



# Monana

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April 2018



The AMETA meeting, on Tuesday 20th February featured a presentation by AMETA member Warwick Grace, Principal of Grace Research Network and currently undertaking research for the Ag Excellence Alliance.

Warwick's presentation concerned the establishment of a **Mesonet in the MidNorth of South Australia.**

In the Mid North of South Australia a Mesonet (mesoscale weather network) comprising 40 automatic weather stations will be established. Although there is no precise definition, "mesoscale" refers to weather events that range in size from 2 to 200 km and duration from several minutes to several hours. Mesoscale events include thunderstorms, fogs, land and seabreezes. Without densely spaced weather observations, these mesoscale events might go undetected.

The information from the network will allow farmers to avoid spraying pesticides when weather conditions indicate spray drift and off-target damage are likely. Such damage is estimated at up to \$200 million annually in the Mid North. So ultimately the test of the network will be whether that damage bill is reduced. Reducing spray drift damage is the main purpose of the mesonet. However there are many other general purpose benefits – one or two examples are: frost diagnosis and near-real-time rainfall monitoring; also some of the stations will be especially useful for Fire Weather monitoring.

Much of the spray drift damage is from weedicides such as 2,4-D, which selectively kills broadleaf weed but leaves grass and cereal unharmed, and glyphosate (aka Roundup) which is a broad spectrum agent meaning it will kill most plants. The problem arises when weedicide drifts on to a different crop, perhaps at a susceptible point in its growth cycle, or on to a property that is organic.

During the day, spray can drift across farm boundaries and although that is obviously a problem, the victim can often identify the cause (because the damage pattern will be worse at the common boundary and peter out with distance downwind as of the day of spraying) and take some action. At night, the meteorology and the sociology is different. At night there is usually an inversion at the surface, and this is also true for the period an hour before sunset and an hour after sunrise. For many people it is counter-intuitive that spraying in apparently benign wind conditions runs the risk that some of the finer spray droplets or particles will be lofted into an inversion layer. That layer, which could be only a few metres above the ground, then drifts unpredictably at up to 10kph for several hours. Eventually it may then impact on

some-one else's crop as the topography changes or the sun rises to stir and mix the inversion. So in this scenario, the victim has no idea who was the culprit. Indeed the intervening neighbours remain unaffected.

At its simplest, the mesonet will diagnose the existence of an inversion. There will also be a suite of more complex micro-meteorological measurements. The instruments include a measure of the temperature difference between 10m and 1.25m. In the daytime the upper temperature is usually 1 or 2°C cooler. At night the difference is reversed (that's why it's called an inversion) and 4 to 6 °C warmer aloft is commonly observed in our research towers in the general area. (We have over 20 across the country). Also on the towers are two wind readings – one at 10m and one at 2m. In some inversions, we observe that the winds at these heights are 90 or even 180° apart. The layers must be essentially sliding over each other. With such an observation, it becomes evident that any drift is going to be unpredictable. There will be other more sophisticated measures available as a Traffic Light system of advice (Safe to Spray/ Caution/ Don't Spray).

The first figure shows schematically the weather station instrumentation and the second figure shows the intended locations in the Mid North. We anticipate that there will be a public web site and that the network will be functioning by the end of 2019.

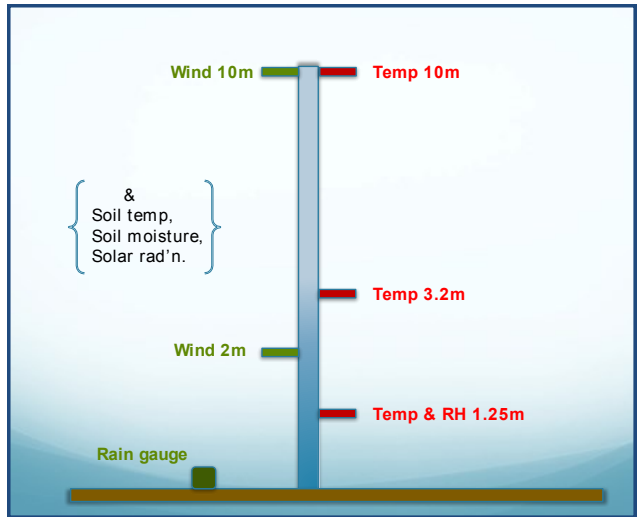


Figure 1. Schematic of the mesonet weather stations.

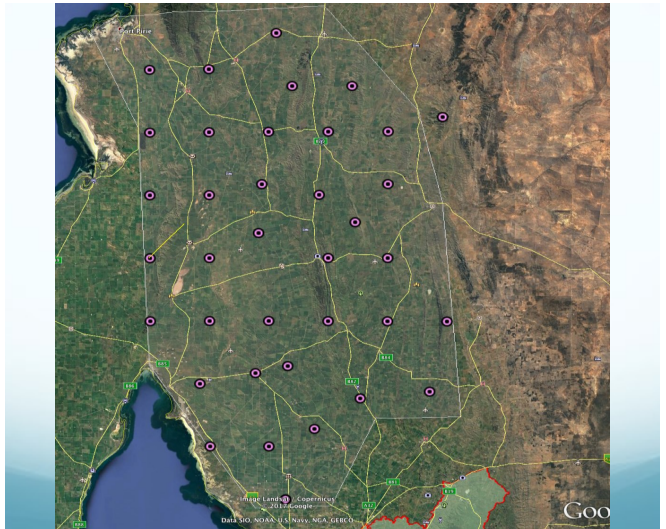


Figure 2. Expected locations of the mesonet automatic weather stations. The area covered stretches from Port Pirie to near Kapunda.

## **Greater Adelaide in January 2018: very warm with below average rainfall**

January rainfall was below average throughout the Adelaide region. Despite some cool days in the middle and end of the month, January mean daytime and night time temperatures were warmer than average throughout Adelaide and the Hills.

### **Below average rainfall**

- January rainfall totals were below average in all suburbs and in the Hills
- The total number of rain days in the city though was seven, higher than the January average of around four rain days

### **Above average temperatures**

- Mean daytime temperatures were very much warmer than average
- Adelaide experienced heatwave conditions several times during the month, as daytime temperatures exceeded 40 °C and overnight minima stayed above 20 °C in most suburbs on several days during the month
- Kent Town and Adelaide Airport had record long runs for January of consecutive days of 30 °C or above (14 days at Kent Town (previous record was 11 days in 2012), and 13 days at Adelaide Airport (previous record was 11 days in 2012))

### **Adelaide (West Terrace / ngayirdapira)**

- Adelaide rainfall was 6.8 mm, 34% of the long-term average of 19.9 mm
- The mean daily maximum temperature for Adelaide was 31.5 °C, 3.0 °C above long-term average of 28.5 °C. Warmest day was 42.3 °C on the 6th, coolest day was on the 31st when the temperature reached 22.6 °C
- Mean daily minimum temperature for Adelaide was 18.1 °C, 1.6 °C above the long-term average of 16.5 °C. The coldest morning was 12.6 °C on the 4th, and the warmest was the 18th when the minimum temperature was 25.4 °C

### **Extremes in January 2018**

Hottest day	44.8 °C at Rosedale on the 19th
Warmest days on average	33.0 °C at Rosedale
Coollest days on average	26.9 °C at Mount Lofty
Coldest day	16.4 °C at Mount Lofty on the 13th
Coldest night	8.2 °C at Mount Lofty on the 31st
Coollest nights on average	14.2 °C at Mount Barker
	14.2 °C at Mount Lofty
Warmest nights on average	18.8 °C at Adelaide (Kent Town)
Warmest night	27.2 °C at Noarlunga on the 18th
Warmest on average overall	25.7 °C at Adelaide (Kent Town)
Coollest on average overall	20.6 °C at Mount Lofty
Wettest overall	26.8 mm at Longwood Alert
Driest overall	3.0 mm at Morphettville
Wettest day	8.8 mm at Longwood Alert on the 22nd
	8.8 mm at Woodside on the 30th
Strongest wind gust	80 km/h at Sellicks Hill on the 31st

