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The AMETA October meeting was a fascinating one, featuring a presentation on Space Weather by one of our newer members, Mark Little. Mark has long experience in Space Weather working with the Defence Science and Technology Group.

Mark spoke about the stream of plasma – a charged particle stream - generated by the Sun. 90% protons, 9% electrons and 1% alpha particles, it is known as the Solar Wind. He spoke about how this interacts with the Earth's magnetic field. This 'space weather' is measured by visual observation as well as instruments such as SOHO (Solar Heliospheric Observatory), a spacecraft launched in 1995 to monitor solar activity and space weather.

Ground based solar observatories are in operation around the globe, with the Bureau of Meteorology Space Weather Services operating one at Learmonth in Western Australia. This includes instruments measuring solar flux on 8 different frequencies across 245-15400 MHz, as well as high frequency solar radio spectrograph measurements.

The Earth's magnetic field protects the Earth from most of the potentially damaging charged particles in the Solar Wind, but some of the energetic particles in the Solar wind spiral down the magnetic field at the poles causing the auroras Borealis and Australis referred to as the northern and southern lights. The ozone layer in the stratosphere is also important in absorbing much of the ultra-violet radiation also generated by the Sun.

It is the ionosphere – the atmosphere above 70 km in height – that interacts most with the Solar Wind. It is composed of several layers extending out to 300-400 km in height, that have different effects on radio waves. What is happening in the ionosphere can be measured through the effects on radio waves by ionospheric sounders. It turns out that Australia is a leader in this equipment. This type of information is useful for long range radio communication, and also for long range radar such as the Over The Horizon Radar in which Australia is a world leader.

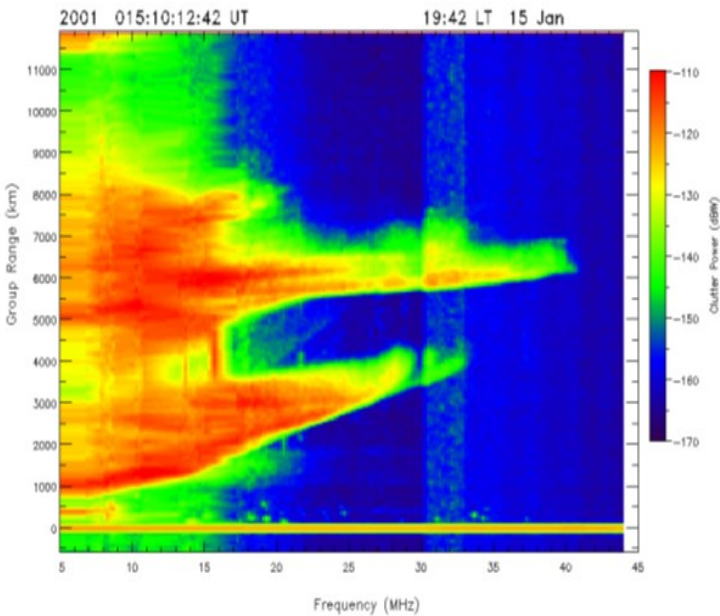
Along the way Mark mentioned a global Citizen Science project called the Sudden Ionospheric Disturbance program, which allows members of the public or students to set up an

antenna and then collect and send measurements of intense X-ray and UV activity to the Stanford SID project. This sounds like a worth-while project for the AMETA to be involved in (<http://sid.stanford.edu/>)

Thank you Mark for some fascinating insights.



Learmonth WA Global Oscillation Network Group solar observatory



An ionospheric backscatter sounding from October 2001

Greater Adelaide in October 2017: average to below average rainfall and warmer than average temperatures

October rainfall tended to be below average across Adelaide and the Hills. Days were much warmer than average while nights were slightly warmer than average in most suburbs.

Average to below average rainfall

- Raindays were well spread throughout the month, with rain falling during each week of October
- Most sites across Adelaide recorded more than 10 mm of rainfall in the 24 hours to 9am on the 12th, with some sites in the Hills having more than 20 mm
- Towards the end of the month, a cold front on the 29th again brought more than 20 mm of rain to parts of the Hills
- October rainfall totals ranged from 46% of average at Parafield Airport to 88% of average at Adelaide (Kent Town)

Warmer than average days

- October days were much warmer than average throughout Adelaide and the Hills, with all sites around Adelaide having mean daytime temperatures more than one degree warmer than the October average
- Adelaide (West Terrace/ngayirdapira) had three consecutive days over 30 degrees between the 16th and 18th; the earliest such occurrence for the city after winter since 11-13 October 1940
- Nights were generally warmer than the October average, ranging from 0.4 °C cooler than average at Rosedale to 1.9 °C warmer than average at Mt Barker
- It was a cold start to the month, with overnight temperatures on the 1st more than four degrees cooler than average north of Adelaide
- The coldest nights were at Rosedale, north of Adelaide, where minimum temperatures were just 1.0 °C on the 1st and 1.2 °C on the 2nd

Adelaide (West Terrace / ngayirdapira)

- Total rainfall for Adelaide (West Terrace / ngayirdapira) was 30.0 mm, which is 68% of the long-term average of 44.4 mm
- The mean daily maximum temperature for Adelaide (West Terrace / ngayirdapira) was 23.7 °C, which is 2.4 °C above the long-term average of 21.3 °C. The warmest day was 33.9 °C on the 18th, and the coolest day was on the 30th when the temperature reached 16.8 °C
- The mean daily minimum temperature for Adelaide (West Terrace / ngayirdapira) was 12.1 °C, which is 1.0 °C above the long-term average of 11.1 °C. The coldest morning was 5.9 °C on the 2nd, and the warmest morning was on the 18th when the minimum temperature was 25.4 °C

Strong winds at times

- On the 11th, a cold front crossed Adelaide bringing heavy rain and strong winds, with gusts of 80 km/h or more recorded at several sites in the Hills and north of Adelaide
- At the end of the month, gusts in excess of 80 km/h were recorded on both the 29th and 30th in the Adelaide region as a cold front crossed the city followed by cold west to southwesterly winds with showers and hail storms
- Outer Harbour (Black Pole) recorded Greater Adelaide's strongest wind gust for the month of 91 km/h on the 30th.

Adelaide (West Terrace / Ngayirdapira), South Australia October 2017 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	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
Day	°C	°C	mm	mm	hours	Dirn	Spd	Time	°C	%	eghts	Dirn	km/h	hPa	°C	%	eghts	Dirn	km/h	hPa
1	Su	6.5	17.3	0.2		WSW	24	13:36	11.5	73	NNE	6	1027.4	15.9	57	SW	17	1025.5		
2	Mo	5.9	21.8	0		W	30	14:29	11.8	77	NNE	6	1026.2	20.7	49	WSW	15	1021.4		
3	Tu	8.8	27.2	0		NNW	24	10:42	16.3	52	NNE	11	1021.2	25.3	31	WSW	13	1018.5		
4	We	16.3	29.8	0		WNW	44	13:24	22.0	28	NE	13	1015.8	28.2	15	NNW	24	1013.2		
5	Th	13.5	18.4	2.6		SSE	41	20:32	14.7	77	SSW	19	1019.6	17.0	55	SSE	19	1021.3		
6	Fr	9.6	19.2	0		SE	31	23:25	11.9	60	W	4	1025.2	17.7	42	E	15	1021.1		
7	Sa	11.8	28.1	0.6		NNE	48	10:19	15.1	55	NE	15	1014.3	26.4	26	NNE	22	1007.9		
8	Su	14.0	26.8	0		WSW	37	16:56	17.5	70	N	13	1010.3	25.5	32	NNW	19	1008.6		
9	Mo	11.9	19.3	0		SW	31	00:00	14.9	69	SW	13	1016.4	18.0	42	WSW	13	1016.5		
10	Tu	6.7	26.8	0		N	31	11:48	14.8	56	NNE	11	1016.7	25.9	29	NNW	9	1012.1		
11	We	14.6	24.6	0		NNW	54	10:05	24.2	53	NNW	19	1004.9	15.6	90	WSW	20	1007.7		
12	Th	12.4	18.4	9.6		WSW	35	14:15	14.6	60	W	20	1019.6	17.3	59	W	19	1019.4		
13	Fr	10.8	18.6	0.2		SW	30	13:38	13.4	79	N	7	1022.7	17.9	64	SW	17	1022.3		
14	Sa	8.0	21.1	0.8		ESE	35	20:46	14.3	70	W	7	1025.5	19.8	54	SSW	17	1023.0		
15	Su	10.9	24.7	0		ESE	31	16:47	17.1	66	W	7	1023.4	22.7	48	SW	13	1020.4		
16	Mo	13.0	31.6	0		E	33	23:21	23.9	42	NE	6	1020.3	30.8	25	ENE	15	1016.7		
17	Tu	22.1	33.3	0		NNE	46	10:21	27.2	29	NNE	20	1016.9	32.2	15	N	17	1013.9		
18	We	25.4	33.9	0		SW	69	19:42	27.9	33	N	17	1015.0	33.1	28	WNW	17	1012.2		
19	Th	16.1	20.4	0.8		SSW	39	08:29	16.3	80	SW	20	1019.5	19.2	53	SW	15	1022.9		
20	Fr	9.5	20.0	0		SSE	39	17:01	14.4	53	S	15	1031.1	19.2	38	SSE	15	1029.3		
21	Sa	10.4	19.2	0		WSW	44	14:29	13.5	61	S	11	1029.9	17.4	53	SW	24	1026.1		
22	Su	10.1	19.5	0		SW	35	17:58	15.9	60	SSW	13	1023.4	17.8	62	SW	19	1020.9		
23	Mo	9.9	23.6	0		WSW	26	12:05	14.6	69	NNW	7	1020.2	22.6	46	SW	13	1016.7		
24	Tu	13.9	26.5	0		NNW	41	12:32	22.2	44	NE	11	1013.5	18.0	76	NNE	6	1014.6		
25	We	16.0	23.0	4.6		ENE	37	23:10	18.7	63	NE	17	1009.2	20.5	62	WSW	17	1008.5		
26	Th	14.6	21.1	0		WSW	30	12:56	15.6	74	S	13	1013.0	19.5	51	W	15	1011.7		
27	Fr	12.4	33.7	0		NW	61	15:19	20.8	46	NNE	17	1006.9	30.4	24	NW	22	1000.5		
28	Sa	10.8	21.7	0		WNW	28	08:18	16.3	58	W	15	1010.9	19.4	50	WSW	17	1009.0		
29	Su	13.2	28.1	0		NNW	67	09:45	21.6	33	N	24	1001.7	20.5	59	SW	24	1001.6		
30	Mo	7.7	16.8	10.6		W	67	01:46	12.6	55	WSW	20	1012.3	13.1	59	SSW	28	1017.0		
31	Tu	7.0	19.5	0		SW	26	12:32	14.8	60	ESE	4	1024.3	17.4	43	WSW	9	1023.0		

