



## SIGNIFICANT WEATHER – April 2009

### SUMMARY

Tropical cyclone KIRRILY formed in the Arafura sea on the 18th and moved close to eastern Indonesia. The cyclone had no effect on the Australian coastline.

Thunderstorms were recorded in all states with possible tornadoes reported in Tasmania causing extensive structural and tree damage.

Duststorms were reported in New South Wales during the middle of the month reducing visibility to 500 metres.

Flooding occurred in Queensland, New South Wales and South Australia. Extensive damage occurred in New South Wales with an estimated \$30 million damage bill.

Tasmania experienced a cold snap where lowest April minimum and maximum temperature records were broken.

### TROPICAL CYCLONES

#### Northern Territory

A tropical low formed in the Arafura Sea, well north of the Australian coast on the 18th. The low wandered slowly around northern waters for the next week but initially remained weak. On the 26th, the low deepened and tropical cyclone *KIRRILY* formed briefly close to the eastern Indonesian Aru Archipelago about 700 kilometres north-northeast of Darwin. The cyclone weakened on the 28th as it moved across the islands and the remnant tropical low drifted slowly west into the Banda Sea later in the month, before dissipating on 3 May.

### THUNDERSTORMS/TORNADOES

#### Queensland

On the 11th hail up to the size of golf balls, very heavy rainfall and flash flooding were reported approximately 30 kilometres south of Camooweal.

#### New South Wales

On the 13th thunderstorms on the South West Slopes caused heavy rain and flash flooding in the Cootamundra area. There was one fatality when a vehicle was swept off a flooded causeway east of

Cootamundra. The highest fall in the district was 63mm at Grenfell.

On the 14th thunderstorms caused heavy showers and strong winds in the Bankstown-Liverpool area in southwest Sydney. Trees were brought down and there was flash flooding in the Liverpool area. Bankstown recorded 25mm in 17 minutes.

On the 20th a waterspout was observed off the North Coast near Evans Head.

#### Victoria

On the 3rd thunderstorms developed in central areas of Victoria and moved to the northeast later in the day. There were reports of localised flash flooding in the Kinglake area and Albury Airport recorded a 98 km/h wind gust.

On the 25th a tornado with associated large hail 2 cm in diameter and damaging winds was reported from Boundary Bend (southeast of Mildura). There were also reports of tornadoes near Heathcote and Kyneton. There was significant damage to a large number of trees.

#### Tasmania

On the 15th, a line of severe thunderstorms moved across the north of the state on an active cold front. The strongest recorded wind gust was 194 km/h at Scottsdale. A possible tornado moved through the area, and there were several other reports of damage swathes elsewhere in the north. Winds gusted to over 100 km/h at many locations along the north coast, and several sites including Devonport (124 km/h) and Sheffield (109 km/h) had their strongest wind gust on record. The winds caused extensive structural and tree damage. Roofs were blown off and sheds demolished at Boat Harbour, Wynyard and Scottsdale. A caravan and an old bus were blown over at Scottsdale. Over 30,000 premises lost power, mainly due to lightning or toppled power lines. The damage bill was estimated to be in excess of one million dollars, from over 200 insurance claims.

#### South Australia

On the 15th a line of thunderstorms associated with a front produced a wind gust of 91 km/h at Cape Jaffa and a wind gust of 96 km/h at Naracoorte.

A significant front on the 25th resulted in a number of storms that moved across South Australia. One of these produced a wind gust of 95 km/h at Mt Crawford and another produced a wind gust of 91 km/h at Cape Jaffa. In addition, a supercell moved

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across the northern suburbs of Adelaide which damaged some electricity network infrastructure.

### Western Australia

A severe thunderstorm at the Murrin Murrin Aerodrome in the Goldfields produced some minor damage, erosion due to heavy rainfall and an accumulation of small hail. Flash flooding resulted in approximately 0.5 metres of water covering the runway and surrounding area.

### Northern Territory

On the 10th a thunderstorm produced 105mm of rain in 2 hours at Bulman AWS in the Arnhem District, 72mm of which fell in 1 hour.

