



Monana

THE OFFICIAL PUBLICATION OF THE AUSTRALIAN
METEOROLOGICAL ASSOCIATION INC
June 2019

One of the Bureau of Meteorology's newer forecasting meteorologists, Hilary Wilson, gave an excellent talk on the life of a weather forecaster and how the forecast is put together, at the AMETA April meeting. This was very well attended, and Hilary gave the audience a great run through of life forecasting the weather. Thank you Hilary.



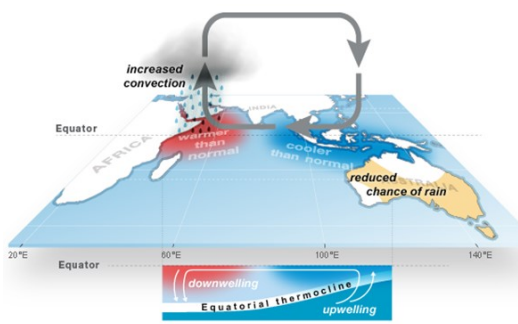
For those interested in a career in weather, or have family interested, there is some good information at: <http://www.bom.gov.au/careers/grad-met/>
For more on her talk see page 4.

The Indian Ocean what?

As far as major climate influences on Australia go, many people are fairly familiar with El Niño events - variability in the Pacific Ocean linked to hot and dry conditions in Australia, and perhaps the wetter, cooler flip side in La Niña events. This year-to-year variability has been well known in the climate community since the 1980's, and was first noticed as early as the late 1800's.

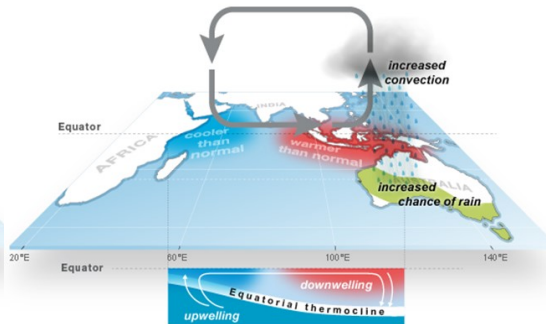
The understanding of the Earth's climate system has evolved quite a lot over recent decades, and one piece of the puzzle researchers have established is the **Indian Ocean Dipole** (IOD). This is a pattern of variability in the northern Indian Ocean, seen from May or June, and running through until the northern monsoon gets going in November. The first scientific paper on this came out in 1999.

Researchers noticed variations in the sea surface temperatures in the region to the northwest of Australia, and in the area near eastern Africa. They established an index which takes the difference from average of the sea surface temperatures to the northwest of Australia away from the difference from average of sea surface temperatures near Africa. This is where the **Dipole** bit comes in - from comparing ocean temperatures in two different regions.



Indian Ocean Dipole (IOD): **Positive phase**

© Commonwealth of Australia 2013



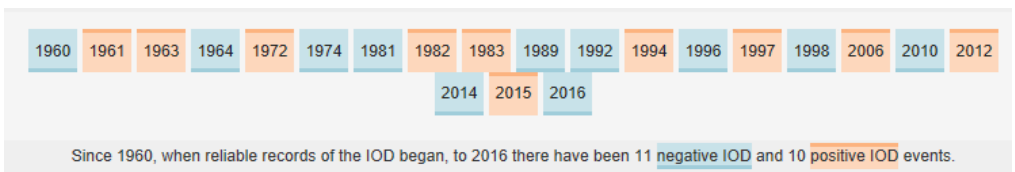
Indian Ocean Dipole (IOD): **Negative phase**

© Commonwealth of Australia 2013.

When sea surface temperatures are warmer than average near Africa and cooler than average near north-western Australia this results in positive values of the index. Values above 0.4 for 3-5 months are called Positive Indian Ocean Dipole events. Values less than -0.4°C for 3-5 months are Negative IOD events, and see warmer than average water to the northwest of Australia, and cooler than average near Africa.

So why is this important? Negative IOD events see lots of moisture coming off the oceans across Australia, contributing to Negative IOD years being some of the wettest on record for Australia. 1992 is a good example. Positive IOD years tend to be much drier with less moisture coming down from the northwest, and the atmosphere tending to sink down more than usual as well, leading to drier than average conditions.

Negative IOD events can happen on their own as in 1992 or 2016, or with a La Niña, as in 2010/11. And Positive IOD can also be on their own, or with an El Niño events as well, such as in 2006 and 2015.



The Bureau of Meteorology uses outlook models to forecast the likelihood of the year seeing a Positive or Negative IOD event. This year conditions are shaping up to be strong Positive IOD year. This means reduced rainfall and warmer conditions are likely for this winter and spring. It is worth noting that IOD events particularly impact August to October. So it is shaping to be another drier and warmer than average year.

There is plenty of information on the Bureau of Meteorology webpage about what the IOD is, the typical impacts and what the outlook is for the current year.

See: www.bom.gov.au/climate/ahead/ and go to the "About outlooks and influences" tab. There is even a Youtube video on the Indian Ocean Dipole to look through.

Greater Adelaide in March 2019: very dry and warmer than average

Rainfall in March was below to very much below average at sites throughout Adelaide and the Hills. Both daytime and night-time temperatures were warmer than average for March, despite a cool end to the month.

Drier than average

- Rainfall in March was below average at sites throughout Adelaide and the Hills
- Although Adelaide (West Terrace) had a near-average six rain days in March, the 8 mm total rainfall for the month was only about one-third of the average
- March rainfall totals were less than a quarter of average at Mount Crawford, about a third of average in the city, and about two-thirds of average on Mount Lofty
- Some sites in the Greater Adelaide area had their driest March on record or their driest March since 1994.

Warmer than average

- Daytime temperatures for March were warmer than average throughout Adelaide and the Hills
- Mean minimum temperatures ranged from 0.4 °C warmer than average at Adelaide (West Terrace / ngayirdapira), Parafield Airport and Rosedale, to 1.2 °C warmer than average at Mount Barker.

