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“CHARLES TODD: HIS FORMATIVE YEARS.”

At the AMETA June 2017 meeting Dr Tony Rogers, Historian and leader of the AMETA/BOM Volunteer History Unit, recounted some of the fascinating stories he and Judy Ferrante have uncovered in the process of researching Todd's early years; his early life in England (particularly his training in the latest scientific ideas) and the contrasting life he encountered in the colony of South Australia. It was a lively account of colonial life, highlighting Todd's influential contributions to the development of the colony of South Australia, aided by some of the emerging technology and forward thinking of the time. A major factor was the increasing speed of communications around the world due to the use of the telegraph. Tony's book should be available at the end of the year.



Message from the President

The next AMETA meeting, on Tuesday 15th August, is our AGM and we are due for elections. I have found the last 6 years as President very rewarding and am proud of what our small Association has achieved. However I think every organisation should periodically examine itself and question whether it is best meeting the needs of the members - could it do better?

Before we undertake our elections this year, I would like to have a robust discussion about where our future lies. I am keen to do this as our 'sister' organisation, the Australian Meteorological and Oceanographic Society (AMOS), is celebrating its 30th anniversary this month. This is a truly national society with several hundred members and chapters in each State. It has close ties with other relevant societies such as the American Meteorological Society and the Royal Meteorological Society (UK) and serves its professional members very well.

Recently, under the guidance of its President, Mary Voice, AMOS has shown an interest in developing a public outreach arm. During its 30th year celebrations in Melbourne 21-24th August, it will be holding a free citizen science workshop. AMETA has a good track record in both public outreach and citizen science. Can we work with AMOS to strengthen meteorological outreach across Australia?

Please give some thought to this and look at the AMOS website www.amos.org.au, then come to the AGM ready to put your ideas out there!

Tell us what you most want from AMETA over the next 5 years. It should be a good discussion.

Adelaide in June 2017: dry with warmer days and cooler nights

June 2017 was much drier than average throughout Adelaide and the Hills. Daytime temperatures in June were warmer than average, while overnight temperatures were generally cooler than average.

Very much below average rainfall in the Adelaide region

- June rainfall was either lowest on record or very much below average throughout Adelaide and the Hills
- Monthly rainfall was less than 10 mm in the city, with Kent Town recording 8.6 mm
- Since 1887, the city has had only three previous years (1967, 1959, 1958) when June rainfall was less than 10 mm
- Almost all sites in the Adelaide region recorded less rain days than average for June
- Adelaide (Kent Town) had just 7 rain days during the month, compared to the long-term average of around 15 days of rain during June
- Many sites across the Adelaide region had either their lowest total June rainfall on record or their lowest total June rainfall for at least 20 years

Warmer than average days and cooler than average nights

- All sites around Adelaide and the Hills had warmer than average daytime temperatures
- Nights in June were generally cooler than average, though Mount Lofty and Mount Crawford had warmer than average mean minimum temperatures
- Adelaide (Kent Town) recorded a daily minimum temperature of 2.9 °C on the 1st, the earliest occurrence of a cold morning with temperatures below 3 °C since 25 May, 2006
- Adelaide (Kent Town) had its coldest start to winter (1-7 June) since 1989
- Mount Barker had its highest June mean daily maximum temperature since 1957
- Parafield A/P had its lowest June mean daily minimum temperature on record

Extremes in June 2017

Hottest day	20.2 °C at Parafield Airport on the 19th
Warmest days on average	17.3 °C at Parafield Airport
Coollest days on average	11.6 °C at Mount Lofty
Coldest day	7.9 °C at Mount Lofty on the 29th
Coldest night	-0.5 °C at Parafield Airport on the 4th
Coollest nights on average	3.4 °C at Parafield Airport
Warmest nights on average	7.7 °C at Noarlunga
Warmest night	11.8 °C at Noarlunga on the 15th
Warmest on average overall	12.0 °C at Noarlunga
Coollest on average overall	8.9 °C at Mount Lofty
Wettest overall	26.2 mm at Willunga
Driest overall	1.0 mm at Charleston
Wettest day	16.8 mm at McLaren Vale on the 29th
Strongest wind gust	52 km/h at Edinburgh RAAF on the 25 th

Record lowest June total rainfall

	New record (mm)	Old record	Years of record	June Average
Happy Valley Reservoir	10.2	11.6 in 1959	143	87.6
Uraidla	20.0	24.1 in 1958	126	158.0
Cudlee Creek	13.4	15.0 in 1958	103	111.6
Ashton Co-op	13.8	26.0 in 1959	80	135.0
Williamstown	11.2	17.4 in 1975	49	89.1
Adelaide (Kent Town)	8.6	12.4 in 2006	40	78.8
Burnside	11.2	11.8 in 1913	38	96.9
Blackwood (Wittunga)	13.4	27.7 in 1979	36	102.8
Heathfield Works Depot	14.8	50.0 in 2006	30	142.5

Lowest June total rainfall for at least 20 years

	Observed (mm)	Most recent lower	June Average
Mount Barker	17.4	15.5 in 1913	100.2
Williamstown	11.0	9.9 in 1959	98.5
Adelaide Airport	11.2	7.2 in 1967	56.5
North Adelaide	12.6	12.4 in 1967	73.2
Nairne	16.4	=16.4 in 1967*	88.5
Hahndorf	22.0	20.8 in 1967*	116.5
Hope Valley Reservoir	10.8	5.8 in 1979	82.2
Mount Crawford AWS	18.0	13.2 in 1994	85.4

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

Highest June mean daily maximum temperature for at least 20 years

	Observed (°C)	Most recent higher	June Average
Mount Barker	16.0	18.3 in 1957*	13.7

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

Record lowest June mean daily minimum temperature

	New record (°C)	Old record	Years of record	June Average
Parafield Airport	3.4	3.6 in 2006	60	7.1

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

<http://www.bom.gov.au/climate/current/month/sa/archive/201706.adelaide.shtml>

Adelaide (Kent Town), South Australia June 2017 Daily Weather Observations

The "official" Adelaide site is now at West Terrace / ngayindapira.



Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am					3pm								
		Min °C	Max °C				Dirn	Spd km/h	Time local	Dirn	Spd km/h	MSLP hPa	Temp °C	RH %	Cld eighths	Dirn	Spd km/h	MSLP hPa	Temp °C	RH %	Cld eighths	Dirn	Spd km/h
1	Th	2.9	15.4	0			ENE	17	09:30	10.1	58	ENE	9	1037.7	14.5	48	SW			SW		1035.5	
2	Fr	2.5	17.2	0			NNE	20	09:39	8.6	70	NW	2	1037.0	17.0	40	NW			SW	Calim	1033.9	
3	Sa	2.6	18.1	0			N	17	10:09	8.8	70	N		1030.3	16.6	47			WSW		1030.3		
4	Su	1.7	16.3	0			W	19	13:50	7.3	75			1030.8	14.6	62			WSW		1027.7		
5	Mo	5.1	17.6	0			SW	19	15:20	9.2	84			1029.6	17.2	58			SW		1027.3		
6	Tu	8.8	16.5	0			SE	24	11:17	12.6	70	SSW	7	1032.5	16.3	45	SSW		SSW	4	1030.7		
7	We	3.5	15.5	0			SSW	19	14:44	8.8	73	NNE	6	1032.7	13.8	52	SSW		SW	11	1029.6		
8	Th	3.9	16.8	0			SSW	22	17:04	7.5	85	NNE	2	1032.5	16.6	64	NNE		SW	9	1030.8		
9	Fr	6.1	15.1	0.2			SE	20	12:47	10.6	78			1036.8	13.9	62	SSE		SSE	7	1034.8		
10	Sa	8.2	16.2	0			WSW	24	13:24	12.2	69			1035.6	15.1	55			WSW	13	1032.5		
11	Su	3.9	16.0	0			W	19	12:55	6.5	93			1031.3	14.6	57			WSW	9	1028.9		
12	Mo	6.5	17.7	0			WSW	19	13:56	12.1	75	NNE	4	1031.5	17.1	61	W		WSW	11	1029.6		
13	Tu	5.9	17.9	0			WSW	19	12:18	10.5	86			1032.1	17.3	57			WSW	6	1028.9		
14	We	5.4	19.0	0			NNW	28	12:45	12.6	67	NE	7	1028.9	18.5	43	NE		NE	11	1026.7		
15	Th	8.6	18.5	0			NNE	17	11:30	11.3	69			1027.3	17.6	41	NE		NNW	7	1024.9		
16	Fr	9.8	14.8	0.2			ENE	13	11:47	11.8	81	NE	2	1026.5	14.6	66	NE		NNE	7	1023.6		
17	Sa	6.0	16.8	1.4			WSW	15	13:57	9.3	96			1027.5	16.4	63			WSW	7	1026.6		
18	Su	8.0	16.9	0.2			WSW	13	14:24	10.0	95			1032.9	16.2	66			VNW	7	1030.9		
19	Mo	5.2	19.4	0			NE	24	13:01	10.0	82			1032.9	18.9	45			NE	7	1029.2		
20	Tu	4.9	19.1	0			N	19	10:03	10.4	82	NE	2	1028.4	18.4	37	NE		W	9	1026.5		
21	We	4.5	19.2	0			WSW	17	13:56	10.0	80			1029.5	17.8	52			WSW	11	1026.9		
22	Th	4.6	19.5	0			N	22	11:27	9.6	76			1026.9	18.9	29			VNW	7	1022.3		
23	Fr	5.4	18.5	0			NNW	19	12:27	11.7	58	ENE	4	1020.0	17.1	44	ENE		NW	4	1017.7		
24	Sa	5.0	17.3	0			W	17	12:19	9.6	83			1020.7	16.7	54			SW	9	1018.5		
25	Su	8.0	14.6	0			SW	28	13:30	10.6	89	NE	9	1020.7	13.5	74	NE		WSW	11	1020.6		
26	Mo	8.7	16.0	1.6			VNW	17	13:40	10.2	95	NNE	6	1026.2	14.1	73	NNE		NNW	4	1024.8		
27	Tu	9.2	16.9	0			N	20	13:18	11.2	81			1024.6	16.6	48			VNW	7	1022.3		
28	We	5.8	16.0	0			WSW	35	14:26	8.5	85	NE	4	1024.0	11.9	77	NE		SSW	7	1022.6		
29	Th	6.1	14.3	3.0			WSW	30	13:36	9.9	92			1029.2	13.5	74			SW	9	1028.6		
30	Fr	4.7	15.6	2.0			NNW	20	14:04	8.4	94			1032.6	15.3	47			NNW	9	1029.0		
Statistics for June 2017		Mean		5.7	17.0					10.0	79			1029.8	16.0	54					7	1027.4	
		Lowest		1.7	14.3					6.5	58			1020.0	11.9	29					Calim	1017.7	
		Highest		9.8	19.5	3.0				12.6	96	#		1037.7	18.9	77					WSW	13	1035.5
		Total																					

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

The "official" Adelaide weather observations site is now at West Terrace / ngayindapira (site number 023000). This Kent Town site is about 2 km east of the city centre.