**For more information on January's temperatures and rainfall plus a summary of statistics please see:**

<http://www.bom.gov.au/climate/current/month/sa/archive/201801.adelaide.shtml>

# Adelaide (West Terrace / Ngayirdapira), South Australia January 2018 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				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP	
		°C	°C	mm	mm	hours	km/h	local	°C	%	eighths	°C	%	eighths	km/h	hPa	°C	%	eighths	km/h	hPa	
1	Mo	16.0	24.3	0			WNW	31	12:32	19.1	62		WSW	7	1011.5	22.6	47		SW	15	1010.4	
2	Tu	13.8	23.0	0			SSW	39	12:42	18.5	60		SSW	11	1012.6	21.1	46		SW	22	1013.3	
3	We		23.6							19.0	52		SSE	11	1018.4	21.9	48		SW	20	1017.1	
4	Th	12.6	30.3	0			WSW	26	11:30	20.8	51			Calm	1017.3	28.9	27		SSW	11	1015.3	
5	Fr	15.0	37.7	0			W	26	11:10	24.7	34		NE	11	1014.2	35.8	15		WNW	11	1011.1	
6	Sa	24.6	42.3	0			NNW	50	10:02	35.0	14		N	13	1007.6	32.1	29		SW	26	1007.5	
7	Su	17.2	32.3	0			S	39	23:17	20.5	56		ENE	19	1013.1	28.4	39		WSW	15	1011.5	
8	Mo	16.9	26.0	0			SSW	43	18:55	19.9	56		S	9	1014.3	23.8	48		WSW	22	1013.0	
9	Tu	13.9	26.7	0			WSW	39	11:43	19.8	57		S	15	1018.8	25.2	36		S	20	1017.3	
10	We	13.6	28.7	0			E	28	02:26	20.5	41		W	6	1016.4	28.3	28		ENE	7	1013.4	
11	Th	18.5	36.0	0			NNE	28	10:02	26.4	30		NE	11	1010.5	34.1	22		WSW	7	1006.8	
12	Fr	23.4	23.8	2.0			NE	39	02:27	23.7	75		NW	11	1007.6	20.1	78		WSW	15	1007.8	
13	Sa	17.3	22.8	0.6			WNW	56	09:27	19.5	60		W	24	1010.3	21.0	49		SW	28	1011.6	
14	Su	13.7	26.0	0.2			ESE	39	22:59	17.4	58		E	15	1020.8	24.1	31		SSE	13	1019.1	
15	Mo	14.2	30.1	0			ESE	35	23:09	20.3	50		SE	4	1022.1	29.6	37		SE	13	1018.8	
16	Tu	17.3	32.2	0			ESE	30	00:25	23.3	54		SW	4	1019.4	28.0	43		SW	19	1017.1	
17	We	18.0	38.7	0			NE	33	09:20	29.3	24		NE	11	1014.8	35.1	13		WSW	19	1012.7	
18	Th	25.4	41.9	0			NW	35	12:12	31.4	15		NE	13	1012.8	40.6	6		WSW	15	1009.8	
19	Fr	22.1	42.2	0			NW	41	10:03	35.2	13		NNE	9	1010.0	40.4	14		SSW	19	1008.8	
20	Sa	23.7	38.5	0			SE	46	17:14	28.5	42		NNE	4	1010.3	36.4	20		SSE	19	1009.7	
21	Su	22.8	36.0	0			SW	30	14:01	29.8	37		WSW	2	1009.2	33.0	31		SW	19	1008.4	
22	Mo	21.3	31.0	1.2			SSE	33	20:00	24.9	56		SSW	6	1009.2	29.8	33		SSW	17	1006.2	
23	Tu	13.5	30.9	0			SSE	30	14:30	19.8	54			Calm	1013.2	30.2	29		S	13	1008.9	
24	We	13.8	33.0	0			SSW	35	15:15	21.4	50		S	6	1010.5	31.0	27		SSW	13	1006.6	
25	Th	15.8	34.7	0			WSW	33	15:10	23.5	45		WSW	6	1008.1	30.2	36		WSW	20	1006.6	
26	Fr	19.6	33.2	0			W	24	14:47	25.6	33			Calm	1008.8	32.0	31		WSW	7	1009.1	
27	Sa	20.6	37.3	0.4			SW	26	15:16	28.9	35		W	2	1007.5	34.0	26		SW	13	1004.9	
28	Su	25.0	41.8	0			SW	48	16:43	34.5	27		NNE	6	1003.8	38.4	18		SW	19	1001.8	
29	Mo	23.6	27.6	0.6			SW	33	10:15	24.6	74		SSW	13	1008.7	21.4	77		SSE	15	1009.5	
30	Tu	16.5	22.8	1.8			SSE	46	14:56	17.7	58		SE	15	1014.7	20.8	47		SSE	19	1014.1	
31	We	14.3	22.6	0			SE	50	08:59	16.6	54		SE	15	1017.6	20.1	42		SSE	19	1016.2	
<b>Statistics for January 2018</b>																						
Mean		18.1	31.5							23.9	46				9	1012.7	29.0	34		16	1011.1	
Lowest		12.6	22.6							16.6	13				Calm	1003.8	20.1	6		#	7	1001.8
Highest		25.4	42.3	2.0			WNW	56		35.2	75		W	24	1022.1	40.6	78		SW	28	1019.1	
Total				6.8																		

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 023090).  
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 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-DW0000.pdf>  
 IDC:DW5081201801 Prepared at 01:15 GMT on 1 Feb 2018

## **South Australia in January 2018: A warmer than average month**

South Australia observed above to very much above average temperatures during January 2018 with both maximum and minimum temperatures ranking as tenth-highest on record (comparable records commenced in 1910). Rainfall across the State was slightly below average.

### **Warmer than average temperatures**

- The mean maximum temperature for South Australia as a whole was 2.42 °C warmer than average which ranks as tenth-warmest on record
- Mean maximum temperatures were above to very much above average throughout South Australia during January 2018 with some sites reporting their highest January mean daily maximum temperature on record
- Maximum temperatures were 4 °C to 6 °C above average in the northeast.
- Several sites in the north of the State reported their highest number of days with maximum temperature of 45 °C or above, breaking all-time records set in January 2013, including Moomba Airport (10 days breaking the previous record of 9 days in January 2013), Oodnadatta Airport (11 days breaking the previous record of 8 days in January 2013 and 1979), and Marree Aero (11 days breaking the previous record of 6 days in January 2013 and 2001)
- A broad cloud band and cool southeasterly winds brought cool conditions to much of South Australia at the end of the month, with several sites reporting their coldest January day (lowest maximum temperature) on record
- Mean minimum temperatures were above to very much above average throughout South Australia, with some sites in the south reporting their highest January mean daily minimum temperature on record
- The mean minimum temperature for South Australia as a whole was 2.13 °C warmer than average which ranks as as tenth-warmest on record
- Maree Aero reported a minimum temperature of 34.2 °C on the 29th breaking their annual record of 32.7 °C set on 30 December 2003
- Cape Willoughby reported both its highest mean maximum temperature and its highest mean minimum temperature in 50 years of record