Statistics for October 2017			
Mean	12.1	23.7	
Lowest	5.9	16.8	
Highest	25.4	33.9	10.6
Total			30.0

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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Extremes in October 2017

Hottest day	35.0 °C at Parafield Airport on the 18th
Warmest days on average	24.9 °C at Parafield Airport
Coollest days on average	18.0 °C at Mount Lofty
Coldest day	9.9 °C at Mount Lofty on the 30th
Coldest night	1.0 °C at Rosedale on the 1st
Coollest nights on average	7.9 °C at Rosedale
Warmest nights on average	12.5 °C at Noarlunga
Warmest night	26.0 °C at Noarlunga on the 18th
Warmest on average overall	18.3 °C at Adelaide (Kent Town)
Coollest on average overall	13.2 °C at Mount Lofty
Wettest overall	74.4 mm at Crafers (Mt Lofty)
Driest overall	14.2 mm at Gawler
Wettest day	28.8 mm at Aldgate on the 12th
Strongest wind gust	91 km/h at Outer Harbour on the 30th

South Australia in October 2017

October rainfall was close to average for South Australia as a whole, although some southern and eastern agricultural districts were drier than average. Both daytime and night time temperatures were warmer than average during October for most parts of South Australia.

Near-average rainfall

- For South Australia as a whole, October rainfall was 7% above average
- Rainfall was generally below average across southern and eastern agricultural districts
- Pastoral districts had average to very much above average October rainfall
- On the 11th, a surface trough and extensive cloudband with embedded thunderstorms brought more than 30 mm of rain to areas around Tarcoola, with the rain continuing into eastern parts of the State the following day
- Tarcoola (Mobella) and Tiewon had their highest October daily rainfall on record
- Two sites around Tarcoola had their highest total October rainfall for at least 20 years

Warmer than average

- South Australia had its sixth consecutive month of warmer than average mean maximum temperatures (April is the only month this year so far in which the State's mean maximum temperature was cooler than average)
- Mean maximum temperatures for South Australia as a whole were 1.48 °C warmer than average
- After some cooler than average days during the first half of the month, daytime temperatures were up to 12 degrees warmer than average across agricultural districts from 16 to 18 October
- The hottest temperature recorded during October in South Australia was 39.0 °C at Nullarbor on the 17th

- From 16 to 18 October, sites in central agricultural districts had three consecutive days over 30 °C—their earliest such run after winter
- Mean minimum temperatures for South Australia as a whole were 1.09 °C warmer than average
- October began with a very cold night across much of South Australia, with overnight temperatures on the 1st more than eight degrees cooler than average in the State's east Cape Jaffa and Kingscote had their highest October mean daily minimum temperature on record

Extremes in October 2017

Hottest day	39.0 °C at Nullarbor on the 17th
Warmest days on average	31.5 °C at Moomba Airport
Coollest days on average	18.0 °C at Mount Lofty
Coldest day	9.9 °C at Mount Lofty on the 30th
Coldest night	-0.7 °C at Snowtown (Rayville Park) on the 1st
Coollest nights on average	6.6 °C at Snowtown (Rayville Park)
Warmest nights on average	17.5 °C at Moomba Airport
Warmest night	26.0 °C at Noarlunga on the 18th 26.0 °C at Moomba Airport on the 28th
Warmest on average overall	24.5 °C at Moomba Airport
Coollest on average overall	13.2 °C at Mount Lofty
Wettest overall	74.4 mm at Crafers (Mt Lofty)
Driest overall	2.0 mm at Marree Aero
Wettest day	35.8 mm at Tieyon on the 1st
Strongest wind gust	107 km/h at Neptune Island on the 11th

Some notable statistics for October were:

Record highest October daily rainfall

	New record(mm)	Old record	Years of record
Tarcoola (Mobella)	35.4 on the 11th	32.4 on the 16th in 1974	59
Tieyon	35.8 on the 1st	26.8 on the 13th in 1999	23

Highest October total rainfall for at least 20 years

	Observed (mm)	Most recent higher	October Average
Tarcoola (Mobella)	55.2	77.8 in 1974*	14.9
Tarcoola (Mulgathing)	44.8	50.2 in 1993	17.6

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

Record highest October mean daily minimum temperature

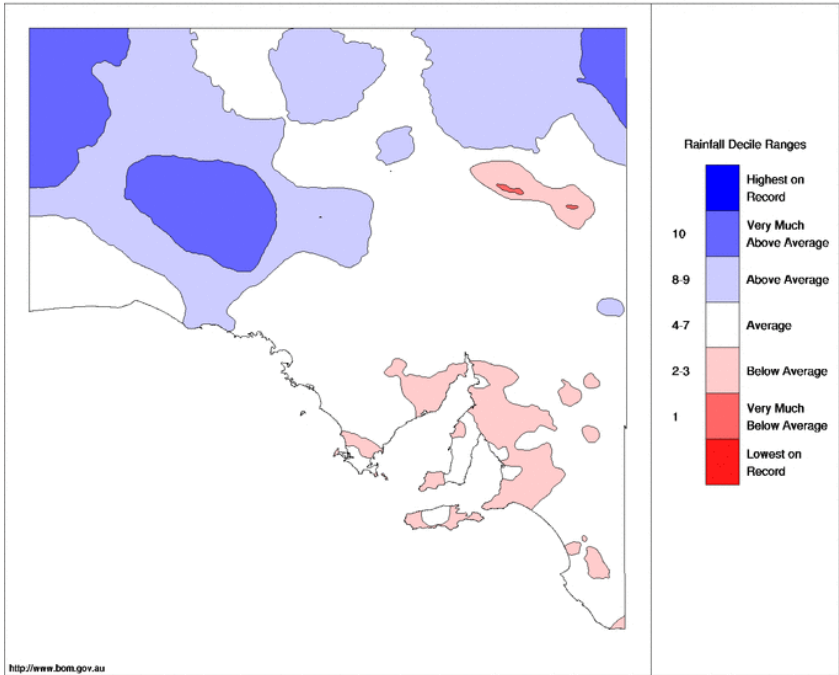
	New record (°C)	Old record	Years held	October Average
Cape Jaffa	10.6	10.4 in 1992	25	9.2
Kingscote	8.6	= 8.6 in 1999	23	7.1

For more information on October's temperatures and rainfall please see:

<http://www.bom.gov.au/climate/current/month/sa/archive/201710.summary.shtml>

South Australian Rainfall Deciles October 2017

Distribution Based on Gridded Data
Australian Bureau of Meteorology

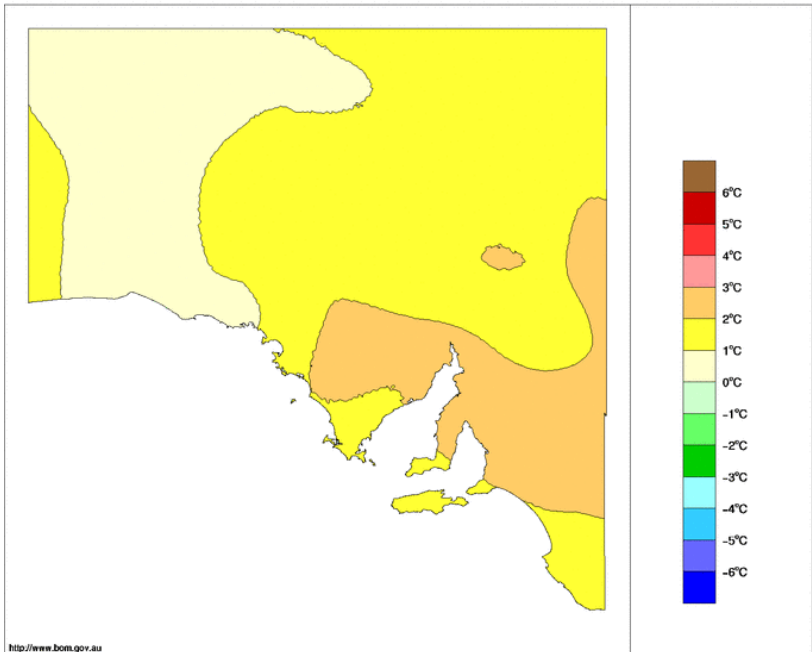


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Issued: 19/01/2018

Maximum Temperature Anomaly (°C) October 2017

Australian Bureau of Meteorology



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Issued: 21/11/2017

Greater Adelaide in November 2017: a warm month

Warmer than average days and nights were observed across Adelaide and the Hills during November 2017, with a cool start to the month giving way to warm spells for much of the remainder of the month. Rainfall was generally near average to below average with a couple of rainfall events.