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<http://www.bom.gov.au/climate/dwo/IDC.IDM0000.pdf>

South Australia in June 2017: dry with warmer days and cooler nights

June 2017 was much drier than average throughout the agricultural districts of South Australia. Daytime temperatures were warmer than average across the State, while night time temperatures were very much cooler than average in agricultural districts.

Much drier than average

- June 2017 was South Australia's driest June since 2007
- For the State as a whole, rainfall was 48% below average
- Agricultural districts had very much below average rainfall
- June rainfall in pastoral districts was closer to average, including an area of above average rainfall around Tarcoola
- Late in the month, daily totals of 10 mm or more were recorded in the pastoral districts and in the south as a mid-level cloudband with embedded isolated thunderstorms crossed the north and a cold front brushed the south
- Tarcoola (Mobella) received 24.0 mm on the 27th, and Port Victoria recorded 25.0 mm on the 28th, which were the top two daily totals of the month recorded in South Australia
- After a very wet April, South Australia recorded two very dry months in May and June
- Almost all sites across South Australia had less rain days than average for June
- Most sites in the agricultural districts received less than 25 mm for the month
- Many sites had either their lowest total June rainfall on record or their lowest total June rainfall for at least 20 years

Warmer than average days and cooler than average nights

- June mean maximum temperatures were 1.13 °C warmer than average for the State as a whole, which was the warmest for June since 2002
- Days were warmer than average for almost all areas of South Australia
- Daytime temperatures were more than two degrees warmer than average in the State's far northeast
- Generally clear skies and light winds also resulted in cooler than average nights
- South Australia's mean minimum temperature was 1.77 °C below average, which was the seventh-lowest on record for June and coolest since 2007
- Temperatures at Arkaroola in the Flinders Ranges dropped to -5.4 °C on the morning of the 4th, the site's coldest June minimum temperature since records began in 1978
- In the Riverland, Renmark had five consecutive nights with temperatures below -2 °C at the start of June, which was a record run of such cold nights in June for the town
- Loxton recorded 20 nights in total with minimum temperatures of 2 °C or lower, which was the town's June record count of such cold nights
- Overall mean temperatures were close to average for the State as a whole
- Several sites in the south and the far northeast of the State had either their highest June mean daily maximum temperature on record or their highest June mean daily maximum temperature for at least 20 years
- On the 3rd and 4th, some sites had their lowest June temperature on record
- Two sites had their lowest June mean daily minimum temperature on record

High pressure systems frequent southern Australia

- Mean sea level pressure was more than 5 hPa above average for June across much of southern Australia
- The dominant high pressure systems reduced the number of rain-bearing low pressure systems and cold fronts affecting southern Australia
- Most sites that measure air pressure daily in South Australia had their record highest June 9am mean sea level pressures and others recorded their highest June values for more than ten years
- Average wind speeds for the month were below average across southern South Australia

Extremes in June 2017

Hottest day	27.1 °C at Oodnadatta Airport on the 23rd
Warmest days on average	20.9 °C at Moomba Airport
Coollest days on average	11.6 °C at Mount Lofty
Coldest day	7.9 °C at Mount Lofty on the 29th
Coldest night	-5.7 °C at Yunta Airstrip on the 4th
Coollest nights on average	-0.2 °C at Yongala
Warmest nights on average	13.2 °C at Neptune Island
Warmest night	15.3 °C at Neptune Island on the 16th
Warmest on average overall	15.0 °C at Neptune Island
Coollest on average overall	8.3 °C at Clare High School
Wettest overall	53.4 mm at Stenhouse Bay
Driest overall	0 mm at Curramulka North
Wettest day	25.0 mm at Port Victoria on the 28th

Record highest June mean daily maximum temperature				
	New record	Old record	Years held	June Average
Leigh Creek	18.9	18.5 in 2011	34	17.0
North Shields	18.5	17.9 in 2005	25	16.8
Kingscote	17.1	= 17.1 in 2005	23	16.1
Stenhouse Bay	17.3	17.2 in 2005	22	16.3
Cleve	17.4	17.3 in 2005	20	16.0
Minnipa	18.0	17.9 in 2008	20	16.7
Nuriootpa	15.4	= 15.4 in 2005	20	14.0

Record lowest June mean daily minimum temperature				
	New record	Old record	Years held	June Average
Parafield Airport	3.4	3.6 in 2006	60	7.1
North Shields	6.1	= 6.1 in 2006	25	8.6

Record highest June mean daily maximum temperature				
	New record	Old record	Years held	June Average
Leigh Creek	18.9	18.5 in 2011	34	17.0
North Shields	18.5	17.9 in 2005	25	16.8
Kingscote	17.1	= 17.1 in 2005	23	16.1
Stenhouse Bay	17.3	17.2 in 2005	22	16.3
Cleve	17.4	17.3 in 2005	20	16.0
Minnipa	18.0	17.9 in 2008	20	16.7
Nuriootpa	15.4	= 15.4 in 2005	20	14.0

