



## SIGNIFICANT WEATHER – June 2009

### SUMMARY

Thunderstorms were recorded in most states with tornadoes reported in Queensland, South Australia and the Northern Territory causing extensive structural and tree damage.

A deep low pressure system at the end of the month caused damaging winds in New South Wales, Victoria, South Australia and Western Australia. Major flooding occurred in Queensland and Tasmania. Heavy rainfall in Tasmania set new records with many sites recording their wettest day on record. Fog and snow were reported in Tasmania.

### THUNDERSTORMS/TORNADOES

#### Queensland

A tornado was reported at Rosewood and Amberley on the 5th.

#### Victoria

On the 30th an intense low pressure system moved towards Victoria from the Bight. This resulted in the development of gale force northerly winds ahead of a cold front that moved through western Victoria in the early afternoon and central areas in the evening. Along with damaging wind gusts in the northerly flow, very strong gusts were reported in association with thunderstorms that developed near the cold front.

A woman in Maryborough died after being hit by a fallen tree, as a result of wind gusts associated with thunderstorms near the cold front. There were also reports of a person trapped in a car by a fallen branch in St Arnaud.

Winds greater than 100 km/h were reported at: Mount Hotham 157 km/h, Mount William 113 km/h, Hopetoun 109 km/h, Horsham 107 km/h, Swan Hill and Frankston 100 km/h.

#### Tasmania

On the 8th a thunderstorm dropped a large quantity of pea-sized hail at St Marys Pass. In some areas it was reported to be around 30cm deep. The hail caused a number of cars to slide off the road, including one that overturned.

#### South Australia

On the 6th a cluster of clouds spawned a series of waterspouts over the St Vincent Gulf, which were visible from the Yorke Peninsula and Adelaide beaches.

On the 13th a thunderstorm produced a tornado, which caused a narrow 1.5 kilometre long swathe of tree and shed damage near Kingston in the Upper South East.

On the 23rd severe winds associated with a convective cell caused significant structural damage to a shed near Arthurton on the Yorke Peninsula.

On the 30th a severe thunderstorm on a strong cold front tracked across Adelaide suburbs. Winds with the storm tipped over a semi-trailer and brought down power poles at West Beach. A wind gust of 106 km/h was recorded at Adelaide Airport. The same storm caused significant tree damage in Flagstaff Hill and Happy Valley. A wind gust of 107 km/h was recorded at Coles Point on the Lower Eyre Peninsula.

#### Western Australia

On the 19th, a cold front moved across the west coast causing a tornado at Bunbury and severe wind gusts at coastal sites. The tornado passed south of the Bunbury city centre following the front. There were reports of houses with roofs completely off, and others with major roof damage. The damage was confined to a west-southwest/east-northeast discontinuous path about 30 metres wide and 3 kilometres long extending from the coast to the cemetery. The damage was consistent with an F1 tornado with wind speeds of 120 to 160 km/h. The front also caused severe wind gusts at the following sites: 111 km/h at Cape Leeuwin; 115 km/h at Cape Naturaliste; 96 km/h at Garden Island and 93 km/h at Rottnest Island. In the Perth metropolitan area, houses at Kalamunda, Ocean Reef and Dardanup, sustained roof damage.

On the 24th, a deep low near the Southwest district coast brought damaging winds to the Great Southern. Damage consistent with the passage of a tornado was reported near Bokal, then Katanning. At Bokal, trees were reported to have been ripped out of the ground and small hail fell associated with a thunderstorm. The damage path (oriented northwest to southeast) was estimated to be 100 to 130 metres wide and about 3 kilometres in length. Between Katanning and Kojonup, tree damage was reported as well as fences down, roofs ripped off houses and four silos were demolished. The damage path was

estimated to be 3 to 4 kilometres in length and had a maximum width of about 100 metres.

## WIND

### New South Wales

On the 30th a strong cold front moved through the south of the state, Mount Ginini recorded a wind gust of 107 km/h and Deniliquin Airport recorded a wind gust of 98 km/h.