## WIND

### New South Wales

On the 3rd a thunderstorm downburst caused a wind gust of 106 km/h at Khancoban on the South West Slopes.

On the 19th an intense low pressure system caused gale force winds at Lord Howe Island. The highest wind gust was 146 km/h. Many trees were blown over, boats sunk and much of the island lost power.

On the 25th active cold fronts caused strong winds over the higher ground of the Southern Tablelands. Cabramurra recorded a wind gust of 106 km/h and Mount Ginini recorded a wind gust of 100 km/h.

### Victoria

On the 15th a cold front moved across Victoria with gale force northwesterly winds ahead of the front. Strongest wind gusts were 150 km/h at Mount Buller and 130 km/h at Mount Hotham, with lower elevation areas experiencing wind gusts around 100 to 115 km/h. Wilsons Promontory Lighthouse recorded a wind gust of 159 km/h.

On the weekend of the 25th and 26th, a deep low pressure system formed and moved through Bass Strait, resulting in gale force northerly winds tending west to southwesterly. The SES received over 800 calls for assistance, mainly due to fallen tree limbs and for a storm surge in Port Phillip. The strongest wind gust was 143 km/h at Mount Hotham, but most southern areas had wind gusts that exceeded 100 km/h.

### Tasmania

On the 26th strong southerly winds developed as a deep low pressure system crossed the state. Wind gusts reached 152 km/h at both Hogan Island and Maatsuyker Island. Tiles were blown off a roof in Penguin, and trees and power lines were damaged

on the Tasman Peninsula and at Lenah Valley in Hobart. The Channel Highway in Huonville was closed for an hour around 9pm as the strong onshore winds, low pressure, increased streamflow and a sea height anomaly combined to flood the road. Battery Point in Hobart recorded a peak of nearly 1.9 metres late on the 26th causing minor road flooding at Lauderdale and Eaglehawk Neck.

### South Australia

On the 25th Neptune Island recorded a wind gust of 102 km/h.

## DUST STORMS

### New South Wales

On the 15th a cold front and strong westerly winds up to 93 km/h caused raised dust over the southern inland of New South Wales. Visibility was reduced to less than 5 kilometres over the Riverina and South West Slopes with some locations reporting visibility of only 1 kilometre. At Cootamundra on the South West Slopes, the reported visibility at 3pm was 500 metres.

On the 16th, strong upper level winds transported the dust to the east coast where visibility in Sydney and Newcastle was reduced to about 8 kilometres and in parts of the Hunter Valley to about 3 kilometres. The dust reached as far north as the North Coast of New South Wales where visibility was 5 kilometres at Lismore.

## FLOODING

### Queensland

A trough system that moved adjacent to the southeast Queensland coast from New South Wales early in the month produced widespread rain and thunderstorms over the southeast corner of Queensland. Very heavy rainfall (in excess of 400mm) was recorded on the 2nd in the Kin Kin and Cooran areas, and widespread rainfall well over 200mm was recorded at other stations. This rainfall caused rapid local stream rises and flash flooding in the Sunshine Coast region between Cooran and Eumundi and to parts of the Maroochy and Mooloolah Rivers. Flood warnings were issued on the 2nd for the Noosa River and Sunshine Coast Streams with moderate to major flooding recorded in the Maroochy River, and moderate to major flooding in the Mary River and tributaries.

About two weeks later on the 13th an upper level trough combined with a low pressure system that developed on the Sunshine Coast, produced further areas of heavy rain (40mm an hour) and isolated thunderstorms. Rapid local stream rises and flash flooding resulted in the Mary River tributaries, with

flooding experienced in Six Mile Creek and Tinana Creek. The most intense rainfall burst was recorded over Goomboorian on Tinana Creek (171mm in 3 hours). Flood warnings for moderate to major flooding were issued for the Sunshine Coast Streams, and for moderate flooding in the Mary River and tributaries including Six Mile Creek & Tinana Creek.

A flood warning was issued on the 16th for the Bulloo River for major flooding at Quilpie township.