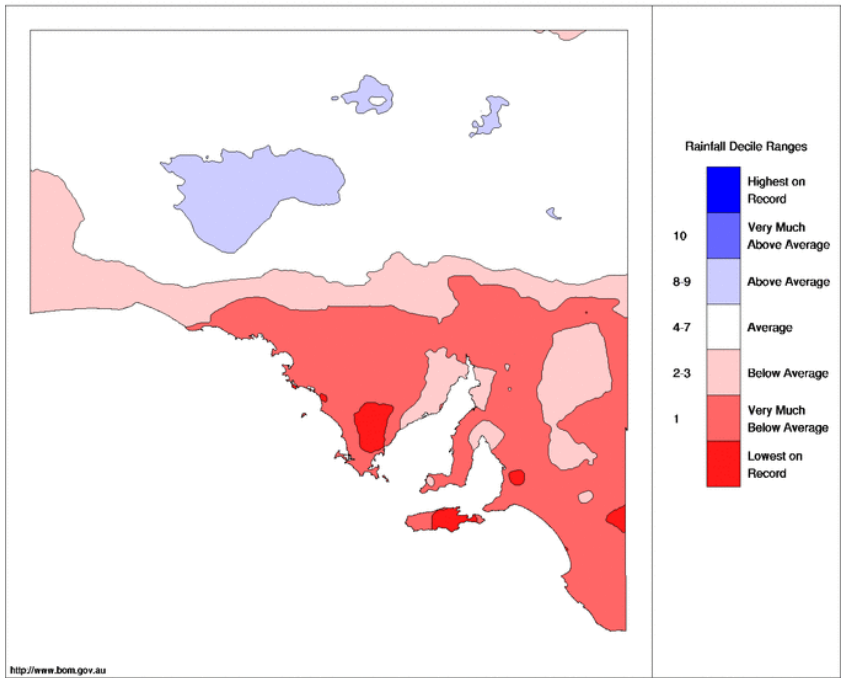
Record lowest June total rainfall				
	New record	Old record	Years held	June Average
Happy Valley	10.2	11.6 in 1959	143	87.6
Uraidla	20.0	24.1 in 1958	126	158.0
Cudlee Creek	13.4	15.0 in 1958	103	111.6
Parndana	18.2	27.7 in 1967	57	121.4
Williamstown	11.2	17.4 in 1975	49	89.1
Aldgate	18.4	38.2 in 1979	48	143.6
Prospect Hill	20.2	33.1 in 1979	47	110.7
Minlaton	14.0	17.8 in 1986	46	60.1
Kent Town	8.6	12.4 in 2006	40	78.8
Burnside	11.2	11.8 in 1913	38	96.9
Blackwood	13.4	27.7 in 1979	36	102.8
Mintaro	9.9	19.4 in 1997	34	71.3
Loxton	1.6	2.5 in 2007	32	25.3
Heathfield	14.8	50.0 in 2006	30	142.5
Buckleboo	7.4	12.2 in 1997	29	36.8
Clare	9.0	10.2 in 1994	23	69.2
Renmark	0.6	5.6 in 2010	21	20.3
Minnipa	7.2	10.6 in 2008	20	38.4
Nuriootpa	13.2	16.0 in 2015	20	56.8

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

<http://www.bom.gov.au/climate/current/month/sa/archive/201706.summary.shtml>

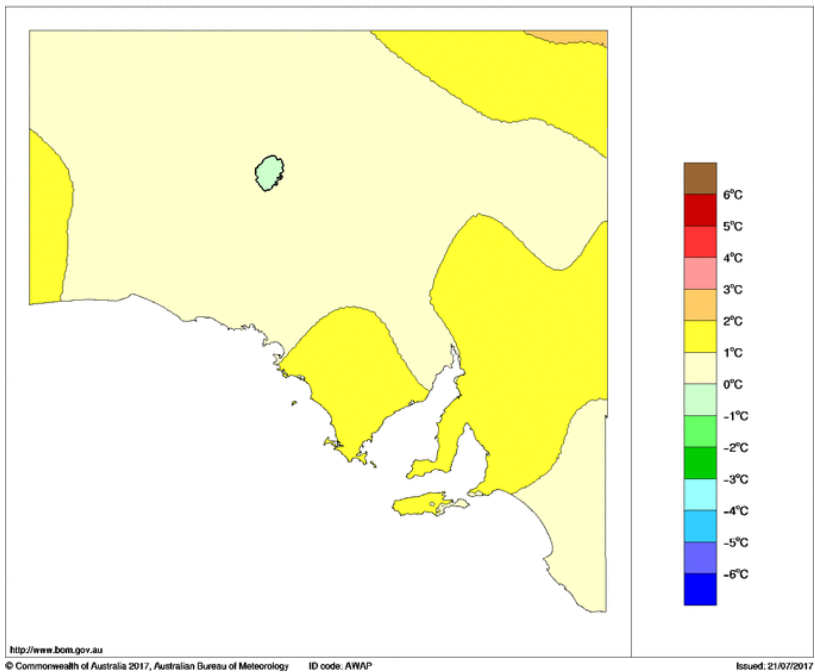
South Australian Rainfall Deciles June 2017