### Tasmania

On the evening of the 30th damaging winds blew across northern and western areas as a cold front crossed the state. Wind gusts reached 124 km/h on Mount Read, 106 km/h at Cape Grim and 91 km/h at Launceston Airport. A roof was ripped off near Wynyard and a shed was demolished at Queenstown.

### South Australia

On the 30th a strong front linked to a large, deep low pressure system swept across South Australia. Severe winds were experienced in all but the Upper and Lower South East districts, with most of the damage occurring with or shortly following the front. In the Pastoral districts, blowing dust accompanied the front. About 30,000 homes lost power. Parts of Adelaide were amongst the worst affected areas with a lot of tree related damage. Several houses also suffered roof damage. Some of the higher wind gusts recorded were 115 km/h at Whyalla (Eastern Eyre Peninsula), 113 km/h at Nuriootpa (Mount Lofty Ranges) and Loxton (Riverland) and 106 km/h at Adelaide Airport. A second period of severe wind gusts affected southern districts during the evening of the 30th as the main upper cold trough moved through. Wind gusts of 90–95 km/h were recorded at Coles Point (Lower Eyre Peninsula) and Stenhouse Bay (Yorke Peninsula).

### Western Australia

A series of strong cold fronts embedded within a vigorous westerly airstream affected the South West Land Division from the 26th to the 29th. Many potentially damaging gusts were recorded throughout the South West Land Division, particularly on the 29th.

At Hyden in the Great Southern there was a report of severe damage to trees. At Lake King, trees were blown down and there was roof damage to houses.

## FLOODING

### Queensland

On the 3rd, major flooding occurred at Humbern on the Paroo River. Flood warnings continued until the 16th after a moderate flood peak at Hungerford was observed.

On the 22nd flash flooding occurred at Nerang, where a car was washed off the road.

### Tasmania

Between the 3rd and 7th heavy rain fell in the east of the state. Rain extended from the north on the 3rd as an easterly trough developed through Bass Strait. By the 4th, the trough had moved over Tasmania producing rain. Most of the rain fell in the east and southeast where falls of 50 to 80mm were widespread. Several sites received over 200mm in four days. Both Copping and Bream Creek had their wettest day on record after over 130mm fell in the 24 hours to 9 am on the 5th. Several other sites in the southeast had their wettest June day on record on the 5th, as did Deal Island and Killiecrankie (on Flinders Island) on the 7th.

On the 7th there was moderate flooding throughout the upper reaches of the South Esk River (Fingal peaked at 5.3 metres).

The rain also caused creeks, dams, stormwater drains and gutters to overflow, rockfalls, and flooding of several roads in the south and east, including the Tasman Highway north of Buckland. Part of a road near Woodbridge collapsed on the 8th.

On the 25th and 26th more heavy rain fell in eastern Tasmania as an easterly trough moved over the state and a weak low pressure system persisted near the east coast. At Nugent 171mm fell (including 137mm in the 24 hours to 9 am on the 26th, which is its wettest day on record). Many sites in the southeast had their wettest June day on record.

Rain on the 25th caused a landslip at St Marys, flash flooding and a string of car accidents in the southeast. The rain also caused rapid river rises, and on the 26th there was moderate flooding of the Macquarie River at Mt Morrision (peaking at 2.0 metres).

On the 30th strong winds and a low pressure system combined to create a high tide of 4 metres at Burnie, which was 60cm higher than predicted. The Cam River at Somerset broke its banks.

## Western Australia

The Perth Barrack St Jetty tide gauge recorded 1.56 metres on the 30th, which equates to a storm surge of 0.63 metres. One lane of the Kwinana Freeway was closed due to heavy spray from the adjacent Swan River. Gale force winds combined with heavy swell caused significant beach erosion along metropolitan beaches.