Near-average rainfall

- Most sites in the Adelaide region had near-average to below average rainfall for November 2017
- After a generally dry first half of the month, rain was reported from the 15th to 18th, with moderate falls on the 16th as a trough and rain band moved through the area; some locally heavy falls were reported about the Mount Lofty Ranges
- A slow moving trough brought rainfall to the Adelaide area between the 22nd and 24th

Above average temperatures

- November was a warmer than average month throughout the Adelaide region, with most sites reporting mean daytime temperatures more than two degrees warmer than than average
- After a cool start with daytime temperatures generally in the high teens to low twenties for the first week, warmer conditions with maximum temperatures generally in excess of 30 °C were experienced from the 9th to 14th
- Kent Town reported three consecutive days with temperatures of 35 °C or more from the 12th to 14th, which was the equal-second longest such hot spell at the site behind a run of eight days of 35 °C or more in November 2009 (8th to 15th)
- Cool daytime maxima in the mid-to-high teens were observed from the 15th to 17th, in conjunction with a period of cloudy and rainy conditions. Most sites reported their coolest day of the month on the 16th or 17th with Mount Lofty reporting the lowest maximum in the Adelaide region with 11.1 °C on the 16th
- Another warm spell was experienced from the 19th to 22nd, with daytime temperatures in excess of 30 °C across the Adelaide Plains
- The hottest day of the month for all sites was observed on the 29th with temperatures reaching the high-thirties at most sites, and Parafield Airport reporting a maximum of 40.2 °C, the hottest day in the Adelaide region during November 2017
- Mean minimum temperatures were more than three degrees warmer than average across most sites in the Adelaide region
- After a cool to cold start, nights became warmer than average from the 10th onwards, including several warm spells (10th to 14th, 20th to 22nd, and 29th to 30th) where overnight temperatures were in the low to mid-twenties
- Adelaide (West Terrace / ngayirdapira) reported five consecutive nights of 20 degrees or above between the 10th and 14th, the city's longest warm spell of this type for November since 2007 (nine nights of twenty degrees or more at the Kent Town site). Adelaide (West Terrace / ngayirdapira) also reported three nights over 25 °C, breaking the previous November record of two such nights in 1975
- The warmest night of the month was 27.1 °C observed at Noarlunga on the 22nd during another warm spell; Kent Town reported three consecutive nights of over 24 °C from the 20th to 22nd, breaking the previous record of two set in 1987, 2000 and 2009

Adelaide (West Terrace / ngayirdapira)

- Total rainfall for Adelaide (West Terrace / ngayirdapira) was 14.4 mm, which is 47% of the long-term average of 30.6 mm
- The mean daily maximum temperature for Adelaide (West Terrace / ngayirdapira) was 27.5 °C, which is 3.1 °C above the long-term average of 24.4 °C. The warmest day was 39.4 °C on the 29th, and the coolest day was on the 17th when the temperature reached 18.1 °C
- The mean daily minimum temperature for Adelaide (West Terrace / ngayirdapira) was 16.6 °C, which is 3.5 °C above the long-term average of 13.1 °C. The coldest morning was 8.8 °C on the 2nd, and the warmest morning was on the 22nd when the minimum temperature was 26.7 °C

Strong winds at times

- Thunderstorms moved across the Adelaide region on the 30th producing a gust of 72 km/h at Adelaide Airport

Extremes in November 2017

Hottest day	40.2 °C at Parafield Airport on the 29th
Warmest days on average	28.9 °C at Parafield Airport
Coolest days on average	22.2 °C at Mount Lofty
Coldest day	11.1 °C at Mount Lofty on the 16th
Coldest night	1.4 °C at Mount Lofty on the 4th
Coolest nights on average	12.2 °C at Mount Lofty
Warmest nights on average	17.0 °C at Adelaide (Kent Town)
Warmest night	27.1 °C at Noarlunga on the 22nd
Warmest on average overall	22.5 °C at Adelaide (Kent Town)
Coolest on average overall	17.2 °C at Mount Lofty
Wettest overall	66.4 mm at Ironstone Road
Wettest day	38.0 mm at Birdwood on the 16th
Strongest wind gust	72 km/h at Adelaide Airport on the 30 th

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

<http://www.bom.gov.au/climate/current/month/sa/archive/201711.adelaide.shtml>

Remember: 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.

Adelaide (West Terrace / Ngayirdapira), South Australia November 2017 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	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP		
	°C	°C	mm	mm	hours	km/h	local	°C	%	eighths	km/h	°C	%	eighths	km/h	hPa	°C	%	eighths	km/h	hPa	
1	We	9.6	19.6	0		SW	31	17:10	15.2	67	NNW	4	1023.2	18.5	57	WSW	11	1020.2				
2	Th	8.8	20.9	0		WSW	31	15:11	15.9	67	NNW	6	1018.0	20.2	45	SW	15	1014.8				
3	Fr	11.3	19.3	0		SE	37	19:36	14.4	54	S	13	1019.0	17.6	43	SE	17	1018.1				
4	Sa	9.2	21.5	0		ESE	41	23:52	12.3	42	E	10	1022.1	20.5	24	ENE	11	1019.3				
5	Su	12.2	25.1	0		SE	50	18:51	16.7	34	E	22	1018.1	23.7	21	ENE	9	1014.3				
6	Mo	11.1	20.2	0		SE	39	08:22	14.2	55	SSE	19	1020.1	18.1	37	SSE	20	1020.2				
7	Tu	11.7	20.2	0		S	35	13:17	13.9	59	SE	11	1025.2	19.6	44	SSE	13	1023.2				
8	We	10.4	24.6	0		E	31	22:16	16.0	46	NW	2	1025.3	21.3	42	SW	17	1022.5				
9	Th	13.0	30.5	0		ESE	41	21:59	24.3	25	NE	17	1022.0	29.3	15	NNE	11	1019.3				
10	Fr	23.4	33.6	0		E	37	00:51	26.8	24	NE	15	1020.4	28.6	25	SW	6	1017.8				
11	Sa	23.5	31.4	0		NE	24	04:02	26.5	22	NE	13	1019.1	29.1	22	SW	7	1018.8				
12	Su	21.7	33.5	0		W	41	14:48	30.7	20	NE	13	1017.2	31.3	19	SW	13	1014.9				
13	Mo	25.9	36.3	0		E	37	01:21	29.4	23	NE	9	1014.2	34.1	11	W	15	1011.2				
14	Tu	20.3	34.6	0		NNW	43	10:03	30.5	23	NE	15	1009.6	32.5	21	Calm		1006.5				
15	We	19.4	19.4	1.8		SSW	44	14:31	18.0	95	WSW	9	1011.3	16.3	90	SSW	24	1013.3				
16	Th	12.6	18.6	6.4		SW	44	15:28	15.2	69	SSW	19	1017.6	15.4	78	S	15	1016.2				
17	Fr	12.7	18.1	0.4		SSW	39	16:45	14.1	94	WSW	17	1014.8	15.8	88	WSW	20	1014.1				
18	Sa	14.0	23.8	2.4		WNW	31	14:58	17.2	77	SSW	2	1015.8	21.6	66	WSW	17	1015.0				
19	Su	13.4	31.4	0		ENE	31	15:22	23.7	52	NE	11	1015.0	29.8	28	E	15	1013.2				
20	Mo	23.6	34.1	0		NE	39	01:34	26.8	41	NE	11	1015.6	32.7	26	E	9	1012.4				
21	Tu	25.1	35.3	0		NNE	37	08:53	29.4	27	NNE	10	1014.7	34.5	17	ENE	17	1011.4				
22	We	26.7	34.4	0		WNW	39	11:47	30.6	20	N	20	1010.8	26.5	45	WSW	17	1010.0				
23	Th	18.0	26.1	2.8		NW	35	08:40	24.1	52	N	6	1009.3	23.5	53	ENE	13	1009.5				
24	Fr	16.3	27.9	0.6		ENE	24	08:56	24.4	50	ESE	11	1012.1	26.4	45	WSW	11	1010.4				
25	Sa	17.5	26.4	0		WSW	31	16:20	22.9	56	S	2	1012.1	24.2	59	WSW	19	1010.5				
26	Su	15.2	22.7	0		SW	37	13:07	19.0	72	S	13	1014.1	21.4	63	SW	17	1013.5				
27	Mo	13.0	27.9	0		E	30	14:10	18.4	54	SSE	7	1016.4	27.2	33	ESE	19	1012.7				
28	Tu	16.2	34.8	0		WSW	31	13:41	26.6	48	NE	11	1013.3	31.8	27	SW	17	1010.7				
29	We	22.2	39.4	0		NNE	52	17:36	30.6	31	NE	9	1010.6	36.3	14	WSW	15	1007.0				
30	Th	23.2	34.2	0		SW	50	17:25	29.3	40	NNE	11	1008.0	31.7	34	SSW	13	1004.3				
Statistics for November 2017																						
Mean		16.6	27.5						21.9	47		11	1016.2	25.3	39					14	1014.2	
Lowest		8.8	18.1						12.3	20	#	2	1008.0	15.4	11					Calm		1004.3
Highest		26.7	39.4	6.4		NNE	52		30.7	95	E	22	1025.3	36.3	90					SSW	24	1023.2
Total				14.4																		

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).

IDCJDW5081.201711 Prepared at 16:06 GMT on 16 Jan 2018

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South Australia in November 2017

November 2017 was wetter than average across much of South Australia, resulting in the seventh-wettest November on record. Maximum temperatures were close to average, while minimum temperatures were much warmer than average and the eighth-warmest on record.

