	29.8	+4.8	28.7 (2002)	+4.4 (Sep 1980)
68192	Camden	30.1	+4.1	30.0 (2002)	+4.4 (Oct 1988)
70005	Bombala	27.0	+6.5	26.3 (1982)	+6.8 (Apr 1923)
<b>70014</b>	<b>Canberra</b>	29.0	+6.3	28.7 (1982)	+6.0 (Nov 1982)
<b>70080</b>	<b>Taralga</b>	27.5	+6.3	26.1 (1982)	+4.9 (Nov 1982)
<b>70263</b>	<b>Goulburn TAFE</b>	28.4	+6.5	27.6 (2002)	+5.7 (Nov 2002)
<b>70278</b>	<b>Cooma Visitors Ctr</b>	27.7	+5.4	27.4 (1982)	+5.1 (Nov 1982)
71003	Charlotte Pass	17.6	+5.2	16.8 (2002)	+5.6 (Mar 1940)
<b>71041</b>	<b>Thredbo Village</b>	21.4	+5.4	20.1 (1982)	+4.9 (Aug 1982)
<b>72043</b>	<b>Tumbarumba</b>	27.7	+5.3	26.9 (1982)	+4.5 (Nov 1982)
<b>72091/72161</b>	<b>Cabramurra</b>	19.8	+5.4	19.0 (1982)	+4.6 (Nov 1982)
<b>72150</b>	<b>Wagga Wagga</b>	32.8	+7.1	30.8 (1982)	+5.1 (Nov 1982)
<b>73007</b>	<b>Burrinjuck Dam</b>	30.2	+6.8	29.4 (2002)	+6.7 (Jan 1939)
<b>73014</b>	<b>Grenfell</b>	32.4	+6.4	31.9 (1919)	+5.9 (Nov 1919)
<b>73032</b>	<b>Quandialla</b>	34.2	+6.8	32.4 (2002)	+5.8 (May 1956)
<b>73054</b>	<b>Wyalong</b>	33.6	+6.6	31.8 (1982)	+5.3 (Apr 2005)
74106	Tocumwal	31.7	+4.9	31.3 (1982)	+4.9 (Jan 1981)
74128/74258	Deniliquin	32.2	+5.6	30.9 (1959)	+6.1 (Oct 1914)
<b>74221</b>	<b>Narrandera GC</b>	32.7	+5.5	31.9 (1982)	+5.4 (Aug 1982)
75031	Hay	32.7	+4.6	32.3 (1982)	+5.9 (Jan 1939)
<b>75032</b>	<b>Hillston</b>	34.0	+5.7	32.7 (1908)	+5.5 (Aug 1982)
<b>75041</b>	<b>Griffith</b>	33.3	+5.6	31.8 (2002)	+4.9 (Apr 2005)
76031	Mildura	32.5	+5.0	31.5 (1982)	+5.3 (Jan 2001)
<b>76047</b>	<b>Ouyen</b>	32.4	+5.0	31.7 (1982)	+4.7 (Mar 1940)
<b>76064</b>	<b>Walpeup</b>	32.5	+5.6	31.2 (1982)	+4.6 (Aug 1982)

Table 2 (cont.). Long-term stations (30 years or more of data) which set records for highest mean November maximum and minimum temperatures. Station numbers shown in bold indicate the largest temperature anomaly on record for any month.

