



## SIGNIFICANT WEATHER – March 2007

### SUMMARY

Tropical cyclone *Odette* formed over the Coral Sea on the Queensland coast. Tropical cyclone *George* in the Northern Territory caused significant flooding in parts of the Top End causing record breaking rainfall from late February. Western Australia experienced 3 tropical cyclones, *George*, *Jakob* and *Kara* during the month. *George* was the most severe cyclone, with three people killed and many others injured.

Severe thunderstorms were reported in Queensland on many days causing extensive damage to homes. Significant damage occurred from a tornado in the Northern Territory.

### TROPICAL CYCLONES

#### Queensland

Tropical cyclone *Odette* formed over the Coral Sea on the 4th and weakened to a low on the 5th. Tropical cyclone *Odette* remained well offshore as it moved slowly south and southeast over the next few days then combined with high pressure systems over the Tasman Sea causing increased easterly swells to the south coast.

#### Northern Territory/Western Australia

##### *Tropical Cyclone George:*

A number of severe thunderstorms, including a tornado, were associated with the tropical low as it moved over the western Top End. Gale force winds were experienced along the north coast of the Top End on the 1st and 2nd, with wind speeds of 63 km/h and greater at

Cape Wessel, McCluer Island, and Elcho Island. McCluer Island also recorded a severe wind gust of 91 km/h on the 2nd.

At the beginning of the month a monsoon trough extended across the northern Top End, with a tropical low located over Arnhem Land near Milingimbi. Over the next few days, the low began to intensify as it moved westward, developing into tropical cyclone *George* over the Joseph Bonaparte Gulf on the 4th. Tropical cyclone *George* continued to move west away from the Northern Territory.

Severe tropical cyclone *George* was very intense and affected a large area of the coastline. Gales were reported on or near the coast as the cyclone moved from the Northern Territory to Western Australia on the 4th. Gales occurred as far west as Karratha on the 8th. The cyclone intensified to a category 4 system as it approached the coast, but post-analysis may indicate intensity of category 5 at landfall. The wind impact was greatest between Wallal and Whim Creek with a mean wind of 195km/h (equivalent to gusts of 275 km/h) being recorded offshore at Bedout Island. At Port Hedland Airport, gusts of 154km/h were recorded around 10:30pm prior to equipment failure. It is likely that stronger winds were experienced around midnight, on the edge of the very destructive core.

Tropical cyclone *George* produced large amounts of rainfall in the Northern Kimberley and the Northern Territory earlier in its lifecycle. Upon approaching the Pilbara coast, substantial falls occurred, however due to the lack of previous rainfall. No significant flooding was recorded.

Port Hedland escaped direct impact from storm surge as the cyclone passed to the east of the town.

Reported impacts include three fatalities and numerous injuries at mining camps south of Port Hedland. Considerable damage was reported from Port Hedland and nearby pastoral stations with at least 10 houses losing roofs, despite solid construction practices in the Region. The Bureau's Port Hedland radar dome was damaged.

Tropical cyclone *George* was the most destructive cyclone to affect Port Hedland since tropical cyclone *Joan* in 1975.

## Western Australia

### *Tropical Cyclone Jacob:*

Tropical cyclone *Jacob* was named at 9am WDT on the 7th, 370 kilometres southeast of Christmas Island. A tropical cyclone warning was issued for the island as the cyclone approached and developed into a category 2 system. However, *Jacob* changed course, did a loop then recurved to the southeast on the 8th away from Christmas Island. Apart from a heavy swell affecting Port operations at Christmas Island no damage was reported.

*Jacob* continued on a general southeastward track eventually crossing the Pilbara coast 40 kilometres east northeast of Port Hedland as a category one cyclone at noon WDT on the 12th.

There was heightened awareness and concern prior to the crossing of *Jacob* as severe tropical cyclone *George* had crossed the coast less than 4 days earlier causing significant damage to Port Hedland and neighbouring pastoral stations, aboriginal stations and mining camps.

