

Issued 1 November 2024 — Monthly Summary for Australia — Product Code IDCKGC1AR0

Australia in October 2024

In brief

- Australia's national area-averaged mean temperature in October was 2.51 °C above the 1961–1990 average, the second-highest for October since 1910.
- The area-averaged mean temperature for Queensland was the highest on record for October, 2.77 °C above the 1961–1990 average.
- Australia's area-averaged mean maximum temperature was 2.81 °C above average, the fourth-highest on record for October since 1910, while the national area-averaged mean minimum temperature was 2.21 °C above average, the second-highest on record.
- Both mean maximum and mean minimum temperatures were above average for most of Australia.
- The national area-averaged October rainfall total was 18.4% below the 1961–1990 average.
- Area-averaged rainfall was above average for Western Australia and below average for all other states and territories.
- October rainfall was above average for much of Western Australia, parts of western South Australia, and areas in the north of the Northern Territory and along the east coast.
- Rainfall was below average for most of Tasmania, western and eastern Victoria and large parts of New South Wales, Queensland, south-western Western Australia, and small areas of south-eastern and northern South Australia and southern Northern Territory.

Further information and tables of records for each state and the Northern Territory can be found in the individual [regional climate summaries](#), published on 6 November 2024.

Temperatures

Australia's national area-averaged mean temperature was 2.51 °C above the 1961–1990 average, the second-highest on record for October since 1910.

The area-averaged mean temperature for Queensland was the highest on record for October, 2.77 °C above the 1961–1990 average, surpassing the previous record of 2.76 °C set in 1988. For South Australia and Western Australia, area-averaged mean temperature was the second-highest and third-highest on record respectively.

Warm conditions persisted over most of northern Australia since the beginning of the month with daily maximum temperatures at times reaching 8 °C above the October average. Severe intensity heatwaves developed in parts of western Top End including Tiwi Islands in the Northern Territory, the western Kimberley in Western Australia and parts of the Cape York Peninsula in Queensland and continued during most of the month with Heatwave Warnings issued on most days.

Australia's area-averaged mean maximum temperature was 2.81 °C, the fourth-highest on record for October since 1910. Mean maximum temperatures were above to very much above average (in the highest 10% of all Octobers since 1910) for most of Australia. Mean maximum temperatures for October were the highest on record for parts of the Kimberley in Western Australia, eastern Northern Territory and western and central Queensland. Some stations in these areas had their highest October mean maximum temperatures on record.

For both Queensland and the Northern Territory, area-averaged mean maximum temperature was the second-highest on record for October.

The national area-averaged mean minimum temperature was 2.21 °C above average, the second-highest for October on record. Mean minimum temperatures were above to very much above average (in the highest 10% of all Octobers since 1910) for most of Australia. Mean minimum temperatures for October were the highest on record for some areas scattered across central and western parts of the country. Some stations in these areas had their highest mean minimum temperature records for October.

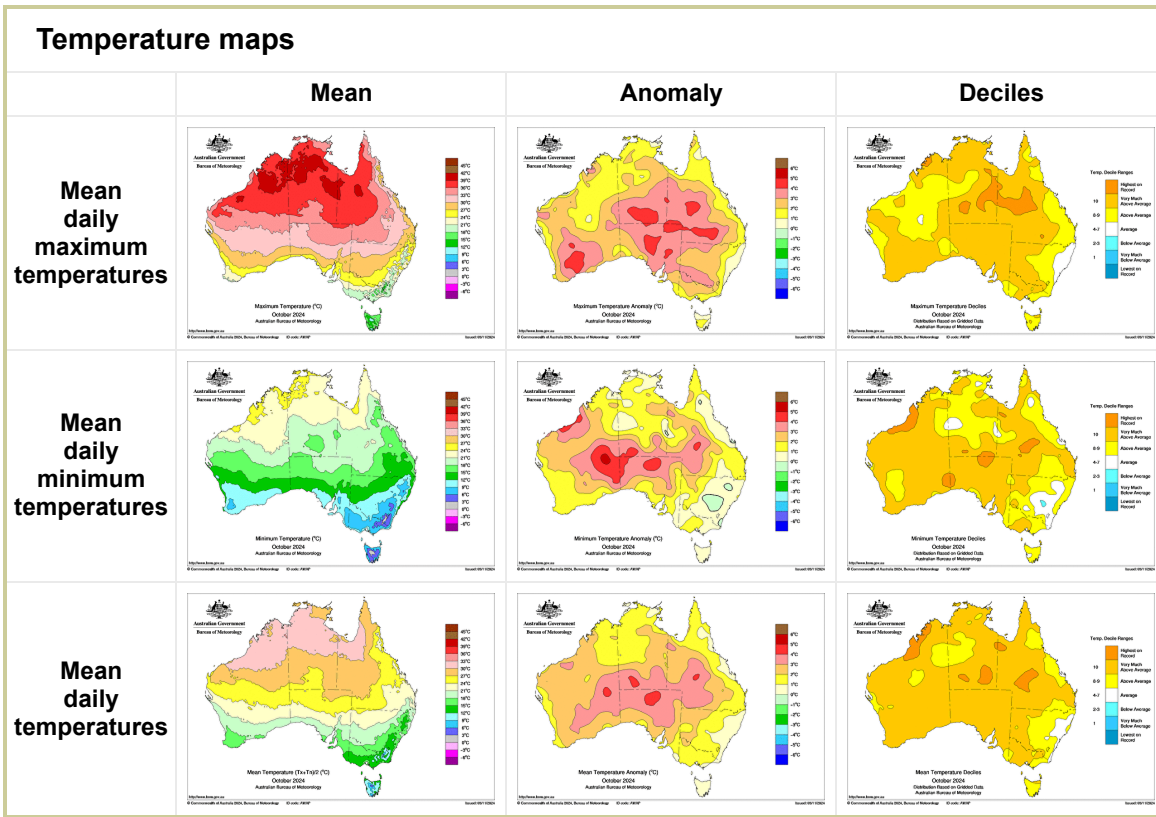
For both South Australia and Western Australia, area-averaged mean minimum temperature was the second-highest on record for October, the highest since 2015. Area-averaged mean minimum temperature for Queensland was the third-highest on record.