Station number	Location	2009 value (°C)	Anomaly (°C)	Previous November record (°C)	Previous record anomaly (°C)
<b>Maximum temperature</b>					
77042/77094	Swan Hill	32.3	+5.7	31.4 (1911, 1914)	+6.5 (Jan 1939)
<b>78031/78015</b>	<b>Nhill</b>	31.0	+6.3	29.1 (1911)	+5.7 (Oct 1914)
<b>78077</b>	<b>Warracknabeal</b>	31.2	+5.7	30.1 (1982)	+4.6 (Nov 1982)
<b>79023</b>	<b>Horsham</b>	31.2	+6.9	29.2 (1908)	+6.1 (Apr 1923)
<b>79028</b>	<b>Longerenong</b>	30.9	+6.8	29.2 (1982)	+5.1 (Nov 1982)
80023	Kerang	31.7	+5.4	31.2 (1914)	+6.8 (Oct 1914)
<b>80091</b>	<b>Kyabram</b>	31.4	+6.8	29.5 (1982)	+4.9 (Nov 1982)
<b>81003/81123</b>	<b>Bendigo</b>	29.8	+6.3	28.4 (1982)	+4.9 (Nov 1982)
<b>81049</b>	<b>Tatura</b>	30.0	+5.6	28.7 (1982)	+4.3 (Nov 1982)
82039	Rutherglen	30.8	+5.6	30.1 (1914)	+7.4 (Oct 1914)
82053/82138	Wangaratta	30.6	+5.6	30.2 (1959)	+6.5 (Oct 1914)
<b>84030</b>	<b>Orbost</b>	26.3	+4.6	24.7 (1982)	+4.1 (Mar 1940)
<b>85072</b>	<b>Sale</b>	25.9	+4.6	25.3 (1982)	+4.0 (Nov 1982)
<b>85279</b>	<b>Bairnsdale</b>	26.1	+4.6	24.3 (1997)	+4.5 (Feb 2000)
86038	Essendon	26.8	+5.2	24.4 (2005)	+5.3 (Mar 1940)
<b>86071</b>	<b>Melbourne</b>	27.1	+5.3	25.5 (1862)	+4.8 (Mar 1940)
<b>86077</b>	<b>Moorabbin</b>	25.7	+4.2	24.9 (1982)	+4.0 (Jan 1981)
<b>86104</b>	<b>Scoresby</b>	26.2	+5.0	25.1 (1982)	+4.6 (Feb 1997)
<b>86127</b>	<b>Wonthaggi</b>	23.8	+4.1	22.1 (2005)	+3.4 (Feb 2000)
<b>86282</b>	<b>Melbourne Airport</b>	26.8	+5.2	26.2 (1982)	+4.6 (Nov 1982)
<b>87031</b>	<b>Laverton</b>	25.8	+4.2	25.2 (1982)	+3.8 (Dec 2005)
<b>88023</b>	<b>Lake Eildon</b>	28.8	+5.9	27.4 (1982)	+4.5 (Nov 1982)
89002	Ballarat	25.1	+5.6	24.9 (1982)	+5.8 (Oct 1914)
<b>89085</b>	<b>Ararat</b>	27.1	+6.2	26.4 (1982)	+5.5 (Nov 1982)
<b>90135</b>	<b>Casterton</b>	27.5	+5.9	26.3 (1982)	+4.7 (Nov 1982)
91009	Burnie	20.1	+2.0	20.0 (2007)	+3.1 (Apr 1958)
91219	Scottsdale	20.9	+2.2	20.8 (1982)	+3.0 (Feb 2000)
91223	Marrawah	19.5	+2.9	19.3 (2000)	+3.0 (Feb 2007)
92045	Eddystone Point	20.2	+2.7	19.9 (1959)	+3.4 (Dec 2007)
96003	Butlers Gorge	18.2	+3.3	16.8 (1958)	+4.3 (Jan 1951)
<b>99005</b>	<b>Flinders Island</b>	21.5	+3.1	20.2 (2000)	+2.8 (Dec 2007)
<b>Minimum temperature</b>					
16001	Woomera	19.3	+3.9	18.4 (2000)	+4.7 (Jan 2001)
<b>16032</b>	<b>Nonning</b>	17.1	+4.6	16.1 (2000)	+4.5 (Jan 2001)
16065	Andamooka	20.1	+3.4	19.8 (2000)	+5.2 (Jan 2006)
17005/17110	Leigh Creek	19.6	+3.2	18.3 (2000)	+5.2 (Jan 2006)
17031	Marree	20.5	+3.7	19.5 (2003)	+6.1 (Jan 2006)
17096/17123	Moomba	21.7	+3.2	21.5 (2002)	+3.9 (Feb 1983)
17099	Arkaroola	19.2	+4.2	17.8 (2000)	+4.7 (Jan 2006)
18012	Ceduna	15.6	+3.2	14.3 (1963)	+4.0 (Jun 1957)
<b>18014</b>	<b>Cleve</b>	16.8	+4.6	15.0 (2000)	+4.1 (Jun 1957)
18040	Kimba	15.8	+4.2	15.2 (2000)	+4.3 (Jan 2001)
18044	Kyancutta	13.9	+3.1	13.7 (2000)	+4.4 (Feb 1997)
<b>18069</b>	<b>Elliston</b>	16.8	+4.0	14.8 (2000)	+3.9 (Feb 1997)
18079	Streaky Bay	17.1	+3.9	15.7 (2000)	+4.3 (Feb 1997)
19017	Hawker	17.9	+4.9	16.8 (2000)	+5.5 (Jan 2006)
19062	Yongala	13.1	+4.2	13.0 (2000)	+5.6 (Jan 1939)
21043	Port Pirie	18.9	+4.2	18.3 (2000)	+4.5 (Feb 1997)
<b>22008</b>	<b>Maitland</b>	17.0	+5.5	14.6 (2000)	+3.3 (Feb 2000)
<b>22015</b>	<b>Price</b>	16.1	+4.5	15.0 (2007)	+3.7 (Jan 1974)
<b>22018</b>	<b>Warooka</b>	15.9	+4.0	14.5 (2000)	+3.0 (Feb 1997)
<b>22801/22823</b>	<b>Cape Borda</b>	15.5	+4.3	13.7 (2000)	+2.9 (Feb 1997)
<b>22803</b>	<b>Cape Willoughby</b>	16.0	+3.1	14.7 (2000)	+1.9 (Mar 1974)

Table 2 (cont.). Long-term stations (30 years or more of data) which set records for highest mean November maximum and minimum temperatures. Station numbers shown in bold indicate the largest temperature anomaly on record for any month.