Adelaide (West Terrace / ngayirdapira)

- Total rainfall was 8.0 mm, which is 34% of the long-term average
- The mean daily maximum temperature for Adelaide (West Terrace / ngayirdapira) was 26.6 °C, which is 0.6 °C above the long-term average
- The hottest day was 40.3 °C on the 1st, and the coolest day was on the 30th when the temperature reached 18.4 °C
- The mean daily minimum temperature for Adelaide (West Terrace / ngayirdapira) was 15.6 °C, which is 0.4 °C above the long-term average
- The coolest morning was 9.8 °C on the 30th, and the warmest morning was on the 2nd when the minimum temperature was 29.3 °C

Extremes for Greater Adelaide in March 2019

Hottest day	42.3 °C at Edinburgh RAAF on the 1st
Warmest days on average	28.6 °C at Rosedale (Turretfield Research Centre)
Coollest days on average	22.4 °C at Mount Lofty
Coldest day	11.1 °C at Mount Lofty on the 30th
Coldest night	5.0 °C at Mount Lofty on the 30th
Coollest nights on average	11.7 °C at Mount Barker
Warmest nights on average	16.4 °C at Noarlunga
Warmest night	31.3 °C at Noarlunga on the 2nd
Warmest on average overall	21.9 °C at Adelaide (Kent Town)
Coollest on average overall	17.4 °C at Mount Lofty
Wettest overall	26.8 mm at Mount Lofty
Wettest day	10.4 mm at Belair on the 25th
Strongest wind gust	94 km/h at Mount Crawford AWS on the 24 th

A Day in the Life of a Weather Forecaster

In April Hilary Wilson, a weather forecaster in the South Australian Office of the Bureau of Meteorology, outlined her path to weather forecasting and described the interesting and highly varied life of a weather forecaster.

After completing her Bachelor of Science majoring in weather and climate science at Melbourne University Hilary undertook a 9 month Graduate Diploma in Meteorology along with on-the-job training at the Bureau of Meteorology. She was attracted to the field because of the wide ranging applications of meteorological science and the opportunity to work with diverse users of forecasting products.

The smooth running and output of a weather forecasting office depends upon the development and continuous monitoring and review of the overall forecast policy. This entails building a 4- dimensional picture of the atmosphere through examination and integration of recent data from surface weather stations, satellites, weather radar, aircraft and balloon flights. Recent and present weather events are taken into account and prognoses charts of mean sea level and upper air developments – products of numerical prediction models are also used to develop a forecast policy for the next few days. The situation appraisal includes both a broad area assessment of atmospheric pressure and frontal systems with associated air temperatures and weather and, a more local assessment using high resolution numerical weather products which take into account local effects such as topography and sea and land breezes. Once the official forecasts, based on these assessments are produced and disseminated, the policy undergoes ongoing monitoring and review as updated data and analyses are received. A special focus is given to potentially hazardous weather including severe thunderstorms, fire weather, damaging winds and heavy rainfall events.

For a junior forecaster, each shift is different and filled with a variety of tasks. An important role is in interacting and providing additional interpretation of disseminated products to the media – including radio, social networks and television. These products include both forecasts and daily summaries of weather, rainfall, wind and maximum and minimum temperatures. These daily summaries are prepared by the young forecasters. Their workload is significantly enhanced on days of severe weather when continuous review of additional short term warnings is essential. In these situations a large part of Hilary's role is to assist the severe weather team with hazard and threshold monitoring, ongoing analysis and the distribution of warnings. In quieter periods this time may be available for training, research and personal projects related to improving her meteorological understanding.

Weather forecasting offices currently exist in each capital city in Australia, including Canberra. To find out more about career opportunities with the Bureau – see the Bureau's website at bom.gov.au.

Adelaide (West Terrace / Ngayirrapira), South Australia March 2019 Daily Weather Observations

The official site for Adelaide, having reopened in May 2017.