### **Near average rainfall**

- January rainfall was 15% below average across South Australia as a whole
- Areas of above to very much above average rainfall occurred in much of the western half of South Australia, while the remainder was generally close to average
- The remnants of ex-Tropical Cyclone Hilda brought rainfall to the north early in the month, with Ernabella reporting 23.8 mm in the 24 hours to 9am on the 1st
- The passage of a trough brought light to moderate falls to much of the State, with falls of 30 mm to 40 mm reported in central parts of the pastoral districts in the 24 hours to 9am on the 30th
- Mount Barry reported the highest daily and monthly rainfall for South Australia during January 2018, with 45.0 mm in the 24 hours to 9am on the 30th and 58.0 mm for the month
- A middle level cloud band brought areas of rain to central parts of South Australia, with totals reaching the 30 mm to 40 mm range in the 24 hours to 9am on the 31st in the Flinders district

## Extremes in January 2018

Hottest day	47.4 °C at Wudinna Aero on the 19th
Warmest days on average	42.0 °C at Moomba Airport
Coollest days on average	23.4 °C at Neptune Island
Coldest day	16.4 °C at Mount Lofty on the 13th
Coldest night	3.6 °C at Keith (Munkora) on the 14th
Coollest nights on average	12.3 °C at Mount Gambier Aero
Warmest nights on average	26.7 °C at Moomba Airport
Warmest night	34.2 °C at Marree Aero on the 29th
Wettest overall	58.0 mm at Mount Barry Station
Wettest day	45.0 mm at Mount Barry Station on the 30th
Strongest wind gust	98 km/h at Marree Aero on the 29 <sup>th</sup>

Some notable statistics for January were:

Record lowest January daily maximum temperature				
	New record (°C)	Old record	Years Held	January Average
Woomera	19.1 on the 30th	19.7 on the 3rd in 1968	69	34.6
Nullarbor	17.5 on the 31st	19.0 on the 2nd in 2006	31	27.9
Coober Pedy	20.4 on the 31st	20.5 on the 10th in 2015	24	36.7
Roxby Downs	22.0 on the 30th	23.7 on the 9th in 2015	21	37.1
Marree	23.8 on the 31st	25.5 on the 9th in 2015	20	38.7
Tarcoola	18.5 on the 31st	22.0 on the 5th in 1998	20	36.7

## Record highest January mean daily maximum temperature

	New record (°C)	Old record	Years Held	January Average
Cape Willoughby	23.8	23.6 in 1982	50	21.7
Edithburgh	27.9	27.3 in 2014	25	25.3
Moomba Airport	42.0	41.9 in 2013	22	38.7

## Record highest January daily minimum temperature

	New record (°C)	Old record	Years Held	January Average
Marree	34.2 on the 29th	32.6 on the 15th in 2006	20	23.0

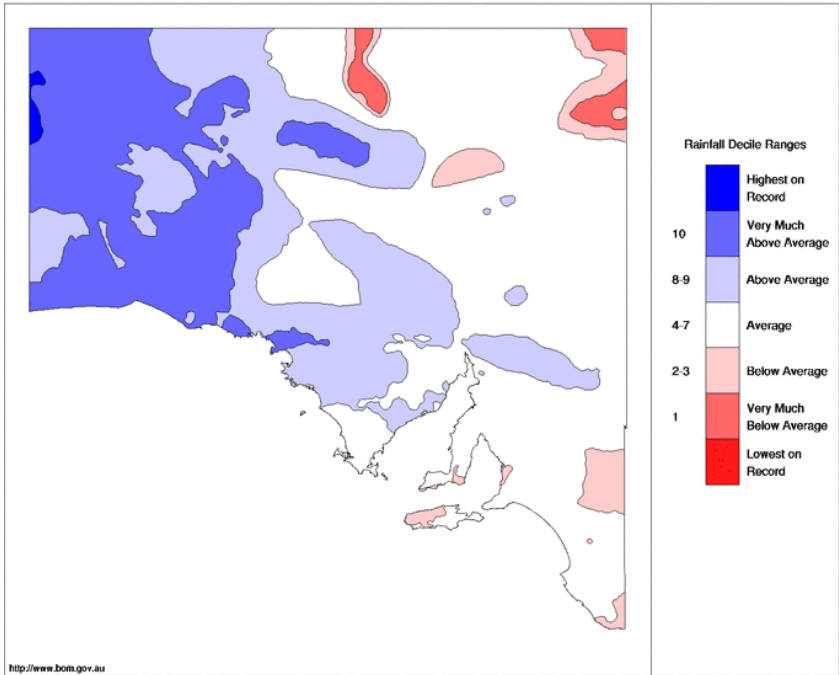
## Record highest January mean daily minimum temperature

	New record (°C)	Old record	Years Held	January Average
Cape Willoughby	17.6	17.4 in 1981	50	15.9
Parawa	15.5	15.2 in 2014	23	13.7

For more information on January's temperatures and rainfall, plus a summary of statistics please see:

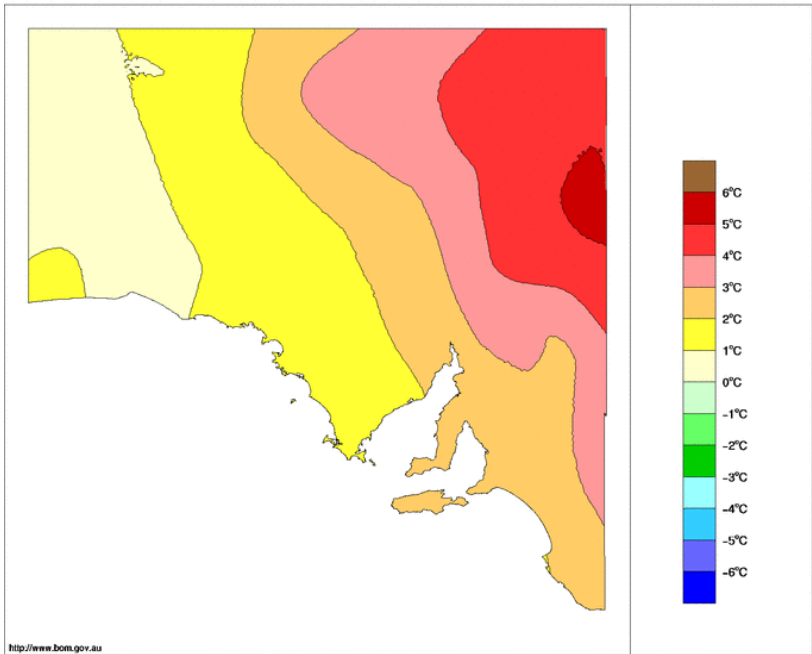
**All the detail you could possibly want and more is available on the BoM website.**

Visit <http://www.bom.gov.au/climate> and wander through the various archived



Maximum Temperature Anomaly (°C) January 2018

Australian Bureau of Meteorology



## Greater Adelaide in February 2018: warm with below average rainfall

Despite some cool conditions, mainly during the middle and end of the month, both mean maximum and minimum temperatures were warmer than average during February 2018.

### Below average rainfall

- Most sites reported less than 25% of February average rainfall, although February is typically the city's driest month of the year.
- Most sites reported their wettest day on the 24th, with Crafers West observing the wettest day in the Adelaide area with 11.4 mm in the 24 hours to 9am on the 24th.

### Above average temperatures

- Kuitpo Forest reported six consecutive days with a maximum temperature of 32 °C or above, breaking the previous February record of five (15 to 19 February 2007)
- Mean minimum temperatures across the Adelaide region were generally one to two degrees higher than average, apart from in the Adelaide Hills where overnight temperatures were around 0.5 °C warmer than average
- Kent Town and Noarlunga observed their longest runs with minimum temperatures of 20 °C or above in February with eight and seven days respectively; the February record for the city is ten days at the West Terrace site in 1939 and 1956
- The coolest night observed was on the 26th, with metropolitan area sites dropping to the low-teens and sites in the hills reporting single digit minimum temperatures.

