

HARDEN UP

QUEENSLAND

CASE STUDY: Brisbane Cyclone, 11th March 1890

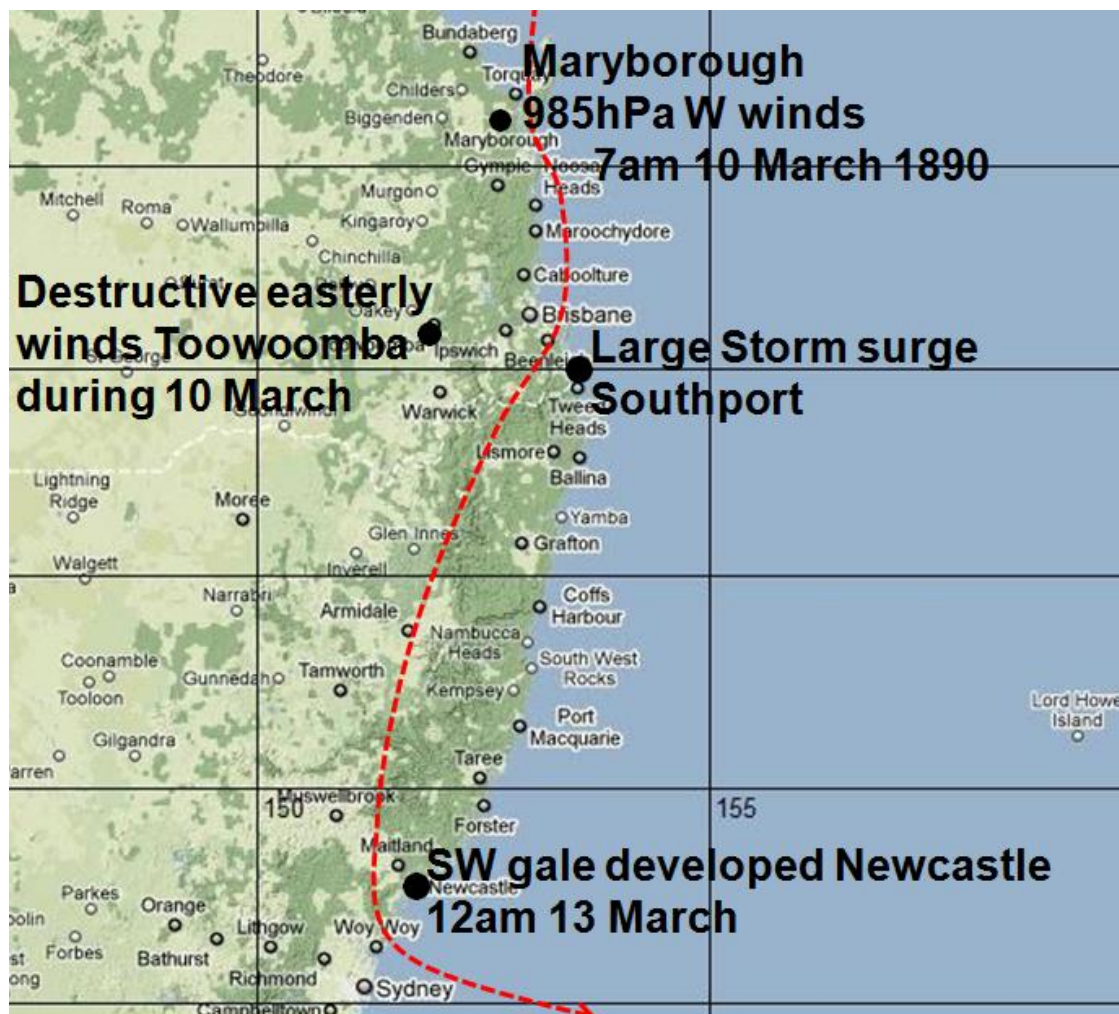
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A tropical cyclone crossed the South Queensland Coast near Southport (see Map below).
Barometer at Maryborough 996 hPa 9.30 pm 9th with freshening and veering SW to NW winds bar down to 985 hPa 7 am 10th. Cyclonic affects Gungalda 9th/10th.
For twelve hours on 10 March in Toowoomba the wind blew with destructive force, and half unroofed St. Luke's Church and the historical old poplar tree was uprooted.

