

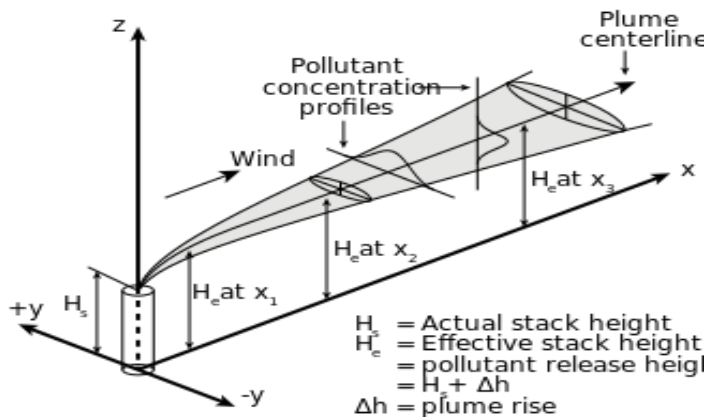


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THE OFFICIAL PUBLICATION OF THE AUSTRALIAN
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October 2015

Guest speaker at the August 2015 AMETA meeting was Chris Purton, a now retired Consulting Meteorologist/Hydrologist. He gave an interesting talk on his decades of experience working in meteorology and environmental analysis and consulting, with a focus on his role as an expert witness in court.

Chris started his career as one of the early cadet meteorologists and weather forecasters in the Bureau of Meteorology, but after producing reports for the Ash Wednesday bushfires in 1983, established himself as a boundary layer meteorology specialist, specialising in modelling and analysing air pollution and air dispersion modelling. His work through the 1990's and 2000's saw him analysing scenarios and producing reports for factories and foundries, piggeries, chicken broiler farms, crash repairers and glass manufacturing plants. All of these activities have the potential to produce emissions that can impact surrounding areas, and can result in cases being brought before court.



With his involvement with in excess of 100 cases as an expert witness before court in his decades of experience, Chris is well placed to offer some insights to what is involved. He stated that clients are looking for the appropriate expertise and ability to analyse large amounts of data, coupled with the ability to clearly explain sometimes complex scientific principles.



The role of expert witness obtained by one side in a court case or the other, still requires you to not be an advocate for the client that has engaged you. Your duty as an expert witness is to the court, and all relevant facts have to be presented to court, whether they support your client or not. Chris described how when your work goes before court it is subject to vigorous review, with Chris seeing this as a positive, as it sharpens your work enormously. The potential pitfalls are not being careful to stick to your area of expertise, and losing your temper or becoming argumentative in court, with arguing your client's case not what you are there for.

Adelaide in August 2015: generally cool and dry

Both maximum and minimum temperatures were cooler than average for the month. Rainfall was generally below average across the Adelaide metropolitan area, tending closer to average in the northern suburbs and about the hills.

- Coolest August days in 5 years
- Below average rainfall on the plains
- Average rainfall in the hills

August temperatures were below average for Adelaide, with several stations recording mean monthly maximum temperatures about one degree cooler than their long-term August average. Maximum temperatures were coolest between the 1st and 7th. The coldest day for the city occurred on the 7th when the maximum temperature reached 11.4°C, the coldest August day for Adelaide since August 2008. The August mean maximum temperature for Adelaide was the coolest since 2010. Minimum temperatures were generally above average for most stations on the plains, but tending below average for the more elevated locations in the hills. The coldest night for any location was recorded on the 8th, at Mount Barker when the temperature dropped to 0.8 °C.

Adelaide recorded 48.4 mm of rainfall throughout August, over half of which was recorded between the 1st and 7th in a southwesterly airstream. The long-term August average for Adelaide is 67.5mm (with median of 73.7 mm). The passage of a cold frontal system on the 12th delivered rainfall totals between 5 to 15 mm across the region, with higher totals of 20-30mm in the hills, light showers continued through to about the 17th in a southwesterly airstream. The last week of August was generally dry, with only light rainfall being recorded across the region.

Extremes in August 2015

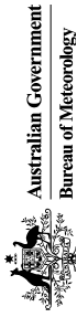
Hottest day	23.0 °C at Noarlunga on the 20th
Warmest days on average	16.0 °C at Parafield Airport
Coolest days on average	9.6 °C at Mount Lofty
Coldest day	6.7 °C at Mount Lofty on the 1st
Coldest night	0.7 °C at Mount Barker on the 31st
Coolest nights on average	4.8 °C at Mount Lofty
Warmest nights on average	8.4 °C at Noarlunga
Warmest night	13.4 °C at Noarlunga on the 21st
Warmest on average overall	12.0 °C at Adelaide (Kent Town)
Coolest on average overall	7.2 °C at Mount Lofty
Wettest overall	134.4 mm at Ashton
Wettest day	34.6 mm at Ashton on the 1st
Strongest wind gust	81 km/h at Mount Crawford on the 11 th

Summary statistics for August 2015

	Maximum temperatures (°C)				Minimum temperatures (°C)				Rainfall (millimetres)			
	Mean for August 2015	Diff from average	Highest for August 2015		Mean for August 2015	Diff from average	Lowest for August 2015		Total August 2015	Average for August	Rank of August 2015	Fraction of August average
Adelaide	15.8	-0.9	22.9	20th	8.2	0.0	3.3	8th	48.4	67.5	average	72%
Adelaide Airport	15.5	-0.4	22.6	20th	8.1	+0.6	2.9	31st	34.4	50.2	low	69%
Edinburgh RAAF	15.7	-0.8	20.9	21st	6.6	+0.1	1.6	29th	49.2	49.1	average	100%
Kuripito	12.4	-1.2	20.7	20th	6.4	-0.5	3.8	30th	100.8	86.1	average	117%
Mount Barker	14.2	0.0	21.2	20th	5.5	+0.5	0.7	31st	79.8	101.9	average	78%
Mount Crawford	11.2	-1.3	17.8	20th	5.4	-0.8	2.2	30th	87.4	83.7	average	104%
Mount Lofly	9.6	-0.4	16.7	20th	4.8	-0.5	1.7	30th	113.8			
Noarlunga	15.1	-0.8	23.0	20th	8.4	-0.5	4.6	8th	41.8	49.3	low	85%
Parafield Airport	16.0	-0.3	21.7	20th	6.5	-0.2	0.9	29th	44.8	53.4	average	84%

Adelaide, South Australia August 2015 Daily Weather Observations

Observations are from Kent Town, about 2 km east of the city centre.