### Adelaide (West Terrace / ngayirdapira)

- Adelaide's total rainfall was 3.0 mm — 15% of the long-term average of 20.6 mm
- The mean daily maximum temperature was 30.1 °C, which is 1.6 °C above the long-term average of 28.5 °C. The warmest day was 39.7 °C on the 7th, and the coolest day was on the 15th when the temperature reached 22.8 °C
- The mean daily minimum temperature was 18.3 °C, which is 1.5 °C above the long-term average of 16.8 °C. The coldest morning was 10.9 °C on the 26th, and the warmest morning was on the 9th when the minimum temperature was 28.7 °C

### Extremes in February 2018

Hottest day	42.3 °C at Rosedale on the 8th
Warmest days on average	31.9 °C at Rosedale
Coollest days on average	25.5 °C at Mount Lofty
Coldest day	16.8 °C at Mount Lofty on the 24th
Coldest night	6.2 °C at Mount Barker on the 26th
Coollest nights on average	13.6 °C at Mount Barker 13.6 °C at Mount Lofty
Warmest nights on average	18.7 °C at Adelaide (Kent Town)
Warmest night	28.7 °C at Adelaide (Kent Town) on the 9th 28.7 °C at West Terrace / ngayirdapira on the 9th
Warmest on average overall	24.7 °C at Adelaide (Kent Town) 24.7 °C at Parafield Airport
Coollest on average overall	19.6 °C at Mount Lofty
Wettest overall	16.4 mm at Crafers West
Wettest day	11.4 mm at Crafers West on the 24th
Strongest wind gust	80 km/h at Sellicks Hill on the 1 <sup>st</sup>



# Adelaide (West Terrace / Ngayirdapira), South Australia February 2018 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				mm	mm	hours	Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn
	°C	°C				km/h	km/h	local	°C	%	eighths	Dirn	km/h	hPa	°C	%	eighths	Dirn	km/h	hPa	
1	Th	13.6	25.2	0		ESE	50	01:45	16.8	44		E	13	1017.3	23.7	32	SSE	13	1014.6		
2	Fr	15.9	30.3	0		SE	41	23:50	19.9	48		ESE	20	1016.5	29.4	23	E	11	1014.8		
3	Sa	19.1	33.5	0		ESE	43	00:41	24.8	35		SSE	6	1018.8	32.3	23	WSW	15	1016.9		
4	Su	19.8	34.4	0		E	35	00:54	26.5	43		Calm	1019.9	34.0	17	SW	19	1018.2			
5	Mo	21.8	35.8	0		SW	30	15:25	26.2	42		N	6	1017.9	34.6	15	WSW	17	1016.0		
6	Tu	19.2	33.9	0		WSW	24	12:13	26.5	30		SW	6	1016.1	32.5	19	WSW	15	1014.1		
7	We	20.7	39.7	0		WSW	24	12:51	27.4	33		SSE	6	1013.5	37.9	12	W	9	1011.3		
8	Th	22.8	39.5	0		ESE	35	19:45	28.8	30		NNE	7	1012.4	38.3	13	SW	15	1010.9		
9	Fr	28.7	39.4	0		E	43	00:47	30.3	28		ENE	13	1012.9	37.3	21	SSW	15	1009.6		
10	Sa	25.0	31.1	0		WSW	39	12:20	28.1	47		SE	2	1006.3	26.0	58	SW	17	1008.3		
11	Su	14.7	24.1	0		SW	39	17:01	18.7	61		SE	6	1013.3	22.7	44	WSW	19	1011.1		
12	Mo	13.2	23.8	0		WSW	33	14:24	18.8	50		SSW	7	1014.2	22.7	45	WSW	20	1012.7		
13	Tu	13.5	28.9	0		WSW	30	15:34	18.7	62		NE	9	1013.1	27.2	31	NW	11	1009.9		
14	We	18.6	23.6	0		WSW	52	02:59	19.3	57		SSW	22	1014.1	22.1	40	WSW	17	1016.3		
15	Th	11.9	22.8	0		WNW	26	10:51	16.8	62		N	7	1017.9	21.9	48	S	13	1016.5		
16	Fr	14.4	24.9	0		SW	31	11:54	19.7	61		SSE	9	1016.7	23.3	51	SW	19	1015.3		
17	Sa	13.5	26.2	0		SW	24	12:15	18.9	59		NNE	2	1014.5	24.5	46	SW	13	1011.8		
18	Su	16.6	26.7	0		SE	39	22:25	22.6	55		Calm	1011.0	22.6	68	NW	9	1011.6			
19	Mo	17.9	29.2	0.8		SE	35	00:55	18.9	69		ENE	17	1014.6	27.1	41	SE	17	1011.9		
20	Tu	18.9	33.6	0		ESE	37	00:58	25.7	47		ENE	13	1012.0	31.7	40	WSW	13	1009.7		
21	We	23.5	31.5	0		WSW	33	12:36	26.1	58		W	2	1010.7	29.2	39	WNW	13	1011.1		
22	Th	23.1	32.4	0		E	57	20:09	24.2	70		SSW	4	1009.5	27.8	60	SE	7	1006.8		
23	Fr	24.2	34.4	0.2		E	50	23:04	32.3	33		NNE	20	1001.9	33.1	37	NW	26	1001.2		
24	Sa	19.8	24.6	2.0		SW	35	03:40	20.2	89		SSW	13	1008.8	22.4	59	SSW	17	1009.5		
25	Su	15.7	23.7	0		SSE	35	13:03	17.7	63		SE	11	1014.9	22.1	44	SSE	19	1013.7		
26	Mo	10.9	24.5	0		SW	28	14:31	16.5	52		Calm	1016.7	23.7	44	WSW	17	1013.7			
27	Tu	16.1	35.6	0		SW	39	23:00	24.4	35		NE	13	1012.5	33.9	12	NW	13	1008.3		
28	We	18.5	23.9	0					19.5	62		W	19	1013.6	23.0	49	SW	20	1015.0		
<b>Statistics for February 2018</b>																					
Mean	18.3	29.9							22.7	50			9	1013.6	28.1	36			15	1012.2	
Lowest	10.9	22.8							16.5	28			Calm	1001.9	21.9	12			SE	7	1001.2
Highest	28.7	39.7	2.0			E	57		32.3	89		SSW	22	1019.9	38.3	68			NW	26	1018.2
Total			3.0																		

Observations were drawn from Adelaide (West Terrace / Ngayirdapira) (station 0230003)  
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).

IDCJDM581.201802 Prepared at 13:04 UTC on 21 Mar 2018  
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<http://www.bom.gov.au/climate/dwo/IDCJDM0000.pdf>

## South Australia in February 2018

February rainfall was slightly below average for South Australia as a whole, with wetter than average conditions in the west but a drier than average month across most of the eastern half of the State. Both days and nights were warmer than average

### Very wet in the west, dry in the east

- February rainfall was 16% below average for South Australia as a whole
- The highest monthly totals were in the far west of the State, parts of which had more than four times their February average rainfall
- The eastern half of the State was drier than average, with much of the Far North, and most central and southeast agricultural districts receiving less than 40% of their February average rainfall

### Warmer than average

- Daytime and overnight temperatures were more than one degree warmer than average for the State as a whole
- With the exception of the far western border region, the whole State had warmer than average days and nights
- Mean maximum temperatures were as much as 3 °C above average in the far northwest of the State
- It was a cool start to the month, with temperatures more than 10 °C below average across central parts of the State on the 1st and 2nd
- For most of the month, temperatures tended to be near to or warmer than average
- Cool weather returned to the south on the 28th, giving Price its coldest February day on record