Date	Temps		Rain	Evap	Sun	Max wind gust			9am			3pm								
	Min	Max				Dirn	Spd	Time	Temp	RH	Cid	Dirn	Spd	MSLP	Temp	RH	Cid	Dirn	Spd	MSLP
	°C	°C				mm	mm	hours	°C	%	eights	km/h	local	°C	%	eights	km/h	hPa	°C	%
1	Fr	21.1	40.3	0		N	31	10:54	30.1	24	NE	15	1016.0	39.6	10	W	17	1013.3		
2	Sa	29.3	40.2	0		NW	37	10:37	32.5	19	NNE	13	1015.0	38.7	11	W	17	1013.1		
3	Su	22.2	32.0	0		SW	39	06:25	26.4	56	NE	11	1016.3	28.6	52	WSW	11	1016.2		
4	Mo	17.5	31.4	0		WSW	26	13:36	22.6	44		Calm	1018.5	28.2	39	WSW	17	1016.2		
5	Tu	15.0	23.9	0		WSW	44	18:37	19.0	64	S	9	1016.4	21.8	56	W	17	1014.9		
6	We	15.1	20.6	0		SW	46	16:44	16.7	41	SSW	20	1020.7	19.3	43	SW	17	1021.2		
7	Th	10.2	25.5	0.8		NNE	30	12:52	14.4	48	NE	13	1024.2	22.6	25	N	17	1018.6		
8	Fr	14.4	26.8	0		NW	24	11:25	20.1	32	NE	11	1016.5	25.4	25	WSW	11	1016.5		
9	Sa	15.9	27.6	0		WSW	26	16:33	21.4	72	SW	6	1019.0	26.7	45	SW	13	1017.3		
10	Su	18.4	26.1	0		WSW	26	12:10	20.6	72	NE	9	1015.2	24.8	60	WSW	9	1013.8		
11	Mo	19.1	23.2	0		SW	35	17:24	19.6	71	SSW	13	1014.3	21.8	55	WSW	15	1013.3		
12	Tu	17.6	21.7	0		SSW	41	11:16	17.6	76	SSW	19	1015.6	20.1	42	SSW	17	1016.6		
13	We	12.3	21.9	0.2		SW	33	17:27	15.8	51	E	9	1019.3	21.2	40	WSW	15	1017.3		
14	Th	10.5	24.5	0		WSW	30	13:11	16.4	54		Calm	1017.4	23.4	37	SW	17	1015.8		
15	Fr	12.3	27.1	0		WSW	31	13:53	17.7	64	NW	6	1019.7	24.2	48	WSW	17	1017.4		
16	Sa	14.1	28.4	0		SSW	31	15:31	20.1	58		Calm	1018.2	27.4	28	SW	17	1016.2		
17	Su	14.9	31.3	0		WSW	28	14:33	21.2	52		Calm	1017.0	29.5	36	WSW	15	1015.1		
18	Mo	14.9	30.5	0		WSW	22	11:57	21.6	50		Calm	1017.3	28.2	37	WSW	13	1014.4		
19	Tu	15.4	28.6	0		W	24	13:01	21.2	43	NNE	6	1015.7	27.4	38	SW	15	1013.4		
20	We	16.6	27.1	0		WSW	26	14:16	19.6	63	NE	11	1015.1	26.1	53	W	15	1013.3		
21	Th	16.4	28.8	0		S	28	14:24	21.1	58	S	4	1015.6	28.0	37	SSE	13	1013.6		
22	Fr	15.5	32.2	0		WSW	31	16:45	21.0	65	W	2	1012.5	30.9	35	WSW	11	1008.3		
23	Sa	18.8	25.2	0		W	24	09:18	21.5	75	W	6	1010.5	23.8	57	SW	9	1010.8		
24	Su	19.1	26.1	0		W	50	22:14	20.4	78	N	6	1009.7	24.9	59	NW	24	1006.0		
25	Mo	13.8	19.4	0.4		W	54	06:03	14.3	73	WSW	28	1013.3	17.9	48	WSW	26	1015.3		
26	Tu	12.9	20.8	2.6		SW	31	16:29	16.4	56	S	9	1023.0	20.1	50	WSW	17	1022.4		
27	We	10.3	23.9	0		WSW	26	14:15	15.6	71	NNE	9	1023.6	23.0	41	WSW	13	1020.4		
28	Th	12.4	28.9	0		NNW	31	11:14	18.4	48	NE	13	1016.6	27.7	25	NW	17	1012.3		
29	Fr	18.0	20.6						20.6	72	W	20	1008.3	15.9	68	SW	28	1010.4		
30	Sa	9.8	18.4	2.4		WSW	43	12:57	12.9	62	S	15	1018.1	16.2	51	SW	17	1018.5		
31	Su	10.9	20.5	1.6		SW	35	00:42	17.1	63	SSW	9	1022.1	19.4	59	WSW	19	1022.1		
Statistics for March 2019																				
Mean		15.6	26.6						19.8	57		9	1016.8	24.9	42		16	1015.3		
Lowest		9.8	18.4						12.9	19		Calm	1008.3	15.9	10	#	9	1006.0		
Highest		29.3	40.3	2.6		W	54		32.5	78	WSW	28	1024.2	39.6	68	SW	28	1022.4		
Total				8.0																

Observations were drawn from Adelaide (West Terrace / Ngayirrapira) (station 023000)

This is now the "official" site for Adelaide, having reopened in May 2017. Observations are also available from the Kent Town site (station number 023090).

IDC:JDW5061.201903 Prepared at 16:02 UTC on 2 May 2019

Copyright © 2019 Bureau of Meteorology

Users of this product are deemed to have read the information and

accepted the conditions described in the notes at

<http://www.bom.gov.au/climate/dwo/IDC-JDW0000.pdf>

South Australia in March 2019: warmer and drier than average in many districts

Rainfall in March was below to very much below average in most southern and western districts, but was above average in parts of the Northeast Pastoral district. Both daytime and night-time temperatures were warmer than average in most areas, particularly in northern and eastern districts.

Wet in the northeast but drier than average in many areas

- Rainfall was below to very much below average in most southern and western districts, but was near-average to above average in the Northeast Pastoral district
- South Australia's total rainfall for March was 64% less than average
- The highest monthly totals were in the Northeast Pastoral district, with daily totals of more the 40 mm on the 25th as a cold front to the south interacted with moist, tropical air from the remnants of ex-tropical cyclone Trevor
- Towards the end of the month, flood warnings were issued for parts of the Lake Eyre Basin at Goyder Lagoon and the Warburton River as roads were cut and flood plains inundated
- Rainfall for March was up to 400% of average in parts of the Northeast Pastoral district, but was less than 20% of average across many of the State's western and southern districts
- Some southern sites had their driest March either on record or since 1994
- Western districts received little or no rain for the month

Warmer than average

- Daytime temperatures in March were warmer than average across most of SA
- Mean maximum temperatures for March were above average to very much above average across Pastoral districts and in some central agricultural districts, and generally above average along the West Coast and South East districts
- Mean maximum temperatures were up to 4 °C warmer than average in the far Northwest Pastoral district
- The month began with several hot days and some sites having their highest March temperature on record (mostly on the 1st), or their warmest March night on record (on the 2nd)
- Woomera Aerodrome had a run of four consecutive days of 40 °C or above from 1 to 4 March, exceeding its previous longest run in March of three such days in 1991
- Oodnadatta had a total of ten days during the month with temperatures of 40 °C or above, exceeding its previous highest count for March of nine such days in 1983
- The March mean maximum temperature for South Australia was 2.21 °C warmer than average
- Mean minimum temperatures for March were above to very much above average for most of South Australia, but close to average in the south
- Cool temperatures during the last week of the month resulted in March mean minimum temperatures up to 1 °C cooler than average from Eyre Peninsula to the Lower South East
- Minimum temperatures were more than 6 °C cooler than average in many areas of the State on the 27th, with Streaky Bay having its lowest March temperature on record
- The March mean minimum temperature for South Australia was 1.34 °C warmer than average
- The overall March mean temperature for South Australia was 1.78 °C above average, making it the equal fourth-warmest March for the State as a whole.