No wind damage was recorded following *Jacob*. However heavy rain augmented rainfall from tropical cyclone *George* exacerbating flooding on rivers east of Port Hedland particularly the De Grey.

### *Tropical cyclone Kara:*

A tropical low over the Kimberley moved westwards into the Indian Ocean on the 23rd and by the 24th was showing potential to develop into a tropical cyclone. The low

continued to track west, and at 3pm WDT on the 25th it was named tropical cyclone *Kara*.

On the night of the 25th *Kara* began to track in a southwesterly direction. Following a period of rapid intensification *Kara* was upgraded to a severe category 3 cyclone at 8am WST on the 26th. The system weakened very rapidly during the afternoon and evening of the 27th and *Kara* was downgraded to a tropical low at 9am WST on the 28th. Some high rainfall totals associated with tropical cyclone *Kara* were recorded, particularly in the eastern Pilbara. Preliminary totals in the 48 hours to 9am WST on the 28th included 361mm at Pardoo Station, 249mm at Mandora, 244mm at Wallal Downs and 109mm at Telfer Airport.

## THUNDERSTORMS/TORNADES

### Queensland

On the 8th thunderstorms occurred in the southeast and northwest of the state. Reports of strong winds and very heavy rain were reported from the eastern Darling Downs. Wind damage occurred at Coominya. Further north 23 mm was recorded in 10 minutes at Perseverance (near Crows Nest). Damage was also reported from Bethania, in the southern suburbs of Brisbane.

In the northwest, traffic disruptions were experienced on the Barkly Highway near Mt Isa when a shed was blown across the road. A 91 km/h wind gust was recorded at Mt Isa. Soft hail to the size of a 5 cent piece was reported which marked the first ever recorded occurrence of hail in Mt Isa in March.

On the 9th further activity was recorded in the south east of the state ahead of an advancing trough line on the Sunshine Coast region. A 107 km/h wind gust was recorded at Double Island Point.

On the 12th a severe thunderstorm was reported in Mt Isa. Soft marble sized hail fell blocking gutters. The thunderstorm was also accompanied by damaging winds, removing veranda roofs, damaging fencing, bringing down trees and power lines and upending water tanks. The worst affected areas were around Breakaway Creek, on the eastern side of Mt Isa.

On the 13th the most extensive outbreak of severe thunderstorms occurred in Queensland for some time. Cold air in the middle levels from two separate systems, one in the north of the state and one in the south of the state, combined with a strong surface trough resulting in reports of severe thunderstorms from the Northwest, Northern Goldfields and Upper Flinders, North Tropical Coast and Darling Downs districts.

In the Northwest, a severe thunderstorm with gusts of at least 100 km/h and 25 mm of rain in 15 minutes was recorded at the Mount Isa Mines site. Large trees were brought down, carports blown away and shade sail support poles snapped and twisted. At least two homes were damaged by falling trees as well as several vehicles and a number of buildings on the Mount Isa mines site. Minor flash flooding occurred as a result of the storm. Small hail and winds were also reported from Cloncurry.

On the North Tropical Coast, thunderstorms with very heavy rain were reported mid afternoon where 51 mm was recorded in 30 minutes at Bolinda Estate (about 25 kilometres northwest of Tully) and 73 mm in 60 minutes at Bolton Road (about 15 kilometres northeast of Mareeba). The most severe thunderstorm of the afternoon occurred near Tara. Very strong winds, heavy rain and large hail were reported. Damage was extensive, with 12 homes and numerous sheds substantially damaged. A severe thunderstorm occurred at Julia Creek recording a 96 km/h wind gust.

### **New South Wales**

On the 1st at Gunnedah a thunderstorm with a wind gust to 115 km/h was reported. At Inverell a gustnado was reported near Inverell, damaging trees. At Campbelltown a thunderstorm with 2cm hail was reported. At Wallacia a thunderstorm with heavy rain and strong winds, brought down trees on houses causing extensive damage. About 66mm of rain was recorded in about 1 hour.

