

### CASE STUDY: Bundaberg Cyclones, February 1893

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On 11 February 1893 a tropical cyclone crossed the coast near Bundaberg adding to the Brisbane Floods. A 150 ton Schooner was wrecked at Inskip Point and the body of a man washed ashore. The barometer dropped to 982 hPa on the *Fitzroy* in Hervey Bay on the night of the 10th/11th. Winds reached 90mph at Gladstone.

**Another tropical cyclone crossed the coast near Bundaberg on 17 February 1893.** Heavy rainfall in the Brisbane River catchment along with soaking rain from the previous two cyclones ensured that significant floods would result and the Brisbane River rose again and at 10.20 am 19 February came within 25 cm of the massive peak reached a fortnight earlier. Two tropical cyclone induced tornadoes were observed in Moreton Bay and they levelled a 20 metre wide path in forests, lifted boats out of water and blew down several houses. A house at Redcliffe was lifted and blown along some distance and buggies were lifted into trees. There were floods from Rockhampton to Grafton with six deaths.

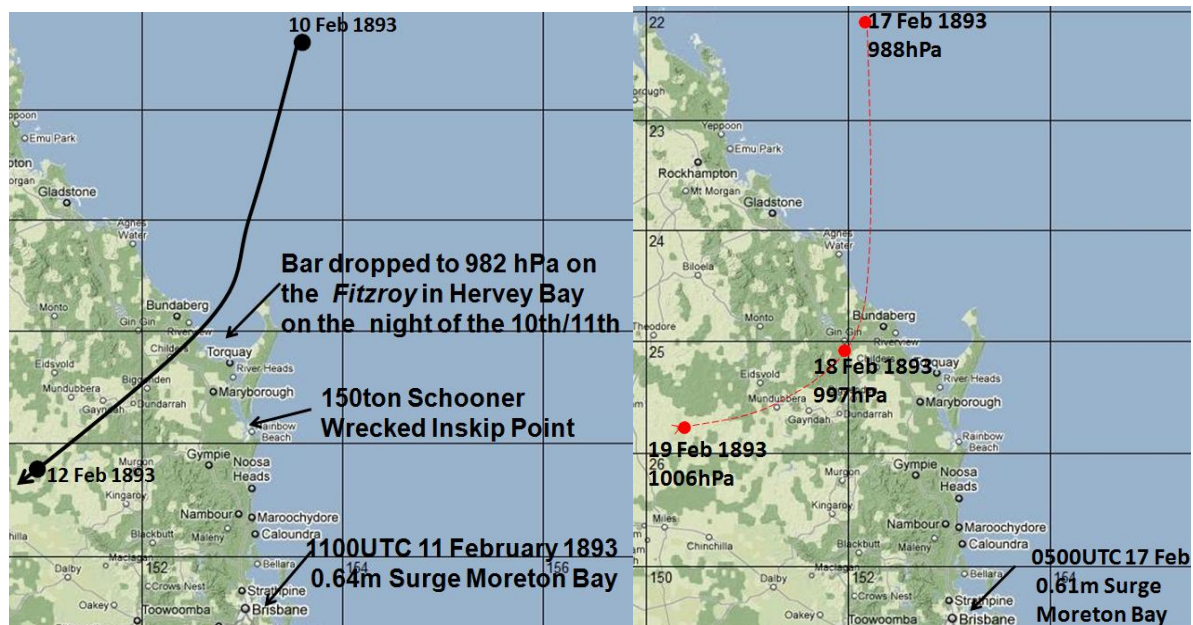


Figure 1 Tracks of two tropical cyclones in February 1893.

## Accounts of the Moreton Bay Tornadoes

### Redcliffe.

Some measure of the destructive power of tornadoes found with land-falling tropical cyclones can be gauged from the following account of damage caused by the 1893 cyclone, reproduced in Caboolture Historical Society (1973) and taken from the account published in the Telegraph of 25th February 1893: A recent visitor to Woody Point (Redcliffe) supplies the following account of the total destruction of Mrs. Bell's well known residence 'Klanger'. This place was caught in a tornado on February 17th (1893) at 7am. The first intimation the occupants had of the strength of the wind was the front door bursting open. Mrs. Bell, who was in bed at the time, went to shut the door, when she was lifted bodily up and her head knocked against the ceiling of the hall. Mrs. Bell was found amongst the debris, apparently without a broken bone but severely bruised. Her daughter, Mrs. Hobbs, and the latter's two children, who were also in the house, had a miraculous escape from death, as the building fell in on them. In fact one child was under a wardrobe that took four persons to lift and the other had a hairpin knocked into her head. All of them were very much bruised, especially Mrs. Bell and her daughter.

