



Issued 2 September 2024 — Monthly Summary for Australia — Product Code IDCKGC1AR0

Australia in August 2024

In brief

- Australia's national area-averaged mean temperature was 3.03 °C warmer than the 1961–1990 average, the warmest August on record since 1910.
- It was the warmest August on record for New South Wales, Victoria, Tasmania, Queensland and South Australia, and the second-warmest on record for Western Australia and the Northern Territory.
- The national area-averaged mean maximum and mean minimum temperatures were the warmest on record, 3.50 °C and 2.56 °C above average respectively.
- Both mean maximum and mean minimum temperatures were warmer than average for most of Australia.
- South Australia had its warmest August mean maximum temperature on record, 4.63 °C above the 1961-1990 average.
- Area-averaged mean minimum temperatures were the warmest on record for all states, and the ninth-warmest on record for the Northern Territory.
- The national area-averaged August rainfall total was 4.8% below the 1961–1990 average.
- Victoria had its driest August since 2014, 55.4% below the 1961-1990 average.
- August rainfall was above average for large parts of Tasmania, Western Australia and Queensland, and parts of north-eastern New South Wales.
- Rainfall was below average for Victoria, much of southern South Australia, large parts of New South Wales and scattered areas across southern Western Australia, southern Northern Territory and south-western Queensland.

Further information and tables of records for each state and the Northern Territory can be found in the individual [regional climate summaries](#), published on 4 September 2024.

Temperatures

Australia's national area-averaged mean temperature was 3.03 °C warmer than the 1961–1990 average, the warmest August on record since 1910.

In terms of mean temperature, August was the warmest on record for New South Wales, Victoria, Tasmania, Queensland and South Australia, and the second-warmest on record for Western Australia and the Northern Territory.

An unseasonal warm second half of August affected most of Australia, with both daytime and night-time temperatures more than 10 °C above the August average for large parts of the country. Many stations set records for the number of consecutive days with temperatures above a threshold or highest daily maximum or minimum temperatures for August.

Australia's area-averaged mean maximum temperature was 3.50 °C above average, the warmest August on record since national observations began in 1910. Mean maximum temperatures were above to very much above average (in the highest 10% of all Augusts since 1910) for most of Australia. Mean maximum temperatures for August were the highest on record for parts of the Kimberley and Southern Interior districts of Western Australia, the Top End and Simpson and Lasseter districts in the Northern Territory, the Northern Pastoral districts in South Australia extending

into south-western Queensland, southern Victoria and south-eastern South Australia. Many stations in these areas had their highest mean maximum temperature records for August.

South Australia had its warmest August mean maximum temperature on record, 4.63 °C above the 1961–1990 average. For Queensland, New South Wales, Victoria, Tasmania and the Northern Territory, it was the second-warmest August on record, while for Western Australia it was the third warmest on record.

The national area-averaged mean minimum temperature was 2.56 °C above average, the warmest August on record. Mean minimum temperatures were above to very much above average (in the highest 10% of all Augusts since 1910) for most of Australia. Mean minimum temperatures for August were the highest on record for most of South Australia, large parts of New South Wales and southern Queensland, and parts of southern and eastern Victoria, northern Tasmania and the Pilbara, Lower West, South West and Southern Interior districts in Western Australia. Many stations in these areas had their highest mean minimum temperature records for August.

Area-averaged mean minimum temperatures were the warmest on record for all states, and the ninth-warmest on record for the Northern Territory.