Seventh-wettest November on record

- Rainfall totals were above average across large areas of South Australia in November 2017, particularly in the Northwest Pastoral district, southeastern parts of the State, and in parts of the Eyre Peninsula
- Parts of the West Coast around Ceduna and areas around Gulf St Vincent saw below to very much below average rainfall
- For South Australia as a whole, it was the seventh wettest November on record, and wettest since 2009
- Several stations recorded their highest total November rainfall on record
- A band of rain and isolated thunderstorms moved across central districts during the 15th, giving several sites their highest November daily rainfall on record in the 24 hours to 9am on the 16th
- A slow moving low pressure system over western Eyre Peninsula and a broad trough over central districts generated scattered showers and thunderstorms throughout central and eastern districts on the 22nd and 23rd. Isolated severe thunderstorms were observed over eastern districts with reports of flash flooding in the Barossa Valley. Several sites on the Eyre Peninsula observed their highest November daily rainfall on record in the 24 hours to 9am on the 23rd

Warmer than average temperatures, particularly in the southeast

- Mean maximum temperatures during November 2017 were warmer than average in southern central and eastern areas, and close to average for the remainder of the State
- South Australia had its seventh consecutive month of warmer than average mean maximum temperatures, although November 2017 was in the near-average range and 0.91 °C above normal; April is the only month this year so far in which the State's mean maximum temperature was cooler than average
- Mean minimum temperatures were very much warmer than average throughout the agricultural districts, with several sites in the State's southeast reporting their warmest month on record; overnight temperatures were cooler than average in small parts of the northern Pastoral districts
- Mean minimum temperatures for South Australia as a whole were 1.65 °C warmer than average during November 2017 and ranked as the eighth-warmest November on record
- A cold morning on the 4th in southeastern agricultural areas saw several sites record their lowest November temperature on record including Keith (Munkora) with -2.3 °C which was the second-coldest November temperature observed in South Australia only behind the -2.4 °C observed at the same site on 10 November 2013
- Keith observed both its coldest November temperature (0.5 °C on the 4th) and its warmest November temperature (28 °C on the 29th) in 55 years of record

Strong winds at times

- On the 22nd, isolated severe thunderstorms were observed over eastern districts, with a wind gust to 82 km/h observed at Murray Bridge
- A slow moving low generated severe wind gusts of 102 km/h and 100 km/h during the afternoon of the 22nd at Port Augusta Aero and Oodnadatta Airport respectively
- Severe thunderstorms moved across South Australia on the 30th with a severe wind gust of 119 km/h reported at Oodnadatta

Extremes in November 2017

Hottest day	41.3 °C at Moomba Airport on the 30th
Warmest days on average	34.9 °C at Moomba Airport
Coollest days on average	20.7 °C at Neptune Island
Coldest day	11.1 °C at Mount Lofty on the 16th
Coldest night -	2.3 °C at Keith (Munkora) on the 4th
Coollest nights on average	11.6 °C at Snowtown (Rayville Park)
Warmest nights on average	20.1 °C at Moomba Airport
Warmest night	28.0 °C at Keith on the 29th
Warmest on average overall	27.5 °C at Moomba Airport
Coollest on average overall	17.2 °C at Mount Lofty
Wettest overall	126.2 mm at Ernabella (Pukatja)
Wettest day	59.2 mm at Parrakie on the 16th
Strongest wind gust	119 km/h at Oodnadatta Airport on the 30th

Some notable statistics for November were:

Record highest November temperature

	New record (°C)	Old record	Duration	November Average
Cape Jaffa	37.4 on the 29th	37.2 on the 19th in 2009	26	21.3

Record highest November daily rainfall

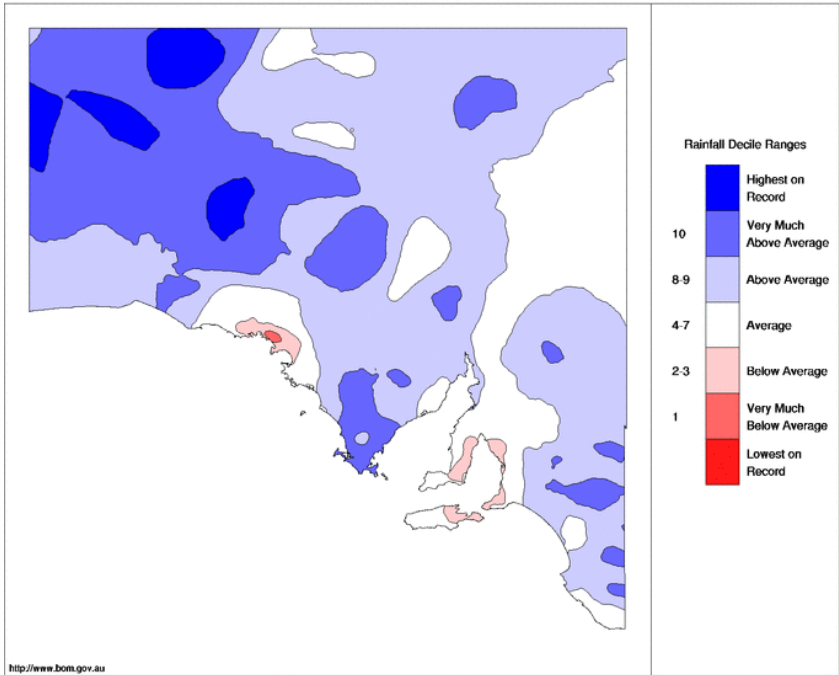
	New record (mm)	Old record	Years held
Nildottie	39.4 on the 16th	31.2 on the 11th in 1970	52
Renmark	25.6 on the 16th	25.0 on the 11th in 2000	23
Coffin Bay	46.4 on the 23rd	27.2 on the 26th in 2002	28
North Shields	43.2 on the 23rd	32.8 on the 2nd in 2008	24
Wharminda	46.2 on the 23rd	36.6 on the 4th in 2015	70
Parrakie	59.2 on the 16th	38.8 on the 5th in 2015	110
Geranium	57.4 on the 16th	40.2 on the 5th in 2015	108
Loxton	50.8 on the 16th	35.0 on the 5th in 2015	34

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

<http://www.bom.gov.au/climate/current/month/sa/archive/201711.summary.shtml>

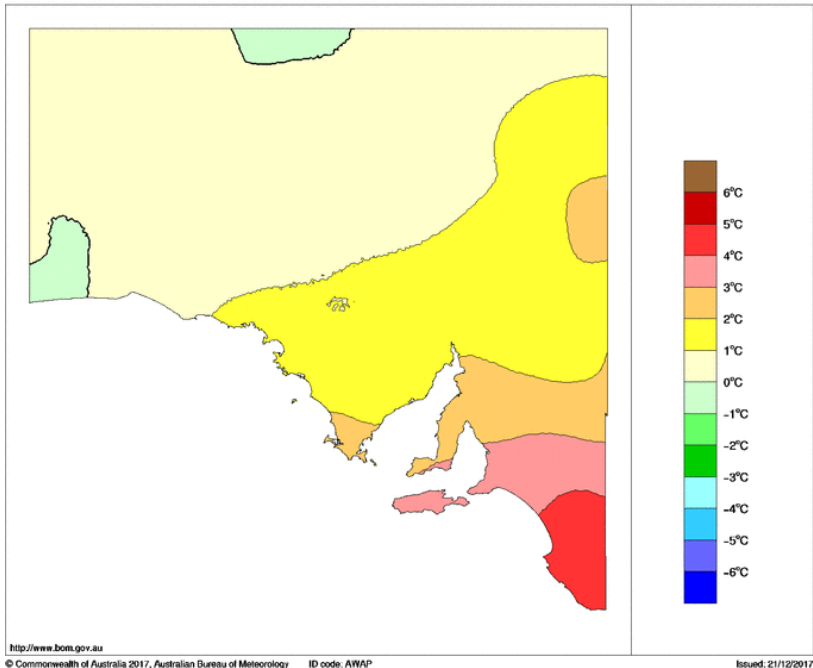
South Australian Rainfall Deciles November 2017

Distribution Based on Gridded Data
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) November 2017

Australian Bureau of Meteorology



Greater Adelaide in spring 2017: warm spring nights reported

Warmer than average daytime and night time temperatures were reported during spring across the Adelaide region, with a number of sites observing their warmest spring nights on record. Rainfall was close to average for most locations across Adelaide and the Hills.