Visher and Hodge:

Cyclone appeared off Central Qld Coast 7th gradually moved south and passed from North Coast NSW, then passed eastward over coast near Sydney 12th. Most severe on the 10th.



Marine Tragedy

The *Agnes* which survived the July 1889 winter cyclone foundered north of Brunswick heads with all hands lost. 3 bodies were washed ashore on the 12th and the other 5 bodies were never found.

Death toll

Eight on the *Agnes*;
One at Tarampa in floods;
Five in Brisbane in floods;
Eleven in NSW in floods;
Total 25 lives lost.

Sequence of events at Brisbane

- 10 March Easterly gale Brisbane which had also characterised the previous 3 days.
- 5pm 10 March the rain eased in Brisbane but the wind continued in heavy gusts until midnight. The river has been rising very rapidly since Sunday (9th), and at high water afternoon of 10 March was fully 4ft. above the level reached by the highest spring tides. There was tree damage from the wind and roofing iron loosened or displaced.
- Tuesday 11th 12.30pm the Brisbane River reached the Jan 1887 level and by 8pm was 7 feet above highest astronomical height.
- 12 March many parts of Brisbane flooded 3 dwellings swept down the river. 1 man drowned in Brisbane at Milton.
- 13 March- The Brisbane River was at its highest at 7am and then began subsiding four more lives were lost by drowning (a total of 5).

Storm Surge:

Storm surge Southport

At Southport there were heavy gales and large waves and the swimming baths at the Pier were swept away. Waves came over the swimming boxes 12 feet above HAT. There was flooding at Carrara

Storm surge Moreton Bay

0100UTC 10 March 0.52m Surge Moreton Bay tide gauge.

Storm Surge Sandgate

On Sunday night (9th) at Sandgate the wind raged at the force of a hurricane and continued into Monday. High tide at the Brisbane River bar was at 11 51 am, and just about this time the turbulent sea began to make inclusions on the lower esplanade. Visitors to Sandgate will probably long remember that the Brighton flat was almost on a dead level with the beach originally but the frontage has been to some extent reclaimed by a sea wall which has been packed up behind with large quantities of stone and gravel. This is one of the most prominent municipal works of the town. Thence the flat dips backwards towards a high ridge some two or three hundred yards distant. The flat frontages have recently become very popular residence sites and all of them are built on at the present time. Yesterday however, the retaining wall proved no barrier to the rising tide driven shorewards by the southeaster, the waves made clean breaches over the wall, and the tide rose until it covered the esplanade entirely, and flooded, not only the frontage but nearly the whole of the allotments of the flat. The water of the flat joined the Sandgate lagoon and formed an arm of the sea with waves rolling in and causing damage to fences and gardens and reaching the floors of some houses.

Rainfall

The rainfall in Southern Queensland and Northern New South Wales is shown below in Table 1 and while there are extreme rainfall totals usually associated with such major flood events there is heavy rain over a long period from the 24 hours to 9am 7 March to the 24 hours to 9am 12 March. In Queensland prior to Federation the rainfall was recorded as the rainfall in the 24 hours from 9am hence the 'to and from' notation in Table 1.