Extremes in March 2019

Hottest day	45.3 °C at Nullarbor on the 1st
Warmest days on average	36.8 °C at Oodnadatta Airport
Coollest days on average	21.4 °C at Cape Willoughby
Coldest day	11.1 °C at Mount Lofty on the 30th
Coldest night	2.5 °C at Padthaway South on the 30th
Coollest nights on average	10.3 °C at Keith (Munkora)
Warmest nights on average	21.3 °C at Moomba Airport
Warmest night	31.3 °C at Noarlunga on the 2nd
Warmest on average overall	28.7 °C at Oodnadatta Airport
Coollest on average overall	17.0 °C at Robe Airfield
Wettest overall	42.2 mm at Kalamurina
Wettest day	42.2 mm at Kalamurina on the 25th
Strongest wind gust	94 km/h at Mount Crawford AWS on the 24 th

Some notable statistics for March were:

Record lowest March total rainfall

	New record (mm)	Old record	Years Held	March Average
Clare	3.6	4.0 in 2015	25	23.9
Mount Crawford	6.6	7.4 in 2015	25	28.2
Kuitpo Forest	11.0	16.2 in 2018	21	34.3
Snowtown	0.4	2.2 in 2014	21	17.9

Record highest March temperature

	New record (°C)	Old record	Years	Avge
Streaky Bay	42.8 on the 1st	42.6 on the 5th in 1986	62	27.2
Meningie	40.8 on the 1st	40.5 on the 17th in 2008	53	24.4
Cape Willoughby	38.5 on the 1st	37.2 on the 1st in 1989	52	20.8
Kent Town	42.2 on the 1st	41.9 on the 6th in 1986	43	26.5
Nullarbor	45.3 on the 1st	43.4 on the 26th in 2017	32	26.6
Cape Jaffa	38.4 on the 1st	37.3 on the 11th in 1998	28	22.7
North Shields	43.3 on the 1st	42.4 on the 9th in 2008	27	24.3
Mount Crawford	37.6 on the 1st	36.9 on the 17th in 2008	25	23.5
Parawa	38.2 on the 1st	36.9 on the 9th in 2008	25	21.2
Stenhouse Bay	41.9 on the 1st	41.2 on the 9th in 2008	24	23.4
Minnipa	42.4 on the 1st	= 42.4 on the 26th 2017	23	28.8
Nuriootpa	39.6 on the 2nd	39.2 on the 16th in 2008	23	26.0
Strathalbyn	41.6 on the 1st	40.3 on the 9th in 2008	23	25.3
Ernabella	42.2 on the 11th	41.1 on the 2nd in 2007	22	31.4
Roseworthy	42.6 on the 1st	41.7 on the 13th in 2008	22	28.3
Kuitpo Forest	38.1 on the 1st	37.4 on the 8th in 2008	21	23.3
Snowtown	41.5 on the 1st	41.1 on the 8th in 2016	21	28.7

Record lowest March daily maximum temperature				
	New record (°C)	Old record	Years	Avg
Coonawarra	15.6 on the 30th	= 15.6 on the 30th in 2004	34	25.0
Moomba	22.4 on the 30th	= 22.4 on the 28th in 2013	24	34.1

Record highest March mean daily maximum temperature				
	New record (°C)	Old record	Years Held	March Average
Oodnadatta	36.8	36.7 in 2017	70	33.8

Record highest March daily minimum temperature				
	New record (°C)	Old record	Years	Avg
West Terrace	29.3 on the 2nd	29.1 on the 4th in 1942	94	15.2
Cleve	29.3 on the 2nd	28.8 on the 3rd in 1965	62	14.7
Elliston	26.0 on the 2nd	25.7 on the 2nd in 2000	58	14.4
Maitland	27.5 on the 2nd	27.0 on the 17th in 2008	39	14.5
Coonawarra	25.0 on the 2nd	24.1 on the 4th in 2004	34	10.3
North Shields	23.4 on the 2nd	22.8 on the 8th in 2013	27	14.6
Clare	24.1 on the 2nd	23.3 on the 11th in 2014	25	12.2
Parawa	27.1 on the 2nd	25.2 on the 10th in 2008	25	13.0
Stenhouse Bay	23.7 on the 2nd	= 23.7 on the 2nd in 2000	24	16.0
Cleve	29.8 on the 2nd	29.1 on the 14th in 2008	23	14.6
Minnipa	29.0 on the 2nd	27.5 on the 17th in 2008	23	14.1
Nuriootpa	26.3 on the 2nd	24.1 on the 8th in 2013	23	12.0
Naracoorte	26.0 on the 2nd	25.0 on the 14th in 2008	21	10.1

Record lowest March temperature				
	New record (°C)	Old record	Years	Average
Cleve	7.8 on the 30th	= 7.8 on the 14th in 957	62	14.7
Streaky Bay	6.0 on the 31st	7.2 on the 2nd in 1964	62	14.8