1-month temperature table ending August 2024

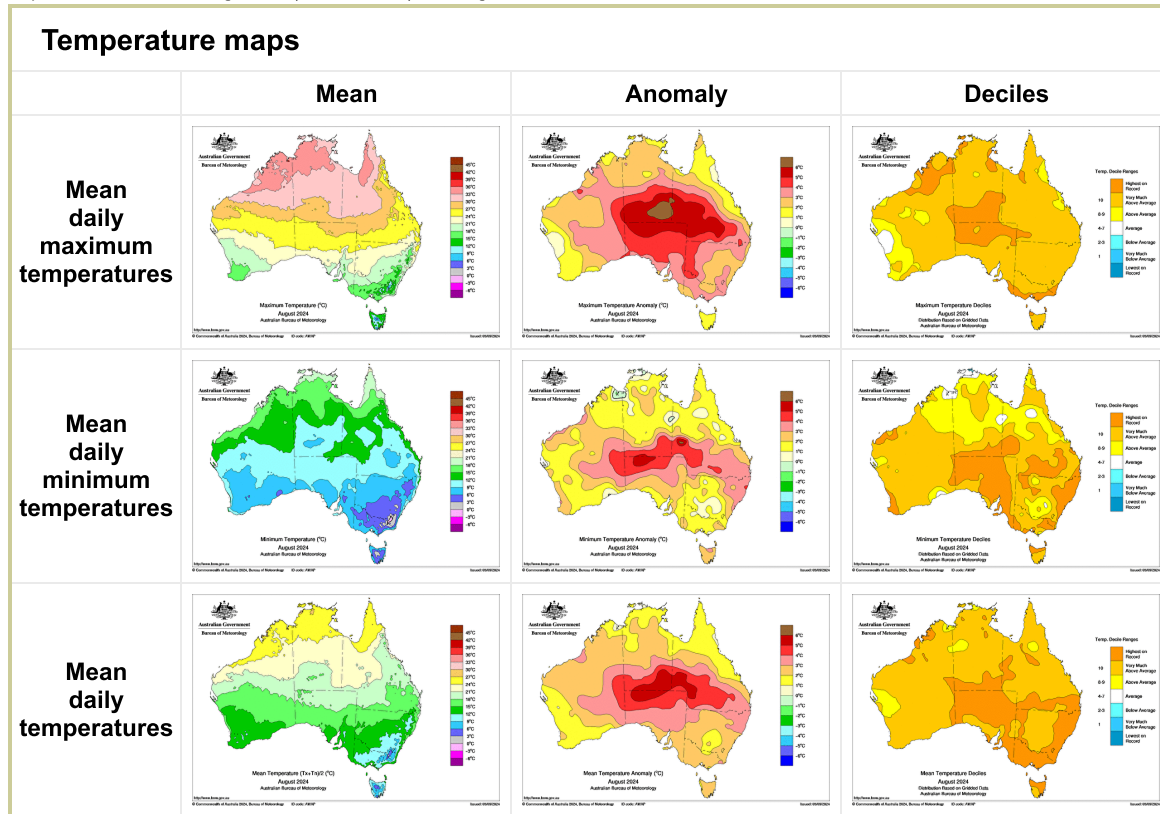
Areal average temperatures									
	Maximum Temperature			Minimum Temperature			Mean Temperature		
	Rank (of 115)	Anomaly (°C)	Comment	Rank (of 115)	Anomaly (°C)	Comment	Rank (of 115)	Anomaly (°C)	Comment
Australia	115	+3.50	highest (was +3.26 °C in 2009)	115	+2.56	highest (was +2.06 °C in 1998)	115	+3.03	highest (was +2.56 °C in 2009)
Queensland	114	+3.74	2nd highest (record +4.29 °C in 2009)	115	+3.01	highest (was +2.52 °C in 1998)	115	+3.38	highest (was +3.35 °C in 2009)
New South Wales	114	+3.39	2nd highest (record +4.23 °C in 1982)	115	+2.59	highest (was +2.34 °C in 1998)	115	+2.99	highest (was +2.38 °C in 1982)
Victoria	114	+3.33	2nd highest (record +3.47 °C in 1982)	115	+1.59	highest (was +1.43 °C in 2013)	115	+2.46	highest (was +1.62 °C in 1982)
Tasmania	114	+1.75	2nd highest (record +1.76 °C in 1982)	115	+2.94	highest (was +2.82 °C in 2011)	115	+2.35	highest (was +2.22 °C in 2011)
South Australia	115	+4.63	highest (was +4.46 °C in 1982)	115	+3.08	highest (was +2.45 °C in 2009)	115	+3.86	highest (was +3.04 °C in 2009)
Western Australia	113	+2.88	3rd highest (record +3.61 °C in 2023)	115	+2.41	highest (was +2.15 °C in 1998)	114	+2.65	2nd highest (record +2.76 °C in 2023)
Northern Territory	114	+3.72	2nd highest (record)	107	+1.97	9th highest; highest	114	+2.85	2nd highest (record)

+3.86 °C
in 2009)

since
2009

+3.05 °C
in 2009)

Rank ranges from 1 (lowest) to 115 (highest). A rank marked with '=' indicates the value is tied for that rank. **Anomaly** is the departure from the long-term (1961–1990) average.