Date	Temps		Rain mm	Evap mm	Sun hours	Max wind gust				8am				3pm						
	Min	Max				Dirn	Spd km/h	Time local	Temp °C	RH %	Cid eighths	Dirn	Spd km/h	MSLP hPa	Temp °C	RH %	Cid eighths	Dirn	Spd km/h	MSLP hPa
	°C	°C																		
1	Sa	7.7	11.0			WSW	37	04:48	10.8	95		SSW	7	1016.0	11.3	83		1016.1		
2	Su	8.1	14.4	7.0		WSW	35	16:49	10.9	80		W	9	1020.3	13.4	69	W	1020.2		
3	Mo	10.1	14.0	2.6		WSW	41	02:51	11.2	74		SSW	19	1025.4	11.8	69	SW	1025.6		
4	Tu	6.5	13.3	0.6		WSW	33	23:10	8.4	90		N	7	1028.1	12.0	77	W	1025.3		
5	We	8.3	13.9	4.2		WSW	41	11:20	11.2	81		SW	15	1022.0	13.2	65	WSW	1021.6		
6	Th	7.7	13.3	1.2		WSW	26	14:08	10.3	88		SSW	7	1026.5	12.4	70	SW	1026.1		
7	Fr	9.3	11.4	0.6		NNW	17	11:28	10.0	89		N	7	1029.4	11.0	78	NNW	1027.6		
8	Sa	3.3	16.7	0		N	28	10:34	9.3	76		N	2	1025.6	15.7	49	NW	1021.3		
9	Su	8.8	19.2	0.2		NNW	44	20:05	13.4	43		NE	9	1017.4	19.0	34	N	1010.6		
10	Mo	10.4	15.7	0		WSW	44	12:06	12.3	79		NNW	17	1013.2	14.6	59	W	1013.1		
11	Tu	7.4	16.2	2.6		N	50	13:28	11.4	65		N	7	1009.5	10.1	84	NNW	1004.8		
12	We	7.0	14.5	5.8		WSW	59	13:12	10.6	83		SW	17	1010.0	13.5	64	SW	1014.9		
13	Th	10.5	15.7	4.0		W	26	13:23	11.6	97		NNW	11	1023.6	15.1	68	NNW	1023.2		
14	Fr	11.3	15.4	1.2		W	20	14:44	12.2	95		N	6	1028.4	15.1	76	NNW	1027.7		
15	Sa	10.9	14.5	1.4		W	15	11:28	12.2	92		N	7	1033.0	13.4	81	SW	1031.2		
16	Su	6.9	15.7	0		WSW	20	13:48	9.6	90		NNE	4	1029.6	14.9	58	WSW	11	1026.0	
17	Mo	9.3	15.5	0		SW	31	16:14	12.1	90		NNW	6	1024.3	14.4	55	SW	17	1022.5	
18	Tu	8.8	14.3	0.4		WSW	13	17:12	11.1	60		SSW	6	1024.5	14.1	48	W	4	1022.7	
19	We	8.5	19.1	0		NNE	30	22:55	12.5	51		NE	9	1022.2	16.9	51	NE	11	1018.5	
20	Th	12.5	22.9	0		NNE	50	12:53	19.0	25		NNE	20	1016.2	20.6	31	NNE	19	1012.8	
21	Fr	12.7	20.8	3.0		N	37	12:44	14.1	78		N	7	1012.9	19.5	48	NW	19	1010.6	
22	Sa	9.6	18.4	0.6		N	22	13:59	11.2	97		N	9	1018.2	17.8	53	NNW	13	1017.1	
23	Su	6.0	17.4	0		ESE	44	19:03	13.5	67		N	2	1019.8	15.5	56	ESE	15	1017.8	
24	Mo	9.2	14.3	0		SE	48	10:25	9.9	64		SE	17	1024.7	13.4	42	SSE	19	1024.1	
25	Tu	8.6	15.2	0		SE	35	09:51	11.9	50		SSE	11	1028.9	14.5	35	S	13	1026.1	
26	We	8.9	16.0	0		SW	31	14:35	11.5	65		W	1	1025.6	14.3	40	SSW	13	1023.4	
27	Th	4.6	14.3	0.6		SW	26	12:13	9.1	85		N	2	1026.4	12.0	81	SSW	9	1025.8	
28	Fr	6.2	14.0	1.4		S	24	16:44	12.3	68		ESE	6	1030.0	13.1	62	SSE	9	1027.6	
29	Sa	4.4	14.5	0		E	20	10:17	11.0	66		SE	9	1029.0	13.4	46	ESE	7	1026.6	
30	Su	6.8	16.9	0		E	26	04:06	12.7	41		ENE	7	1026.7	16.5	39	SW	4	1023.0	
31	Mo	4.1	19.9	0		W	20	14:44	14.0	42		NE	7	1021.4	19.2	29	NNW	7	1017.9	

Statistics for August 2015

Mean	8.2	15.8							11.7	73				9	1022.9	14.6	58		13	1021.0	
Lowest	3.3	11.4							8.4	25				Calm	1009.5	10.1	29		Calm	1004.8	
Highest	12.7	22.9	11.0						19.0	97				NNE	20	1033.0	20.6	84	#	26	1031.2
Total			48.4																		

Observations were drawn from Adelaide (Kent Town) (station 023050)

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South Australia in August 2015

Rainfall was below average in the southeast and far northwest, with elsewhere across the State recording falls closer to average for the month. Statewide temperatures were slightly warmer than average as a whole, with cooler than normal days and nights particularly in southern parts. Western areas saw nights tend warmer than average.