Mean maximum and minimum temperatures were close to or below average only for small areas of coastal New South Wales and adjacent ranges.

1-month temperature table ending October 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	112	+2.81	4th highest (record +3.61 °C in 2015)	114	+2.21	2nd highest (record +2.44 °C in 2015)	114	+2.51	2nd highest (record +3.03 °C in 2015)
Queensland	114	+2.97	2nd highest (record +3.19 °C in 1988)	113	+2.56	3rd highest (record +2.87 °C in 2017)	115	+2.77	highest (was +2.76 °C in 1988)
New South Wales	105	+2.53		100	+1.30		= 105	+1.92	equal 10th highest
Victoria	103	+2.01		100	+0.91		107	+1.46	9th highest
Tasmania	106	+0.99	10th highest	95	+0.51		106	+0.75	10th highest
South Australia	112	+3.61	4th highest (record +5.91 °C in 2015)	114	+2.88	2nd highest (record +3.66 °C in 2015)	114	+3.25	2nd highest (record +4.79 °C in 2015)
Western Australia	111	+2.83	5th highest	114	+2.45	2nd highest (record +2.74 °C in 2015)	113	+2.64	3rd highest (record +3.32 °C in 2015)
Northern Territory	114	+2.36	2nd highest (record +2.65 °C in 1988)	= 106	+1.65	equal 9th highest	110	+2.00	6th highest

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 October rainfall total was 18.4% above the 1961–1990 average.

October rainfall was above to very much above average (in the highest 10% of all Octobers since 1900) for much of Western Australia and some areas in the north of the Northern Territory and northern Queensland. Rainfall was above average also for parts of western South Australia, north-western New South Wales and areas along the coast of Queensland.

Rainfall was below to very much below average (in the lowest 10% of all Octobers since 1900) for south-western Western Australia, and parts of New South Wales and Victoria. Rainfall was also below average for most of Tasmania, large parts of Queensland and areas scattered across south-eastern and northern South Australia and southern Northern Territory.

For both Victoria and Tasmania area-averaged rainfall was the lowest since 2019, around 30% below the October average.

Significant weather and records

Rain and damaging winds in Western Australia

A strong cold front moved across Western Australia on 2 October, with a band of rain, showers, thunderstorms and strong winds. Ahead of the front, a west coast trough moved inland bringing showers and thunderstorms to central and eastern parts of the state. The front brought strong westerly winds, with gusts above 80 km/h recorded at many stations. The strongest wind gust of 98 km/h was recorded at Cape Leeuwin on the 3rd. Two-day rainfall totals to 9 am on the 3rd were generally between 10 and 30 mm, with the highest two-day total of 59.8 mm recorded at Bickley in the state's south-west. Prenti Downs station, located in the Southern Interior, had a two-day rainfall total of 41.0 mm; this area has October average rainfall of 5 to 25 mm.

Hot conditions across northern Australia

Hot days and warm nights occurred regularly throughout October across northern Australia. Daily maximum temperatures were in the high 30s and low 40s and minimum temperatures in the mid to high 20s, 2 to 8 °C above the October average. A severe intensity heatwave developed from 3 October in parts of western Top End including

the Tiwi Islands in the Northern Territory and western Kimberley in Western Australia and extended from the 7th to include the Cape York Peninsula in Queensland. Extreme intensity heatwaves impacted areas south of Darwin at times, with Heatwave Warnings issued for affected areas. Conditions started to ease from 12 October.