Distribution Based on Gridded Data
Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) June 2017

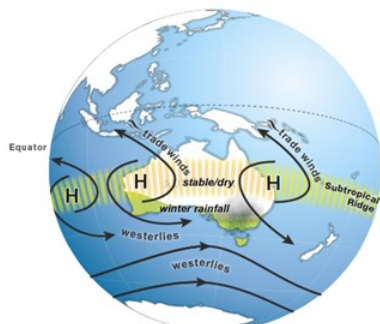
Australian Bureau of Meteorology



High and dry

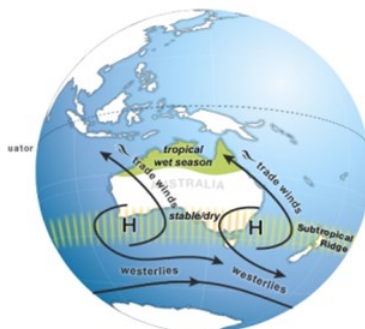
So what was behind June 2017's sunny, chilly and dry weather?

The **subtropical ridge** is a belt of high pressure systems that circles the southern hemisphere midlatitudes—the region of the globe between about 23°S and 66°S. It is a dominant influence on the climate of Australia. The belt of high pressure is associated with blue skies for the parts of the country that sit beneath it. During our summer it tends to sit over southern Australia, bringing generally dry weather. But in the winter it usually migrates north, allowing cold fronts and low pressure systems to move up from the Southern Ocean and bring rainfall to southern Australia.



Subtropical Ridge: Winter

© Commonwealth of Australia 2013.



Subtropical Ridge: Summer

© Commonwealth of Australia 2013.

The subtropical ridge of high pressure over Australia usually moves north in the winter, but stayed down south well into winter this year.

This June, that didn't happen. Instead of a steady progression of rain-bearing fronts, southern Australia saw high pressure system after high pressure system, bringing clear, dry days. The subtropical ridge remained firmly down south, sitting for most of June 2017 near Albury when it should be closer to Tamworth. Pressure across much of southern Australia through June 2017 averaged more than 7 hPa above normal.

Not only was the subtropical ridge further south than it should be, but it was stronger as well- the strongest we've seen in June since 1944, which was the driest June on record for southern Australia. Almost all of South Australia and Victoria have recorded their highest June average pressure values on record, and some stations—such as Horsham and Mount Gambier—recorded their highest daily pressure values at any time of the year for at least 10 years.

As well as dry weather across much of southern Australia, the lack of clouds associated with a strong subtropical ridge means warm days and frosty mornings. This has been very much the case for winter 2017, at least through to the end of June.

Victoria had its coldest winter nights on record during 1944 and 1982, which were also its two driest winters on record. Both of these had an exceptionally strong subtropical ridge.

On the flip side, the east coast is one area where a strong subtropical ridge can mean more rainfall. A strengthening of the subtropical ridge and weaker westerly winds means an increase in the frequency of easterly winds, which bring moist air from the Tasman Sea.

However, July 2017 has seen weather patterns shift to something more typical, with the subtropical ridge sitting over central Australia, and more persistent westerly winds bringing average or higher rainfall totals to coastal and elevated areas, such as the Mount Lofty Ranges.

Adelaide in July 2017

July rainfall was above average throughout Adelaide and the Hills. Both daytime and night time temperatures were warmer than average across the Adelaide region during July.

Above average rainfall

- July rainfall was above average across the Adelaide region
- The city received slightly above average rainfall for the month
- Rainfall totals ranged from 113% of average at Adelaide (West Terrace / ngayirdapira) to 150% of average at Mount Crawford
- Adelaide and the Hills received regular rainfall during the month
- Adelaide (Kent Town) had a total of 18 raindays in July, and Adelaide (West Terrace / ngayirdapira) had 22 raindays, compared to the city's long-term July average of 16 raindays
- The Adelaide region and Mt Lofty Ranges were the wettest areas of the State for the month
- Some sites had their highest total July rainfall for at least 20 years

Warmer than average temperatures

- Daytime temperatures in July were warmer than average throughout Adelaide and the Hills
- Daytime temperatures in the middle of the month were cooler than average, but days were several degrees warmer than average in the second half of July
- Night time temperatures in July were warmer than average throughout Adelaide and the Hills
- Warm and windy conditions at the end of the month resulted in Mount Crawford having its highest July temperature on record
- Some sites had their highest July mean daily maximum temperature for at least 20 years
- Edinburgh RAAF had its warmest July since 1975

Extremes in July 2017

Hottest day	24.2 °C at Edinburgh RAAF on the 29th
Warmest days on average	16.9 °C at Parafield Airport
Coollest days on average	10.3 °C at Mount Lofty
Coldest day	7.4 °C at Mount Lofty on the 31st
Coldest night	1.0 °C at Mount Barker on the 20th
Coollest nights on average	5.4 °C at Mount Lofty
Warmest nights on average	9.3 °C at Noarlunga
Warmest night	12.4 °C at Adelaide (Kent Town) on the 13th 12.4 °C at Noarlunga on the 13th
Warmest on average overall	12.6 °C at Adelaide (West Terrace)
Coollest on average overall	7.9 °C at Mount Lofty
Wettest overall	298.0 mm at Uraidla
Driest overall	56.4 mm at Kilburn
Wettest day	53.2 mm at Lobethal on the 18th
Strongest wind gust	94 km/h at Mount Crawford AWS on the 29th