- Above average rain in the east
- Below average rain in the southeast and northwest
- Coolest August days since 2010
- Driest August since 2010

A cold frontal system early in the month, produced 25 to 50 mm of rainfall over southern SA. Cold fronts over the 9th to 12th, saw light to moderate rain for agricultural areas. On the 24th, a band of rain extended over the Flinders and south of the eastern pastoral districts, resulting in some sites having their highest total August rainfall for at least 20 years.

The statewide mean maximum temperature was warmer than average, though it was the coolest August since 2010. The coolest temperatures for the month were recorded at the start of the month as a cold front and southwesterly airstream was directed across the State. Minimum temperatures were also above average for August, though nights were generally cooler than average through some central and eastern parts of the state. Light winds and clear skies during this period resulted in minimum temperatures of around 5 to 10 degrees below average and morning frost reported across much of the state

Record highest August daily rainfall

	New record (mm)	Old record	Years of record
Kimba	38.0 on the 12th	28.6 on the 23rd in 2000	94
Parachilna	31.4 on the 19th	30.0 on the 18th in 1979	47
Strathearn	26.0 on the 24th	17.4 on the 30th in 1992	25
Minnipa	27.2 on the 21 st	26.0 on the 20th in 1998	20

Record highest August total rainfall

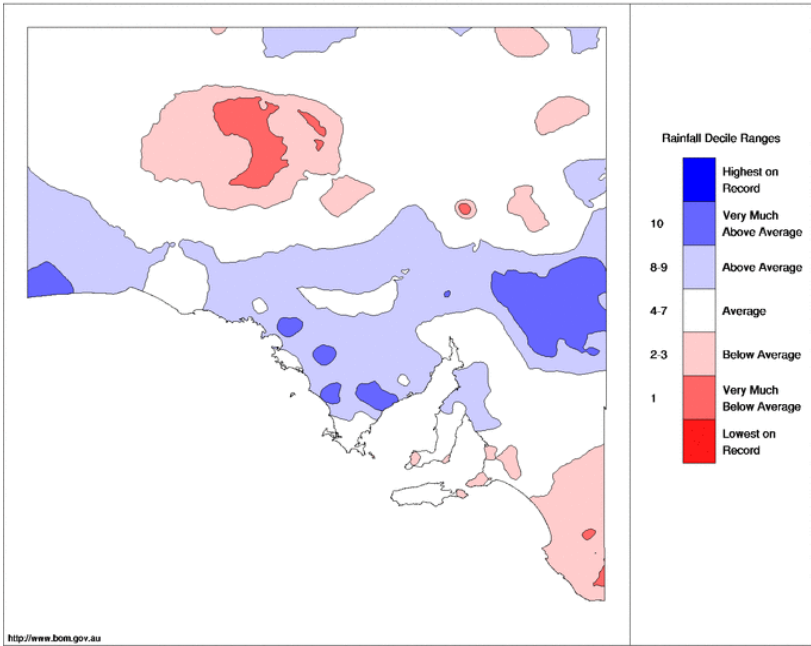
	New record	Old record	Years of record	August Average
Minnipa	84.8	70.8 in 1996	20	37.6

Record highest August temperature

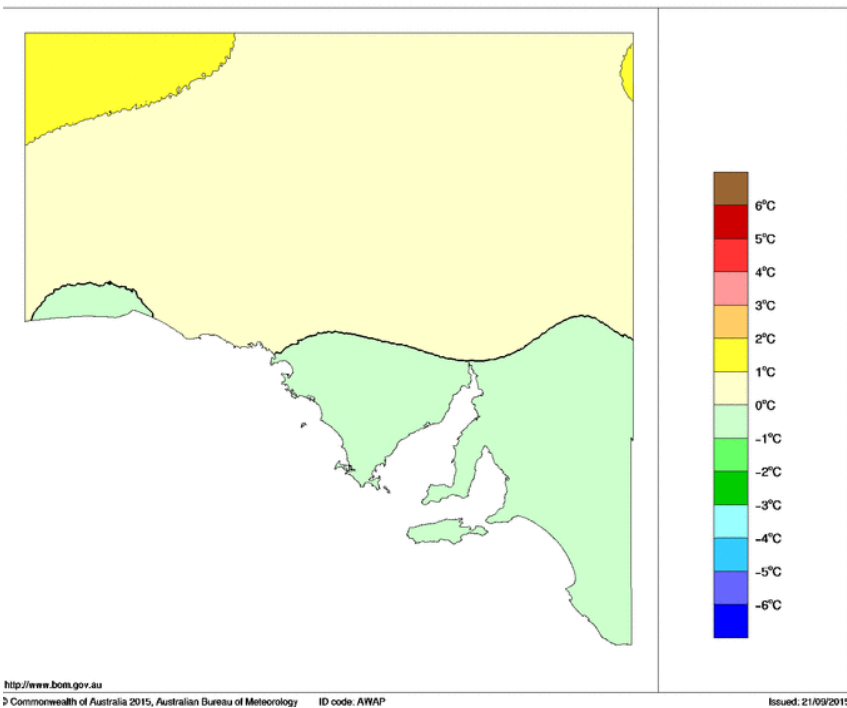
	New record	Old record	Yearsof record	August Average
Moomba	34.8 on the 23 rd	34.6 on the 22nd	22	22.7

South Australian Rainfall Deciles August 2015

Distribution Based on Gridded Data
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) August 2015
Australian Bureau of Meteorology



Adelaide in September 2015

Days were generally mild but night time minimum temperatures were cooler than average for the month. Rainfall was generally near average, though tending below average for several locations.

- Mild days to start spring
- Coolest September nights since 1994
- Average rainfall in the city, but from two major rain events, early and mid-month

Overall, maximum temperatures were generally close to average across the Adelaide region. The coldest day for Adelaide during the month was on the 2nd with a maximum temperature of 14.0°C. Nights were generally cooler for Adelaide. The September mean minimum temperature for the city was the coolest since 1994. Though minimum temperatures were cooler on the plains, night-time temperatures were closer to average for the more elevated Adelaide Hills. The coldest night for any location was recorded on the 8th, at Mount Barker when the temperature dropped to 1.0 °C.