Near average rainfall

- Most sites across Adelaide reported near average to below average rainfall for spring 2017
- Adelaide's wettest day was in early September, with Bridgewater in the Adelaide Hills recording 43.8 mm on 3 September
- Spring rainfall totals ranged from 60 mm to 80 mm along the coast to up to 260 mm at Mount Lofty

Warm spring nights

- Minimum temperatures were well above average during spring 2017, with several sites observing their highest spring mean daily minimum temperature on record
- Adelaide (West Terrace / ngayirdapira) reported five consecutive nights over 20 degrees between 10 and 14 November, the city's equal-second longest warm spell of this type for spring (record is nine such nights at Kent Town in November 2009)
- Kent Town reported three consecutive nights of over 24 °C from 20 to 22 November equalling the spring record set in 1987 (31 October to 2 November)
- Maximum temperatures were also warmer than average throughout Adelaide and Hills
- Mean maximum temperatures ranged from 0.8 °C warmer than average at Noarlunga to 2.8 °C warmer than average at Mount Lofty
- Kent Town reported three consecutive days of 35 °C or more from 12 to 14 November, which was the city's equal-third longest hot spell of this type for spring behind the eight days of 35 °C or more during the exceptionally warm November in 2009 (8th to 15th)

Adelaide (West Terrace / ngayirdapira)

- Total rainfall for Adelaide (West Terrace / ngayirdapira) was 89.2 mm, which is 71% of the long-term average of 126.1 mm
- The mean daily maximum temperature for Adelaide (West Terrace / ngayirdapira) was 23.4 °C, which is 2.0 °C above the long-term average of 21.4 °C. The warmest day was 39.4 °C on 29 Nov, and the coolest day was on 4 Sep when the temperature reached 13.7 °C
- The mean daily minimum temperature for Adelaide (West Terrace / ngayirdapira) was 13.2 °C, which is 2.0 °C above the long-term average of 11.2 °C. The coldest morning was 4.9 °C on 10 Sep, and the warmest morning was on 22 Nov when the minimum temperature was 26.7 °C

Extremes in spring 2017

Hottest day	40.2 °C at Parafield Airport on 29 Nov
Warmest days on average	24.5 °C at Parafield Airport
Coollest days on average	17.7 °C at Mount Lofty
Coldest day	6.5 °C at Mount Lofty on 4 Sep
Coldest night	1.0 °C at Rosedale on 1 Oct
Coollest nights on average	8.9 °C at Mount Lofty
Warmest nights on average	13.4 °C at Noarlunga
Warmest night	27.1 °C at Noarlunga on 22 Nov
Warmest on average overall	18.6 °C at Adelaide (Kent Town)
Coollest on average overall	13.3 °C at Mount Lofty
Wettest overall	263.4 mm at Crafers (Mt Lofty)
Wettest day	43.8 mm at Bridgewater on 3 Sep
Strongest wind gust	104 km/h at Mount Crawford AWS on 3 Sep

South Australia in spring 2017: warm nights in the south

Spring 2017 saw much wetter than average conditions in the northwest of the State and generally average to below average rainfall in southern and eastern districts. Both maximum and minimum temperatures were warmer than normal throughout with mean minimum temperatures highest on record in parts of the south.

Above average rainfall

- For South Australia as a whole, spring rainfall was 46% above average
- Despite a dry start to the season with little to no rainfall until the last week of September, wetter than average conditions were observed across northern and western pastoral districts during spring 2017
- There were small patches of wettest spring on record in the Northwest pastoral district
- Agricultural areas had generally average to below average rainfall for spring 2017, although rainfall was above average in a small area around Port Lincoln.
- Several rainfall events throughout the season resulted some sites in agricultural districts reporting their highest spring daily rainfall on record

Very much above average temperatures

- Statewide maximum temperatures during spring were 1.47 °C warmer than average, with mean daytime temperatures warmer than average in each of September, October and November
- Warmer than average maximum temperatures were prevalent across the whole State during spring, with areas of very much above average temperatures in eastern agricultural districts
- A hot end to the season resulted in Cape Jaffa breaking it's highest spring temperature on record with 37.4 °C on 29 November; Cape Jaffa also had it's warmest spring on record
- Statewide minimum temperatures during spring were 1.24 °C warmer than average which was the ninth-warmest on record.
- Warmer than average overnight temperatures were reported through much of South Australia during spring, with areas of very much above average minimum temperatures across the agricultural districts

Extremes in South Australia in spring 2017

Hottest day	41.3 °C at Moomba Airport on 30 Nov
Warmest days on average	31.3 °C at Moomba Airport
Coollest days on average	17.7 °C at Mount Lofty
Coldest day	6.5 °C at Mount Lofty on 4 Sep
Coldest night	-2.3 °C at Renmark Aero on 17 Sep -2.3 °C at Keith (Munkora) on 4 Nov
Coollest nights on average	7.9 °C at Yongala
Warmest nights on average	16.5 °C at Moomba Airport
Warmest night	28.0 °C at Keith on 29 Nov
Warmest on average overall	23.9 °C at Moomba Airport
Coollest on average overall	13.3 °C at Mount Lofty
Wettest overall	263.4 mm at Crafers (Mt Lofty)
Wettest day	81.0 mm at Mintabie on 30 Sep
Strongest wind gust	119 km/h at Oodnadatta Airport on 30 Nov

Some notable statistics for Spring were:

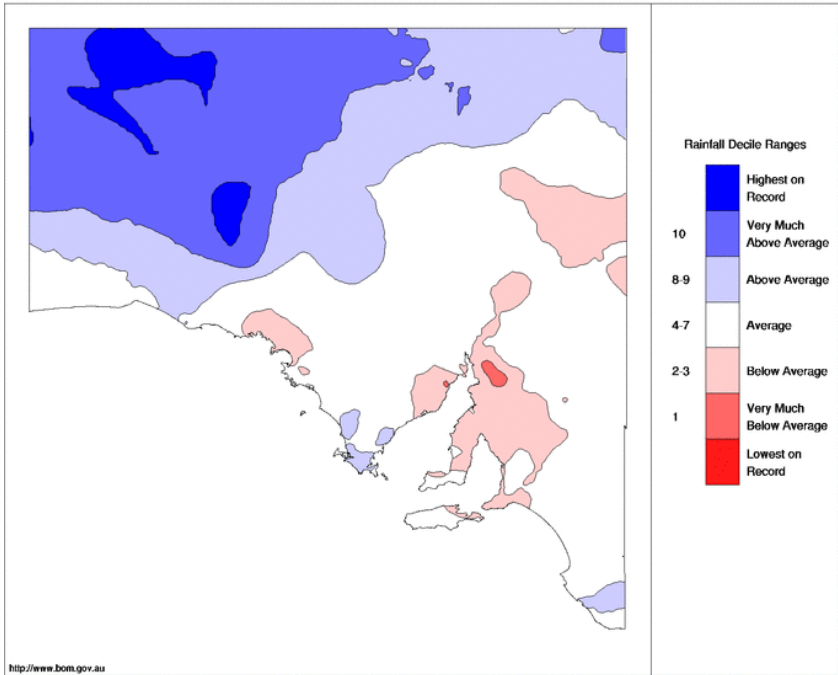
Record highest spring daily rainfall			
	New record (mm)	Old record	Years of record
Todmorden	58.0 on 30 Sep	55.9 on 29 Sep 1968	69
Geranium	57.4 on 16 Nov	46.0 on 19 Oct 1973	109
Parrakie	59.2 on 16 Nov	47.0 on 28 Sep 1979	110
Wharminda	46.2 on 23 Nov	40.8 on 12 Sep 1990	74
Tieyon	35.8 on 1 Oct	26.8 on 13 Oct 1999	23
Coffin Bay	46.4 on 23 Nov	37.2 on 18 Oct 2000	30
North Shields	43.2 on 23 Nov	37.0 on 18 Oct 2000	24
Mount Barry Station	45.0 on 30 Sep	=45.0 on 30 Sep 2004	36

Record highest spring mean temperature				
	New record (°C)	Old record	Years Held	Spring Average
Mount Gambier	14.8	14.5 in 2015	75	12.7
Adelaide Airport	18.0	= 18.0 in 2009	62	16.0
Parafield Airport	18.3	18.2 in 2009	60	16.2
Coonawarra	15.3	15.1 in 2015	31	13.6
Cape Jaffa	15.7	15.1 in 2014	25	14.1
Kingscote	15.5	15.2 in 2009	23	14.0
Parawa	14.5	= 14.5 in 2014	23	13.1

Many other records were also set in Spring. For more information please see:
<http://www.bom.gov.au/climate/current/season/sa/archive/201711.summary.shtml>

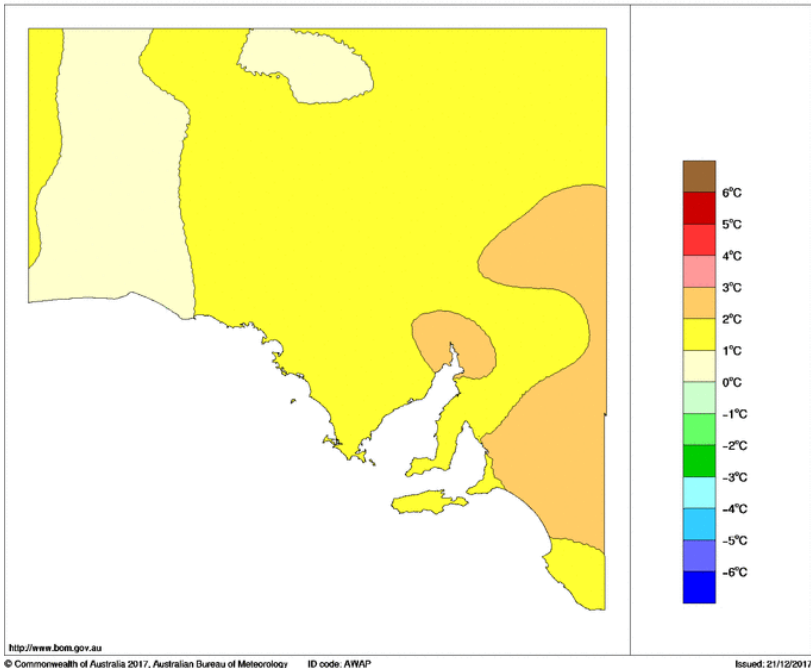
South Australian Rainfall Deciles 1 September to 30 November 2017

Distribution Based on Gridded Data
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) 1 September to 30 November 2017

Australian Bureau of Meteorology



Greater Adelaide in December 2017

December rainfall was above average at most sites in Adelaide and the Hills. After a cool start, several hot days later in the month resulted in mean daytime and night time temperatures for December that were generally slightly warmer than average.