The man servant was carried from the kitchen steps into a mulberry tree and hurt about the legs by falling timber. The house and the 8 ft. 6 in. veranda appear to have been lifted bodily up, carried about five to ten yards and then crashed to pieces. Nearly all the furniture was smashed to pieces and bedsteads were broken and twisted like so many twigs. At one time it was thought that a valuable piano, which had somehow escaped the weight of the falling building, was uninjured – but unfortunately that is not the case. Parts of the galvanized iron roof were carried a long distance and wrapped around a big tree. A light buggy belonging to Mr. Parry Okeden which was in a shed at the stable was lifted and carried into a fig tree. When taken down it appeared none the worse for its aerial flight, except that part of the ironwork was bent.

A poor horse, which had been feeding some distance away, must have been lifted up and dashed against a tree as the unfortunate animal was found almost, cut in two. Mrs. Boden, a daughter, says that when Mrs. Bell was found she was holding a silver tea pot which had been presented to her in appreciation of her hospitality.

### Sandgate.

The storm at Sandgate on Friday 17 February morning was of very great force. At about a quarter-past 9 o'clock it came like a tornado. It struck the town first between the Hon. J. R. Dickson's house and Mr. Barrett's, clearing a roadway about one chain and a half wide of largo gum and ironbark trees as if they were mere straws; those that were not torn up by the roots are twisted off. How far back this goes the correspondent could not say, as between the beach and the rising ground at the back was by then a large and deep lagoon of rain water quite unfordable. The tornado seems to have gone round to the Cabbage-tree Creek. Here it first struck at the back of Mr. Lihou's house, on the point opposite the junction of Nudgee and Cabbage-tree Creeks, and let the Lihou's house drop from about 8ft. above the high mark down nearly to the level of the creek.

### Floods

**Fitzroy River.** Rockhampton February 16. The river rose slowly since Friday both at Rockhampton and at Yaamba. All low-lying country around the town was flooded. Several people living in the swamp near town at North Rockhampton and on the Port Curtis-road had to leave their houses. A Mexican named Joe Estrada, a stockman employed by Messrs. Pattison and Co., was drowned to-day while rounding up stock in a paddock near Crocodile Crook.

### **Brisbane River.**

In the first cyclone the flood height reached 2.15metres 12 February 1893 in Brisbane City (modern datum).

During the second cyclone two children drowned in the Brisbane River on 17 February. A man was found drowned in Edward Street Saturday 18 February morning. A man was **drowned in the vicinity of Breakfast Creek** on Saturday evening. The Flood height reached **8.09 m** 10am 19 February 1893 in Brisbane City (modern datum).

### **Toowoomba.**

Sunday 19 February. The flood at Toowoomba ran completely down in a few hours on Friday night the damage done to bridges, fences, gardens, and houses was considerable. The body of a man, who had been drowned, was found Saturday morning at the bottom of the traffic bridge with his arm clasped round a pile, against which he had collided. His skull was smashed.

### **Burnett River**

Bundaberg Friday February 17. At 8 pm a third and most serious flood was experience in Bundaberg. The water had already reached nearly the height of the big flood of 1890, and was still rising slowly. The North Bundaberg Township was seriously threatened and the inhabitants were crossing over to the town by train over the railway bridge. The flooded out people are being housed in all the public buildings. Most of South Bundaberg was submerged between Woodooma and Burnett streets.

### **Mary River.**

Gympie and Maryborough were also visited by disastrous floods, a large portion of each town being under water. Maryborough 10.20 p.m. 17 February the River was rising slowly. The water was by then in Kent, Lennox, and Adelaide streets, but is still 2ft. under the 1890 mark.

Gympie Friday 17 February. At 9.45pm the river continued to rise, and at about 8 o'clock this morning the low portion of Mary street was submerged. The water rose about 4in. an hour throughout the day, but during the last two hours the rise increased to 8in. per hour.

### **Pine River.**

The bridge at Cashs Crossing was washed away in the second cyclone.