Some notable statistics for July were:

Highest July total rainfall for at least 20 years

	Observed (mm)	Most recent higher	Average for July
Lobethal	229.6	230.8 in 1986*	129.8
Heathfield	254.0	306.4 in 1995	161.2
Blackwood	167.0	172.4 in 1995*	107.2
Uraidla	298.0	336.8 in 1995*	161.6

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

Record highest July temperature

	New record (°C)	Old record	Years held	July Average
Mount Crawford	20.3 on the 29th	18.7 on the 21st in 2016	24	10.9

Highest July mean daily maximum temperature for at least 20 years

	Observed (°C)	Most recent higher	Average for July
Mount Barker	15.0	15.1 in 1975	12.9
Adelaide Airport	16.2	16.5 in 1994	14.9
Edinburgh RAAF	16.5	16.7 in 1994	15.3
Parafield Airport	16.9	17.0 in 1994	15.1

Highest July mean temperature for at least 20 years

	Observed (°C)	Most recent higher	Average for July
Edinburgh RAAF	11.9	12.3 in 1975	10.7

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

<http://www.bom.gov.au/climate/current/month/sa/archive/201707.adelaide.shtml>

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 July 2017 Daily Weather Observations

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



Date	Temps		Rain mm	Evap mm	Sun hours	Max wind gust			9am				3pm						
	Min °C	Max °C				Dirr	Spd km/h	Time local	Temp °C	RH %	Cld eighths	MSLP hPa	Temp °C	RH %	Cld eighths	Dirr	Spd km/h	MSLP hPa	
1	Sa	8.5	16.5	0.2		NNE	28	08:39	11.8	60	NNE	15	1026.9	15.9	54	NW	15	1023.1	
2	Su	9.5	17.6	0		NNE	33	22:40	10.9	58	NE	13	1019.0	17.3	34	NE	19	1011.7	
3	Mo	9.3	13.5	1.6		NNW	59	13:31	9.9	66	N	20	1008.0	12.3	72	NNW	31	1005.7	
4	Tu	9.9	16.9	7.8		NW	41	00:57	13.1	95	WNW	17	1011.8	14.4	85	W	19	1010.9	
5	We	10.2	15.6	8.4		W	24	01:58	12.4	85	W	11	1015.6	14.6	66	WSW	11	1015.9	
6	Th	7.4	16.6	0		NNW	43	16:01	11.1	80	NNE	11	1014.5	15.2	53	NNW	24	1009.5	
7	Fr	8.5	14.5	5.2		W	56	18:00	11.5	89	WNW	19	1009.6	12.7	84	W	22	1011.0	
8	Sa	7.2	15.5	4.6		WNW	46	14:22	9.2	96	NNE	9	1018.3	14.4	68	WNW	22	1016.4	
9	Su	9.2	15.2	0.4		NW	30	11:37	11.0	88	N	7	1021.3	14.6	60	WNW	15	1020.8	
10	Mo	8.3	16.5	0.4		N	20	11:33	10.7	79	NE	9	1026.8	16.2	54	NNW	11	1026.0	
11	Tu	5.4	18.4	0.2		ENE	26	23:13	10.3	77	NNE	6	1032.4	17.4	43	N	9	1029.9	
12	We	10.3	17.8	0		NNE	44	12:04	12.3	54	N	13	1029.5	17.2	35	N	19	1023.5	
13	Th	12.2	17.9	0.2		NNW	41	12:57	12.7	57	NNE	11	1019.4	16.8	43	NNW	20	1015.1	
14	Fr	8.2	14.4	3.6		WSW	33	01:14	12.3	80	W	9	1017.5	13.7	68	WSW	13	1017.5	
15	Sa	4.9	14.6	1.6		NW	24	13:44	7.6	88	NE	13	1023.2	14.1	52	NW	9	1020.3	
16	Su	7.6	12.9	0.2		N	35	09:55	10.9	60	NNE	17	1015.9	12.2	68	NNE	19	1011.0	
17	Mo	10.2	15.6	9.2		NNW	54	11:34	11.9	80	N	17	1009.6	15.0	72	NW	24	1008.6	
18	Tu	10.3	13.7	7.8		WSW	56	18:14	11.6	81	WNW	17	1013.1	13.3	77	WNW	20	1011.7	
19	We	9.3	13.9	2.8		SW	35	10:46	11.4	74	S	13	1023.2	13.3	54	SSW	15	1023.9	
20	Th	3.3	14.3	0		WSW	19	14:35	7.7	79	N	4	1025.3	12.7	61	W	9	1021.6	
21	Fr	6.7	17.6	0		N	35	14:56	11.7	54	NE	11	1021.4	17.4	43	NNW	19	1018.5	
22	Sa	11.6	18.1	0		N	46	11:50	12.3	52	N	15	1018.1	17.6	38	NW	22	1013.9	
23	Su	9.9	16.9	0		WNW	37	14:24	11.4	96	N	11	1017.9	15.8	71	W	20	1017.3	
24	Mo	9.4	18.7	5.8		NW	33	13:21	11.6	77	NNE	13	1021.8	18.5	49	NW	17	1018.7	
25	Tu	10.2	17.2	0.2		WNW	31	14:08	12.1	68	NNE	11	1018.6	14.9	75	NW	17	1018.2	
26	We	9.5	16.1	0.2		W	24	01:34	12.6	85	NE	11	1024.3	15.7	58	W	9	1023.4	
27	Th	9.2	16.8	0		NNE	37	11:13	13.1	58	NNE	13	1018.9	13.4	80	N	9	1015.8	
28	Fr	8.0	19.9	2.6		NNE	37	23:08	10.0	89	NNE	9	1022.0	17.5	42	NNE	17	1016.8	
29	Sa	10.0	21.8	0		NW	59	12:04	19.6	29	N	28	1006.2	15.2	72	WSW	15	1005.8	
30	Su	10.0	16.3	4.8		NNW	30	00:07	12.2	82	NW	15	1014.3	15.3	63	W	17	1014.5	
31	Mo	8.2	14.6	7.4		NNW	48	05:26	10.5	85	NNW	9	1018.7	13.7	71	SW	15	1020.0	
Statistics for July 2017																			
Mean		8.8	16.3						11.5	74			1018.8	15.1	60			16	1016.7
Lowest		3.3	12.9						7.6	29			1006.2	12.2	34		#	9	1005.7
Highest		12.2	21.8	9.2		#	59		19.6	96	N	28	1032.4	18.5	85		NNW	31	1029.9
Total																			