### Extremes in February 2018

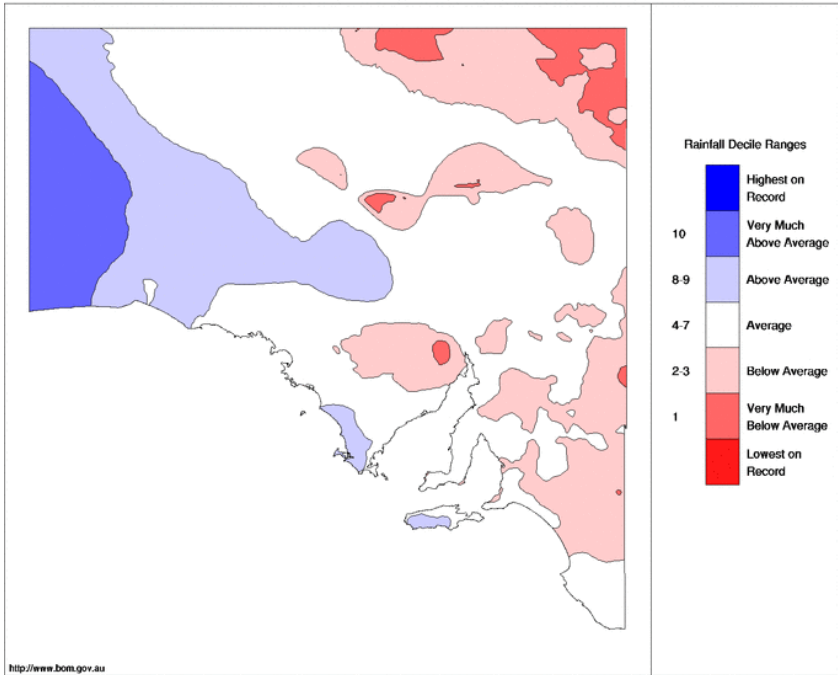
Hottest day	45.5 °C at Andamooka on the 10th 45.5 °C at Moomba on the 11th
Warmest days on average	38.8 °C at Moomba and Oodnadatta
Coolest days on average	22.8 °C at Cape Willoughby
Coldest day	16.8 °C at Mount Lofty on the 24th
Coldest night	3.5 °C at Keith (Munkora) on the 26th
Coolest nights on average	12.6 °C at Keith (Munkora)
Warmest nights on average	24.4 °C at Moomba Airport
Warmest night	29.7 °C at Tarcoola Aero on the 22nd
Warmest on average overall	31.6 °C at Moomba Airport
Coolest on average overall	19.6 °C at Mount Lofty and Parawa
Wettest overall	38.8 mm at Tarcoola Aero
Driest overall	0.6 mm at Moomba
Wettest day	21.2 mm at Tarcoola on the 1st
Strongest wind gust	115 km/h at Tarcoola Aero on the 22 <sup>nd</sup>

### Record lowest February daily maximum temperature

	New record (°C)	Old record	Years Held	February Average
Price	19.0 on the 28th	19.2 on the 20th in 2014	54	28.0

South Australian Rainfall Deciles February 2018

Distribution Based on Gridded Data  
Australian Bureau of Meteorology

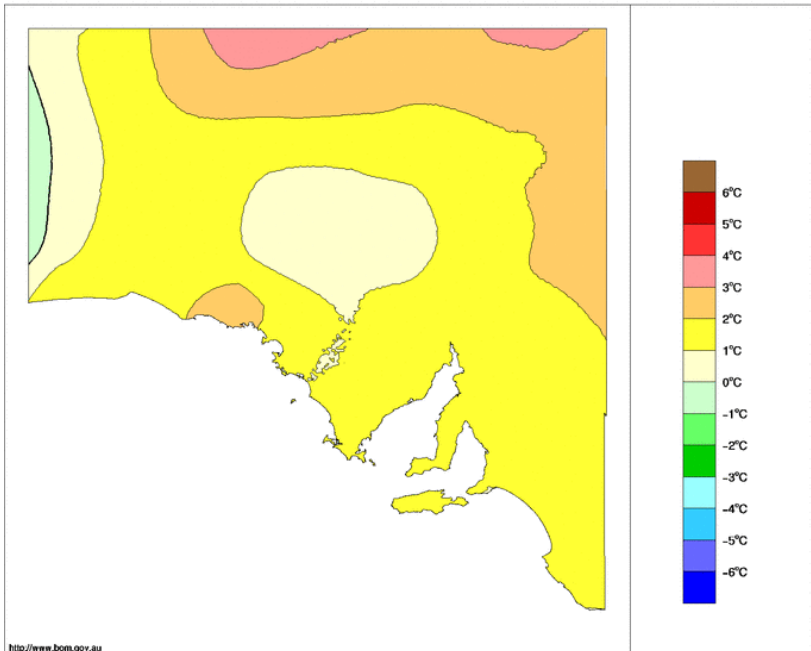


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Issued: 27/03/2018

Maximum Temperature Anomaly (°C) February 2018

Australian Bureau of Meteorology



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Issued: 21/03/2018

## Greater Adelaide in summer 2017-18: warm with below average rainfall

Despite a relatively wet December, summer rainfall was close to or below average across Adelaide. A very warm January, combined with above average temperatures during February resulted in above average daytime and night time temperatures.

### Below average rainfall

- Rainfall totals in the Adelaide region for summer 2017-18 were below average with most sites reporting around 60% to 80% of their summer average
- The wettest day for most sites was on the first day of summer with moderate falls in the 20 mm to 30 mm reported mainly in outer suburbs.

### Above average temperatures

- Adelaide Airport reported a record long run for summer of consecutive days of 30 °C or above, with the 13 days from 16 to 28 January breaking the previous record run of 12 days from 28 January to 8 February 1956.
- The 14 consecutive days of 30 °C or above at both Kent Town and Adelaide (West Terrace / ngayirdapira) from 15 to 28 January equalled the city's second longest run for summer (also reported in 1930, 1956 and 2009) behind the 17 days at Kent Town from 4 to 20 February 2004.

### Adelaide (West Terrace / ngayirdapira)

- Total rainfall was 39.0 mm, which is 58% of the long-term average of 66.9 mm
- The mean daily maximum temperature was 29.6 °C, which is 1.6 °C above the long-term average of 28.0 °C. The warmest day was 42.3 °C on 6 January, and the coolest day was on 2 December when the temperature reached 19.6 °C
- The mean daily minimum temperature was 17.3 °C, which is 1.1 °C above the long-term average of 16.2 °C. The coldest morning was 10.8 °C on 7 Dec, and the warmest morning was on 9 February when the minimum temperature was 28.7 °C