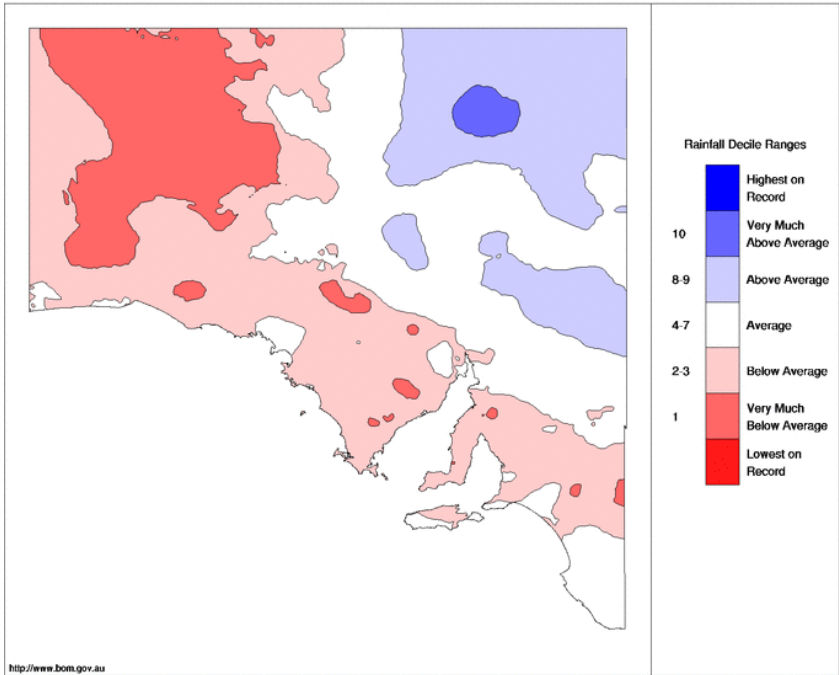
Record highest March mean temperature				
	New record (°C)	Old record	Years Held	Average
Cooper Pedy	27.2	26.9 in 2017	24	25.1

All the detail you could possibly want and more is available on the BoM website.

Visit <http://www.bom.gov.au/climate> and wander through the various archived climate reports and summaries which are available in text and graphical forms.

South Australian Rainfall Deciles March 2019

Distribution Based on Gridded Data
Australian Bureau of Meteorology

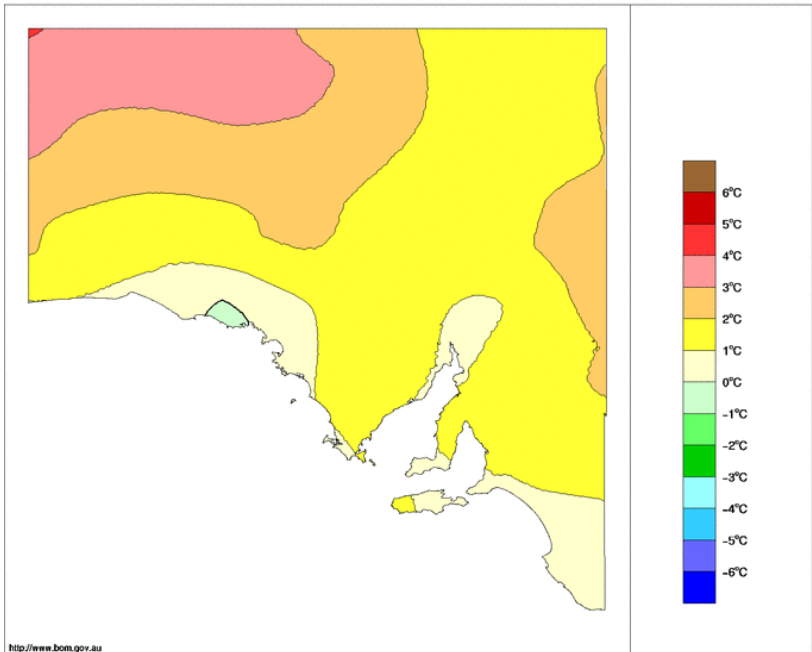


© Commonwealth of Australia 2019, Australian Bureau of Meteorology ID code: AWAP

Issued: 27/04/2019

Maximum Temperature Anomaly (°C) March 2019

Australian Bureau of Meteorology



© Commonwealth of Australia 2019, Australian Bureau of Meteorology ID code: AWAP

Issued: 27/04/2019

Greater Adelaide in April 2019: very dry and warm

Rainfall for April was very much below average throughout Adelaide and the Hills, with many suburbs having less than 10% of their monthly average. Daytime temperatures were very much warmer than average, with a burst of late season warmth during the third week of the month. Night-time temperatures generally weren't as extreme, but were still above average in most suburbs.

A very dry month

- Rainfall was very much below average throughout Adelaide and the Hills in April
- In the city, Adelaide (West Terrace / ngayirdapira) recorded 3.2 mm, which ranked as one of its ten driest Aprils on record
- Rainfall totals across Greater Adelaide were less than 10 mm and ranged from 1% of average at Rosedale to 15% of average at Mount Lofty
- For the January to April period, Adelaide (West Terrace / ngayirdapira) and Adelaide (Kent Town) each had their driest starts to the year on record
- A number of sites had either their lowest total April rainfall on record or their lowest total April rainfall for at least 20 years

Warmer than average

- There was unusual late season warmth for several days between the 14th and the 20th, with maximum temperatures more than 10 °C warmer than average on some days and minimum temperatures not dropping below 20 °C on the 17th
- The daily maximum temperature of 33.8 °C at West Terrace ngayirdapira on the 19th was the highest temperature recorded at the official city site so late in the season (previous late season record was 33.6 °C on 19 April 1902)
- Mean maximum temperatures ranged from 1.1 °C warmer than average at Noarlunga to 3.2 °C warmer than average at Mount Lofty
- For the January to April period, Adelaide (Kent Town) had its second-warmest start to the year for mean maximum temperature (warmest was January to April 2018)
- The daily minimum temperature of 24.5 °C at Adelaide (West Terrace / ngayirdapira) on the 17th was the highest minimum temperature at the official city site so late in the season (previous late season record was 24.4 °C on 17 April 1992 at Kent Town); it was also the warmest April night in the city for more than ten years, since 2 April 2005 (26.6 °C at Kent Town)
- Mean minimum temperatures ranged from 0.2 °C cooler than average at Rosedale to 1.9 °C warmer than average at Adelaide Airport
- On the 17th, Mount Barker had its warmest April night on record

Adelaide (West Terrace / ngayirdapira)