The wettest period of September for the Adelaide region occurred during the first few days of the month as a series of cold frontal systems and southwesterly airstream crossed the region. The passage of a cold frontal system on the 2nd and then another on the 7th each delivered daily rainfall totals between 15 to 20 mm across the region, with higher totals of 20-30 mm in the hills. Ashton in the Adelaide Hills recorded the wettest day of the month with 37.6 mm in the 24 hours to 9am on the 8th. Much of the 52.2 mm Adelaide recorded for September, was recorded in the 24 hours to 9am on the 17th when a low pressure trough that had moved over central districts produced thunderstorms about the city. Several stations in the eastern suburbs of Adelaide reported totals of between 10 to 20 mm on the 17th, with small hail blanketing some areas east of the city.

Extremes in September 2015

Hottest day	30.0 °C at Adelaide Airport on the 13th
Warmest days on average	19.6 °C at Parafield Airport
Coolest days on average	13.3 °C at Mount Lofty
Coldest day	7.8 °C at Mount Lofty on the 2nd
Coldest night	1.0 °C at Mount Barker on the 8th
Coolest nights on average	6.1 °C at Mount Barker 6.1 °C at Mount Lofty
Warmest nights on average	9.6 °C at Noarlunga
Warmest night	18.2 °C at Noarlunga on the 12th
Warmest on average overall	14.1 °C at Adelaide (Kent Town)
Coolest on average overall	9.7 °C at Mount Lofty
Wettest overall	104.6 mm at Mount Lofty
Wettest day	37.6 mm at Ashton on the 8th
Strongest wind gust	85 km/h at Mount Crawford on the 6 th

Record lowest September total rainfall

	New record	Old record	Years of record	September Average
Edinburgh RAAF	4.0	14.8 in 1980	43	46.0

Lowest September total rainfall for at least 20 years

Summary statistics for September 2015

	Maximum temperatures (°C)				Minimum temperatures (°C)				Rainfall (millimetres)			
	Mean for September 2015	Diff from average	Highest for September 2015		Mean for September 2015	Diff from average	Lowest for September 2015		Total for September 2015	Average for September	Rank of September 2015	Fraction of September average
Adelaide (Kent Town)	19.2	+0.1	29.1	13th	9.0	-0.8	4.3	5th	52.2	57.9	average	90%
Adelaide Airport	18.5	+0.3	30.0	13th	8.8	-0.1	3.5	5th	15.2	44.6	v low	34%
Edinburgh RAAF	19.1	+0.1	28.5	13th	6.9	-1.2	1.8	19th	4.0	46.0	lowest	9%
Kuitpo Forest Reserve	15.5	-0.9	26.1	13th	7.8	-0.4	4.2	23rd	57.4	69.8	average	82%
Mount Barker	18.2	+1.7	27.1	13th	6.1	+0.2	1.0	8th	54.6	84.9	low	64%
Mount Crawford	14.7	-0.6	23.4	13th	7.0	-0.4	1.2	23rd	47.8	70.1	average	68%
Mount Lofty	13.3	+1.2	22.6	13th	6.1	0.0	1.2	23rd	104.6			
Noarlunga	18.1	-0.7	28.6	13th	9.6	-0.8	4.8	29th	25.2	45.1	low	56%
Parafield Airport	19.6	+0.6	28.9	13th	6.8	-1.5	2.0	19th	27.6	43.5	low	63%

2015 AMETA Christmas Dinner for the diary

The AMETA 2015 Christmas Dinner will be on Tuesday 24th November at the Morphett Arms Hotel, 138 Morphett Rd, Glengowrie, 6:00pm for a 6:30pm start. RSVP's to book places are via email or telephone the secretary Darren Ray d.ray@bom.gov.au or 08 8366 2664



A GENTLE REMINDER

Subscriptions for 2015/2016 (\$15) are now due

See the website for payment details: www.ameta.org.au

NEW SATELLITE IMAGES NOW AVAILABLE

The Bureau of Meteorology has now made available real-time 10 minute high resolution images from the recently launched Japanese Himawari-8 satellite. Himawari-8 is currently the most advanced dedicated weather satellite in the world, with 10 minute high resolution updates, and a range of viewing wavelengths available at:

<http://www.bom.gov.au/australia/satellite/>

Adelaide, South Australia September 2015 Daily Weather Observations

Observations are from Kent Town, about 2 km east of the city centre.