### Extremes in summer 2017-18

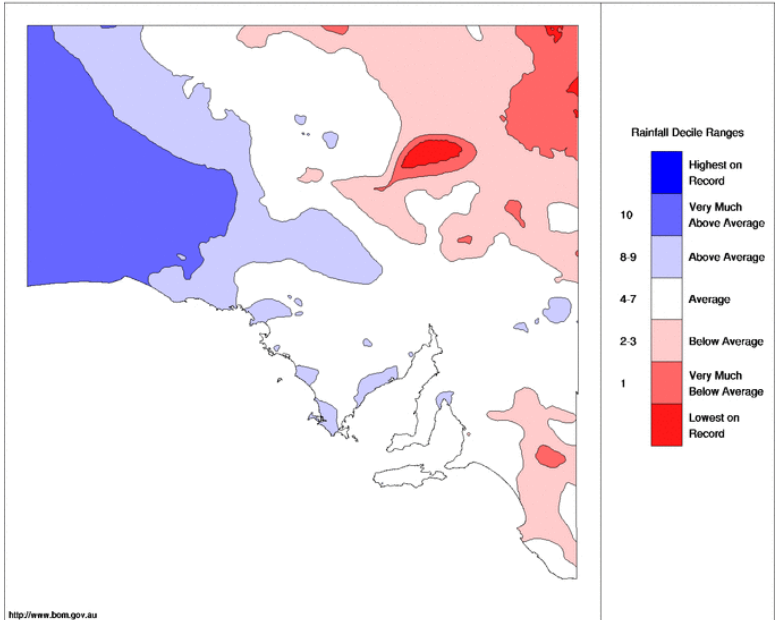
Hottest day	44.8 °C at Rosedale on 19 Jan 2018
Warmest days on average	31.2 °C at Rosedale
Coollest days on average	24.8 °C at Mount Lofty
Coldest day	12.1 °C at Mount Lofty on 7 Dec 2017
Coldest night	6.2 °C at Rosedale on 8 Dec 2017 6.2 °C at Mount Barker on 26 Feb 2018
Coollest nights on average	13.0 °C at Mount Lofty
Warmest nights on average	17.8 °C at Adelaide (Kent Town)
Warmest night	28.7 °C at Adelaide (Kent Town) on 9 Feb 2018 28.7 °C at Adelaide (West Terrace) on 9 Feb 2018
Warmest on average overall	24.1 °C at Adelaide (Kent Town)
Coollest on average overall	18.9 °C at Mount Lofty
Wettest overall	92.6 mm at Piccadilly (Woodhouse)
Wettest day	29.4 mm at Woodside on 1 Dec 2017
Strongest wind gust	80 km/h at Sellicks Hill on 31 Jan 2018 80 km/h at Sellicks Hill on 1 Feb 2018

**For more information on Summer temperatures and rainfall, plus a summary of statistics please see:**

<http://www.bom.gov.au/climate/current/season/sa/archive/201802.adelaide.shtml>

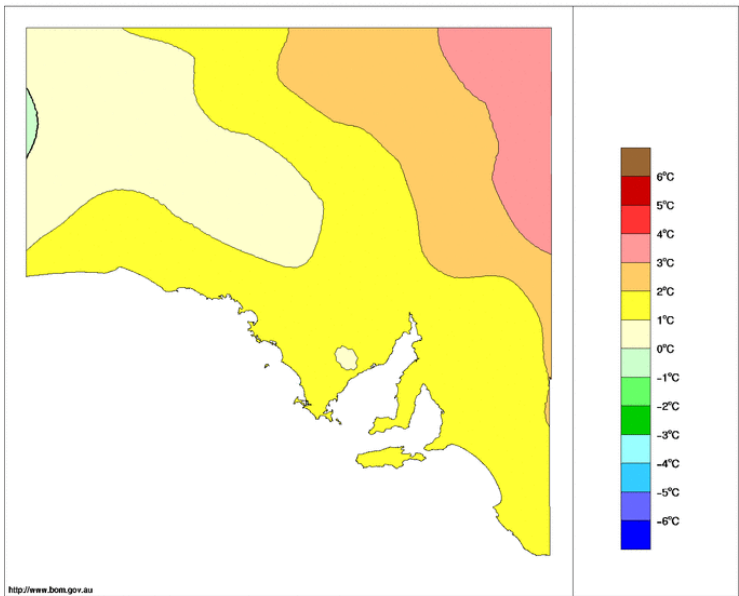
South Australian Rainfall Deciles 1 December 2017 to 28 February 2018

Distribution Based on Gridded Data  
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) 1 December 2017 to 28 February 2018

Australian Bureau of Meteorology



## South Australia in summer 2017-18

South Australia had its fourth-warmest summer on record, and warmest since 2005–06. Summer rainfall was slightly above average for South Australia as a whole, but it was much wetter than average in the west and drier than average for most of the eastern half of the State.

### Wet in the west, drier in the east

- Summer rainfall was slightly above average for South Australia as a whole
- Rainfall totals were very much above average in the State's west, more than three times the summer average in areas west of Nullarbor
- Summer was drier than average in both the Far North pastoral district and in the southeastern agricultural districts
- Western districts were wetter than average in each of the summer months
- The northeast of the State recorded little or no rain during the season
- Moomba Airport had its lowest total summer rainfall on record and two other sites in the Far North had their lowest total summer rainfall for at least 20 years

### Third-warmest summer on record

- It was South Australia's fourth-warmest summer of record, with the mean temperature 1.52 °C warmer than average, and the warmest summer since 2005–06
- Summer daytime and night time temperatures were warmer than average throughout South Australia
- The State's mean maximum temperature was sixth-warmest on record
- Daytime temperatures were very much above average in parts of the Far North and the Western Agricultural districts
- January was particularly warm, with daytime temperatures ranking as South Australia's tenth-warmest on record
- The State's mean minimum temperature for summer ranked as fifth-warmest on record, and the highest since 2005–06
- Cleve Aerodrome and Tarcoola Aero had their coldest summer day (lowest maximum temperature) on record
- Moomba had its highest summer mean daily maximum temperature on record
- Marree Aero had its warmest summer night (highest daily minimum temperature) on record late in January
- Several sites had their highest summer mean daily minimum temperature on record
- Cape Jaffa and Moomba had their highest summer mean temperature on record

### Extremes in summer 2017-18

Hottest day	47.4 °C at Wudinna Aero on 19 Jan 2018 and Marree Aero on 22 Jan 2018
Warmest days on average	39.8 °C at Moomba Airport
Coollest days on average	22.7 °C at Neptune Island
Coldest day	12.1 °C at Mount Lofty on 7 Dec 2017
Coldest night	3.4 °C at Keith (Munkora) on 25 Dec 2017
Coollest nights on average	11.7 °C at Keith (Munkora)
Warmest nights on average	24.8 °C at Moomba Airport
Warmest night	34.2 °C at Marree Aero on 29 Jan 2018
Warmest on average overall	32.3 °C at Moomba Airport

Coollest on average overall	18.9 °C at Mount Lofty
Wettest overall	119.0 mm at Parawa (Sharon)
Driest overall	3.4 mm at Moomba Airport
Wettest day	54.0 mm at Boolcoomatta on 2 Dec 2017
Strongest wind gust	122 km/h at Neptune Island on 18 Dec 2017

**Some notable statistics for Summer were:**

**Record lowest summer total rainfall**

	<b>New record (mm)</b>	<b>Old record</b>	<b>Years Held</b>	<b>Summer Average</b>
Moomba	3.4	6.8 in 2004	23	56.5

**Lowest summer total rainfall for at least 20 years**

	<b>Observed (mm)</b>	<b>Most recent lower</b>	<b>Summer Average</b>
Leigh Creek	13.2	8.9 in 1985*	72.1
Blinman	30.6	29.2 in 1991*	73.1

*note: there are gaps in the historical record at this site, so it is possible a lower value has gone unreported*

**Record lowest summer daily maximum temperature**

	<b>New record (°C)</b>	<b>Old record</b>	<b>Years Held</b>	<b>Summer Average</b>
Cleve	16.0 on 1 Dec 2017	16.9 on 5 Dec 2013	22	28.3
Tarcoola	18.5 on 31 Jan 2018	19.0 on 14 Dec 2001	21	35.6

**Record highest summer mean daily maximum temperature**

	<b>New record (°C)</b>	<b>Old record</b>	<b>Years Held</b>	<b>Summer Average</b>
Moomba Airport	39.8	39.7 in 2012	22	37.5

**Record highest summer daily minimum temperature**

	<b>New record (°C)</b>	<b>Old record</b>	<b>Years Held</b>	<b>Summer Average</b>
Marree	34.2 on 29 Jan 2018	32.7 on 30 Dec 2003	20	21.9

**Record highest summer mean daily minimum temperature**

	<b>New record (°C)</b>	<b>Old record</b>	<b>Years Held</b>	<b>Summer Average</b>
Cape Willoughby	16.7	= 16.7 in 2000	50	15.5
Cape Jaffa	14.2	14.1 in 1992	26	13.2
Parawa	14.3	= 14.3 in 2015	23	13.2

**Record highest summer mean temperature**

	<b>New record (°C)</b>	<b>Old record</b>	<b>Years Held</b>	<b>Summer Average</b>
Cape Willoughby	19.8	= 19.8 in 2000	50	18.5
Cape Jaffa	19.6	= 19.6 in 2000	26	18.6

**For more information on Summer temperatures and rainfall, plus a summary of statistics please see:**

<http://www.bom.gov.au/climate/current/season/sa/archive/201802.summary.shtml>

## Greater Adelaide in March 2018: a dry start to autumn; warm days

Rainfall was below average for most sites in the Greater Adelaide area. Mean maximum temperatures were all above average, while mean minimum temperatures were generally above average except in the Adelaide Hills.