- Total rainfall was 3.2 mm, which is 7% of the long-term average of 43.8 mm
- The mean daily maximum temperature was 24.3 °C, which is 2.1 °C above the long-term average of 22.2 °C. The warmest day was 33.8 °C on the 19th, and the coolest day was on the 27th when the temperature reached 17.9 °C
- The mean daily minimum temperature was 14.1 °C, which is 1.3 °C above the long-term average of 12.8 °C. The coldest morning was 8.2 °C on the 25th, and the warmest morning was on the 17th when the minimum temperature was 24.5 °C

Extremes for Greater Adelaide in April 2019

Hottest day 35.4 °C at Rosedale on the 16th

Warmest days on average	25.3 °C at Parafield Airport
Coollest days on average	19.3 °C at Mount Lofty
Coldest day	12.6 °C at Mount Lofty on the 26th
Coldest night	2.0 °C at Mount Barker on the 11th
Coollest nights on average	10.5 °C at Rosedale (Turretfield Research Centre)
Warmest nights on average	14.3 °C at Noarlunga
Warmest night	24.7 °C at Adelaide (Kent Town) on the 17th
Warmest on average overall	19.2 °C at Adelaide (Kent Town)
	19.2 °C at Adelaide (West Terrace / ngayirdapira)
Coollest on average overall	15.0 °C at Mount Lofty
Wettest overall	14.0 mm at Ashton
Driest overall	0.2 mm at Gawler
Wettest day	6.0 mm at Belair (State Flora Nursery) on the 9th
Strongest wind gust	81 km/h at Kuitpo Forest Reserve on the 5th
	81 km/h at Outer Harbour (Black Pole) on the 30 th

Some notable statistics for April were:

Record lowest April total rainfall

	New record(mm)	Old record	Years Held	April Average
Williamstown	2.0	2.6 in 1993	52	48.6
Edinburgh RAAF	0.6	1.8 in 1997	47	29.5
Kuitpo Forest	7.2	7.4 in 2005	22	55.7

Record highest April daily minimum temperature

	New record(°C)	Old record	Years Held	Average
Mount Barker	23.4 on the 17th	21.7 on the 26th in 1962	63	8.4

Many other rainfall & temperature records were also set in April. For more information plus a summary of statistics please see:

<http://www.bom.gov.au/climate/current/month/sa/archive/201904.adelaide.shtml>

Adelaide (West Terrace / Ngayirdapira), South Australia April 2019 Daily Weather Observations

The official site for Adelaide, having reopened in May 2017.



Date	Day	Temps		Rain	Evap	Sun	Max wind gust					9am					3pm																		
		Min	Max				Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP	Temp	RH	Cld	Dir	Spd	MSLP														
		°C	°C	mm	mm	hours	km/h	km/h	local	°C	%	eighths	Dir	km/h	hPa	°C	%	eighths	Dir	km/h	hPa														
1	Mo	13.9	21.2	0	0		SW	30	13:01	16.7	54	SE	11	1025.7	20.1	47	WSW	15	1023.8																
2	Tu	10.8	27.6	0	0		N	22	10:58	17.2	56	NE	9	1024.2	26.2	18	W	11	1020.5																
3	We	13.3	26.5	0	0		N	19	10:10	20.2	37	NE	6	1024.2	25.6	28	SSW	7	1023.5																
4	Th	20.1	32.7	0	0		ENE	30	04:56	23.8	29	NE	13	1024.4	31.9	17	W	9	1020.7																
5	Fr	23.7	32.6	0	0		NNW	57	12:13	27.6	27	N	19	1017.1	32.1	23	NNW	26	1012.9																
6	Sa	17.0	21.0	0	0		SW	31	03:52	17.1	63	S	13	1023.0	19.6	54	WSW	13	1021.1																
7	Su	11.8	22.9	0	0		WSW	43	15:00	17.5	64	S	13	1019.2	21.6	50	W	22	1016.8																
8	Mo	14.0	23.7	0	0		NW	46	12:52	17.8	74	N	11	1016.7	20.8	62	WSW	22	1014.6																
9	Tu	13.1	19.0	1.6	0		W	33	00:20	15.1	47	SSW	17	1023.3	17.2	37	SSW	11	1023.6																
10	We	11.3	20.2	0.2	0		SE	30	20:13	14.4	49	NE	15	1028.6	18.2	32	S	6	1025.8																
11	Th	11.6	21.6	0	0		E	30	02:48	15.6	46	NE	15	1026.6	20.4	33	SW	13	1023.2																
12	Fr	13.2	25.2	0	0		W	28	12:20	19.1	30	NE	9	1023.2	24.4	19	WNW	9	1021.5																
13	Sa	13.6	23.1	0	0		E	20	12:15	18.2	42	NNE	6	1024.8	22.1	30	NNE	6	1022.6																
14	Su	15.6	28.7	0.8	0		E	35	05:04	18.9	69	NNE	11	1016.8	27.7	32	WNW	6	1017.5																
15	Mo	18.9	28.9	0	0		N	41	11:20	24.1	21	NNE	11	1016.8	27.7	14	NE	15	1013.5																
16	Tu	18.7	33.5	0	0		NNW	46	11:17	25.8	30	NE	11	1017.1	33.0	18	NW	24	1013.7																
17	We	24.5	25.7	0	0		SW	37	15:55	25.3	34	N	17	1016.8	22.5	57	SSW	19	1017.8																
18	Th	10.0	23.0	0	0		ENE	31	16:12	16.9	48	E	9	1027.5	22.7	29	ENE	13	1023.8																
19	Fr	16.6	33.8	0	0		ENE	31	01:00	22.7	29	NE	13	1022.3	33.0	16	ENE	13	1017.9																
20	Sa	21.3	32.2	0	0		N	48	12:49	28.1	23	NNE	17	1018.5	30.9	19	NNW	20	1013.3																
21	Su	14.4	20.0	0.6	0		SW	44	00:30	15.9	81	S	7	1020.2	18.8	51	WSW	13	1020.4																
22	Mo	8.9	20.5	0	0		WSW	30	12:47	16.4	54	S	7	1026.8	19.9	37	SSW	17	1024.9																
23	Tu	8.6	21.7	0	0		S	30	16:13	15.8	55	S	6	1028.3	20.5	36	S	19	1025.1																
24	We	8.7	20.4	0	0		WSW	35	14:43	15.4	65	WNW	6	1026.8	19.5	54	SSW	19	1024.8																
25	Th	8.2	21.4	0	0		WSW	30	20:20	15.3	69	NNW	7	1025.9	19.9	50	SW	15	1022.3																
26	Fr	15.1	18.3	0	0		SSW	46	08:33	16.4	66	SSW	17	1024.5	16.9	50	SSW	20	1024.7																
27	Sa	9.9	17.9	0	0		WSW	28	13:10	15.0	52	S	6	1030.8	17.4	51	WSW	15	1029.1																
28	Su	12.0	18.5	0	0		W	28	09:24	15.9	60	SSW	11	1030.3	17.6	58	WSW	15	1028.0																
29	Mo	8.5	23.9	0	0		NE	26	22:53	15.0	66	NE	11	1026.2	22.9	28	N	9	1019.5																
30	Tu	15.0	24.3	0	0		NW	54	19:59	18.5	38	NNE	15	1012.2	23.7	24	NNW	22	1004.6																
Statistics for April 2019																																			
Mean		14.1	24.3							18.7	49		10	1023.2	23.2	35				14	1020.4														
Lowest		8.2	17.9							14.4	21		Calm	1012.2	16.9	14			#	6	1004.6														
Highest		24.5	33.8	1.6			NNW	57		28.1	81	N	19	1030.8	33.0	62			NNW	26	1029.1														
Total				3.2																															