Date	Temps		Rain mm	Evap mm	sun hours	Max wind gust			9am					3pm						
	Min	Max				Dirrn	Spd km/h	Time local	Temp °C	RH %	Cld eighths	Dirrn	Spd km/h	MSLP hPa	Temp °C	RH %	Cld eighths	Dirrn	Spd km/h	MSLP hPa
	°C	°C																		
1	Tu	9.5	20.2	0.4		N	39	23:24	16.6	40	NE	11	1013.6	18.7	32	NNE	19	1009.6		
2	We	10.6	14.0	8.4		N	39	09:28	12.4	72	N	19	1005.7	11.2	92	NNE	11	1001.1		
3	Th	9.5	15.8	10.8		SW	35	09:46	13.9	74	SSW	13	1020.0	15.1	67	SSW	13	1022.1		
4	Fr	6.5	14.1	0		WSW	19	14:50	11.7	64	WSW	6	1028.8	12.9	63	WSW	11	1026.0		
5	Sa	4.3	18.1	0		N	26	12:56	12.8	55	NNE	6	1025.4	17.6	42	N	11	1020.8		
6	Su	10.9	16.8	0		WSW	57	12:55	15.3	56	NNE	17	1015.3	15.4	45	W	24	1017.2		
7	Mo	9.5	15.1	1.0		WSW	39	11:08	12.3	48	SW	19	1025.7	14.4	50	WSW	17	1025.5		
8	Tu	11.5	16.5	2.8		WSW	33	13:04	13.4	86	WSW	15	1027.4	15.6	68	SW	17	1026.8		
9	We	10.8	15.2	1.8		WSW	20	15:57	12.1	90	SSW	7	1032.7	14.5	76	WSW	15	1030.9		
10	Th	5.5	20.2	0		N	26	10:11	13.3	58	NE	7	1034.1	19.6	38	WNW	7	1029.2		
11	Fr	10.5	24.8	0		NNW	37	11:16	18.3	48	N	17	1026.3	24.4	26	NW	17	1022.9		
12	Sa	15.5	27.1	0		NNW	28	11:43	21.5	31	N	11	1024.4	27.0	26	NNW	13	1021.5		
13	Su	17.1	29.1	0		W	39	11:35	24.2	19	NNE	13	1020.2	29.0	16	NNE	17	1015.8		
14	Mo	14.7	19.9	0		W	35	14:40	17.9	55	NW	6	1014.8	17.2	64	W	17	1014.9		
15	Tu	9.4	17.1	1.4		WSW	26	10:49	12.9	60	SW	13	1020.7	15.4	45	WSW	7	1020.0		
16	We	7.2	19.2	0.2		E	31	11:14	14.3	52	NE	9	1018.7	9.1	95	SE	6	1018.1		
17	Th	6.5	17.4	22.4		WSW	33	15:35	14.1	67	SW	7	1027.9	17.2	55	SW	15	1027.9		
18	Fr	7.2	17.2	0		WSW	28	13:24	11.5	71	WSW	4	1031.7	15.9	52	WSW	15	1027.8		
19	Sa	5.8	21.1	0		W	24	13:35	14.9	60	N	7	1024.5	20.9	33	W	9	1020.3		
20	Su	8.2	25.3	0		WNW	48	16:12	19.8	30	N	11	1018.7	24.5	17	NW	19	1014.9		
21	Mo	9.8	16.4	1.8		SW	39	10:07	13.2	47	SW	19	1024.3	15.5	50	WSW	15	1024.6		
22	Tu	8.2	16.0	1.2		SSE	33	11:42	13.0	45	SSE	13	1032.2	15.4	38	SSE	13	1031.9		
23	We	5.8	16.2	0		SSE	35	17:29	11.8	43	E	11	1038.3	15.6	39	SSE	11	1034.7		
24	Th	7.2	16.1	0		E	30	16:26	11.8	50	SSE	13	1038.8	15.3	43	SE	11	1031.0		
25	Fr	10.6	20.0	0		E	37	02:53	16.1	40	ENE	9	1032.4	19.6	32	E	11	1028.2		
26	Sa	7.1	22.4	0		WSW	28	15:03	18.1	27	NE	7	1029.1	21.4	23	SW	17	1025.4		
27	Su	7.4	24.7	0		WSW	24	13:25	18.2	33	NNE	4	1024.5	24.3	20	WSW	11	1021.5		
28	Mo	10.2	19.6	0		WSW	35	14:28	14.7	53	N	7	1020.8	18.0	52	SW	20	1018.9		
29	Tu	5.0	18.0	0		WSW	39	14:07	12.4	44	SSE	7	1022.3	17.5	37	S	11	1019.9		
30	We	7.4	22.4	0		SSE	52	10:39	15.8	50	ENE	9	1024.5	21.3	35	WSW	11	1021.6		
Statistics for September 2015																				
Mean		9.0	19.2						14.9	52		10	1024.7	18.0	45		13	1022.4		
Lowest		4.3	14.0						11.5	19			Calmm	9.1	16		SE	6	1001.1	
Highest		17.1	29.1	22.4					24.2	90	#	19	1038.3	29.0	95		W	24	1034.7	
Total				52.2																

Observations were drawn from Adelaide (Kent Town) (station 023090)

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<http://www.bom.gov.au/climate/dwo/ICDJM503.201509.pdf>

South Australia in September 2015

In South Australia, most central and eastern districts saw below average rainfall for September. Rainfall was very much below average in the southeast and mid-north. Elsewhere, rainfall tended to be near average. With statewide temperatures generally cooler than average as a whole, nights were particularly cool in the Upper Murray Valley.

- Below average rain in the southeast continue long-term rainfall deficiencies
- Persistent strong weather patterns result in cool nights in the east
- Coolest nights for the state since 1994

September rainfall was below average for South Australia as a whole, with particularly dry areas across the southeast, and parts of central, western and Pastoral districts. A sequence of low pressure systems and associated frontal systems brought moderate rainfall for southern parts of the state at the beginning of the month. However persistently stronger than average high pressure systems to the south of Australia kept conditions relatively clear across much of the state for most of the month. The low rainfall resulted in some sites having their lowest total September rainfall on record or their lowest total September rainfall for at least 20 years.

The statewide mean maximum temperature was cooler than average across much of the state and the coolest September since 2010. The coolest temperatures for the month were recorded at the start of the month as a cold front and south-westerly airstream was directed across the State. Minimum temperatures were also below average for September, particularly so through some central and eastern parts of the state where some sites had their lowest September mean daily minimum temperature on record or their lowest September mean daily minimum temperature for at least 20 years.

Extremes in September 2015

Hottest day	36.5 °C at Oodnadatta Airport on the 30th
Warmest days on average	26.2 °C at Oodnadatta Airport
Coolest days on average	13.3 °C at Mount Lofty
Coldest day	7.8 °C at Mount Lofty on the 2nd
Coldest night	-3.6 °C at Keith (Munkora) on the 23rd
Coolest nights on average	3.2 °C at Yongala
Warmest nights on average	12.0 °C at Neptune Island
Warmest night	19.0 °C at Arkaroola on the 14th
Warmest on average overall	18.4 °C at Moomba Airport
Coolest on average overall	9.7 °C at Mount Lofty
Wettest overall	104.6 mm at Mount Lofty
Wettest day	37.6 mm at Ashton on the 8th
Strongest wind gust	93 km/h at Neptune Island on the 6 th

Record lowest September total rainfall

	New record (mm)	Old record	Years of record	September Average
Edinburgh RAAF	4.0	14.8 in 1980	43	46.0
Nangwarry	20.1	26.2 in 2014	21	67.9
Strathalbyn	17.0	20.2 in 2014	20	45.0