### FOG

## Tasmania

On the 5th and 18th thick fog delayed flights into Launceston Airport. One flight from Melbourne was delayed for over 40 minutes.

### SNOW

## Tasmania

On the evening of the 9th snowfalls descended to low levels after a cold front crossed the state. Snow settled to as low as 300 metres in southern areas early on the 10th, including on Mount Wellington and at Nugent. Snow also fell to low levels in the north, and the Ridgley Highway in the northwest was closed due to falling snow on the evening of the 9th. Several other roads were closed in the north and west on the morning of the 10th due to snow and ice.

### TEMPERATURE

**Note:** The record tables below are only shown for sites with 30 years or more of observations. (Northern Territory is 20 or more years).

## New South Wales

On the 10th, Thredbo AWS recorded its lowest ever maximum temperature (in its 32 years of records), reaching only -6.4°C. This was also an Australian record for June. This temperature was associated with a strong low in the Tasman Sea, which brought cool maritime air north into New South Wales.

### Highest Mean Maximum Temperature for June

Station	Actual °C	Previous Highest °C	Year	Years of Record
<b>Queensland</b>				
Rockhampton Aero	26.0	25.8	1991	70
Kairi Research Station	24.0	23.1	1978	47
Walkamin DPI	25.5	25.4	1978	41
Musgrave	32.1	31.5	2005	38

### Highest Daily Maximum Temperature for June

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
<b>Queensland</b>					
Lockhart River Airport	31.2	28	31.0	2002	44
<b>Western Australia</b>					
Halls Creek Airport	34.2	30	33.8	1973	62
<b>Northern Territory</b>					
Jervois	33.9	30	33.8	1996	39
Tennant Creek Airport	33.6	30	32.9	2002	39
Wave Hill	35.7	30	35.0	2002	34
Timber Creek	36.1	29	35.9	2001	28
Tindal RAAF AWS	34.5	29	34.5	2003	21

### Lowest Daily Maximum Temperature for June

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
<b>New South Wales</b>					
Thredbo AWS	-6.4	10	-6.0	1983	38

### Lowest Daily Minimum Temperature for June

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
<b>Queensland</b>					
Baralaba PO	-1.2	12	-1.0	1982	38
Monto Township	-3.9	12	-2.9	1986	37
<b>New South Wales</b>					
Montague Island LH	3.1	11	5.4	1974	38

### RAINFALL

**Note:** The record tables below are only shown for sites with 30 years or more of observations. (Northern Territory is 20 or more years).

### Highest Monthly Rainfall on Record for June

Station	Actual mm	Previous Highest mm	Year	Years of Record
<b>Queensland</b>				
Quilberry Station	172.4	122.7	1912	108
Dillalah	119.0	116.7	2005	80
Wallen	85.2	65.2	2005	35
<b>New South Wales</b>				
Condobolin (Worongorrah)	108.0	81.0	1978	47
Griffith Airport AWS	74.8	70.4	1987	47
<b>Victoria</b>				
Mount Richmond	38.5	38.1	1945	69
<b>Tasmania</b>				
St Marys (Clive Street)	357.6	356.0	1922	104
Premaydena Hatchery	183.4	173.7	1923	102
Buckland (Brockley)	247.4	202.1	1923	100
Lunawanna	295.0	250.5	1954	99
Bream Creek (Stroud)	316.0	229.4	1923	91
Kellevie	365.6	356.6	1889	90
Woodbury (Warringa)	110.0	92.0	1939	77
Wattle Hill	217.2	202.2	1954	76
Dover	192.0	180.4	1956	74
Orford South	230.4	220.5	1954	73
Levendale	237.2	234.4	1922	66
Orford (Aubin Court)	230.0	194.8	1954	57
Alonnah Area School	265.1	257.7	1954	54
Hobart Airport	136.2	71.2	1998	52
Snug Plains (Cataract Falls)	351.8	185.4	2002	49