Observations were drawn from Adelaide (West Terrace / Ngayirdapira) (station 023000)

This is now the 'official' site for Adelaide, having reopened in May 2017. Observations are also available from the Kent Town site (station number 023060).

ICD:DW5081-201904 - Prepared at 13:02 UTC on 7 May 2019
Copyright © 2019 Bureau of Meteorology
Users of this product are deemed to have read the information and accepted the conditions described in the notes at <http://www.bom.gov.au/climate/dwo/ICD-DW50000.pdf>

South Australia in April 2019: drier than average and warm days

Rainfall for April was below to very much below average in most districts away from the West Coast and parts of the Flinders and Northeast Pastoral districts. Daytime temperatures for April were very much above average across large areas of South Australia, particularly across central and western districts. Night-time temperatures weren't as extreme, but were still warmer than average in most areas, with near average minimum temperatures in some northern and southeastern areas.

Driest April for two decades

- Rainfall was below average across parts of the northern Pastoral districts and in south-eastern South Australia, including small areas of driest on record
- Most of the State had less than 40% of the monthly average rainfall for April
- For South Australia as a whole, it was the driest April since 1999, with monthly rainfall 81% below average
- The highest totals were in southern coastal districts, with 24.3 mm at Flinders Chase (Rocky River) on Kangaroo Island being the wettest spot for the month
- For the State as a whole, the wettest day was on the 21st as a result of light to moderate rainfall along the West Coast during the passage of a cold front
- Most areas of the State had less than 10 mm for the month and the Pastoral districts generally had little or no rain
- Lake Eyre (North) / Kati-Thanda is about one half full from river inflows earlier in the year and follow-up inflows are possible by June from major flooding in the Diamantina catchment during February and March
- For the January to April period, most districts across the State have had one of their ten driest starts to the year on record, including several eastern Agricultural districts that have had either their driest or second-driest (behind only 1923) start to the year since national rainfall records began in 1900
- Many sites in south-eastern and northern South Australia, including in the Greater Adelaide region, had either their lowest total April rainfall on record or their lowest total April rainfall for at least 20 years

Warmer than average

- Daytime temperatures for April were very much above average across large areas of the State, particularly in the northwest and central districts
- The mean maximum temperature for South Australia as a whole was 2.46 °C above average, the sixth-highest on record for April
- For the January to April period, South Australia has had its warmest start to the year on record for mean maximum temperature (previous warmest January to April period was in 2018)
- Night-time temperatures in April weren't as extreme, but were still warmer than average in most areas, including a small area of very much above average minimum temperatures around Adelaide and the Fleurieu Peninsula
- There were small, isolated patches of cooler than average minimum temperatures in some central and eastern districts
- The State's mean minimum temperature was 0.80 °C warmer than average for April
- On the 17th, several sites had their warmest April night on record

Extremes for South Australia in April 2019

Hottest day	38.7 °C at Ceduna AMO on the 16th
Warmest days on average	30.9 °C at Marree Aero 30.9 °C at Oodnadatta Airport
Coollest days on average	19.3 °C at Mount Lofty
Coldest day	12.6 °C at Mount Lofty on the 26th
Coldest night	-0.8 °C at Gluepot Reserve (Gluepot) on the 11th
Coollest nights on average	7.5 °C at Coonawarra
Warmest nights on average	16.3 °C at Moomba Airport
Warmest night	25.4 °C at Whyalla Aero on the 17th
Warmest on average overall	23.3 °C at Marree Aero
Coollest on average overall	14.5 °C at Coonawarra
Wettest overall	24.3 mm at Flinders Chase (Rocky River)
Driest overall	0 mm at several locations
Wettest day	17.6 mm at Nullarbor on the 21st
Strongest wind gust	98 km/h at North Shields (Port Lincoln AWS) on 5th.