On the 2nd at Grafton a thunderstorm with 2cm hail was reported. At Waterview Heights (Northern Rivers) a thunderstorm with 4cm hail occurred.

On the 5th at Girralong (Mid North Coast) a thunderstorm brought, 42mm of rain in

30 minutes. Hydro station recorded 60 mm in 30 minutes. At Norah Head (Hunter) a thunderstorm with a wind gust to 146 km/h was recorded. At Camden a severe thunderstorm with heavy rain and strong winds was recorded and 30 mm of rain was recorded in 17 minutes with 17.4mm in 7 mins, which has a recurrence interval of 20-50 years. Winds reached 109 km/h.

On the 20th at Asquith (Metropolitan) a thunderstorm and heavy rain caused local flash flooding. At Kariiong (Hunter) a thunderstorm and heavy rain caused local flash flooding. Pea size hail was also reported.

### **South Australia**

On the 23rd, a thunderstorm resulted in a wind squall to 95km/h at Oodnadatta.

### **Western Australia**

On the 7th Varanus Island recorded a wind gust of 96 km/h in a thunderstorm.

On the 16th Paraburdoo Airport recorded a wind gust of 102 km/h in a thunderstorm.

### **Northern Territory**

Significant damage from a tornado occurred to eucalyptus forest and caravans at Mary River Ranger Station in Kakadu National Park on the 1st. A path of damage 300 metres wide and 2-3 kilometres in length was reported. At Mary River Ranger Station trees were felled and two caravans were totally destroyed. A washing machine was blown 60 metres from an outbuilding into a tree. Wind speeds were estimated between 230-270 km/h.

A number of squall lines generated by the tropical low over Arnhem Land affected the northwestern Top End on the 2nd. At around 2 am, a small-scale squall line moved from south to north through Darwin. Another squall line later in the morning, around 4:30 am produced an 80 km/h wind gust at Charles Point. Damage to property and vegetation associated with these squall lines was reported near Humpty Doo in the Darwin Rural Area, and near Charles Point on the Cox Peninsula.

A slow moving thunderstorm generated flash flooding in Katherine on the evening of the

7th. Several surrounding stations reported totals exceeding 60 mm, with Katherine Rural College recording 84 mm.

A trough through the Alice Springs District generated slow moving thunderstorms overnight on the 18th. Wulunguru in the western Alice Springs District recorded 91 mm in the 24 hours to 9 am on the 19th, exceeding the average for March (75.1 mm). Over the three days between the 19th and 21st 166.6 mm fell, which is approximately half the average annual rainfall.

On the 21st, Katherine was again affected by a slow-moving thunderstorm with flash flooding covering the main road for some time. Katherine Aviation Museum received 130 mm in 24 hours, and Katherine Bridge had 114 mm in 24 hours, 58 mm of which fell in an hour.

Thunderstorms affecting Tennant Creek during the afternoon of the 24th produced over 80 mm of rain in a few hours, 56.8 mm of this fell in one hour, a rainfall rate which has an average recurrence interval between 20 and 50 years.

## WIND

### New South Wales

Winds greater than 90 km/h were reported on:

- 5th Norah Head 146 km/h,  
Camden 109 km/h
- 8th Moss Vale 102 km/h
- 15th Thredbo 91 km/h
- 16th Thredbo 105 km/h
- 20th Thredbo 104 km/h
- 23rd Thredbo 100 km/h
- 24th Thredbo 122 km/h
- 25th Norah Head 94 km/h,  
Cabramurra 93 km/h
- 26th Byron Bay 91 km/h
- 29th Thredbo 109 km/h

### Victoria

Winds greater than 90 km/h were reported on:

- 08th Wilsons Promontory 91km/h
- 11th Wilsons Promontory 96km/h
- 12th Wilsons Promontory 93km/h