Observations were drawn from Adelaide (West Terrace / Ngayirdapira) (station 023000)
 This is now the "official" site for Adelaide, having reopened in May 2017. Observations are also available from the Kent Town site (station number 023060).
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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/DW5081_201707 - Prepared at 07:16 GMT on 1 Aug 2017

South Australia in July 2017

July rainfall in South Australia was below average across most of the State, although some agricultural districts had average to above average rainfall. Daytime temperatures were warmer than average for July across the whole State, while night time temperatures tended to be closer to the July average. Overall, it was South Australia's third-warmest July on record for mean temperature, and the warmest July since 1975.

Drier than average for most of the State

- Driest July for South Australia since 2007
- July rainfall was below average across most of South Australia
- Some agricultural areas received average to above average rainfall, but it remained drier than average for much of the northern Eyre Peninsula, in the Riverland, and in the far West Coast of the State
- After a much drier than average June, a surface trough with embedded low pressure systems crossed south of the State during the first week of July, producing rainfall totals in excess of 10 mm to many agricultural districts
- A cold front later in the month resulted in rainfall totals of 25 mm or more on the Fleurieu Peninsula and in the southeast from 17-19 July
- Central and eastern pastoral districts received little or no rain during July
- July continues a run of three consecutive months of drier than average conditions for South Australia as a whole
- Two sites had their highest July daily rainfall on record
- Several sites had their highest total July rainfall for at least 20 years
- Two sites with 20 years of record had their lowest total July rainfall on record
- Numerous sites, particularly in the Flinders and Mid North districts, had their lowest total July rainfall for at least 20 years

Third-warmest July on record

- South Australia's third-warmest July on record (overall warmest mean temperature for July since 1975)
- Third-warmest mean maximum temperatures in July for the State as a whole (warmest July days since 2002)
- Daytime temperatures in July were very much warmer than average across most of South Australia
- For the State as a whole, mean minimum temperatures were slightly warmer than average
- Night time temperatures were cooler than average in southern parts of the pastoral districts and in the Riverland, and warmer than average across central agricultural districts and in a large area extending north around Coober Pedy
- Warm and windy conditions across the State from 27-29 July resulted in many sites having their highest July temperature on record
- Numerous sites had either their highest July mean daily maximum temperature on record or highest July mean daily maximum temperature for at least 20 years
- Several sites had their warmest July since 1975

Extremes in July 2017

Hottest day	31.2 °C at Nullarbor on the 28th
	31.2 °C at Oodnadatta Airport on the 29th
Warmest days on average	22.7 °C at Oodnadatta Airport
Coollest days on average	10.3 °C at Mount Lofty
Coldest day	7.4 °C at Mount Lofty on the 31st
Coldest night	-4.4 °C at Yongala on the 28th
Coollest nights on average	2.3 °C at Yongala
Warmest nights on average	11.8 °C at Neptune Island
Warmest night	15.5 °C at Oodnadatta Airport on the 30th
Warmest on average overall	14.6 °C at Oodnadatta Airport
Coollest on average overall	7.9 °C at Mount Lofty
Wettest overall	298.0 mm at Uraidla
Driest overall	0 mm at Andamooka
	0 mm at Roxby Downs (Olympic Dam Aerodrome)
	0 mm at Tarcoola Aero
	0 mm at Woomera Aerodrome
Wettest day	60.0 mm at Penneshaw on the 4th
Strongest wind gust	106 km/h at Neptune Island on the 17th

Some notable statistics for July were:

Record highest July daily rainfall

	New record (mm)	Old record	Years of record
Penneshaw	60.0 on the 4th	45.0 on the 8th in 1993	106
Nuriootpa	30.8 on the 19th	24.0 on the 28th in 1998	21