For more information plus a summary of statistics please see:

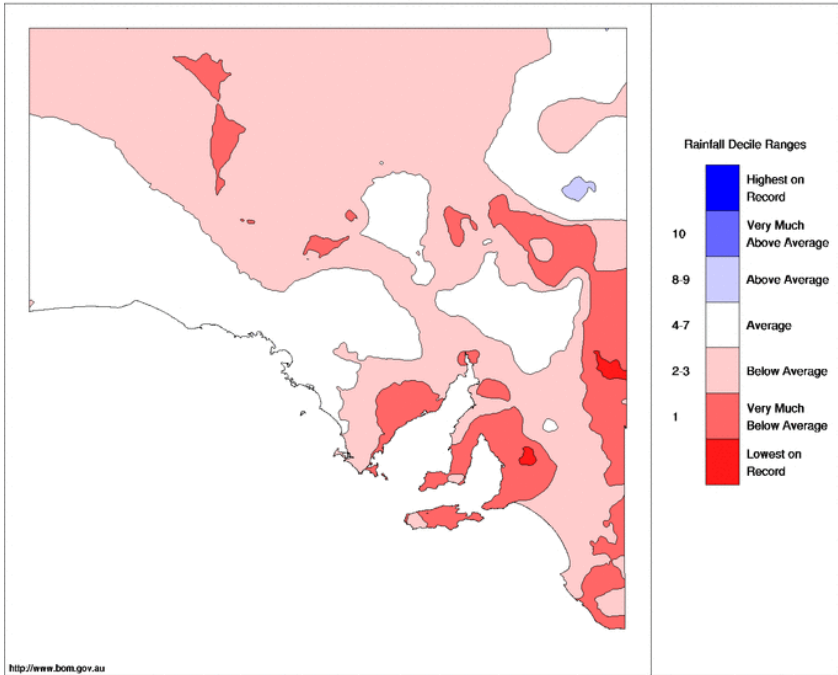
Record lowest April total rainfall				
	New record (mm)	Old record	Years Held	Average
Williamstown	2.0	2.6 in 1993	52	48.6
Edinburgh RAAF	0.6	1.8 in 1997	47	29.5
Renmark	0.0	0.2 in 1997	24	17.1
Nuriootpa	0.0	1.2 in 1997	23	33.7
Kuitpo Forest	7.2	7.4 in 2005	22	55.7
Roseworthy	1.2	5.0 in 2004	22	30.4
Tarcoola	0.2	= 0.2 in 2001	22	12.6

Record highest April daily minimum temperature				
	New record (°C)	Old record	Yrs Held	Avge
Mount Barker	23.4 on the 17th	21.7 on the 26th in 1962	63	8.4
Whyalla	25.4 on the 17th	23.2 on the 6th in 2012	32	11.9
Clare	21.0 on the 17th	19.4 on the 19th in 2017	26	9.1
Nuriootpa	20.4 on the 17th	20.0 on the 1st in 2005	23	9.2
Roseworthy	24.9 on the 17th	20.7 on the 6th in 2012	22	10.5
Tarcoola	25.3 on the 17th	24.0 on the 1st in 2005	22	12.3
Snowtown	22.2 on the 17th	20.7 on the 10th in 2005	21	9.5

<http://www.bom.gov.au/climate/current/month/sa/archive/201904.summary.shtml>

South Australian Rainfall Deciles April 2019

Distribution Based on Gridded Data
Australian Bureau of Meteorology

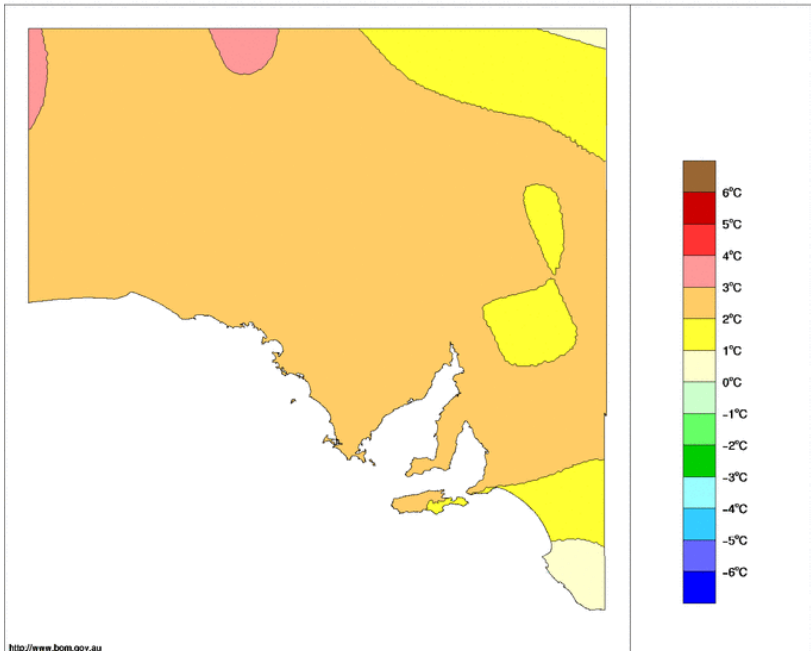


© Commonwealth of Australia 2019, Australian Bureau of Meteorology ID code: AWAP

Issued: 03/05/2019

Maximum Temperature Anomaly (°C) April 2019

Australian Bureau of Meteorology



© Commonwealth of Australia 2019, Australian Bureau of Meteorology ID code: AWAP

Issued: 03/05/2019



Australian Meteorological Association Inc (AMetA)
www.ameta.org.au

NEXT MEETING

6.00 PM TUESDAY 18 June 2019

Topic: Remember 47°C last summer?

Speaker: John Nairn, BOM State Manager, SA Region

2019 - Adelaide's hottest day, month and summer

In Australia, more deaths are caused by heat waves than any other natural disaster. John Nairn, State Manager of the Bureau of Meteorology, will describe a collaborative project between meteorologists and health professionals to build a heat wave vulnerability map for Australia.

Speaker: As Australia's premier heatwave Meteorologist, John Nairn has a national and global reputation in heatwave prediction, analysis and response. He has extensive experience in working cooperatively with the Bureau's clients in bushfire emergencies, airport operations, event forecasting and Antarctic operations.

Please also note that subscriptions for 2018/2019 (\$15) are now due

Secretary:	Darren Ray
Phone:	8366 2664
Fax:	8366 2693

Inquiries or suggestions, please contact the Secretary on the phone number listed above.