- 15th Mount Hotham 93km/h
- 16th Mount Hotham 94km/h,  
Mount Buller 98km/h
- 20th Mount Buller 91km/h,  
Mount Hotham 96km/h
- 23rd Colac 105km/h, Dunns Hill 93km/h,  
Mangalore 94km/h, Kyabram 91km/h,  
Grampians 94km/h, Falls Creek 91km/h  
Mount Buller 100km/h,  
Mount Hotham 96km/h
- 24th Mount Hotham 104km/h, Colac 94km/h,  
Wilsons Promontory 111km/h,  
Mount Buller 100km/h
- 25th Mount Hotham 100km/h
- 30th Wilsons Promontory 117km/h
- 31st Wilsons Promontory 104km/h

### Tasmania

Winds greater than 100km/h were reported on:

- 8th Mount Wellington 107 km/h
- 11th Mount Wellington 133 km/h,  
Tasman Island 102 km/h,
- 12th Macquarie Island 111 km/h,  
Tasman Island 111 km/h
- 13th Macquarie Island 104 km/h
- 22nd Macquarie Island 102 km/h
- 23rd Maatsuyker Island 117 km/h,  
Scotts Peak Dam 113 km/h,  
Mount Wellington 111 km/h,  
Mount Read 109 km/h,
- 24th Macquarie Island 111 km/h,
- 29th Maatsuyker Island 104 km/h,
- 30th Mount Wellington 115 km/h,  
Cape Grim 113 km/h,  
Hogan Island 111 km/h,  
Mount Read 104 km/h,

### Western Australia

On the 1st the passage of a cold front and deep low over the southwest produced a wind gust of 102 km/h at Cape Leeuwin and 91 km/h at Busselton Jetty.

On the 4th/5th a squall line developed over the Pilbara during the evening and moved along the Pilbara coast and offshore in the early morning. It produced a wind gust of 91 km/h at Port Hedland Airport on the 4th, 102 km/h at Karratha Airport on the 5th, 102 km/h at Mardie AWS, 126 km/h at Varanus Island and 94 km/h at Barrow Island. In an unrelated event, a wind

gust of 91 km/h was recorded at Paraburdoo Airport on the 4th.

## FLOODING

### Northern Territory

The most significant impacts on the Northern Territory occurred early in the month as the tropical low moved across the Top End. Significant flooding continued in parts of the Top End with a continuation of record-breaking rainfall from late February. Widespread heavy rainfall occurred over the western Top End as the low moved towards the Joseph Bonaparte Gulf. Several 24-hour totals exceeding 200 mm were recorded, with some locations receiving more than 100 mm on consecutive days.

Early in the month, the precursor low to tropical cyclone *George* caused widespread flooding on the coastal flood plains. The Arnhem and Kakadu Highways were cut for some time, isolating Oenpelli, Jabiru and other nearby communities. The Arnhem Highway was badly damaged. The Stuart Highway was temporarily cut at the Adelaide River, Snake Creek and other nearby streams.

### Upper Adelaide River

The Adelaide River at the township reached a major flood peak of 13 metres on the 3rd. This is the highest level ever recorded at this site in 55 years surpassing the previous record height of 12.4 metres recorded in 1998 and 1977.

## TEMPERATURE

### Western Australia

On the 7th/8th maximum temperatures above 40 degrees Celsius on consecutive days caused severe burning and browning of several fruit crops in the southwest of Western Australia, damaging up to 40 per cent of crops.