Station number	Location	2009 value (°C)	Anomaly (°C)	Previous November record (°C)	Previous record anomaly (°C)
<b>Minimum temperature</b>					
<b>23000/23090</b>	<b>Adelaide</b>	18.0	+4.4	17.1 (2000)	+3.6 (Feb 2000)
23013	Parafield	16.4	+3.6	15.4 (2000)	+4.4 (Jun 1991)
23020/23122	Roseworthy	14.7	+2.8	14.5 (1914)	+4.2 (Mar 2008)
<b>23034</b>	<b>Adelaide Airport</b>	16.7	+4.2	16.3 (2000)	+3.8 (Nov 2000)
23083	Edinburgh	16.7	+4.1	15.7 (2000)	+4.3 (Jan 1973)
24016/24048	Renmark	16.6	+3.3	16.1 (2000)	+3.8 (Jan 2001)
<b>24511</b>	<b>Eudunda</b>	14.6	+4.6	13.4 (2000)	+3.9 (Jan 2001)
<b>24518</b>	<b>Meningie</b>	14.4	+3.3	13.4 (2000)	+3.0 (Feb 2000)
24521	Murray Bridge	14.5	+3.2	14.0 (2000)	+3.7 (Jun 1991)
25507	Keith	13.5	+3.4	12.7 (2000)	+3.5 (Mar 1974)
<b>25509</b>	<b>Lameroo</b>	14.5	+4.3	13.6 (2000)	+3.8 (Feb 1997)
26021	Mount Gambier	11.8	+3.3	11.2 (2000)	+3.3 (Mar 1974)
26026	Robe	14.4	+2.9	13.9 (2000)	+2.9 (May 2007)
40043	Cape Moreton	21.2	+1.9	20.9 (2002)	+3.3 (Jul 1993)
40223/40842	Brisbane Airport	19.5	+1.4	19.4 (2005 + others)	+4.3 (Jul 1993)
41100	Texas	18.1	+4.0	17.4 (2002)	+5.1 (Jul 1993)
41175	Applethorpe	13.8	+2.5	13.5 (1997)	+4.8 (Jul 1993)
43015	Injune	18.7	+3.4	17.7 (2002)	+6.1 (Jul 1973)
43035	Surat	20.1	+3.4	19.5 (2002)	+5.8 (Jul 1973)
47007	Broken Hill	19.5	+4.9	19.1 (1914)	+5.2 (Jan 2001)
47016	Lake Victoria	17.0	+3.5	15.7 (2000)	+4.2 (Jan 1939)
47019	Menindee	19.4	+4.9	18.4 (1914)	+6.0 (Jan 1939)
49002	Balranald	17.2	+5.0	15.9 (1914)	+5.8 (Sep 1929)
49019	Ivanhoe	19.2	+5.6	18.1 (1959)	+6.4 (Oct 1961)
<b>50031</b>	<b>Peak Hill</b>	19.9	+6.0	17.7 (2002)	+4.2 (Jan 2006)
<b>50052</b>	<b>Condobolin Ag Res</b>	18.7	+6.0	16.4 (2007)	+4.9 (Jan 1981)
51039	Nyngan	20.0	+5.1	17.9 (1946)	+5.6 (Sep 1955)
53027/53048/	Moree	19.5	+4.0	18.8 (2002)	+4.9 (Jul 1921)
53115					
54003	Barraba	15.2	+3.9	14.8 (2002)	+6.0 (Jun 1967)
<b>55024</b>	<b>Gunnedah Res Ctr</b>	19.0	+4.1	18.2 (2002)	+4.0 (Jul 1950)
55136	Woolbrook	10.6	+2.8	10.5 (2005)	+5.0 (May 1983)
56013	Glen Innes Ag Res	12.1	+2.4	11.3 (2002)	+3.8 (Jul 1973)
56018	Inverell Res Ctr	15.6	+2.9	14.3 (2002)	+4.6 (Jun 1967)
57095	Tabulam	16.1	+2.1	16.0 (1995)	+3.6 (Jul 1993)
60085	Mount Seaview	17.1	+3.6	15.7 (2005)	+3.9 (Apr 1989)
61089	Scone Soil Cons	16.1	+2.9	15.9 (1997)	+3.9 (Jun 1967)
<b>62013</b>	<b>Gulgong</b>	16.6	+4.9	15.1 (1997)	+3.8 (Jul 1973)
<b>63023</b>	<b>Cowra Res Ctr</b>	16.9	+5.2	15.0 (1982)	+4.3 (Jun 1991)
63039	Katoomba	13.0	+3.4	12.6 (1959)	+3.6 (Feb 1939)
63063	Oberon	10.1	+3.4	8.6 (1987)	+3.4 (Jun 2008)
<b>63231</b>	<b>Orange Airport</b>	12.5	+5.1	10.8 (2007)	+4.4 (Jun 1991)
<b>63254</b>	<b>Orange Ag Inst</b>	13.0	+4.2	11.5 (2002)	+3.4 (Jan 1981)
64009	Dunedoo	17.2	+5.1	15.8 (1946)	+5.7 (Jun 1957)
<b>65026</b>	<b>Parkes</b>	18.7	+5.1	18.6 (1914)	+5.0 (Nov 1914)
<b>65091</b>	<b>Cowra Airport</b>	15.1	+5.4	14.4 (2007)	+5.1 (Jun 1991)
66037	Sydney Airport	18.5	+3.3	17.5 (1997)	+3.5 (Aug 2007)
66062	Sydney	18.7	+2.7	18.5 (1914)	+2.9 (Jun 1967)
66124	Parramatta	16.5	+2.6	15.5 (1997)	+2.9 (Jun 1967)
66137	Bankstown	16.9	+2.7	15.9 (2007)	+3.0 (Jun 1991)
67019	Prospect	16.1	+1.9	16.0 (1990)	+4.0 (Dec 1990)