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Seven Mile Beach (Royal Hobart Golf Club)	139.4	81.0	2004	48	Huonville (Tutton Avenue)	62.0	26	51.6	1983	40
Memana (Babel Farm)	128.5	126.0	2002	46	Dunalley (Bangor)	54.2	05	43.4	2002	36
Hobart Strickland Reserve	251.4	166.4	2002	44	Longley (Telopea)	87.2	26	63.6	2005	34
Taroona (Taroona Crescent)	156.2	92.0	1981	44	Lucaston (Bakers Creek Road)	58.8	26	54.0	1983	31
Ferntree (Grays Road)	363.4	199.4	1981	42	Taranna (Parks & Wildlife)	65.2	05	55.8	1998	31
Margate (Sunnyside)	201.8	108.2	2002	42	Risdonvale (Poplar Road)	58.2	26	41.4	2005	30
Huonville (Tutton Ave)	141.4	132.6	2002	40	<b>South Australia</b>					
Orielton (East Orielton Road)	150.4	105.4	1981	40	Rocky River (Brookland Park)	85.2	30	62.5	1964	55
Copping	320.0	109.6	1981	39	Mount Lofty (Cleland Conservation Park)	76.4	09	65.4	2007	41
Killiecrankie	132.0	112.1	1971	38	<b>Western Australia</b>					
Rotherwood	135.0	114.0	1981	38	Newman Aero	36.0	25	27.4	1989	34
Mount Rumney (Mount Rumney Rd)	182.2	94.0	1981	37						
Dunalley (Bangor)	208.2	112.5	1981	35						
Longley (Telopea)	318.4	210.7	1981	32						
Lucaston (Bakers Creek Road)	153.0	144.0	2002	31						
<b>South Australia</b>										
Petersville	107.0	103.2	1994	45						
Butler (Moody Vale)	109.8	107.0	1981	41						
<b>Western Australia</b>										
North Stirlings	111.7	88.7	1988	49						

Note: Some statistical records mentioned in this report are based on data that have yet to be fully validated

### Lowest Monthly Rainfall on Record for June

Station	Actual mm	Previous Lowest mm	Year	Years of Record
<b>Queensland</b>				
Walkamin DPI	0.8	1.0	2002	45
<b>Victoria</b>				
Bonbeach (Carrum)	0.1	10.7	1972	52
Gellibrand River Forestry	14.4	28.6	1967	50
Benambra (The Brothers)	8.2	15.6	2008	40
<b>Northern Territory</b>				
Gove Airport	0.4	1.5	1974	31

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Station	Actual mm	Date	Previous Highest mm	Year	Years of Record
<b>Queensland</b>					
Quilberry Station	109.0	01	57.0	2006	88
Dillalah	91.0	01	70.4	1912	58
Pingine	57.0	01	47.0	2006	56
Killara	74.4	27	56.4	1988	53
Mountain View	47.6	03	42.0	1983	36
Wallen	42.6	01	34.8	2006	35
<b>New South Wales</b>					
Cobar MO	38.8	27	38.4	1979	48
Cobar Water Storage	37.2	27	31.4	1979	38
Pleasant Hills (Killarney)	39.0	22	27.0	1998	31
<b>Victoria</b>					
Mount Richmond	38.5	09	38.1	1945	69
<b>Tasmania</b>					
Deal Island	79.0	07	69.9	1891	113
Osterley	46.2	26	41.9	1954	96
Bream Creek (Stroud)	140.0	05	114.8	1923	91
Dover	77.2	05	63.0	1964	62
Grove Comparison	70.8	26	59.7	1956	58
Snug Plains (Cataract Falls)	110.6	05	66.3	1964	49
Taroona (Taroona Crescent)	53.4	05	39.9	1964	47
Fern Tree (Grays Road)	105.6	05	84.8	1981	42
Killiecrankie	59.8	07	40.0	1977	42
Margate (Sunnyside)	82.0	05	38.4	1981	41
Copping	134.8	05	33.4	1981	40