Rainfall

The national area-averaged August rainfall total was 4.8% below the 1961–1990 average.

Area-averaged rainfall for August was above average for Tasmania, Western Australia and Queensland, and below average for other states and the Northern Territory, noting that the later is seasonally dry.

August rainfall was above average for large parts of Tasmania, Western Australia and Queensland, and parts of north-eastern New South Wales. Rainfall was very much above average (in the highest 10% of all Augusts since 1900) for parts of Western Australia's Pilbara, north-east Gascoyne, north-west Southern Interior, South West and Great Southern districts, and much of Queensland's central and southern coast extending inland. Rainfall was the highest on record for parts of Capricornia and Wide Bay and Burnett districts in Queensland. Many stations in these areas had their record highest August total rainfall.

Rainfall was below average for Victoria, much of southern South Australia, large parts of New South Wales and areas scattered across southern Western Australia, southern Northern Territory and south-western Queensland. Rainfall was very much below average (in the lowest 10% of all Augusts since 1900) for central and north-western Victoria, parts of eastern South Australia and the lower Eyre Peninsula and a small area in the Eucla district in Western Australia.

Victoria had its driest August since 2014, 55.4% below the 1961-1990 August average.

Significant weather and records

Cold fronts and low pressure systems brought rainfall to southern Western Australia

A strong cold front late on 31 July brought intense showers, damaging wind gusts and thunderstorms to the south of Western Australia. Widespread rainfall was observed through south-western areas of the state, with totals generally

between 15 and 40 mm along the south-west coast. The highest rainfall total in the 24 hours to 9 am on 1 August, 52.6 mm, was recorded at Jindong, while Pemberton, recorded 52.0 mm, its record highest daily rainfall for August (84 years of data).

A cold front and an associated low pressure trough moved over southern Western Australia late on the 6th bringing thunderstorms, damaging wind gusts and locally heavy falls around Perth and inland areas. In the 24 hours to 9 am on the 7th, a number of stations across Lower West and Great Southern districts recorded daily rainfall totals in excess of 40.0 mm. Pierce RAAF had 45.6 mm, with 29.0 mm recorded in 1 hour. Stations with high daily rainfall totals include Jarrahdale (141 years of data) which recorded 80.0 mm, the third-highest August daily rainfall total for this station, Karnet (62 years of data) which had 67.0mm, its fourth-highest August rainfall and Pingelly (134 years of data) which recorded 54.0 mm, its second-highest August total rainfall.

Two cold fronts and an associated low pressure system moved over southern Western Australia between 16 and 18 August bringing widespread rain, isolated thunderstorms, localised flooding, strong winds and cooler conditions to much of the state's south-west and south. In the 24 hours to 9 am on the 17th, moderate to high rainfall totals were recorded in Western Australia's far south-west, with daily totals generally between 30 and 70 mm. The highest daily rainfall total of 86.2 mm was recorded at Yoongarillup TBRG; some stations in the area had their record highest daily rainfall for August. The front progressed eastwards during the 17th, bringing broader areas of showers and thunderstorms to most of the west coast and adjacent inland areas. In the 24 hours to 9 am on the 18th, daily rainfall totals between 30 and 60 mm were recorded across coastal districts between Kalbarri and Walpole, with lower totals further inland. Small hail was observed through parts of the south-west, including across the southern suburbs of Perth and in Hopetoun on the south coast. During the 18th, the low pressure system directed showers towards southern coastal districts, with daily totals mostly between 20 and 40 mm.

A trough and a low pressure system moved over the state's south on the 22nd, bringing rainfall to the South West Land Division with daily totals of 5 to 35 mm. A strong cold front followed late on the 23rd and the 24th, with gusty to locally damaging winds, showers and isolated thunderstorms. Daily rainfall totals in the 24 hours to 9 am on the 24th were generally between 20 and 40 mm along the west coast, and to 9 am on the 25th the South West Land Division recorded between 5 and 15 mm. Behind the front, wind gusts in excess of 90 km/h were recorded at multiple stations.