Table 2 (cont.). Long-term stations (30 years or more of data) which set records for highest mean November maximum and minimum temperatures. Station numbers shown in bold indicate the largest temperature anomaly on record for any month.

Station number	Location	2009 value (°C)	Anomaly (°C)	Previous November record (°C)	Previous record anomaly (°C)
<b>Minimum temperature</b>					
68102	Bowral	12.9	+3.8	12.5 (2002)	+4.6 (Jun 1991)
68192	Camden	15.2	+2.6	14.8 (2000)	+3.7 (Apr 1989)
70014	Canberra	12.7	+3.9	11.8 (2007)	+4.7 (Jun 1991)
70263	Goulburn TAFE	12.4	+3.5	12.0 (2000)	+4.3 (Jun 1991)
71003	Charlotte Pass	4.3	+2.5	3.8 (1993)	+4.4 (Oct 1940)
<b>72023</b>	<b>Hume Reservoir</b>	16.4	+5.0	15.6 (2007)	+4.3 (Jun 1991)
<b>72043</b>	<b>Tumbarumba</b>	11.3	+4.3	10.8 (2000)	+4.2 (Jan 2006)
<b>72091/72161</b>	<b>Cabramurra</b>	10.5	+5.0	8.8 (2007)	+3.7 (Jan 1981)
<b>72150</b>	<b>Wagga Wagga</b>	15.8	+5.4	14.7 (2000)	+4.8 (Jun 1991)
73032	Quandialla	17.1	+5.7	15.3 (2007)	+6.0 (Jan 1952)
<b>73054</b>	<b>Wyalong</b>	18.3	+6.3	16.1 (2007)	+4.7 (Jan 2006)
74034	Corowa	15.5	+4.9	15.2 (1914)	+7.5 (Feb 1926)
74106	Tocumwal	15.6	+3.8	14.1 (2000)	+4.0 (Jun 1991)
<b>74128/74258</b>	<b>Deniliquin</b>	16.3	+4.5	16.2 (1914)	+4.4 (Nov 1914)
<b>74221</b>	<b>Narrandera GC</b>	17.1	+4.9	15.4 (2007)	+4.4 (Jun 1991)
<b>75031</b>	<b>Hay</b>	17.7	+4.9	17.6 (1914)	+4.8 (Nov 1914)
<b>75041</b>	<b>Griffith</b>	18.2	+6.1	16.2 (2007)	+4.7 (Jan 2006)
<b>76031</b>	<b>Mildura</b>	17.3	+4.7	15.1 (2000)	+3.9 (Jan 2006)
<b>76047</b>	<b>Ouyen</b>	16.3	+4.8	14.6 (2000)	+3.7 (Feb 1997)
<b>76064</b>	<b>Walpeup</b>	15.9	+4.5	14.4 (2000)	+3.8 (Jan 1981)
<b>77042/77094</b>	<b>Swan Hill</b>	15.6	+3.8	14.5 (1959)	+3.7 (Jan 1939)
<b>78031/78015</b>	<b>Nhill</b>	13.6	+4.2	12.8 (1914)	+3.7 (Mar 1934)
<b>78077</b>	<b>Warracknabeal</b>	14.4	+4.4	13.4 (1990)	+3.7 (Jun 1991)
79028	Longerenong	12.5	+3.3	11.4 (2000)	+3.9 (Mar 1974)
<b>80023</b>	<b>Kerang</b>	15.6	+4.3	14.7 (1914)	+3.6 (Feb 1997)
<b>80091</b>	<b>Kyabram</b>	14.5	+4.7	13.3 (2000)	+4.2 (Jun 1991)
<b>81003/81123</b>	<b>Bendigo</b>	13.9	+4.6	12.6 (1959, 2000)	+3.3 (Jan 1981)
81049	Tatura	13.7	+3.6	13.4 (2000)	+4.4 (Jun 1991)