Lowest September total rainfall for at least 20 years

	Observed (mm)	Most recent lower	September Average
Macclesfield	24.6	20.2 in 1951	81.8
Curramulka	8.8	8.4 in 1982	44.3
Kalangadoo	22.4	22.2 in 1987*	77.7
Mount Pleasant	27.6	20.4 in 1987*	75.5
Cape Jaffa	24.6	15.4 in 1994	46.3
Lobethal	40.1	32.2 in 1995	98.3
Meningie	20.4	19.7 in 1995	47.8
Two Wells	20.6	13.8 in 1994*	39.6

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

Record lowest September mean daily minimum temperature

	New record (°C)	Old record	Years of record	September Average
Cooper Pedy	9.8	10.1 in 1995	21	11.3
Renmark Aero	5.2	5.5 in 2008	20	6.8

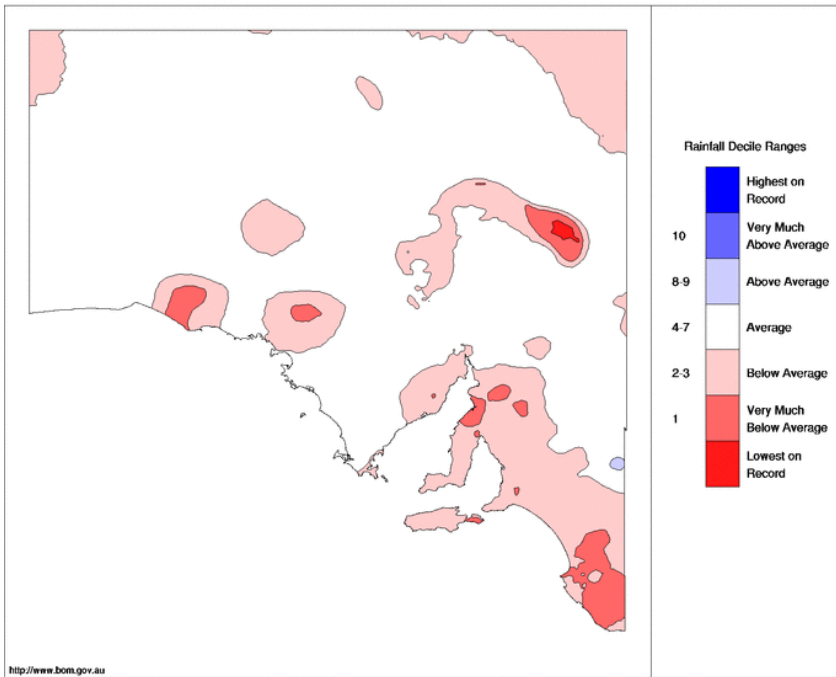
Lowest September mean daily minimum temperature for at least 20 years

	Observed (°C)	Most recent lower	September Average
Edinburgh RAAF	6.9	6.1 in 1985	8.1
Rosedale	5.2	5.0 in 1985	6.7
Cape Jaffa	7.5	7.4 in 1993	8.6
Adelaide	9.0	8.9 in 1994	9.8
Arkaroola	6.5	5.9 in 1994	8.1
Ceduna	7.1	7.0 in 1994	7.9
Leigh Creek	8.4	8.3 in 1994	9.4
Oodnadatta	10.2	9.7 in 1984*	11.5
Woomera	9.0	8.4 in 1994	9.5
Hawker	4.6	=4.6 in 1989*	6.8

All the detail on recent months that 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.

Distribution Based on Gridded Data
 Australian Bureau of Meteorology

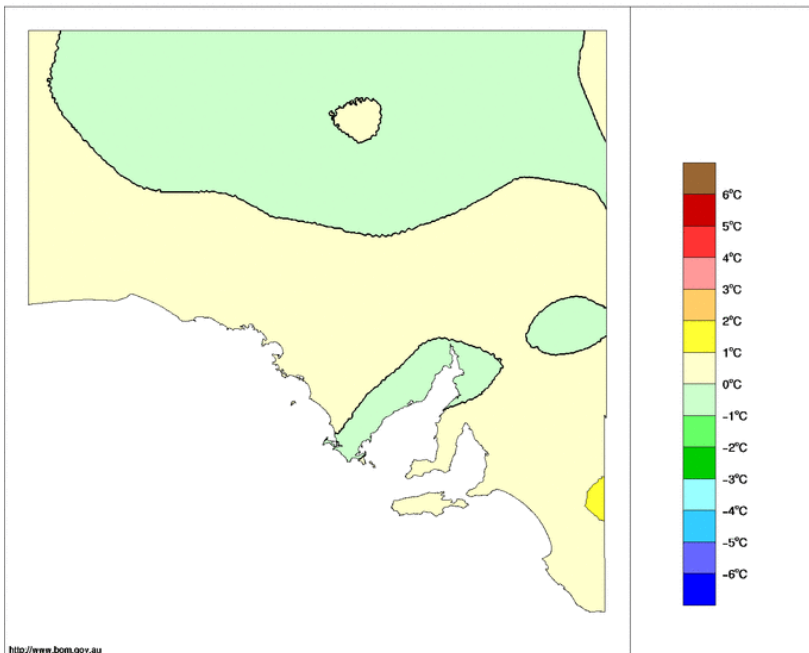


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Maximum Temperature Anomaly (°C) September 2015

Australian Bureau of Meteorology



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Adelaide in winter 2015

Both maximum and minimum temperatures were cooler than average during winter, with the coolest days accompanied with rain from cold frontal systems and southwesterly airstreams. Rainfall was generally below average across Adelaide, with most locations across the region receiving 60 to 80% of their long term average.

- Adelaide's driest winter since 2006
- Cooler than average days
- Cooler than average nights

The season started dry with very much below average rainfall throughout June. Rainfall tended near average in July, but again tended below average throughout August. This resulted in the driest winter since 2006 for Adelaide, and in the lowest 20% of winter rainfall totals since records began in 1839. In the hills, Nairne had its lowest total winter rainfall for at least 20 years.

Overall, the season was cooler than average, with both maximum and minimum temperatures tending below average across the region. At Kent Town, daytime temperatures averaged 15.5°C. The winter mean minimum temperature averaged 7.7°C. Throughout the season, there were 16 nights where the minimum temperatures dropped below 5.0°C, this is close to the average, despite the overall slightly colder than average temperatures. The coldest temperature recorded for Adelaide during winter was 1.8°C on 20 July which was the coldest July morning for the city in 4 years.