Another two cold fronts crossed Southern Western Australia close to the end of the month, bringing generally light to moderate rainfall.

Unseasonal rainfall in parts of northern and central Australia

Between 1 and 4 August, there was unseasonal rain over parts of northern Western Australia and the interior of the continent, as a surface trough developed north-west of Australia bringing tropical moisture from the warm Indian Ocean. Clouds and rain extended over Western Australia's Pilbara and Gascoyne districts on 2 August, progressing slowly eastwards into central Australia over the following days.

In the 24 hours to 9 am on the 3rd, Gascoyne's Minner (61 years of data) had 25.4 mm, its second-highest August daily rainfall total, Tangadee (65 years of data) had 29.4 mm, its third-highest August daily total, while Carnegie (79 years of data) in the Southern Interior had 35.0 mm, its record highest daily rainfall for August. Rain continued to extend eastwards and to 9 am on the 4th, Giles had 19.0 mm, while Emabella / Pukatja in northern South Australia had 18.6 mm. Average August rainfall totals for the Western Australia's Pilbara, Gascoyne and Interior districts, northern South Australia and southern Northern Territory range between 1 and 10 mm.

Cloudy skies and rainfall resulted in daily maximum temperatures more than 6 °C below average in large parts of Western Australia, South Australia and south-western Northern Territory during this time.

Showers for the east coast

Between 11 and 15 August, an upper-level low pressure trough combined with the moist onshore airflow to produce widespread showers, rain and thunderstorms, initially mostly between Cooktown Airport and Williamson in Queensland. In the following days, wet weather spread into inland Queensland and eastern parts of New South Wales.

In the 24 hours to 9 am on 12 August, showers, rain and thunderstorms with moderate to heavy falls impacted parts of eastern Queensland and north-eastern New South Wales. Daily rainfall totals were generally between 15 mm and more than 100 mm, with small hail observed in Townsville. The north-eastern New South Wales coast recorded

rainfall totals between 50 and 150 mm, the most significant August rainfall in the region for at least 10 years, with the highest rainfall total of 157.4 mm at Evans Head Bombing Range RAAF.

The following two days brought widespread showers to much of south-eastern Queensland and eastern New South Wales, extending well into the slopes and plains to the west of the Great Dividing Range. In the 24 hours to 9 am on the 13th, daily rainfall totals mostly ranged between 30 and 90 mm, while to 9 am on the 14th, the heaviest falls of 100 to 140 mm were recorded through parts of Queensland's Capricornia, and Wide Bay and Burnett districts. A number of stations with more than 50 years of data had their wettest August day on record, including Pacific Heights with 112.4 mm (134 years of data), Glenlands with 119.7 mm (97 years of data), Mandubbera with 100.0 mm (114 years of data) and Rockhampton Aero with 85.0 mm (86 years of data).

Multiple sites across the south-eastern Queensland and northern coast of New South Wales observed 4-day rainfall totals (11 to 14 August) of more than 200 mm, with the highest 4-day rainfall total of 258.8 mm at Samuel Hill Aero in Queensland.

Rainfall started to ease during the 14th, as the upper trough moved away from the east coast, with patchy showers persisting about the coast for another day.

Warm across large parts of Australia

Between 10 and 15 August, warm conditions developed across southern Australia, as a high pressure system in the Tasman Sea brought warmer northerly winds to the south. Warm conditions initially developed over the south-west of Western Australia, before moving eastwards pushed by an approaching cold front. From the 12th, warm conditions extended across South Australia, Victoria and Tasmania, with daytime temperatures generally 6 to 8 °C above the August average. Between the 12th and 15th, some stations mostly located in south-central Victoria, set August records for the number of consecutive days above threshold temperature. For Melbourne city, it was the earliest run of 4 consecutive days at 20.0 °C or above.