82042	Strathbogie	10.6	+3.5	10.5 (2000)	+4.4 (Jan 1999)
82076	Dartmouth Reservoir	13.0	+3.8	12.7 (2000)	+3.8 (Apr 1990)
<b>84016</b>	<b>Gabo Island</b>	15.3	+2.3	15.1 (2000)	+2.1 (Nov 2000)
<b>84070</b>	<b>Point Hicks</b>	15.1	+2.5	14.8 (2000)	+2.2 (Nov 2000)
<b>85096</b>	<b>Wilsons Promontory</b>	14.0	+2.4	13.8 (2000)	+2.2 (Jan 1951)
<b>86038</b>	<b>Essendon</b>	14.1	+4.4	12.7 (2007)	+3.5 (May 2007)
<b>86071</b>	<b>Melbourne</b>	15.9	+3.9	15.2 (2000)	+3.2 (Nov 2000)
86077	Moorabbin	13.8	+2.7	13.5 (2000)	+2.7 (Jan 1981)
86104	Scoresby	13.3	+2.7	13.2 (2000)	+3.0 (Jan 1981)
86127	Wonthaggi	12.8	+2.6	12.7 (2000)	+3.3 (Feb 2001)
<b>86282</b>	<b>Melbourne Airport</b>	13.8	+3.6	13.1 (2000)	+2.9 (Mar 1974)
87031	Laverton	13.8	+3.6	13.2 (2000)	+3.6 (May 2007)
<b>88023</b>	<b>Lake Eildon</b>	13.2	+4.2	12.1 (2000)	+3.6 (Jan 1999)
<b>88043</b>	<b>Maryborough</b>	13.6	+4.0	12.2 (2000)	+3.3 (Mar 1974)
88109	Mangalore	13.6	+3.8	12.9 (2000)	+4.2 (Jun 1991)
<b>88110</b>	<b>Castlemaine</b>	13.6	+4.7	11.7 (2000)	+4.5 (Jun 1991)
89002	Ballarat	11.2	+3.2	10.7 (2000)	+4.2 (Mar 1974)
89085	Ararat	11.3	+3.5	10.4 (2007)	+3.7 (Jan 2001)
95003	Bushy Park	9.3	+1.7	9.2 (2000)	+3.1 (May 1939)

Table 2 (cont.). Long-term stations (30 years or more of data) which set records for highest mean November maximum and minimum temperatures. Station numbers shown in bold indicate the largest temperature anomaly on record for any month.

Region	Maximum temperature			Mean temperature			Minimum temperature		
	Anomaly	Rank <sup>7</sup>	Current record	Anomaly	Rank	Current record	Anomaly	Rank	Current record
Australia	+2.12	2	+2.17 (2002)	+1.87	1	+1.65 (1990)	+1.61	1	+1.31 (1959)
WA	+1.71	4	+2.39 (2006)	+1.28	5	+2.11 (2006)	+0.85	9	+1.83 (2006)
NT	+0.99	9	+2.65 (1990)	+0.80	9	+2.31 (1990)	+0.60	15	+1.96 (1990)
SA	+3.05	2	+3.10 (1982)	+3.20	1	+2.38 (1959)	+3.36	1	+2.31 (2000)
Queensland	+1.28	8	+1.85 (1990)	+1.13	7	+1.63 (2002)	+0.97	8	+1.57 (1995)
NSW	+4.99	1	+4.03 (2002)	+4.61	1	+3.26 (2002)	+4.22	1	+2.73 (1959)
Victoria	+4.92	1	+3.82 (1982)	+4.36	1	+2.45 (2007)	+3.81	1	+2.69 (2000)
Tasmania	+3.18	1	+2.45 (2007)	+2.43	1	+2.19 (2000)	+1.68	2	+2.42 (2000)

Table 3. National and state temperature anomalies for November 2009.