Hot days and warm nights over much of northern Australia continued in the following days. Severe heatwave conditions developed again in parts the Top End and Kimberley, and smaller areas of the Cape York Peninsula from the 21st.

At Darwin Airport, daily maximum temperatures were at least 35.0 °C on 15 days during the month. This is the highest on record for October, and 5 times its October average of 3 days of at least 35.0 °C.

Thunderstorms along the east coast

On 8 and 9 October, thunderstorms triggered by a low pressure trough impacted eastern and south-eastern Queensland, and north-eastern New South Wales. Storms produced moderate to heavy rainfall with daily totals generally between 30 and 60 mm, but with locally higher falls. In the 24 hours to 9 am on the 10th, daily rainfall totals greater than 100 mm were recorded in Queensland's Southeast Coast district and the Northern Rivers and Northern Tablelands districts in New South Wales. The highest daily total (to 9 am on the 10th) of 183.0 mm was recorded at Murwillumbah (Bray Park) in New South Wales.

Most of the rain from thunderstorms generally fell in a short period of time, typically one hour or less. Localised flash flooding was reported at some places including Mudgeeraba (Queensland) which had 69.0 mm in 30 minutes, Kingscliff (New South Wales) which had 74.0 mm in one hour and Proston (Queensland) which had 77.0 mm in one hour, all on the 9th. There were reports of hail in the south-east Queensland on the 9th with small hail several centimetres deep reported at Morayfield and near Kogan, while hailstones with diameter of 7 cm were observed north of Injune.

Thunderstorms, some severe, impacted south-eastern Queensland and north-eastern and central New South Wales on 24 October, triggered by a low pressure trough and warm humid air. Daily rainfall totals to 9 am on the 25th were generally between 20 and 40 mm, with higher totals up to 85 mm observed across the southern Capricornia and Wide Bay and Burnett districts in Queensland and Hunter district in New South Wales. There were reports of hail and trees downed by strong winds.

More severe thunderstorms developed on the 27th and 28th across parts of central and south-eastern Queensland and north-eastern new South Wales. Daily rainfall totals were generally 10 to 30 mm but there were reports of locally heavy rainfall and flash flooding, as well as hail in many areas.

Warm across large parts of the south

Intense heat, with temperatures up to 12 °C above average impacted parts of central Australia and eastern South Australia on 16 and 17 October, due to a northerly airflow preceding an approaching cold front. On the 17th, some sites in South Australia had their early season maximum temperature records (i.e. the highest temperature observed so early in the season) – Andamooka (55 years of data) recorded 42.8 °C, while Coober Pedy Airport (31 years of data) had 43.7 °C; these were the second-highest October temperatures for both stations

The south-westerly airflow that followed in the wake of a cold front brought cooler conditions on the 18th, but heat quickly started to build again, with daytime temperatures up to 10 °C above the October average affecting southern Western Australia, South Australia and most of Victoria, Tasmania and western New South Wales between the 20th and 22nd. Melbourne (Olympic Park) recorded 30.6 °C on the 22nd, making it the warmest October day since 2019.

Thunderstorm outbreaks in the southern and eastern Australia

From 15 October, a slow-moving high pressure system located south-east of Australia directed humid air from the north to the eastern states. Tropical moisture combined with low pressure troughs, a cold front and a low pressure system that moved over south-eastern parts of the country on the 17th and 18th, resulting in several days of widespread rainfall, showers, thunderstorms and strong, gusty winds in large parts of southern and eastern Australia.

On the 16th, severe thunderstorms developed across the southern interior of Western Australia, south-eastern South Australia including the Adelaide Hills, south-eastern Queensland, south-western New South Wales and western Victoria. A supercell storm moved across western Victoria, bringing heavy rain and large hail. In Casterton, 21.0 mm

of rain fell in 30 minutes, while large hail (3 to 5 cm in diameter) was observed in Casterton and Wonwondah. In an area south of Broken Hill (New South Wales), strong winds and heavy hail damaged powerlines and transmission towers leaving the city and surrounding communities without power.

On the 17th, strong winds affected inland South Australia and parts of southern Northern Territory and western New South Wales causing dust-storms across the dry interior. Some stations recorded wind gusts of more than 90 km/h. Port Pirie Aerodrome AWS and Roxby Downs (Olympic Dam Aerodrome), both in South Australia, recorded the strongest wind gusts of 137 km/h and 130 km/h respectively. A severe thunderstorm brought heavy rainfall and flash flooding to Mintaro (South Australia) where 36.0 mm was recorded in one hour, while hail was observed in the vicinity of Whyalla (South Australia). In the 24 hours to 9 am on the 18th, daily rainfall totals were generally between 15 and 35 mm in south-eastern South Australia, northern Victoria and adjacent parts of New South Wales, with daily totals exceeding 40 mm locally. Woomelang, in Victoria's north-west, recorded 55.8 mm, its record highest daily rainfall total for October, with 125 years of data.