Between 22 and 31 August, much of central and northern Australia experienced unseasonal warmth. Warm conditions started to build over the interior of the continent as a slow moving high pressure system resulted in mostly clear skies, allowing the land to heat up rapidly. Strong north-westerly winds ahead of a cold front moving through south-west Western Australia advected the warm air to central and southern Australia. Temperatures decreased across southern parts of the country due to a series of cold fronts that moved over the south from the 25th, but in Australia's central and northern parts, heat persisted throughout the whole period. Daily maximum temperatures 5 to 15 °C above the August average were observed in much of the country, with many stations across Northern Territory, northern Western Australia, South Australia, parts of Queensland and New South Wales, and Victoria recording their highest maximum temperatures for August. Oodnadatta Airport (75 years of data) recorded 39.4 °C on the 24th, a new August and winter maximum temperature record for South Australia, surpassing the previous record by nearly 3 °C (previous record was 36.5 °C set on 12 August 1946). On the 25th, temperature records were set across Western Australia's Kimberley; Fitzroy Crossing Aero recorded 40.6 °C, its record highest daily maximum temperature for August, and the first temperature of 40.0 °C or more in Australia for this season. Night-time temperatures were also very warm, and many stations had their record highest daily minimum temperature for August on the 25th and 26th. Oodnadatta Airport recorded 23.4 °C on the 25th, a new August and winter minimum temperature record for South Australia. On the 26th, the most intense heat was across northern parts of Western Australia, the Northern Territory and Queensland. Yampi Sound, in Western Australia's Kimberley district, recorded 41.6 °C, a new August and winter maximum temperature record for both Australia and the state, while Bradshaw (Angallari Valley) in the Northern Territory had 40.0 °C a new August maximum temperature record for the Territory. On the 30th, Birdsville Airport had 39.7 °C, an August maximum temperature record for Queensland, equalled at Boulia Airport the following day.

The heat extended to the east coast at the end of the month, with most sites in metropolitan Sydney having their highest August temperature on record on the 30th, and several sites around Brisbane setting records on the 31st.

A daily maximum temperature of at least 40.0 °C was recorded on 20 occasions during the month. Previously, 40.0 °C had only been recorded 4 times in August across Australia, once in 1970 and 3 times in 2020.

Many stations set records for number of consecutive days with maximum temperature at 30.0 °C or above in August. A large number of stations in the south-east had their warmest August mean maximum or minimum temperature on record.

Wet in south-eastern Australia

A cold front associated with a low pressure system to the south of the continent crossed south-eastern Australia on 15 and 16 August, bringing showers, patchy rain, isolated thunderstorms and strong winds. On the 15th, severe thunderstorms were observed across South Australia's Eyre Peninsula with reports of intense rainfall and large hail (2 to 4 cm) about the Mount Lofty Ranges. Some of the highest rainfall totals in the 24 hours to 9 am on the 16th include 34.2 mm at Kuitpo Forest Reserve, 32.6 mm at Crafers West and 31.0 mm at Mount Lofty. On the 16th, the cold front moved over Victoria, Tasmania and southern New South Wales, spreading strong and gusty winds and showers, with the highest daily rainfall totals to 9 am on the 17th generally between 20 and 30 mm.

A strong cold front moved over south-eastern South Australia, Victoria, Tasmania and southern New South Wales on 25 August, with severe thunderstorms impacting mostly Victoria and southern inland New South Wales. Thunderstorms brought damaging to destructive wind gusts, daily rainfall totals generally between 30 to 50 mm for north-central and north-east Victoria and south-east inland New South Wales, and locally large to giant hail. The highest daily rainfall totals during this event (in the 24 hours to 9 am on the 26th) were recorded at Mount Hotham (Victoria) and Perisher Valley AWS (New South Wales), with 70.6 mm and 67.8 mm respectively. Bendigo (Victoria) and surrounding towns observed hail with diameters of 5 cm or more.

A strong cold front crossed Tasmania on the 27th, bringing widespread rainfall to the state's south-west. Rainfall totals in the 24 hours to 9 am on the 28th were generally between 20 and 40 mm, with the highest total of 67.8 mm recorded at Warra, the stations third-highest rainfall total on record for August. A strong cold front late on the 29th brought more rain and many stations had more than 40 mm in the 24 hours to 9 am on the 30th; the highest daily rainfall total of 68.8 mm was recorded at Mount Read.