Region	Maximum temperature			Mean temperature			Minimum temperature		
	Anomaly	Rank	Current record	Anomaly	Rank	Current record	Anomaly	Rank	Current record
Australia	+1.44	3	+1.82 (2006)	+1.12	3	+1.42 (2006)	+0.80	8	+1.13 (1998)
WA	+1.20	6	+1.88 (2006)	+0.91	5	+1.79 (2006)	+0.61	10	+1.70 (2006)
NT	+1.15	7	+1.59 (2002)	+0.83	15	+1.48 (2005)	+0.51	21	+1.67 (2005)
SA	+1.72	4	+2.67 (2006)	+1.73	3	+2.10 (2006)	+1.74	1	+1.61 (1997)
Queensland	+1.18	7	+2.00 (2000)	+0.75	12	+1.64 (2005)	+0.31	26	+1.81 (1998)
NSW	+2.59	3	+2.96 (2002)	+2.08	1	+1.97 (2002)	+1.56	1	+1.28 (1997)
Victoria	+2.19	2	+2.31 (2006)	+1.79	1	+1.29 (2007)	+1.39	1	+1.32 (1975)
Tasmania	+1.38	1	+1.15 (2007)	+1.04	1	+0.95 (2005)	+0.70	6	+1.18 (2000)

Table 4. National and state temperature anomalies for spring 2009.

<sup>7</sup> Rankings in Tables 2 and 3 cover the period from 1950 to 2009 (60 years).



Station number	Location	Threshold (°C)	Number of days	Previous record <sup>8</sup>
<b>Maximum temperature</b>				
11003	Eucla	40	4	3 (4 occasions, most recent 1997)
16001	Woomera	35	15	13 (5 occasions, most recent 2007)
		40	9	5 (3 occasions, most recent 2006)
17031	Marree	40	13	9 (1975, 1980, 2006)
18012	Ceduna	35	11	8 (1962, 1980)
		40	8	5 (1944)
18044	Kyancutta	35	13	11 (4 occasions, most recent 2007)
		40	9	5 (1938, 1990)
18070/18192	Port Lincoln	30	10	7 (1922, 1962)
18103/18120	Whyalla	35	11	8 (1982)
19036/19066/	Port Augusta	35	14	12 (2006)
16092/18201		40	10	4 (4 occasions, most recent 2006)
21043	Port Pirie	35	14	9 (1980, 1982, 2003)
		40	6	3 (1982, 1997, 2006)
21046/21133	Snowtown <sup>9</sup>	40	8	4 (1922)
22801/22823	Cape Borda	30	10	4 (2000, 2004)
23000/23090	Adelaide	35	11	6 (1897, 1919)
23321/23373	Nuriootpa	30	15	13 (1982)
		35	10	5 (1966)
24016/24048	Renmark	35	13	12 (1982)
		40	7	4 (1959, 1982)
26021	Mount Gambier	30	12	8 (1959)
26026	Robe	30	6	3 (1892)
47007	Broken Hill	35	14	10 (1959, 1975)
52026/52088	Walgett	40	8	7 (2006)
53027/53048/	Moree	40	7	5 (1957)
53115				
55024	Gunnedah Res Ctr	40	3	2 (1968)
56017/56242	Inverell	35	7	6 (1936, 1944, 1957)
63005	Bathurst	30	16	15 (1982)
65012/65070	Dubbo	35	12	11 (1922)
72150	Wagga Wagga	35	11	7 (1959, 1982)
		40	3	2 (1980, 1997)
73054	Wyalong	35	13	11 (1982)
74128/74258	Deniliquin	35	13	10 (1919)
75031	Hay	35	13	10 (1959, 1982)
		40	7	4 (4 occasions, most recent 1997)
76031	Mildura	35	14	11 (1982)
		40	7	4 (1980)
78031/78015	Nhill	35	10	6 (1911, 1982, 2006)
79023	Horsham	35	13	6 (2006)
		40	3	1 (5 occasions, most recent 1982)
80023	Kerang	35	12	9 (1982)
81003/81123	Bendigo	30	14	12 (2007)
		35	7	4 (2006)
87031	Laverton	30	9	7 (1980, 2003)

Table 5. Selected stations where the number of days with temperatures exceeding given thresholds is the highest on record for November.

<sup>8</sup> All-months records only shown where these have been approached or broken. November records include all spells that ended in November, including those which started in October.

<sup>9</sup> Two days missing (7-8 November), It is unlikely that maximum temperatures reached 40°C on either day.