Early on the 18th, the low pressure system moved into Victoria and continued eastwards bringing heavy rain and thunderstorms to Victoria, Tasmania and inland New South Wales. A band of severe thunderstorms moved through central Victoria, including Geelong and Greater Melbourne. In the 24 hours to 9 am on the 19th, Geelong Racecourse station had a daily rainfall total of 69.2 mm with 39.2 mm recorded in 30 minutes, Frankston had a daily total of 48.2 mm with 35.2 mm recorded in two hours, while many stations across Greater Melbourne had daily rainfall totals above 35 mm. Heavy rainfall resulted in flash flooding in many suburbs impacting transport, while strong winds damaged powerlines leaving many customers without power. Lightning that occurred during the afternoon in the vicinity of Melbourne Airport resulted in postponed ground operations and some delays.

Severe weather eased early on the 19th as the low pressure system moved over the Australia's east coast and into the Tasman Sea.

Cool in in the south-east

A cold front crossed south-eastern Australia on 23 October with strong, gusty winds, showers, and 'speckled' clouds in a cold southerly airstream behind the front. On 24 and 25 October, large parts of South Australia, Victoria, Tasmania, New South Wales and southern Queensland experienced daily maximum temperatures up to 6 °C cooler than average for October. The cold front also brought snow to elevated parts of Tasmania and the alpine areas of Victoria.

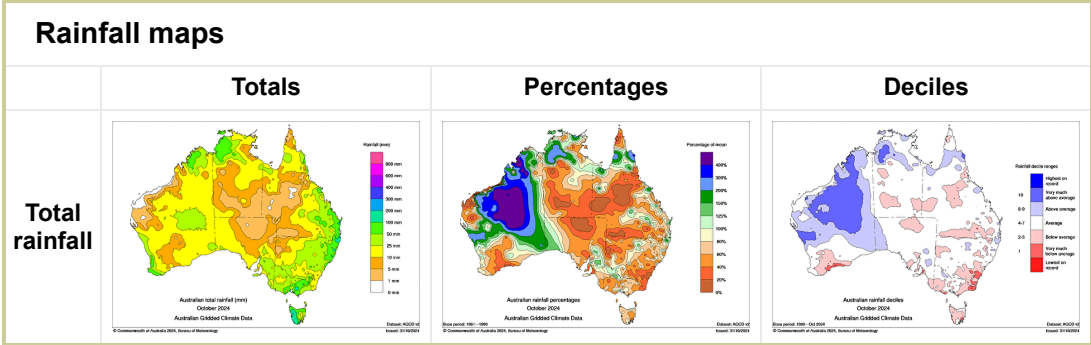
Clear skies and light winds under the high pressure system that moved over south-eastern Australia following the cold front, resulted in low daily minimum temperatures on the 25th and 26th in large parts of south-eastern and central Australia. The lowest daily minimum temperature on the 26th was -7.7 °C at Perisher Valley AWS (New South Wales), while Canberra had -1.3 °C, its lowest October daily minimum temperature since 2014.

1-month rainfall table ending October 2024

Area-average rainfall				
	Rank (of 125)	Average (mm)	Departure from mean	Comment
Australia	58	19.0	-18%	
Queensland	44	16.9	-34%	
New South Wales	38	29.2	-39%	
Victoria	37	43.4	-33%	
Tasmania	18	84.2	-29%	
South Australia	59	12.3	-32%	
Western Australia	109	17.4	+51%	

Area-average rainfall				
	Rank (of 125)	Average (mm)	Departure from mean	Comment
Northern Territory	66	15.8	-16%	
Murray-Darling Basin	35	27.1	-37%	

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.



Australian weather extremes during October 2024

Hottest day	45.3°C	Roebourne Aero (WA) on the 26th
Coldest day	1.5°C	Mount Read (Tas.) on the 7th
Coldest night	-7.7°C	Perisher Valley AWS (NSW) on the 26th
Warmest night	32.5°C	Carnegie (WA) on the 31st
Wettest day	183.0 mm	Murwillumbah (Bray Park) (NSW) on the 10th

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](#).



Unless otherwise noted, all maps, graphs and diagrams in this page are licensed under the [Creative Commons Attribution 4.0 International Licence](#)

This page was created at **9:50 on Wednesday 06 November 2024**