Strong winds across southern Australia

Between 24 and 31 August, southern Australia experienced a prolonged period of very strong winds, due to a series of cold fronts associated with a slow-moving, deep low pressure system passing over the Southern Ocean. Winds started to intensify over southern Western Australia on the 24th, spreading eastwards across South Australia, Victoria, New South Wales and Tasmania, as the first front moved across southern Australia. Behind the front, multiple stations in south-western Western Australia recorded wind gusts in excess of 90 km/h. The second front crossed southern Western Australia late on the 26th, reaching south-eastern South Australia and Victoria on the 27th, and bringing even stronger winds. It was followed by another strong cold front that crossed southern Western Australia on the 29th.

On the 25th, wind gusts of 150 km/h and 128 km/h were recorded at Mount Buller (Victoria) and Thredbo AWS (New South Wales) respectively. On the 28th, the strongest wind gusts for the respective states were 161 km/h recorded at Hogan Island (Tasmania), 154 km/h at Wilsons Promontory Lighthouse (Victoria) and 128 km/h at Thredbo AWS (New South Wales). On the 31st, many stations in Tasmania had their record highest daily wind gust for August or for any month, including 187 km/h at Maatsuyker Island, 161 km/h at Scotts Peak Dam and 156 km/h at Luncheon Hill (Forestry).

Severe Weather Warnings for damaging winds were issued for multiple states during most of this period. There were media reports of wind causing fallen trees, damage to loose structures and property, and power outages.

1-month rainfall table ending August 2024

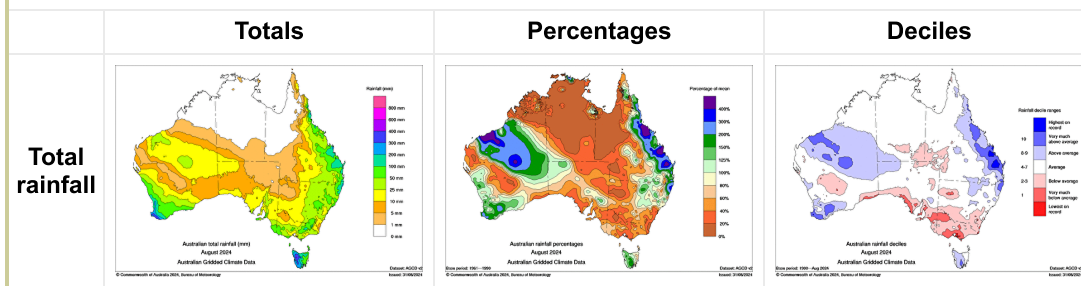
Area-average rainfall				
	Rank (of 125)	Average (mm)	Departure from mean	Comment
Australia	76	17.7	-5%	
Queensland	102	19.1	+39%	
New South Wales	52	29.2	-26%	
Victoria	14	33.7	-55%	

Area-average rainfall

	Rank (of 125)	Average (mm)	Departure from mean	Comment
Tasmania	98	186.1	+26%	
South Australia	28	10.1	-43%	
Western Australia	97	18.9	+28%	
Northern Territory	65	1.1	-68%	
Murray-Darling Basin	43	25.9	-34%	

Rank ranges from 1 (lowest) to 125 (highest). A rank marked with '=' indicates the value is tied for that rank. **Departure from mean** is relative to the long-term (1961–1990) average.

Rainfall maps



Australian weather extremes during August 2024

Hottest day	41.6°C	Yampi Sound (Defence) (WA) on the 26th
Coldest day	-1.3°C	Mount Hotham (Vic.) on the 5th
Coldest night	-9.0°C	Cooma Airport AWS (NSW) on the 2nd
Warmest night	26.3°C	Troughton Island (WA) on the 31st
Wettest day	199.9 mm	Byfield Childs Road (Qld.) on the 14th

Notes

National monthly and seasonal summaries are published on the first working day of the following month, based on information available at 3 pm on the first day of that month.

Long-term averages in this statement and associated tables are for the period 1961 to 1990 unless otherwise specified. Temperature area averages are derived from the ACORN-SAT version 2 dataset and temperature maps are derived from the [AWAP dataset](#). Rainfall area averages and maps, are derived from the [AGCD dataset](#).



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