### New South Wales

From the 31st of March a low pressure trough off the northern NSW coast and a moist easterly airstream caused heavy rain and extensive flooding on the Mid North Coast. Major flooding occurred in the Bellinger and Nambucca Rivers with moderate flooding in the Hastings River. The Nambucca River at Bowraville reached 10.25 metres. Nearly 3,000 people were stranded in Bellingen, Darkwood and Kalang Valley. Flooding continued until the 3rd as rain persisted with some residents stranded for up to 3 days. Hundreds of people had to be rescued from their homes and cars as rivers burst their banks. All major roads in and around Coffs Harbour were closed, cutting access to several towns. The highest rainfall on the Mid North Coast for the 24 hour period to 9 am on the 1st was 510mm at Urunga, a New South Wales state record for April. This includes 4 hourly rainfall intensities which represents a return period of greater than 100 years. Coffs Harbour, Bellingen, Nambucca Heads and Clarence Valley were all declared natural disaster zones. The total damage bill was estimated at nearly \$30 million.

On the 19th an intense low pressure system near Lord Howe Island with very heavy rainfall and gale force winds caused widespread damage to the island. With a central pressure of 987 hPa, the low passed about 50 kilometres to the east of the island causing wind gusts of 146 km/h, the strongest ever recorded in April. The 6-hour rainfall of 209.4mm represents a return period of 20 to 50 years. The airport road was closed due to flooding and much of the island lost power, knocking out communications. Many buildings sustained damage due mainly to falling tree branches and flying debris. The airport was closed to nearly all aircraft for two days after flood waters damaged the runway pavement. The island was declared a natural disaster zone.

### South Australia

On the 25th the passage of a front resulted in a significant storm surge, which produced coastal flooding on the northern coasts of St. Vincent and Spencer Gulfs. Parts of the Adelaide coast suffered beach and coastal erosion where high sea levels combined with heavy surf. The sea level at Outer Harbour peaked at 3.7 metres.

## SNOW

### New South Wales

From the 25th to 28th heavy autumn snowfalls in the Snowy Mountains brought accumulations of up to 50cm in depth at Spencers Creek (elevation 1,768 metres). Snow fell as low as 1,100 metres in the Snowy Mountains and nearby high ground around Eucumbene Dam. It was a particularly cold outbreak with a maximum temperature at Thredbo AWS of -2.7°C on the 26th, a New South Wales record for April, while Charlotte Pass set an Australian record for April with a minimum of -13.0°C on the 29th.

## 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).*

### Tasmania

A southerly change on the 26th brought very cold conditions which persisted for the rest of the month. The lowest April minimum and maximum temperature records at a number of sites were broken, sometimes on more than one day. Overnight temperatures fell well below zero at many sites, causing severe frosts. Liawenee fell to -7.5°C early on the 29th, the second-coldest April temperature ever recorded in Tasmania.

Two of the coldest five April days in Tasmania were recorded on Mount Wellington on the 27th and 28th, with the temperature not rising above -1.4°C during this period. The number of consecutive cold days was the most unusual feature of the event Hobart had three consecutive April days below 12°C - this hasn't happened since 1952 - and Launceston had an unprecedented five April days in a row below 15°C.

#### Highest Mean Maximum Temperature for April

Station	Actual °C	Previous Highest °C	Year	Years of Record
<b>Queensland</b>				
South Johnstone Exp Stn	29.9	29.8	1996	55
Kairi Res Stn	26.7	26.7	1996	48
Mornington Island	33.1	33.1	2005	35
<b>Western Australia</b>				
Kuri Bay	36.0	35.8	1981	39
Troughton Island	34.3	33.8	2004	30
<b>Northern Territory</b>				
Jabiru Airport AWS	36.3	36.0	2003	30
Tindal RAAF AWS	35.4	35.4	2002	21

#### Highest Mean Minimum Temperature for April

Station	Actual °C	Previous Highest °C	Year	Years of Record
<b>Queensland</b>				
Bundaberg Aero	18.7	18.5	1998	30
<b>Western Australia</b>				
Troughton Island	28.4	28.2	2005	30

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### Highest Daily Maximum Temperature for April