### Highest Mean Maximum Temperature for March

Station	Actual °C	Previous Highest °C	Year	Years of Record
<b>Queensland</b>				
Monto Township	32.7	31.3	1987	34
Gladstone Radar	32.9	32.4	2001	50
Cape Moreton LH	27.7	27.3	2003	93
Brian Pastures	33.7	33.1	1998	37
<b>Tasmania</b>				
Eddystone Point	22.4	22.0	2006	50
<b>South Australia</b>				
Neptune Island	22.4	22.3	1990	45

### Highest Mean Minimum Temperature for March

Station	Actual °C	Previous Highest °C	Year	Years of Record
<b>Queensland</b>				
Mackay MO	23.4	23.2	1995	47
Baralaba PO	20.7	20.7	1982	38
Surat	20.2	20.1	1969	62
<b>New South Wales</b>				
Nyngan	19.2	18.8	2006	87
Cobar	19.4	19.3	1983	45
Peak Hill	18.9	18.8	1983	42

### Highest Daily Maximum Temperature for any Month

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
<b>Queensland</b>					
Gladstone Radar	42.0	12	40.1	Nov, 1990	50

### Highest Daily Maximum Temperature for March

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
<b>Queensland</b>					
St Lawrence PO	39.3	12	38.4	1990	51
Clermont Sirius St	41.0	12	40.7	1995	46
Springsure Dame St	40.2	12	39.6	1998	43
Taroom PO	42.0	12	41.8	1973	51
Monto Township	40.0	12	37.8	1962	34
Gladstone Radar	42.0	12	37.0	1993	50
Gympie	38.1	11	37.6	1980	42
Archerfield Airport	38.7	11	36.2	1991	32
Brian Pastures	42.5	12	39.3	1985	39
Oakey Aero	38.0	12	37.7	1998	34
Injune PO	40.1	12	39.2	1998	40
Mitchell PO	39.9	12	39.6	1985	38
Cunnamulla PO	43.3	04	42.0	2004	48
<b>New South Wales</b>					
Menindee	43.4	03	43.0	2005	100
Ivanhoe	44.7	03	43.3	1940	68
Cobar	41.5	04	41.3	2002	45
<b>South Australia</b>					
Andamooka	43.9	02	43.4	1986	38

**Western Australia**

Cape Leeuwin	39.9	07	38.2	1956	101
Cape Naturaliste	37.4	06	36.7	2001	51
Carnarvon Airport	47.8	06	45.3	1977	61
Eneabba	44.9	05	44.0	2004	33
Gascoyne Jn	46.5	06	46.1	1970	36
Geraldton Airport	45.2	06	44.3	1961	65
Jarrahwood	41.2	07	40.5	2005	30
Jurien Bay	44.0	07	42.1	1985	38
Kalbarri	47.2	06	43.1	1980	33
Lancelin	43.6	07	42.7	2004	33
Manjimup	41.2	07	41.0	2005	48
Mullewa	44.0	05	43.5	1973	37

**Northern Territory**

Curtin Springs	43.3	02	43.1	1993	42
Kulgera	43.8	02	42.3	1998	26
Timber Creek	42.5	02	41.2	1988	26

**Lowest Daily Maximum Temperature for March**

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
<b>South Australia</b>					
Oodnadatta Airport	16.8	28	17.3	1982	59
<b>Western Australia</b>					
Eucla	18.1	12	18.3	1960	48
Mandora	24.5	28	25.6	1967	38

**Highest Daily Minimum Temperature for March**

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
<b>Queensland</b>					
St Lawrence PO	27.5	13	27.1	1995	50
Baralaba PO	27.4	13	27.0	1995	38
Rockhampton Aero	27.1	13	26.9	1995	68
Monto Township	24.6	13	23.6	1988	34
Quilpie Airport	31.1	05	29.4	1968	51
<b>New South Wales</b>					
Tibooburra	29.9	04	29.5	1973	97
Cobar	28.9	04	27.5	1965	45
Montague Island	22.8	23	22.1	1998	39
Narooma	21.8	24	21.7	1995	42
Nelson Bay	22.5	22	22.3	2006	93
<b>Western Australia</b>					
Lancelin	28.3	06	26.4	1998	40
Mount Barker	24.8	08	23.9	2001	37
Mullewa	28.5	06	28.0	1996	37
Pearce RAAF	28.0	08	27.2	1944	44
<b>Northern Territory</b>					
Victoria River Downs	29.9	03	29.1	1988	38
Kulgera	28.8	03	28.5	1983	26