Table 1. 24 hour rainfall March 1890

Date 24h from (24h to)	6(7) March	7(8) March	8(9) March	9(10) March	10(11) March	11(12) March
Gympie	25.9	127.0	18.5	73.7	46.7	0.0
Inskip Point	8.9	91.9	2.8	43.4	27.7	14.2
Mooloolah	44.2	205.7	20.3	186.4	147.8	5.6
Caboolture	36.8	102.4	10.2	90.9	82.6	52.1
Cape Moreton	19.8	90.9	6.1	102.6	39.1	1.8
Margate	27.8	88.9	3.8	54.9	81.3	5.1
Sandgate	27.2	87.6	8.4	104.6	40.6	8.9
Lytton	25.1	117.9	9.9	94.7	37.6	6.6
Bulimba	9.9	21.6	91.4	21.6	71.1	40.9
Petrie	26.7	128.8	16.3	92.7	86.4	62.2
Brisbane	27.2	85.9	13.2	65.5	41.4	40.0
Brisbane RNA	41.1	91.7	20.1	85.6	49.0	22.9
Wooloowin	20.1	91.2	20.6	60.2	47.0	14.7
Sunnybank	37.8	95.8	24.6	172.7	75.7	10.7
Indooroopilly	28.7	50.8	13.5	127.0	18.8	14.2
Enoggera Res	0.0	30.5	103.6	17.0	51.8	71.7
Gold Creek	50.6	150.6	35.6	104.1	114.0	17.5
Corinda	34.3	79.2	22.9	87.6	61.0	34.0
Beenleigh	31.2	118.6	21.1	118.1	62.2	11.4
Nerang	42.9	121.9	47.0	62.0	69.1	15.7
Southport	19.8	89.7	17.5	46.5	49.5	5.6
Ipswich	22.9	37.8	21.6	59.2	98.8	31.5
Redbank	10.2	89.7	29.2	80.0	83.6	33.5
Franklin Vale	6.1	29.7	33.8	34.3	103.6	0.0
Laidley	3.0	16.3	45.7	47.2	49.8	96.5
Lowood	35.3	69.3	27.2	76.7	79.8	3.5
Esk	12.4	49.5	14.0	100.3	88.9	0.0
Toowoomba	8.9	32.3	22.9	33.3	126.5	1.8
Condong (near Murwillumbah)	59.4	201.2	148.8	64.5	90.9	7.6
Lismore	59.9	94.5	57.4	68.6	65.6	6.9
Murwillumbah	54.6	132.8	93.2	78.2	101.92	11.7
Grafton	88.1	33.0	40.6	33.0	43.9	0.0
Clunes (17km NE of Lismore)	24.4	170.2	95.3	79.0	108.7	11.7
Casino	113.0	87.4	106.7	54.1	32.3	38.1
Bilambil (near Tweed Heads)	141.5	111.5	60.2	120.4	3.8	12.2
Kotupna 64km east of Armidale	31.2	59.7	113.3	199.9	175.3	31.8
Bellbrook 43km NW of Kempsey	30.5	52.1	55.9	62.2	171.7	21.8
Wirrialpa 67km W of Coffs Harbour	71.1	38.1	56.4	218.4	20.3	21.8
Fernmount 29km SW of Coffs	85.9	51.8	147.3	31.8	173.2	66.0

Floods

- Major Flood in Brisbane The Brisbane River peaked at 5.33metres (datum new city gauge).
- Ipswich 19.0 metres on BoM height records – From *Brisbane Courier* 17.8metres above Spring tide - normal height of Spring tide 1.22metres above Brisbane Springs. Measured at Bremer Railway Bridge.
- Record Flood Lockyer valley 11 March the water rose to 15 feet (4.57metres) above high level bridge at Lowood which is 65feet (19.8metres) above the creek in normal conditions i.e. 83feet (25.3metres) above normal. Local state it was higher than any time during the previous 45years. A man was drowned crossing a gully at Tarampa.
- Toowoomba 10pm 10 March -The heaviest rains experienced there for many years fell on this day, when in the ten hours to 10pm 4.25inches was recorded. The Gowrie Creek overflowed that afternoon, and the water was 2ft (0.61metres) in height across Russell Street. Six or eight business premises were flooded out. Cameron and Hobbell's timber yard was submerged, and considerable damage was done.
- Gympie Tuesday March 11- Mary River was within 6ft (1.83metres) of the previous flood and was still rising. Flood at Gympie peaked at 47 feet (14.3 m) above normal.
- Pine River Mr. Petrie, the oldest resident of this locality, said that this flood was the highest ever known in the Pine River. Two chains of the south approach to the road bridge were gone and the bridge was much damaged. The flood caused great destruction, as the farmers' crops and fences were all under water. A few settlers had removed to higher ground. Roofs were blows off by the gale and a tree fell on one house.
- A Sydney Morning Herald Report from Tenterfield (Thursday 13 March) Great damage was done by floods at Warwick and the railway line between Warwick and Brisbane- bridges washed away.