Wetter than average

- On the 1st, a large cloud band across the country brought rain to Adelaide, including around 13 mm in the city and more than 20 mm at sites in the Hills
- Several cold fronts crossed the city during the first week of December, keeping temperatures cool and bringing rainfall to the city on most days until the 8th
- On 19 December, a complex low pressure system and cold front brought thunderstorms and rain to the Adelaide region, including more than 10 mm to the city

Slightly warmer than average

- Adelaide city had its coldest first week of December since 1969, with maximum temperatures at West Terrace averaging 21.1 °C, almost five degrees cooler than average
- Temperatures were generally warmer than average for the last three weeks of the month, resulting in a warmer than average December overall
- Mean maximum temperatures ranged from 0.4 °C cooler than average at Noarlunga to 2.6 °C warmer than average at Mount Lofty

Adelaide (West Terrace / ngayirdapira)

- Total rainfall was 29.2 mm, which is 111% of the long-term average of 26.3 mm
- The mean daily maximum temperature for Adelaide (West Terrace / ngayirdapira) was 27.0 °C, which is 0.2 °C above the long-term average of 26.8 °C. The warmest day was 39.4 °C on the 13th, and the coolest day was on the 2nd when the temperature reached 19.6 °C

Extremes in December 2017

Hottest day	42.6 °C at Edinburgh RAAF on the 13th
Warmest days on average	28.7 °C at Rosedale (Turretfield Research Centre)
Coollest days on average	22.0 °C at Mount Lofty
Coldest day	12.1 °C at Mount Lofty on the 7th
Coldest night	6.2 °C at Rosedale on the 8th
Coollest nights on average	11.2 °C at Mount Lofty
Warmest nights on average	15.8 °C at Adelaide (Kent Town)
Warmest night	27.0 °C at Adelaide (Kent Town) on the 13th
Warmest on average overall	21.9 °C at Adelaide (Kent Town)
Coollest on average overall	16.6 °C at Mount Lofty
Wettest overall	55.2 mm at Mount Lofty
Driest overall	24.8 mm at Regency Park
Wettest day	29.4 mm at Woodside on the 1st
Strongest wind gust	72 km/h at Outer Harbour (Black Pole) on the 23rd 72 km/h at Sellicks Hill on the 24th and 25 th

<http://www.bom.gov.au/climate/current/month/sa/archive/201712.adelaide.shtml>

Adelaide (West Terrace / Ngayirdapira), South Australia December 2017 Daily Weather Observations

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



Date	Temps		Max wind gust				9am				3pm									
	Min °C	Max °C	Rain mm	Evap mm	Sun hours	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	MSLP hPa
1	Fr	21.1	13.0			S	33	14:57	19.4	76		S	15	1009.5	18.9	65		S	17	1010.4
2	Sa	14.4	19.6	0.4		SSW	46	10:54	16.8	60		SSW	19	1014.3	17.8	60		S	20	1015.6
3	Su	12.3	20.2	0.4		S	44	10:29	15.4	57		S	15	1018.8	16.9	52		SSW	19	1017.8
4	Mo	22.1	22.1	0.8		SE	33	11:19	16.6	58		ESE	11	1019.6	20.6	45		SSW	19	1017.1
5	Tu	12.0	21.8	0.2		WSW	35	15:24	17.0	51		SSE	7	1015.5	20.5	50		SW	15	1012.0
6	We	13.3	23.1	0		WSW	31	12:51	17.9	53		SW	4	1008.6	22.2	43		WSW	15	1006.8
7	Th	10.8	19.9	0.8		SSW	46	13:34	13.8	82		N	4	1008.3	18.1	64		SSW	20	1008.8
8	Fr	11.0	20.8	2.0		WSW	39	14:44	15.4	64		SSW	13	1019.4	19.5	39		WSW	20	1019.7
9	Sa	12.0	24.0	0		SW	31	15:50	17.5	65		WSW	9	1024.3	22.6	41		SSW	19	1023.3
10	Su	11.6	28.2	0		SW	30	17:08	19.3	58		N	6	1023.8	25.4	31		SW	17	1021.5
11	Mo	12.0	28.8	0		WSW	28	16:05	21.3	50		N	2	1021.2	27.3	39		WSW	15	1018.3
12	Tu	13.0	37.5	0		NW	11	11:29	25.9	37		NE	15	1015.3	36.6	13		WNNW	20	1011.0
13	We	25.9	39.4	0		NW	46	09:52	33.0	16		NNE	15	1004.6	31.2	22		SSW	13	1003.8
14	Th	17.3	24.2	0		SW	33	17:17	17.6	89		SSW	17	1011.2	23.9	48		WSW	15	1011.8
15	Fr	12.8	25.6	0		WSW	31	17:22	18.8	55		NW	7	1014.0	24.4	36		SSW	9	1011.6
16	Sa	12.9	27.0	0		WSW	31	14:50	20.3	52		NNE	2	1016.0	23.5	50		SSW	19	1013.8
17	Su	15.4	33.1	0		E	28	01:56	22.0	54		SSW	9	1013.8	30.9	28		SW	9	1011.5
18	Mo	22.0	35.3	0		NE	43	13:23	29.9	24		NNE	7	1009.0	33.9	19		NE	19	1002.1
19	Tu	20.8	28.1	10.2		W	44	13:57	21.7	71		WNNW	6	1001.5	27.0	29		WNNW	24	1002.5
20	We	16.8	22.3	0		SW	39	15:42	18.9	69		WSW	20	1012.7	20.9	53		SW	22	1016.5
21	Th	11.8	22.7	0		SW	35	15:28	18.6	56		NE	4	1021.0	21.5	52		SW	20	1019.0
22	Fr	11.3	31.3	0		WNNW	30	12:31	20.9	55		NE	2	1016.1	30.4	24		WSW	13	1012.3
23	Sa	14.0	37.4	0		WNNW	39	12:01	27.6	23		NNE	11	1008.3	35.9	13		WSW	17	1005.0
24	Su	16.0	24.1	0		SE	37	09:00	18.4	49		SE	17	1013.4	27.9	37		E	20	1013.9
25	Mo	22.0	29.6	0		SE	33	20:51	18.0	46		W	9	1017.3	22.9	19		S	13	1014.0
26	Tu	17.7	34.7	0		E	44	01:41	25.0	28		E	15	1014.0	32.1	15		SW	13	1010.8
27	We	25.0	37.6	0		SSW	46	21:31	31.9	14		NNE	13	1008.2	32.0	22		WSW	19	1006.4
28	Th	21.6	26.3	0		SSW	24	23:35	22.8	74		W	7	1012.6	24.8	69		SW	9	1010.7
29	Fr	18.6	24.3	1.2		WSW	28	13:50	21.1	71		SSE	4	1011.0	22.8	58		WSW	17	1010.8
30	Sa	16.8	23.6	0.2		WSW	35	10:51	18.2	78		WSW	13	1014.0	22.1	52		SW	17	1013.7
31	Su	13.1	24.4	0		WSW	30	17:35	17.7	60		E	6	1014.0	23.8	49		WSW	15	1011.4

Statistics for December 2017									
Mean	15.6	27.0							
Lowest	10.8	19.6							16
Highest	25.9	39.4	13.0						9
Total		29.2							24

Observations were drawn from Adelaide (West Terrace / Ngayirdapira) (station 0233090).
 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).
 Prepared at 13:07 GMT on 21 Jan 2018
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http://www.bom.gov.au/climate/dwo/IDC_IDW0000.pdf

South Australia in December 2017: wetter and warmer than average

December rainfall was above average for most Agricultural Districts and the North-west, but little or no rain fell in the Far North. Both daytime and night time temperatures were warmer than average in most parts of the State, although temperatures were cooler than average in parts of the Northwest.

Rainfall above average

- December rainfall was 28% above average for South Australia as a whole
- Rainfall was more than double the December average in many parts of the Agricultural Districts and neighbouring areas of the Northwest
- Parts of the Lower Southeast and Far North recorded below average rainfall for the month
- Little or no rain fell in much of the Far North
- Yunta Airstrip had its highest December daily rainfall on record and its highest total December rainfall on record, with nearly all of the rain falling in the first three days of the month
- Several sites had their highest total December rainfall since 1992 or 1993
- Two sites around Marree had their lowest total December rainfall on record and Arkaroola had its lowest total December rainfall since 1994

Warmer than average

- December mean temperatures were 0.97 °C warmer than average for South Australia as a whole, and were warmer than average in all areas except northwestern parts of the Northwest
- After several years of very warm Decembers (including the warmest December on record in 2015), it was the coolest December for South Australia as a whole since 2011
- Daytime temperatures were warmer than average in most districts
- Mean maximum temperatures were very much above average in western parts of the Western Agricultural district and in eastern parts of the Far North
- The month began with a week of relatively cool days, with temperatures more than ten degrees cooler than average in western parts of the State on the 1st
- Night time temperatures were also warmer than average in most districts, although not as markedly as daytime temperatures
- Mean minimum temperatures were more than two degrees warmer than average in the far northeast of the State
- Several sites had their highest December temperature on record as temperatures exceeded 45 °C in the second half of the month
- Moomba Airport exceeded its December daily maximum temperature record on the 18th and then equalled this new record (47.1 °C) again on the 29th (although the old Moomba site reached 49.1 °C on 23 December 1972)
- Cleve Aerodrome had its coldest December day on record when it reached just 16.0 °C on the 1st (although the nearby Cleve site only reached 12.8 °C on 1 December 1966)
- Ernabella (Pukatja) had its warmest December night on record on the 18th