**Lowest Daily Minimum Temperature for March**

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
<b>Western Australia</b>					
Bencubbin	5.6	28	6.0	1968	48
Beverley	2.6	28	3.3	2001	37

Carnarvon Airport	13.2	29	13.4	1968	61
Corrigin	3.5	28	4.2	1991	51
Jarrahwood	1.0	29	1.3	1977	30
Jurien Bay	5.6	28	6.8	1972	38
Karnet	4.1	28	4.2	2001	36
Katanning Comp	1.5	29	3.6	1972	51
Norseman	3.3	29	3.8	1968	51
Perth Airport	3.1	27	4.0	2004	63
Pingelly	3.2	28	4.0	2001	36
Yeelirrie	6.0	29	6.1	2001	34

**RAINFALL****Highest Monthly Rainfall on Record for March**

Station	Actual mm	Previous Highest mm	Year	Years of Record
<b>New South Wales</b>				
Bundarra (Bimbadeen)	162.4	162.3	1963	48
<b>South Australia</b>				
Kyancutta	72.6	69.0	1935	78
Wudinna	80.0	68.8	1935	81
<b>Western Australia</b>				
Country Downs	518.4	508.6	2000	35
Cygnets Bay	688.5	445.4	1977	43
Marble Bar	417.4	388.6	1941	113
Mount Amhurst	285.8	240.4	1941	51
Pardoo Stn	630.2	569.8	1934	98
Port Hedland Airport	427.2	250.5	1956	65
Telfer Aero	466.0	414.2	2004	34
Warmun	445.5	427.7	1960	99
<b>Northern Territory</b>				
Oenpelli	1106.6	601.8	1981	92
Darwin River Dam	657.3	614.5	1977	35
Adelaide River PO	653.0	580.0	1976	32
Humpty Doo	686.0	622.2	1995	25
Collard Road				
Mango Farm	710.6	533.4	1983	23

**Lowest Monthly Rainfall on Record for March**

Station	Actual mm	Previous Lowest mm	Year	Years of Record
<b>Victoria</b>				
Crooked River	0.0	2.8	1986	35
<b>Tasmania</b>				
Grey (Craigie-Lea)	0.0	0.6	1996	41
Oatlands PO	2.8	3.4	1998	119
<b>Northern Territory</b>				
Mallapunyah	7.0	12.0	1981, 1992	44

**Highest Daily Rainfall on Record for March**

<i>Station</i>	<i>Actual Date</i>	<i>Previous</i>	<i>Year</i>	<i>Years of</i>
	<i>mm</i>	<i>Highest</i>		<i>Record</i>
		<i>mm</i>		
<b>Queensland</b>				
<i>Aurukun Shire Council</i>	205.4 23	167.0	1985	92
<i>Ballandean PO</i>	78.6 02	71.2	1975	40
<i>Waronga</i>	60.4 06	51.0	1989	36
<b>Western Australia</b>				
<i>Country Downs</i>	133.0 08	120.0	2004	35
<i>Pardoo Stn</i>	285.0 27	229.4	1941	94
<i>Warmun</i>	155.0 30	143.8	1922	80
<b>Northern Territory</b>				
<i>Oenpelli</i>	311.2 01	209.6	1919	93
<i>Tarlton Downs</i>	101.0 29	99.6	1972	47
<i>Black Point</i>	162.2 03	129.9	2000	39
<i>Howard Springs</i>	212.0 04	184.9	1969	33
<i>Adelaide River PO</i>	244.0 03	123.2	1969	31
<i>Tanumbirini</i>	98.2 17	93.0	1989	30
<i>Channel Island</i>	225.0 03	194.6	1941	28
<i>Katherine Aviation Museum</i>	129.8 22	128.5	1971	28
<i>Mango Farm</i>	295.0 03	143.6	1983	22

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