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
<b>Queensland</b>					
Gladstone Radar	34.4	02	34.1	1967	52
Mornington Island	37.3	04	35.6	2000	35
<b>New South Wales</b>					
Tumbarumba PO	29.4	02	29.4	2004	44
<b>South Australia</b>					
Streaky Bay	37.5	01	37.3	1986	52
<b>Western Australia</b>					
Giles Met Office	38.3	01	38.2	2005	53
<b>Northern Territory</b>					
Centre Island AWS	36.3	05	36.0	1981	34
McArthur River Mine	39.1	04	39.0	2002	26

### Lowest Daily Maximum Temperature for April

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
<b>New South Wales</b>					
Hay (Miller St)	12.7	27	12.7	2008	53
Thredbo Village	1.6	26	2.0	1982	37
Camden Airport AWS	16.6	29	16.7	1985	33
<b>Victoria</b>					
Wilson's Promontory LH	11.3	28	11.5	1983	53
<b>Tasmania</b>					
Orford (Aubin Court)	10.0	28	10.3	1969	41
Scottsdale (West Minstone Rd)	9.8	26	11.0	1983	37
<b>South Australia</b>					
Hawker	14.7	26	14.8	2008	36

### Highest Daily Minimum Temperature for April

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
<b>New South Wales</b>					
Wellington (Agrowplow)	20.5	02	20.0	2004	43
Orange Airport Comp	15.1	02	15.0	1983	39
Woolbrook	16.5	03	16.5	2000	37
Danglemah Rd					
<b>Victoria</b>					
Gabo Island LH	19.4	03	19.2	1981	52
Melbourne Airport	21.7	03	21.1	2005	39
<b>Antarctica</b>					
Macquarie Island	8.0	25	7.8	2006	62
<b>Western Australia</b>					
Broome Airport	29.3	01	29.3	1961	70
Port Hedland Airport	28.8	03	28.4	1986	61
Badgingarra Res Stn	22.8	13	22.0	1999	41
Troughton Island	29.8	17	29.7	1998	30

### Lowest Daily Minimum Temperature for April

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
<b>New South Wales</b>					
Balranald RSL	0.8	30	1.5	1999	43
<b>Victoria</b>					
Laverton RAAF	0.3	30	0.4	1999	66
Echuca Aero	0.4	30	0.6	1981	53
Kerang	0.8	30	2.1	2006	43
Scoresby Research	0.3	30	1.1	1966	43
Essendon Airport	0.6	30	2.6	1963	41
Melbourne Airport	1.2	30	1.3	1999	39
<b>Tasmania</b>					
Flinders Island Airport	-0.3	30	0.1	1967	47

## 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).

### Queensland

Intense rainfall on the 2nd and 3rd at Black Pinch Road Alert (in the Kin Kin area) a rainfall total of 464mm was recorded in the 24 hours to 9 am on the 3rd. 143mm was recorded in 60 minutes and 260mm in 2 hours ending at 1:55 pm on the 2nd, this amount having a reoccurrence interval exceeding 100 years. Several other locations received daily falls over 200mm and rainfall totals were generally in the 100 to 200mm range in the Sunshine Coast area with many sites recording periods exceeding 20 year return intervals. Severe flash flooding led to evacuations and a lady was killed when her car was swept off a bridge.

On the 4th a storm spotter reported 114mm in 2 hours ending at 5:30 pm at Jimboomba with flash flooding, this having a return interval between 50 and 100 years. A further 85mm in the next 30 minutes at Jimboomba, resulting in a total of around 200mm falling in the 2.5 hours to 6 pm, led to severe flash flooding. A landslip occurred in Mudgeeraba due to the heavy rain. Both sites are south of Brisbane.

On the 5th a storm spotter reported 93mm in the 90 minutes to 7:30 pm at Withcott (at the base of the Toowoomba range), this exceeding a 100 years return interval.

On the 13th and 14th further moderate to heavy falls affected the Sunshine Coast area disrupting the clean-up operations. Goomborian on Tinana Creek in the Mary River basin recorded one of the highest daily rainfall totals with 266mm in the 24 hours to 9 am on the 14th. The most intense rainfall burst was 171mm in 3 hours.