New South Wales Floods

Many rivers in NSW had major floods and eleven people lost their lives in these floods. Six people were drowned near Narrabri, one near Casino, one in the Hawkesbury River, one near Taree, one near Quirindi, one at South Grafton.

The largest flood ever recorded struck Grafton, McLean, Ulmarra and many other centres. The Clarence River at Grafton peaked at 7.88metres on 12 March 1890 a record which still stands today.

Some reports of NSW Rivers in the Sydney Morning Herald:

- Casino Tuesday 11 March. At Tatham the country is like a sea. The water is nearly up to Rathborne's Hotel, on the high bank. In parts of Coraki the water is 2ft. (0.61metres) deep, and it is knee deep at Quoin's Hotel. At South Woodburn the water has broken into the houses on the river bank. It is only 2inches lower than the big flood of July last. So far there is no trace of the body of the man who was drowned at Tatham. It is not known who he was.

- Taree Tuesday 11 March. There is another flood. The rain has been continuously falling since Saturday night. The upper part of the river stated to be 30ft. (9.14metre) over summer level, and 20ft. (6.1metres) over the Wingham Wharf.
- Kempsey Tuesday 11 March Light rains fell all night. The river is rising; it is now 36ft at Bellbrook, covering all the low parts. The Kempsey boat is out, removing people to higher grounds. There is about 5ft. (1.5metres) of water between Central and West Kempsey. People have been moving all night. Business is suspended.
- Namoi River Narrabri Wednesday 12 March – 6 drownings in the district.
- Richmond Wednesday 12 March- the Hawkesbury River broke its banks and flooded farm land and Low lying farms flooded at Windsor.
- Wednesday 12 March Camden was flooded- Several dams washed away at Mittagong.
- Thursday 13 March Coffs Harbour, Bucca Creek, Woolgoolga, and other places on the coast the rainfall has been very heavy, flooding the whole of that portion of the country.
- Port Macquarie Thursday 13 March. Yesterday the highest flood known since 1875 took place, when the river rose 30ft (9.14metres), all the farms excepting those situated on the very highest land were submerged.
- Wellington Thursday 13 March. The present is the greatest flood since that of 1867. The Macquarie rose 46ft. (14.02metres), backing up the Bell, and making the paddocks fronting the town one sheet of water. Bell Bridge is completely submerged. The Macquarie rose within 30ft (9.14metres).
- Lismore Thursday 13 March - The river since 3pm Sunday rose 35feet (10.67metres) and since daylight 3ft (0.91metres) but over the past 3 hours 1.5 inches (3.8cm) per hour and still rising- The wind is easterly – The height of the water at present is within 2ft. 6in. (0.762metres) of the, flood of 1880. At Casino the greatest rise was 39ft. (11.9metres), and at Lismore 39ft 6in. (12.04metres).
- Hawkesbury River, Windsor, Thursday 13 March.
Both river and creek rose rather rapidly for several hours last night, but towards morning the water came to a standstill, and is now receding slowly. Great damage has everywhere been done, and most of the crops have been totally destroyed. Search is still being made for the body of William Dunstan, who was drowned yesterday but so far unsuccessfully. It is supposed that the body has been caught in a fence.
- Moree Thursday 13 March the Gydir River which was crossable by foot on Sunday rose 26 feet (7.9metres).
- Drowning at Quirindi, Thursday 13 March a man named H. London was trying to cross Kangaroo Creek last night, the creek being flooded. He was washed off his horse and drowned. His body has not yet been found.
- Major Hunter River Flood 14 March 1890 -The Hunter at West Maitland reached 34 feet six inches (10.52metres) causing much inundation and damage.