<b>Minimum temperature</b>				
11003	Eucla	20	4	3 (1980, 2004)
16001	Woomera	20	15	11 (2006, 2007)
		25	6	3 (1987, 2006)
17031	Marree	25	8	5 (1959, 2006)
21043	Port Pirie	20	13	10 (1980)
		25	5	4 (2003)
22801/22823	Cape Borda	20	8	3 (1982)
				All-months record 8 (Feb 1997)
23000/23090	Adelaide	20	10	8 (1902, 1959)
46043	Wilcannia	20	13	10 (1958, 1959, 1982)
47007	Broken Hill	20	15	11 (1959)
		25	9	3 (1959, 1997, 2006)
73054	Wyalong	20	10	5 (2002)
80023	Kerang	20	6	4 (2007)

Table 5 (cont.). Selected stations where the number of days with temperatures exceeding given thresholds is the highest on record for November.

Station number	Location	Value (°C)	Date	Previous record
<b>Maximum temperature</b>				
11003	Eucla	44.5	13/11	44.0 (23/11/1982)
11004/11052	Forrest	44.9	14/11	44.8 (29/11/1962)
13017	Giles	43.9	17/11	43.8 (30/11/1996)
15590	Alice Springs	43.0	17/11	42.9 (28/11/1996)
16001	Woomera	44.9	19/11	44.4 (29/11/2006)
16065	Andamooka	45.1	16/11	44.2 (25/11/1991)
17005/17110	Leigh Creek	45.2	18/11	43.7 (18/11/1968, 29/11/2006)
17031	Marree	47.4	18/11	46.1 (30/11/1982)
17099	Arkaroola	44.4	18/11	43.5 (30/11/1982)
18012	Ceduna	46.5	19/11	45.9 (25/11/1997)
18040	Kimba	43.5	19/11	43.2 (25/11/1997)
18069	Elliston	44.0	19/11	43.3 (29/11/2006) (Nov) 43.5 (17/2/2007) (all months)
18079	Streaky Bay	42.9	14/11	42.8 (29/11/1962)
19017	Hawker	44.0	18/11	41.5 (28/11/2006)
19036/19066/16092/18201	Port Augusta	46.3	19/11	44.9 (25/11/1997)
19062	Yongala	41.8	18/11	40.8 (30/11/1993)
21043	Port Pirie	44.0	15/11	42.8 (30/11/1962)
21046/21133	Snowtown	44.8	19/11	43.9 (30/11/1962)
22801/22823	Cape Borda	36.2	14/11	34.4 (27/11/2000)
23000/23090	Adelaide	43.0	19/11	42.7 (30/11/1962)
23034	Adelaide Airport	43.1	19/11	41.9 (30/11/1962)
23321/23373	Nuriootpa	41.5	19/11	41.0 (30/11/1993)
23343	Turretfield	44.0	19/11	43.8 (30/11/1993)
24016/24048	Renmark	44.6	18/11	43.9 (24/11/1982)
24511	Eudunda	41.5	19/11	40.6 (24/11/1982)
24518	Meningie	41.1	19/11	40.9 (25/11/1997)
40093	Gympie	40.5	17/11	40.0 (30/11/1996)
41175	Applethorpe	34.2	20/11	34.0 (10/11/2002)
46037	Tibooburra	46.4	18/11	44.8 (27/11/1995)
46042	White Cliffs PO	45.0	18/11	44.8 (30/11/2004)
46043	Wilcannia	45.2	16/11	45.0 (30/11/2004)
47007	Broken Hill	44.0	18/11	42.7 (25/11/1997)
47019	Menindee	45.2	18/11	44.4 (30/11/2004)
48013/48239/48245	Bourke	46.6	20/11	45.6 (30/11/1936)
48015	Brewarrina	46.0	20/11	44.0 (29/11/1997)
48030/48027	Cobar	45.4	20/11	45.0 (18/11/1944)
48031	Collarenebri	44.2	20/11	43.8 (30/11/1997)
50031	Peak Hill	43.8	20/11	42.4 (25/11/1982)
51039	Nyngan	45.0	20/11	43.6 (30/11/2004)
51049	Trangie	44.8	20/11	43.7 (25/11/1982)
52020	Mungindi	44.0	19/11	43.9 (29/11/2006)
54104	Pindari Dam	38.9	18/11	38.2 (29/11/1996)
55049	Quirindi	42.2	20/11	41.7 (19/11/1968)
55136	Woolbrook	36.5	19, 20/11	35.1 (25/11/1982)
56011	Glen Innes PO	34.9	20/11	34.4 (19/11/1968)
58130	Murwillumbah	39.6	17/11	38.7 (2/11/1997)
61242	Cessnock (Nulkaba)	44.0	20/11	43.0 (30/11/2004)
62013	Gulgong	41.4	21/11	40.7 (29/11/1997)
63005	Bathurst Ag	39.7	20/11	38.4 (26/11/1997)
63023	Cowra Res Ctr	42.4	20/11	41.5 (26/11/1997)
63254	Orange Ag Inst	35.7	20/11	34.8 (26/11/1997)
64009	Dunedoo	43.0	20/11	42.0 (30/11/2004)

Table 6. Records set in the period 7-22 November 2009 at long-term stations (30 or more years of data).