### Highest Monthly Rainfall on Record for April

Station	Actual mm	Previous Highest mm	Year	Years of Record
<b>Queensland</b>				
Theebine	346.0	310.3	1948	116
Teddington	306.0	305.3	1989	59
Waterworks				
Highvale	299.4	206.2	1972	42
<b>New South Wales</b>				
Urunga (Sunset Place)	734.4	709.7	1962	94
Yarras (Mt Seaview)	567.8	522.8	1988	60

### Lowest Monthly Rainfall on Record for April

Station	Actual mm	Previous Lowest mm	Year	Years of Record
<b>New South Wales</b>				
Broken Hill (Waterbag)	0.0	0.0	2005	63
Broken Hill (Koonawarra)	0.0	0.0	2004	61
Broken Hill (Koralta)	0.0	0.0	2004	30

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### Western Australia

Greenbushes	0.9	1.6	1982	117
Donnybrook	1.0	1.4	1982	109
Nannup	0.8	2.0	1982	108
Lake Grace Comp	0.0	0.2	1994	97
Forest Grove	6.8	7.4	1982	84
Salmon Gums Res				
Stn	0.4	0.5	1950	77
Woodanilling	1.6	1.8	2001	77
Walpole	9.8	10.0	1999	56
Marrivood	0.0	0.2	1982	53
Rosa Brook	2.2	13.0	2001	39
Hillview Farm	0.0	0.6	1977	38
Walpole Forestry	9.5	12.7	1999	38
Valern	0.2	1.6	2001	37
Crendon	0.4	1.2	2001	36
The Wold	0.6	0.9	1982	36
Walters Farm	7.0	13.6	1977	36
Vermeulen	10.4	11.6	1999	35

### Highest Daily Rainfall on Record for any Month

Station	Actual mm	Date	Previous Highest mm	Year	Years of Record
<b>Queensland</b>					
Mungar Junction	296.2	14	272.5	Dec, 1956	115
Theebine	311.0	14	254.0	Apr, 1948	103
Teddington Waterworks	279.2	14	262.4	Jun, 1967	51

### Highest Daily Rainfall on Record for April

Station	Actual mm	Date	Previous Highest mm	Year	Years of Record
<b>Queensland</b>					
Mungar Junction	296.2	14	162.6	1928	115
Lawn Hill	130.6	12	69.1	1952	107
Bustard Head LH	208.4	14	205.0	1972	106
Theebine	311.0	14	254.0	1948	103
Bauple	253.6	14	197.1	1928	101
Goomboorian	266.0	14	230.1	1928	95
Webster Rd					
Rocky Point Sugar Mill	211.0	03	194.4	1974	53
Teddington Waterworks	279.2	14	125.0	1972	51
Carfax	70.2	14	67.0	1989	48
Toolara Forestry	234.4	14	108.0	1972	40
El Arish PO	227.6	09	192.0	2000	37
<b>New South Wales</b>					
Urunga (Sunset Place)	510.0	01	374.9	1963	95
Coramba (Glenfiddich)	283.4	01	238.0	1989	73
Glendon Brook (Lilyvale)	76.4	01	64.0	2008	49
Lower Creek (Cedar Park)	104.2	01	101.0	1981	46
Mount Mitchell (Tirranna)	75.0	13	64.4	1988	45
Paterson (Tocal AWS)	99.0	01	97.0	1988	42
Armidale (Tiverton)	59.0	13	44.8	1983	40
Lostock Dam	94.0	02	57.8	2008	40
Thumb Creek (Figtree)	224.0	01	160.0	1962	40
Girralong	230.2	01	200.6	1974	34
Gloucester (Hiawatha)	69.2	01	66.4	1990	32
<b>Victoria</b>					
Longwood	38.4	24	37.8	1977	45
<b>Western Australia</b>					
Wanarra	51.4	22	36.6	1975	34
<b>Northern Territory</b>					
Gallipoli	41.2	12	29.7	1970	31

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