Extremes for South Australia in December 2017

Hottest day	47.1 °C at Marree Aero on the 18th 47.1 °C at Moomba Airport on the 18th and 29th 47.1 °C at Oodnadatta Airport on the 18th
Warmest days on average	38.5 °C at Moomba Airport
Coollest days on average	21.4 °C at Neptune Island
Coldest day	12.1 °C at Mount Lofty on the 7th
Coldest night	3.4 °C at Keith (Munkora) on the 25th
Coollest nights on average	9.9 °C at Keith (Munkora)
Warmest nights on average	23.4 °C at Moomba Airport
Warmest night	32.8 °C at Moomba Airport on the 19th
Warmest on average overall	31.0 °C at Moomba Airport
Coollest on average overall	16.6 °C at Mount Lofty
Wettest overall	88.2 mm at Parawa (Sharon)
Driest overall	0.6 mm at Marree Aero
Wettest day	54.0 mm at Boolcoommatta on the 2nd
Strongest wind gust	122 km/h at Neptune Island on the 18th

Some notable statistics for December were:

Record highest December daily rainfall

	New record (mm)	Old record	Years of record
Yunta	29.8 on the 2nd	21.0 on the 5th in 2003	20

Record highest December total rainfall

	New record (mm)	Old record	Years Held	December Average
Yunta	50.0	47.6 in 2003	20	18.9

Record lowest December daily maximum temperature

	New record (°C)	Old record	Years Held	December Average
Cleve	16.0 on the 1st	16.9 on the 5th in 2013	22	27.4

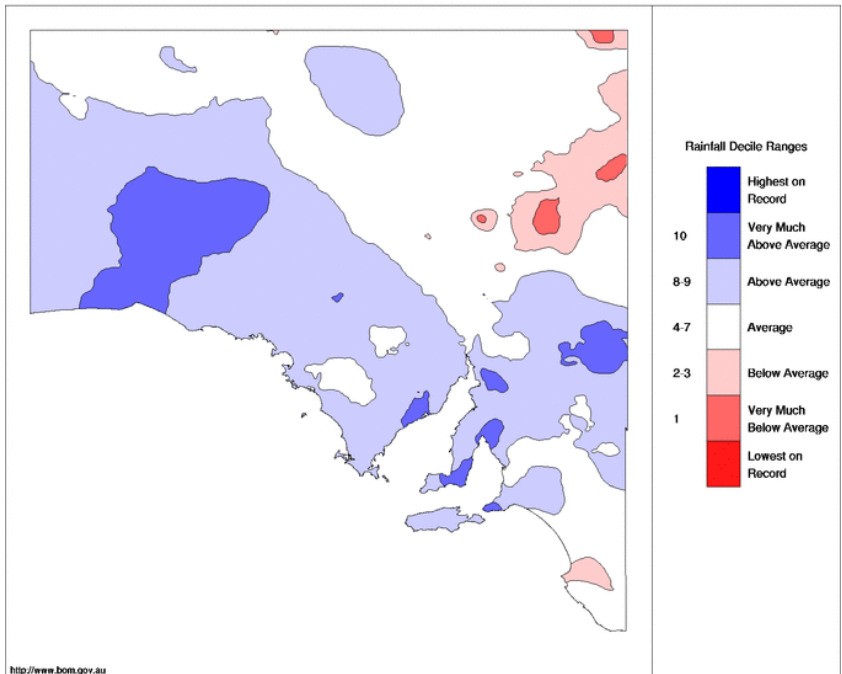
Record highest December daily minimum temperature

	New record (°C)	Old record	Duration	December Average
Ernabella	28.3 on the 18th	27.9 on the 23rd in 2009	20	19.2

Record highest December temperatures

	New record (°C)	Old record	Years Held	December Average
Woomera	45.5 on the 18th	45.4 on the 27th in 1949	69	32.4
Coober Pedy	45.8 on the 18th	45.6 on the 20th in 2013	24	34.4
Moomba	47.1 on the 18th and 29th	46.5 on the 23rd in 2005	23	36.6
Roxby Downs	46.4 on the 18th	46.0 on the 23rd in 2005	21	34.

Distribution Based on Gridded Data
 Australian Bureau of Meteorology

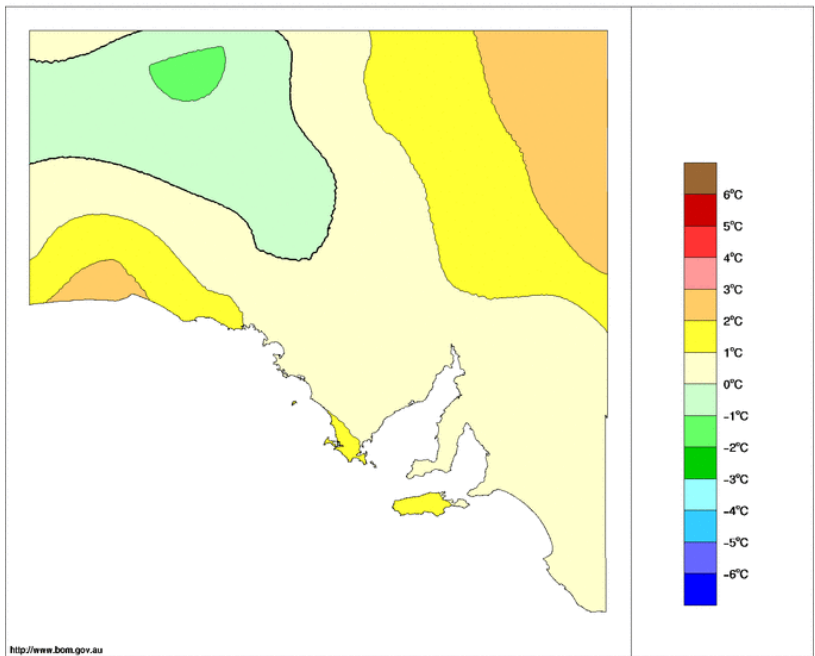


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Issued: 27/01/2018

Maximum Temperature Anomaly (°C) December 2017

Australian Bureau of Meteorology



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Issued: 21/01/2018

Greater Adelaide in 2017: slightly wetter and warmer than average

Rainfall in 2017 was generally close to average across Adelaide and the Hills, with rain falling at regular intervals during the year. Both daytime and night time temperatures were slightly warmer than average overall throughout Adelaide and the Hills.

Slightly wetter than average

- Rainfall in 2017 around Adelaide and the Hills was generally close to average
- Rain tended to fall at regular intervals during the year across the Adelaide region, keeping rainfall totals in most months close to or slightly above average
- June was much drier than average for the Greater Adelaide region
- Rainfall totals during 2017 ranged from 93% of average at Parafield Airport to 106% of average at Kuitpo Forest Reserve, Mount Crawford, and Rosedale
- Uraidla was the wettest site in Greater Adelaide with 1147.8 mm, while Mount Lofty, Aldgate, and Heathfield also recorded more than 1000 mm for the year

Slightly warmer than average

- Overall mean temperatures were typically between half and one degree warmer than average at most sites across Adelaide and the Hills
- Days were much warmer than average at Mount Lofty, while nights were particularly warmer than average at Mount Barker
- The hottest temperatures for the year around Adelaide were during a heatwave in mid-December, with Edinburgh RAAF recording 42.6 °C on 13 December
- Earlier in the year, a heatwave from 8–10 February saw Adelaide (Kent Town) reach 42.4 °C on 8 February
- The coldest temperatures for the year were during a week of unusually cold weather at the end of August, with the lowest in the Greater Adelaide area –1.6 °C at Rosedale on the 28th
- Adelaide Airport equalled its highest mean daily minimum temperature on record

Adelaide (Kent Town)

- Total rainfall for Adelaide (Kent Town) was 536.2 mm, which is 97% of the long-term average of 550.6 mm
- The mean daily maximum temperature for Adelaide (Kent Town) was 23.3 °C, which is 0.9 °C above the long-term average of 22.4 °C. The warmest day was 42.4 °C on 8 February, and the coolest day was on 28 August when the temperature reached 11.7 °C
- The mean daily minimum temperature for Adelaide (Kent Town) was 12.7 °C, which is 0.4 °C above the long-term average of 12.3 °C. The coldest morning was 1.7 °C on 4 June, and the warmest morning was on 7 January when the minimum temperature was 31.4 °C
- In June, the primary observing site for Adelaide city was moved from Kent Town to a location near West Terrace, close to the original Adelaide site, which first opened in 1839
- The Kent Town site has continued to record observations throughout the year, to compare with observations at the new West Terrace site (Ngayirdapira).

Extremes for Greater Adelaide in 2017

Hottest day	42.6 °C at Edinburgh RAAF on 13 Dec
Warmest days on average	23.8 °C at Parafield Airport
Coollest days on average	17.5 °C at Mount Lofty
Coldest day	6.0 °C at Mount Lofty on 3 Aug
Coldest night	-1.6 °C at Rosedale on 28 Aug
Coollest nights on average	9.3 °C at Mount Lofty
Warmest nights on average	13.2 °C at Noarlunga
Warmest night	31.6 °C at Parafield Airport on 7 Jan
Warmest on average overall	18.0 °C at Adelaide (Kent Town)
Coollest on average overall	13.4 °C at Mount Lofty
Wettest overall	1147.8 mm at Uraidla
Driest overall	353.8 mm at Morphettville
Wettest day	54.0 mm at Bridgewater on 18 Jul and 15 Aug
Strongest wind gust	111 km/h at Adelaide Airport on 19 Jan

For more information on 2017's temperatures and rainfall plus a summary of statistics please see:

<http://www.bom.gov.au/climate/current/annual/sa/archive/2017.adelaide.shtml>

2017 third hottest year on record for the planet

2016 was the hottest year record globally, but last year came in 0.84°C above the long-term average, third hottest on record. It is notable that this occurred in a year that was not after an El Niño event, which typically assist in pushing global temperatures further above the background warming trend than in neutral years like 2016/17.