Station number	Location	Value (°C)	Date	Previous record
<b>Maximum temperature</b>				
65012/65070	Dubbo	43.4	20/11	43.3 (19/11/1944)
65034	Wellington	43.0	20/11	41.5 (30/11/2004)
65091	Cowra Airport	43.8	20/11	43.1 (26/11/1997)
67019	Prospect Reservoir	42.0	20/11	41.6 (25/11/2002)
68102	Bowral	38.0	20/11	37.1 (26/11/1997)
70080	Taralga	38.5	20/11	37.2 (26/11/1997)
70091	Yass	39.5	20/11	38.9 (26/11/1997)
70278	Cooma	36.5	20/11	34.6 (18/11/1980)
75032	Hillston	43.5	20/11	43.2 (30/11/2004)
75039	Lake Cargelligo	43.9	20/11	43.5 (30/11/2004)
82042	Strathbogie	37.2	19/11	37.0 (24/11/1982)
82053/82138	Wangaratta	41.4	19/11	41.1 (17/11/1980)
88023	Lake Eildon	38.9	19/11	38.6 (24/11/1982)
91112/91107	Wynyard	30.5	19/11	29.4 (23/11/1982)
91223	Marrawah	29.0	9/11	27.6 (13/11/1988)
92003	Bicheno	35.1	20/11	33.9 (15/11/2003)
<b>Minimum temperature</b>				
10536	Corrigin	24.7	12/11	23.7 (23/11/1977)
10568	Hyden	24.8	12/11	23.0 (23/11/1977)
17099	Arkaroola	30.3	20/11	30.0 (28/11/2006)
18079	Streaky Bay	25.9	15/11	25.6 (30/11/1962)
18115	Neptune Island	20.7	14/11	19.5 (27/11/2004)
22803	Cape Willoughby	22.3	10/11	22.0 (1/11/1987)
38024	Windorah	31.7	21/11	31.1 (16/11/1996)
46037	Tibooburra	30.9	19/11	30.7 (30/11/2004)
46042	White Cliffs PO	32.1	19/11	30.6 (30/11/1966)
47007	Broken Hill	30.2	20/11	28.8 (26/11/1997)
47016	Lake Victoria	25.5	20/11	25.4 (30/11/2004)
47019	Menindee	29.6	20/11	28.3 (30/11/1966)
48013/48239/48245	Bourke	32.2	22/11	30.6 (6/11/1965)
48015	Brewarrina	30.0	22/11	28.1 (29/11/2006)
48031	Collarenebri	30.6	22/11	29.0 (21/11/1982)
49002	Balranald	26.7	19/11	25.6 (13/11/2008)
49019	Ivanhoe	30.5	20/11	30.0 (28/11/1959)
51010	Coonamble	30.0	22/11	28.3 (6/11/1965)
51039	Nyngan	29.4	22/11	27.2 (6/11/1965)
51049	Trangie	27.3	21/11	26.6 (28/11/1980)
52026/52088	Walgett	30.3	22/11	30.2 (20/11/1944)
55024	Gunnedah Res Ctr	29.3	22/11	28.1 (19/11/1968)
55049	Quirindi	27.2	22/11	23.3 (6/11/1965)
58158	Murwillumbah	24.4	22/11	23.7 (7/11/1994)
61051	Murrurundi	25.1	22/11	23.0 (28/11/1995)
63039	Katoomba	24.7	20/11	22.0 (25/11/1982)
63231	Orange Airport	20.8	20, 22/11	20.2 (26/11/2002)
63254	Orange Ag Inst	22.3	20/11	22.2 (25/11/1982)
65026	Parkes	27.8	20/11	26.7 (18/11/1980)
65034	Wellington	26.2	22/11	23.4 (22/11/2006)
68192	Camden	21.7	21/11	21.0 (4/11/2005)
72091/72161	Cabramurra	20.8	20/11	20.0 (26/11/1997)
73007	Burrinjuck Dam	22.6	21/11	22.0 (22/11/2006)
73014	Grenfell	27.8	20/11	24.7 (26/11/1997)
75032	Hillston	30.0	20/11	28.3 (28/11/1959)
76064	Walpeup	26.1	20/11	25.6 (19/11/1987)
78077	Warracknabeal	25.0	20/11	24.2 (13/11/2008)
80023	Kerang	25.5	20/11	24.7 (27/11/1997)
80091	Kyabram	21.2	20/11	21.1 (3/11/2005)

Table 6 (cont.). Records set in the period 7-22 November 2009 at long-term stations (30 or more years of data).