Extremes in winter 2015

Hottest day	23.0 °C at Noarlunga on 20 Aug
Warmest days on average	15.7 °C at Parafield Airport
Coollest days on average	9.5 °C at Mount Lofty
Coldest day	5.3 °C at Mount Lofty on 11 Jul
Coldest night	-1.7 °C at Mount Barker on 20 Jul
Coollest nights on average	4.7 °C at Mount Lofty
Warmest nights on average	8.3 °C at Noarlunga
Warmest night	13.4 °C at Noarlunga on 21 Aug
Warmest on average overall	11.6 °C at Adelaide (Kent Town)
	11.6 °C at Noarlunga
Coollest on average overall	7.1 °C at Mount Lofty
Wettest overall	367.3 mm at Uraidla
Wettest day	40.0 mm at Piccadilly on 11 Jul

Summary statistics for winter 2015

	Maximum temperatures (°C)				Minimum temperatures (°C)				Rainfall (millimetres)			
	Mean for winter 2015	Diff from average	Highest for winter 2015	Mean for winter 2015	Diff from average	Lowest for winter 2015	Total for winter 2015	Average for winter	Rank of winter 2015	Fraction of winter average		
Adelaide (Kent Town)	15.5	-0.5	22.9 20 Aug	7.7	-0.3	1.8 20 Jul	137.4	222.3	v low	62%		
Adelaide Airport	15.3	-0.3	22.6 20 Aug	7.6	+0.2	1.4 19 Jul	95.2	165.4	v low	58%		
Edinburgh RAAF	15.5	-0.4	21.0 6 Jun	6.2	-0.2	-0.6 20 Jul	121.6	156.8	low	78%		
Kuitpo Forest Reserve	12.3	-0.7	20.7 20 Aug	6.4	-0.6	0.6 20 Jul	270.0	305.0	average	89%		
Mount Barker	13.8	+0.2	21.2 20 Aug	5.2	+0.3	-1.7 20 Jul	213.2	309.0	low	69%		
Mount Crawford (Mt Crawford AWS)	11.0	-0.7	17.8 20 Aug	5.6	-0.5	1.2 20 Jul	188.2	262.7	low	72%		
Mount Lofty	9.5	+0.3	16.7 20 Aug	4.7	-0.5	0.1 19 Jul	334.4					
Noarlunga	14.9	-0.5	23.0 20 Aug	8.3	-0.7	2.9 20 Jul						
Parafield Airport	15.7	0.0	21.7 20 Aug	6.0	-0.7	-0.3 11 Jun	121.0	166.2	low	73%		

South Australia in winter 2015

Winter 2015 saw generally below average temperatures and below average rainfall across the southeast and parts of the central districts, though warmer nights in the far northwest. It was persistently dry in the southeast, particularly during June and August.

- Above average rain in the eastern pastoral
- Below average rain in the southeast and northwest
- Coolest winter days since 2010
- Snow in July

Winter rainfall was below average for South Australia as a whole, with particularly dry areas across the southeast and northwest parts of the State. Some parts of the eastern pastoral areas saw above average rainfall for winter, owing mostly to a rainband that produced moderate to heavy rainfall in the last week of August. Yunta (Panaramitee) recorded its highest total winter rainfall for at least 20 years.

Despite the statewide mean maximum temperature being warmer than average, it was the coolest winter since 2010. Daytime temperatures were average, tending below average across much of the central and eastern districts during the season. A warm spell at the end of August saw Moomba observe its highest winter temperature on record. Minimum temperatures were also above average for winter across the State as a whole, though nights were generally cooler than average through some central and eastern parts of the State where some sites recorded their lowest winter temperature on record. The generally cooler days and nights across central and eastern parts of South Australia resulted in some sites having their lowest winter mean daily maximum temperature for at least 20 years.

Extremes in winter 2015

Hottest day	34.8 °C at Moomba Airport on 23 Aug
Warmest days on average	20.5 °C at Oodnadatta Airport
Coolest days on average	9.5 °C at Mount Lofty
Coldest day	5.3 °C at Mount Lofty on 11 Jul
Coldest night	-5.7 °C at Gluepot Reserve (Gluepot) on 20 Jul
Coolest nights on average	2.8 °C at Yongala
Warmest nights on average	11.6 °C at Neptune Island
Warmest night	17.6 °C at Tarcoola Aero on 20 Aug 17.6 °C at Leigh Creek Airport on 21 Aug
Warmest on average overall	14.0 °C at Oodnadatta Airport
Coolest on average overall	7.1 °C at Mount Lofty
Wettest overall	367.3 mm at Uraidla
Wettest day	62.6 mm at Tumby Bay on 18 Jun
Strongest wind gust	106 km/h at Neptune Island on 11 Jul 106 km/h at Cape Willoughby on 20 Aug

Record highest winter daily rainfall

	New record (mm)	Old record	Years of record
Tumby Bay	62.6 on 18 Jun	47.0 on 5 Jul 1940	109
Erudina	61.0 on 20 Jun	47.2 on 3 Jun 1923	105
American River	39.0 on 18 Jun	35.6 on 21 Jun 1998	41

Highest winter total rainfall for at least 20 years

	Observed (mm)	Most recent higher	Average for winter
Yunta	86.0	127.6 in 1978	50.6

Lowest winter total rainfall for at least 20 years

	Observed (mm)	Most recent lower	Average for winter
Warooka	101.0	97.5 in 1977	189.3
Nairne	164.4	99.8 in 1982*	270.1
Bridgewater	268.2	239.2 in 1982*	456.0
Aldgate	311.4	280.8 in 1994*	460.9

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

Record highest winter temperature

	New record	Old record	Years of record	Average
Moomba	34.8 on 23 Aug	34.6 on 22 Aug 2009	21	20.8

Lowest winter mean daily maximum temperature for at least 20 years

	Observed (°C)	Most recent lower	Average for winter
Cape Willoughby	14.0	13.3 in 1989	14.5
Coonawarra	13.8	13.0 in 1989	14.4
Neptune Island	15.1	14.6 in 1989	15.5
Yongala	12.9	12.8 in 1990	13.6