### Above average mean maximum and minimum temperatures

- Mean maximum temperatures were all above average
- Mean minimum temperatures were generally above average; sites in the Adelaide Hills were close to average or below average
- Hottest days were on the 9th or 10th with temperature reaching the mid-30s
- Parafield Airport recorded four consecutive days with temperature of 35 °C or higher between the 7th and 10th, which was its longest such spell for five years since five consecutive days of 35 °C or higher between 4 and 8 March 2013
- Mount Lofty recorded the lowest temperature of the month in the Greater Adelaide with 4.0 °C on the 21st, lowest March temperature for 19 years

### Adelaide (West Terrace / ngayirdapira)

- Total rainfall for Adelaide was 4.4 mm, which is 18% of average
- The mean daily maximum temperature was 27.2 °C (1.2 °C above average)
- Adelaide recorded two consecutive hot days with temperature over 35 °C (35.5 °C on the 9th, 35.4 °C on the 10th), while its coolest day was 20.2 °C on the 26th
- The mean daily minimum temperature was 15.8 °C (0.6 °C above average)
- The coldest morning was 11.4 °C on the 21st, and the warmest morning was on the 9th when the minimum temperature was 24.1 °C

### Extremes in March 2018

Hottest day	36.9 °C at Rosedale on the 10th
Warmest days on average	28.2 °C at Parafield Airport 28.2 °C at Rosedale
Coolest days on average	22.1 °C at Mount Lofty
Coldest day	14.4 °C at Mount Lofty on the 26th
Coldest night	4.0 °C at Mount Lofty on the 21st
Coolest nights on average	11.0 °C at Mount Lofty
Warmest nights on average	15.9 °C at Adelaide Airport 15.9 °C at Noarlunga
Warmest night	24.1 °C at West Terrace / ngayirdapira on the 9th
Warmest on average overall	21.8 °C at Kent Town 21.8 °C at West Terrace / ngayirdapira
Coolest on average overall	16.5 °C at Mount Lofty
Wettest overall	17.6 mm at Cherry Gardens
Wettest day	10.0 mm at Kangarilla (Saddlebags) on the 18th
Strongest wind gust	85 km/h at Sellicks Hill on the 6 <sup>th</sup>

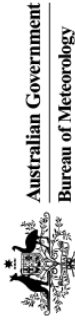
**Many other rainfall records were also set in March. For more information plus a summary of statistics please see:**

<http://www.bom.gov.au/climate/current/month/sa/archive/201803.adelaide.shtml>



# Adelaide (West Terrace / Ngayirdapira), South Australia March 2018 Daily Weather Observations

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



Date	Temps		Max wind gust			9am				3pm							
	Day	Min °C	Max °C	Dirn	Spd km/h	Time local	Temp °C	RH %	Cld eighths	Dirn	Spd km/h	MSLP hPa	Temp °C	RH %	Cld eighths	Dirn	Spd km/h
1	Th	16.5	29.4				18.6	57	ESE	13	1018.7	28.0	31	SE	7	1014.5	
2	Fr	18.2	32.4	WNW	30	12:40	23.6	39	NE	11	1011.3	31.2	24	W	17	1009.1	
3	Sa	15.3	25.9	SW	43	15:13	19.7	64	SSW	17	1012.2	24.3	49	SW	22	1011.5	
4	Su	15.2	24.3	SSW	31	11:38	19.7	65	SSE	7	1017.6	21.5	51	SW	17	1016.7	
5	Mo	12.6	24.0	SSE	43	14:24	17.4	50	SE	11	1021.4	23.5	34	SE	13	1020.4	
6	Tu	12.4	26.2	ESE	39	15:56	16.7	58	SE	13	1024.2	25.1	28	SE	19	1020.5	
7	We	16.7	34.5	SE	35	19:51	25.1	38	ENE	11	1020.5	32.5	29	SW	11	1017.9	
8	Th	22.1	34.2	SE	43	19:54	27.0	25	ENE	9	1021.3	32.9	14	ESE	11	1018.5	
9	Fr	24.1	35.5				28.1	24	NE	9	1022.5	34.4	14	E	13	1019.3	
10	Sa	22.3	35.4				27.4	28	NE	13	1021.9	34.3	15	WSW	15	1020.5	
11	Su	17.7	32.3	SSE	35	17:29	23.0	49	NE	10	1023.6	31.2	33	SSE	17	1021.8	
12	Mo	14.2	25.3	SSW	35	15:47	17.3	60	SE	15	1026.2	24.2	37	SSE	15	1023.5	
13	Tu	14.2					17.9	56	ESE	11	1025.4	23.7	40	SSW	17	1022.4	
14	We	11.7	24.2									22.4	47	SW	17	1017.7	
15	Th	11.7	24.7				16.5	66		Calm	1017.2	23.3	47	SW	19	1015.2	
16	Fr	13.6	27.4	WNW	35	14:17	19.5	55	NE	11	1013.4	21.2	61	WNW	15	1013.8	
17	Sa	18.2	30.1	NNE	43	11:07	27.3	26	NNE	20	1007.6	29.7	18	NNW	19	1005.0	
18	Su	16.2	21.2	W	52	05:35	17.6	53	W	22	1015.3	20.0	37	SW	22	1016.7	
19	Mo		23.2	WSW	35	04:30	18.3	65	W	17	1019.8	22.1	62	SW	19	1019.5	
20	Tu	15.7	22.6				17.4	59	SE	17	1026.5	20.8	39	SSE	15	1025.6	
21	We	11.4	22.4	SE	44	23:36	13.1	61	SE	13	1025.9	20.2	43	WSW	19	1020.6	
22	Th	13.1	29.0	SW	26	12:07	19.2	54		Calm	1017.8	26.0	41	WSW	15	1015.6	
23	Fr	19.0	33.4	WNW	31	14:03	24.0	51	NE	13	1015.5	32.4	27	WNW	13	1012.5	
24	Sa	20.8	34.0	NNW	43	11:09	24.7	45	NE	15	1011.5	32.8	27	NNW	20	1007.6	
25	Su	16.9	22.1	SW	59	17:15	17.7	72	WSW	24	1010.3	21.1	47	WSW	24	1009.3	
26	Mo	11.7	20.2	SSW	43	23:23	14.9	53	SSE	13	1016.2	18.2	46	SW	17	1015.9	
27	Tu	11.9	27.5	NNW	39	11:03	16.6	48	NNE	13	1014.4	25.5	22	NW	19	1010.4	
28	We	16.6	22.6	WSW	28	13:19	19.2	75	SW	13	1015.4	21.9	59	WSW	15	1016.1	
29	Th	12.5	22.7	WSW	28	13:25	16.7	72		Calm	1019.5	21.0	49	SW	13	1017.5	
30	Fr	16.3	22.5	W	35	09:29	16.7	77	N	7	1019.4	21.7	49	WSW	15	1019.1	
31	Sa	11.5		NW	26	12:34	16.8	64	NE	7	1018.9	24.0	45	WSW	15	1015.3	

### Statistics for March 2018

Mean	15.8	27.2					19.9	53			11	1018.4	25.5	37		16	1016.5
Lowest	11.4	20.2					13.1	24		Calm	1007.6	18.2	14	SE	7	1005.0	
Highest	24.1	35.5	1.6	SW	59	28.1	77		WSW	24	1026.5	34.4	62	WSW	24	1025.6	
Total			4.4														

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 023090).  
ICD:DW5061.201803 Prepared at 13:05 UTC on 2 Apr 2018  
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## South Australia in March 2018: a dry start to autumn

Rainfall was below average for most South Australia except in the Far North Pastoral District. Both mean maximum and minimum temperatures were above average for the State as a whole.