For more see: <https://www.ncdc.noaa.gov/sotc/global/201713>

Period of Record:	Year	Anomaly °C	Anomaly °F
1880–2017			
1	2016	0.94	1.69
2	2015	0.90	1.62
3	2017	0.84	1.51
4	2014	0.74	1.33
5	2010	0.70	1.26
6	2013	0.67	1.21
7	2005	0.66	1.19
8	2009	0.64	1.15
9	1998	0.63	1.13
10	2012	0.62	1.12

South Australia in 2017: warmer and wetter than average

Rainfall during 2017 was above average for South Australia as a whole, although it was drier than average in some central and eastern areas. Overall, temperatures were warmer than average in all districts, with 2017 coming in as South Australia's fifth-warmest year on record.

Wetter than average

- Rainfall in 2017 was 11% above average for South Australia as a whole
- Rainfall was above average in the Northwest and parts of the Southeast, but it was drier than average in the Far North and most parts of the central agricultural districts
- After a very wet end to 2016, the year began with South Australia's sixth-wettest January on record and resulted in the State's sixth-wettest summer on record
- January, April, and November each had large areas of the State with very much above average rainfall
- Rainfall was above average for most areas of the State during April, making it South Australia's tenth-wettest April on record, with large areas around Port Augusta, Tarcoola, Mount Eba, and Andamooka recording more than four times their April average rainfall
- South Australia had its driest March since 2003 and May, June, and July all had below average rainfall in most parts of the State
- In September, after little or no rain earlier in the month, the last three days saw the northern pastoral districts receive more than 25 mm of rain, with the month ending as one the region's wettest Septembers on record
- Two sites had their highest daily rainfall on record in the first half of the year

Fifth-warmest year on record

- South Australia's overall fifth-warmest year on record, with the State's mean temperature 1.02 °C warmer than average
- Mean temperatures were above average throughout the State, including large parts that were very much above average with an area of highest on record in the northeast
- Most months were much warmer than average, with April and June the only months to have slightly cooler than average mean temperatures
- Daytime temperatures were very much warmer than average during March and July, and night time temperatures were very much cooler than average during June
- During June, Marree Aero had its lowest temperature on record when temperatures dropped to -2.4 °C on the 4th (although the nearby Marree site recorded -2.8 °C on 30 June 1948 and 15 July 1970)
- Extreme heat was observed at times during January and February over South Australia
- During the February heatwave, Yunta Airstrip had its highest temperature on record when it reached 45.5 °C (although the old Yunta site recorded 47.3 °C on 3 January 1990)
- Mean maximum temperatures were South Australia's third-warmest on record at 1.42 °C warmer than average

- Daytime temperatures were very much warmer than average across most of South Australia, including small areas of highest on record in the Far North
- Mean minimum temperatures were 0.62 °C warmer than average for the State as a whole and were warmer than average in most districts, but after several very warm years, they were the coolest since 2012
- Mean minimum temperatures were very much warmer than average in parts of the Pastoral districts, Western Agricultural, and Southeast districts
- Moomba Airport had both its highest mean daily minimum temperature on record and highest mean temperature on record

Extremes in 2017

Hottest day	48.2 °C at Tarcoola Aero on 9 Feb
Warmest days on average	30.8 °C at Moomba Airport
Coolest days on average	17.5 °C at Mount Lofty
Coldest day	6.0 °C at Mount Lofty on 3 Aug
Coldest night	-5.7 °C at Yunta Airstrip on 4 Jun
Coolest nights on average	8.1 °C at Keith (Munkora)
Warmest nights on average	16.2 °C at Moomba Airport
Warmest night	32.8 °C at Moomba Airport on 19 Dec
Warmest on average overall	23.5 °C at Moomba Airport
Coolest on average overall	13.4 °C at Mount Lofty
Wettest overall	1147.8 mm at Uraidla
Driest overall	97.6 mm at Moomba Airport
Wettest day	106.2 mm at Wilpena Pound on 20 Jan
Strongest wind gust	124 km/h at Neptune Island on 6 Aug and 15 Aug

Some notable statistics for South Australia in 2017 were:

Record highest daily rainfall

	New record (mm)	Old record	Years of record
Roseworthy	58.6 on 21 Apr	57.0 on 31 Oct 1997	21
Buckleboo	76.2 on 20 Jan	54.6 on 15 Feb 2014	31

Record highest temperature

	New record (°C)	Old record	Duration	Annual average
Yunta	45.5 on 10 Feb	45.3 on 7 Feb 2009	20	24.6

Record lowest temperature

	New record (°C)	Old record	Duration	Annual average
Marree	-2.4 on 4 Jun	-1.6 on 3 Aug 2014	20	14.0

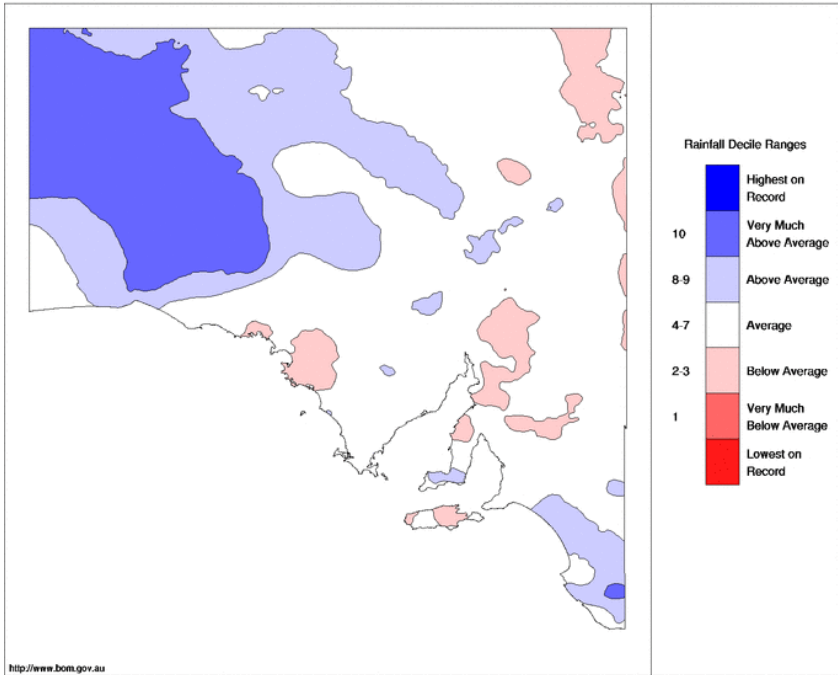
Record highest annual mean daily minimum temperature

	New record (°C)	Old record	Duration	Annual average
Adelaide Airport	12.5	= 12.5 in 2013	61	11.5
Moomba Airport	16.2	16.1 in 2016	21	15.5

Record highest annual mean temperature

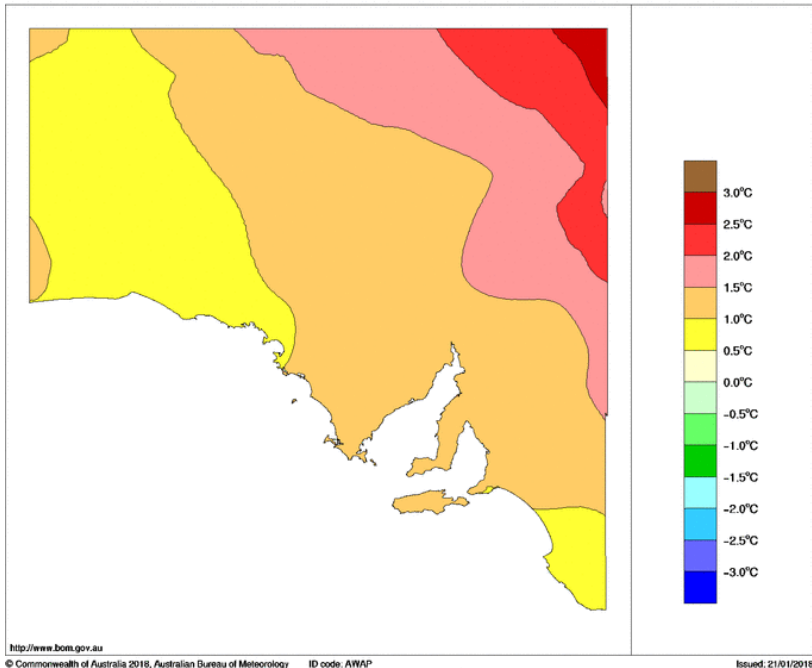
	New record (°C)	Old record	Duration	Annual average
Moomba	23.5	23.4 in 2014	21	22.5

Distribution Based on Gridded Data
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) 1 January to 31 December 2017

Australian Bureau of Meteorology





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

NEXT MEETING

6.00 PM TUESDAY 20 February 2018

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

An automatic weather station Mesonet in Mid-Northern South Australia.

Warwick Grace, Grace Research Network for the Ag Ex Alliance and AMETA committee member

In the Mid-North of South Australia a Mesonet (mesoscale weather network) of 40 automatic weather stations will be established. This information will allow farmers to avoid spraying pesticides when weather conditions indicate spray drift and off-target damage are likely. Such damage is estimated at about \$200 million annually in the Mid North.

Spray drift mitigation systems are important to safeguard South Australia's reputation for premium food and wine produced in our clean environment. In 2016–17, our food and wine generated \$19.97 billion in revenue and accounted for 49% of the state's merchandise exports.

The various weather conditions pre-disposing to spray drift events and the specific mesonet measurements that identify those conditions, will be outlined in this talk.

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.