Record lowest July total rainfall

	New record (mm)	Old record	Years of record	July Average
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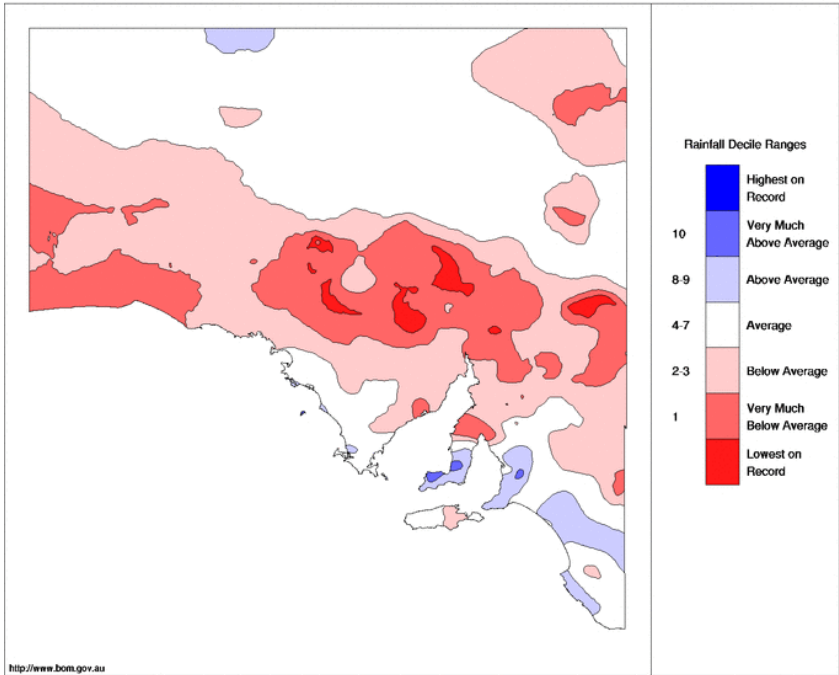
Record highest July mean daily maximum temperature				
	New record	Old record	Years held	July Average
Cape Willoughby	15.3	15.2 in 2013	49	14.2
Hawker	18.4	= 18.4 in 1975	43	15.9
Loxton	17.8	17.7 in 1994	33	15.8
North Shields	17.5	17.4 in 1993	25	16.0
Renmark	18.4	17.9 in 2002	21	16.3
Stenhouse Bay	16.4	= 16.4 in 2002	21	15.5
Strathalbyn	16.3	= 16.3 in 2002	21	14.9
Nuriootpa	14.8	14.6 in 2002	20	13.4

Roxby Downs	0.0	0.4 in 2014	20	6.7
Yunta Airstrip	1.8	= 1.8 in 2003	20	15.4

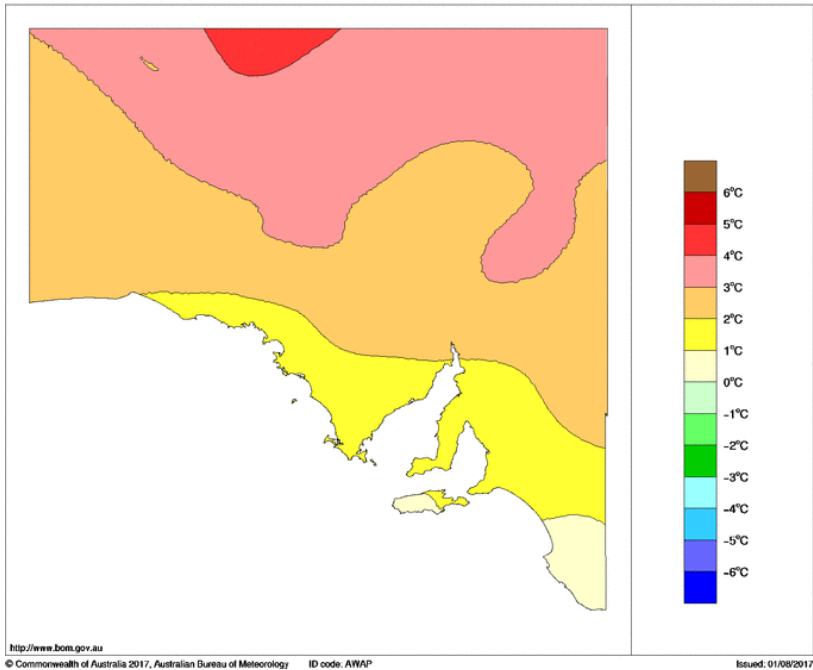
Many other rainfall & temperature records were also set in July. For more information plus a summary of statistics please see:

<http://www.bom.gov.au/climate/current/month/sa/archive/201707.summary.shtml>

South Australian Rainfall Deciles July 2017
 Distribution Based on Gridded Data
 Australian Bureau of Meteorology



Maximum Temperature Anomaly (°C) July 2017
 Australian Bureau of Meteorology





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

NEXT MEETING

6.00 PM TUESDAY 15 August 2017

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

*Please also note that the August meeting is the 2017 AGM and
subscriptions for 2017/2018 (\$15) are now due*

Rather than featuring a key speaker, the August 2017 meeting, as the AMETA AGM, will be devoted to a discussion about our future. As well as reports from the Committee, the meeting will focus on discussing the relationship, and possible linkage between AMETA and AMOS, the Australian National Meteorological and Oceanographic Society

See: <https://www.amos.org.au/>

Darren Ray, Senior Climatologist from South Australian Region of the Bureau, will also give a round up of recent weather patterns, latest Bureau of Meteorology products, and what to expect over the next few months.

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

We look forward to seeing you.

For further information contact

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