Record lowest winter temperature

	New record	Old record	Years of record	Average
Parawa	1.2 on 20 Jul	2.1 on 11 Aug 2003	22	7.3
Cleve	1.0 on 30 Jun	= 1.0 on 7 Jul 2012	20	7.7
Strathalbyn	-1.6 on 20 Jul	-1.5 on 14 Jun 2006	20	6.9

Record lowest winter mean daily minimum temperature

	New record (°C)	Old record	Years of record	Average for winter
North Shields	7.0	= 7.0 in 2006	23	7.8

Lowest winter mean daily minimum temperature for at least 20 years

	Observed (°C)	Most recent lower	Average for winter
Maitland	7.1	6.9 in 1971*	7.4

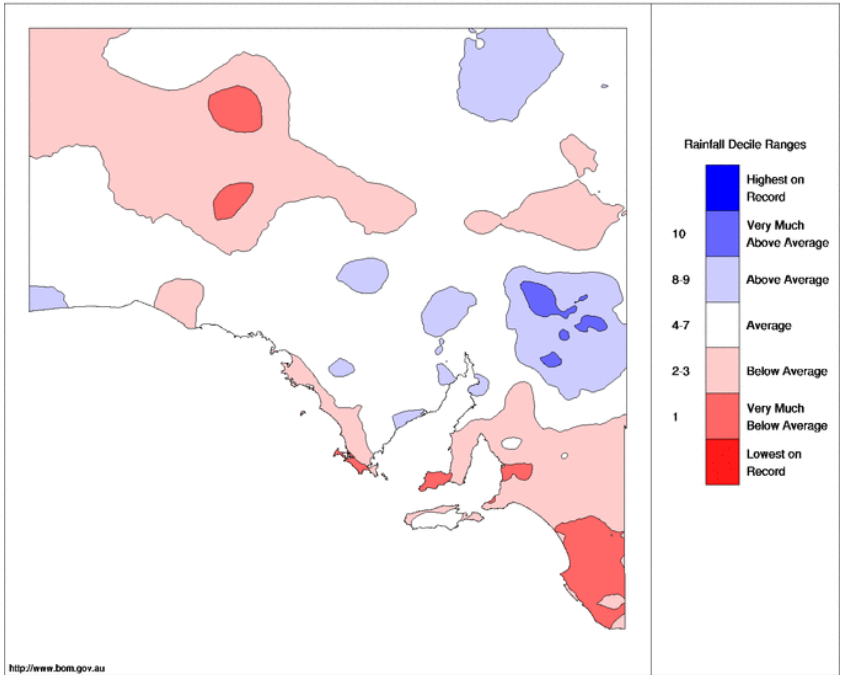
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Lowest winter mean temperature for at least 20 years

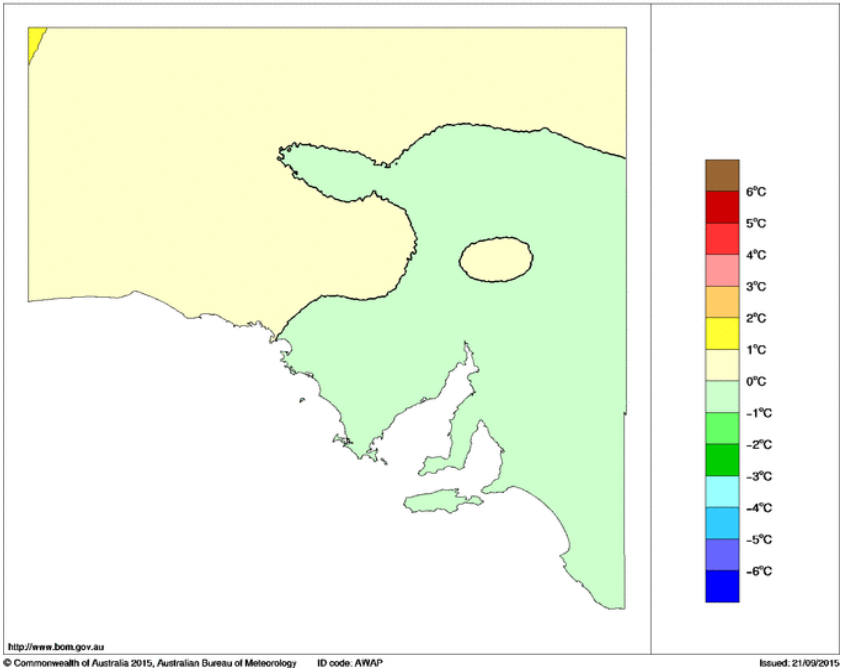
	Observed (°C)	Most recent lower	Average for winter
Maitland	10.9	10.4 in 1971*	11.3

South Australian Rainfall Deciles 1 June to 31 August 2015

Distribution Based on Gridded Data
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) 1 June to 31 August 2015
Australian Bureau of Meteorology





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

NEXT MEETING

6.00 PM TUESDAY 20 October 2015

New Bureau of Meteorology offices, Level 4, corner of South Terrace &
King William Street, Adelaide

****Please also note that subscriptions for 2015/2016 (\$15) are now due****

Subject: *Citizen Science, Making a Contribution to Global
Climate Analysis*

Speaker: *Mac Benoy, AMETA Citizen Science team leader.
The AMETA citizen science team is nearing the completion of a 10 year
project to salvage historical Australian weather data going back to the time of
settlement. Winston Churchill is quoted as saying “The farther back you can
look, the farther forward you are likely to see”. By contributing data to an
international initiative to model global weather, the team has made a
significant southern-hemisphere contribution to the understanding of weather
going back 150 years. Mac Benoy will show how our historical data is setting
the background for our forward perspective on climate analysis.*

PLEASE NOTE: The Citizen Science talk is expected to be popular, so
attendees are requested to contact the Secretary (see below) so that extra
seating can be organised if necessary.

PARKING: Note that parking near the new BoM offices should be easy to
find at the time of the meeting — try, for example, King William Road south
of South Terrace, or South Terrace east or west of King William Road.

*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.