### Below average rainfall across the south; above average rainfall in the far north

- March rainfall was merely one-third of average for South Australia as a whole
- March rainfall totals were less than 5 mm across southern parts of the Pastoral regions and south into the central and western Agricultural regions; many sites either had their driest March on record or driest March for at least 20 years

### Above average mean maximum and minimum temperatures

- Mean maximum temperature was 1.34 °C above average, and mean minimum temperature was 0.42 °C above average for South Australia as a whole
- March continued a run of nine consecutive months of warmer than average temperatures for South Australia
- On the 17th, maximum temperatures reached the low-40s, and were 8 °C to 12 °C above average, in the southern Pastoral and Eastern Eyre Peninsula regions
- Padthaway South in the southeast recorded the State's coldest morning of the month with 2.9 °C on the 21st, which was its lowest temperature in March for four years since 1.7 °C was recorded on 22 March 2014

### Extremes in March 2018

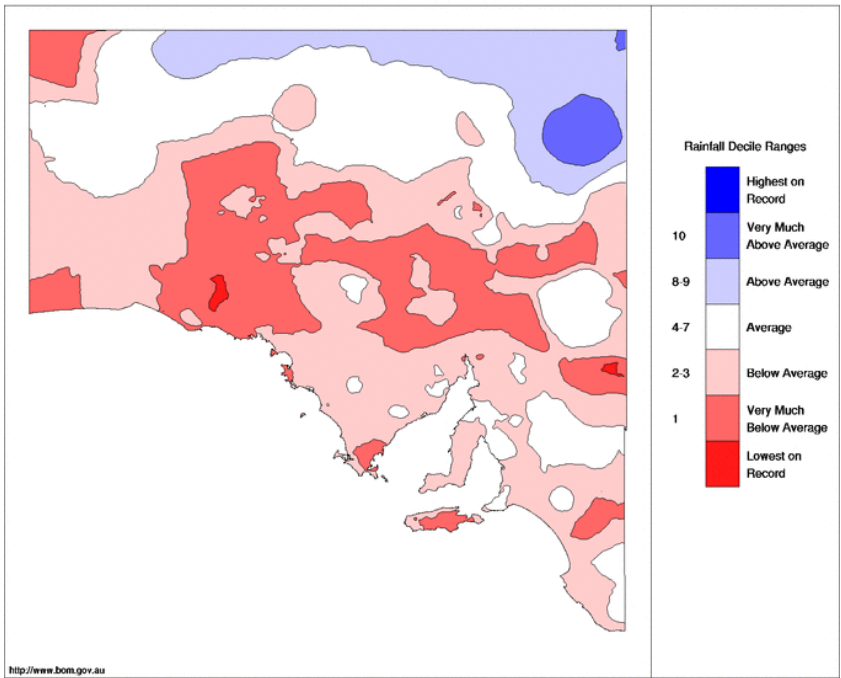
Hottest day	42.6 °C at Tarcoola Aero on the 17th
Warmest days on average	35.3 °C at Moomba Airport
Coollest days on average	22.1 °C at Mount Lofty
	22.1 °C at Parawa (Second Valley Forest AWS)
Coldest day	14.4 °C at Mount Lofty on the 26th
Coldest night	2.9 °C at Padthaway South on the 21st
Coollest nights on average	10.3 °C at Keith (Munkora)
Warmest nights on average	21.3 °C at Moomba Airport
Warmest night	26.2 °C at Moomba Airport on the 8th
Warmest on average overall	28.3 °C at Moomba Airport
Coollest on average overall	16.5 °C at Mount Lofty
Wettest overall	62.0 mm at Moomba Airport
Wettest day	61.4 mm at Moomba Airport on the 23rd
Strongest wind gust	107 km/h at Naracoorte Aerodrome on the 18 <sup>th</sup>

### Some notable statistics for March were:

#### Record lowest March total rainfall

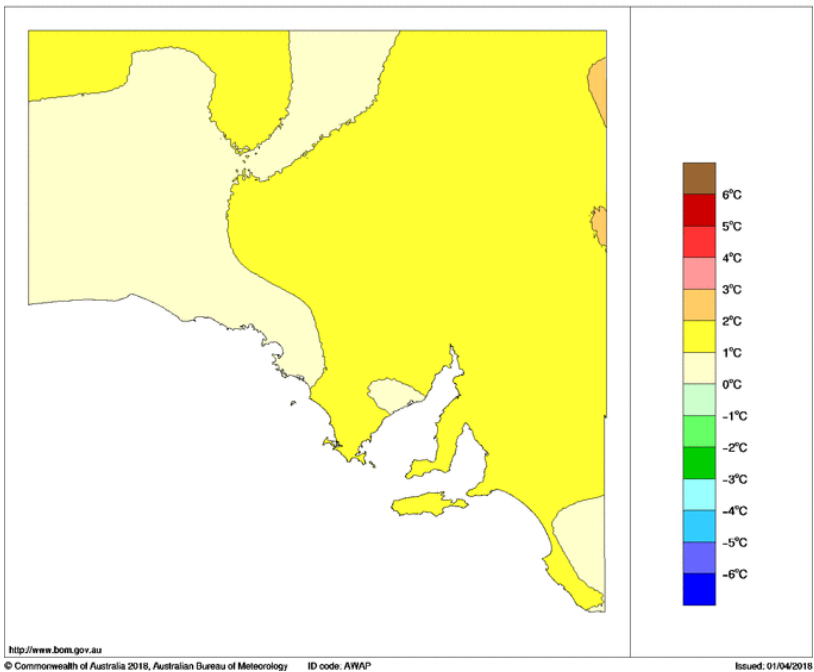
	New record (mm)	Old record	Years Held	March Average
Cape Jaffa	4.2	4.6 in 2005	24	22.0
North Shields	0.8	1.2 in 1997	24	18.5
Kuitpo Forest	16.2	17.0 in 2015	20	35.5

Distribution Based on Gridded Data  
 Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) March 2018

Australian Bureau of Meteorology





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

## **NEXT MEETING**

**6.00 PM TUESDAY 17 April 2018**

*Bureau of Meteorology offices, Level 4, Optus Building, NW corner of  
South Terrace & King William Street , Adelaide*

***Presentation: Setting up and running a home web-linked weather station, and environmental monitoring station***

***Speaker: Mark Little –BAE Systems (AMETA member )***

*As well as his role as a systems engineer with BAE, in his spare time Mark has had an established personal weather station , which is linked to his webpage, and incorporates a sky camera live feed.*

*Mark will go though how to establish a home weather station and get it set up to feed the data to a webpage, and his experiences with the live sky camera feed. Mark will also look at how to set up ‘Purple Air’ dust and environmental monitoring equipment linked to the weather station.*

***Convenient free street parking is usually available nearby (e.g. South Tce.)***

*We look forward to seeing you.*

*For further information contact*

<i>Secretary:</i>	<i>Darren Ray</i>
<i>Phone:</i>	<i>8366 2664</i>
<i>Fax:</i>	<i>8366 2693</i>

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