### **Logan River**

The Railway Commissioners received a telegram yesterday afternoon (Monday 20 February) conveying the message that the iron bridge across the Logan River at Loganlea had suffered severely. The telegram stated that 72ft. of the embankment on the Beenleigh side had been carried away and that the bridge was out of line.

### **Bremer River**

The big flood scarcely a fortnight earlier, being caused mainly by the back-water, did not reach to any damaging extent that portion of country to the rear of the cemetery, but such cannot be said of yesterday's (17 February) inundation. The water, this time coming down the Deebing Creek and the Bremer River, has overflowed the banks of the two creeks.

### **Ipswich**

Saturday Morning 18 February - The rise in the flood waters throughout the night were steady if slow, by forenoon they were 21.4metres, 2.4metres higher than the highest point reached in 1890. Consequently nearly all the wholesale business premises in the East Ward were more or less submerged. There were many heart rending experiences North Ipswich which was almost totally submerged Only half a dozen houses are visible It will requiring an enormous outlay to restore bridges and repair lines.

## **New South Wales**

### **Clarence River.**

Sunday February 12 –The Clarence was in flood at Lawrence all but 5 or 6 houses in the lower part of Town were flooded. At Grafton floods covered the main street.

February 14- The flood waters at Grafton were subsiding very slowly, and were still on the main street. The flood waters at Maclean were also receding from the town, but beyond inconvenience to about thirty householders, who had to pack up and shift elsewhere, and the deposit of mud left in the main street, no damage has been done locally. The farmers in the district, however, suffered greatly with hundreds of acres of agricultural land carrying maize and sugar crops having been submerged many feet. The flood rose to within 3ft. (.91metres) of the great record of 1890, and in some houses the water was from 2ft. to 3ft. deep.

### **Grafton**

17 February - The River rose rapidly at Tabulam, and at 8 p.m. was 43ft. (13.1metres), or 2ft. (.61metres) higher than the flood in the early part of the week.

On 18 February 1893 the Clarence River peaked at 7.73metres at Grafton well above major flood level.

### **Richmond River System.**

At Lismore most of the houses which were invaded by the water in the first flood were by Tuesday 14<sup>th</sup> clear, and a few people who took shelter in the courthouse have left it.

Lismore February 17- River is 26feet; later report same day 29feet 6ins; Still later 30feet (9.1metres) and only rising very slowly. The river peaked at Lismore 11.14metres well above the major flood level.

### **Tweed River**

There was a major flood of 5.4metres at Murwillumbah most probably on 18 February.

## **Rainfall**

The rainfall in Southeast Queensland stations (Table 1) show the heaviest rainfall with the first cyclone occurred in the 24 hours to 9am 11 and 12 February while the heaviest rainfall overall occurred with the second cyclone during the 24 hours to 9am 17 February with the heaviest falls (to 404mm) in the Brisbane area. Obviously the long period of heavy rain along with the saturated state of the catchment after the record flood early in February ensured another near record would follow.

In the Northern Rivers of NSW (table 2) the heaviest falls were in stations closest to Queensland and had tapered off in the Ballina Grafton area. However the very large Clarence River catchment extends right up to the Queensland border so that Grafton could not escape the effects of the flooding.

(Tables over page...)

**Table 1-** In Queensland 24 Hour rainfall (mm) to 9am (date) February 1893

Station	11	12	13	14	15	16	17	18	19
Maryborough	64.8	31.0	44.7	5.6	15.2	<b>105.4</b>	<b>136.4</b>	2.0	0.0
Gigmoomgan 48 km WSW of Maryborough	83.1	61.0	37.3	14.0	5.6	36.3	<b>159.5</b>	8.9	0.3
Double Island Point	35.6	3.6	20.1	1.8	4.3	<b>152.1</b>	<b>113.8</b>	0.3	0.0
Gympie	66.5	16.5	12.2	26.4	36.8	64.3	<b>229.9</b>	1.5	2.8
Cooran 24km SE Gympie	<b>118.1</b>	17.3	19.1	61.0	51.3	95.3	<b>265.9</b>	13.2	0.0
Inskip Point	78.2	5.8	38.1	0.8	14.7	94.0	<b>160.8</b>	0.0	0.0
Yandina	<b>125.5</b>	26.9	26.7	54.6	9.4	72.4	<b>394.7</b>	14.0	12.7
Palmwoods	13.5	<b>136.4</b>	25.4	80.8	40.1	12.4	12.7	<b>101.6</b>	9.4
Mooloolah	<b>154.4</b>	29.5	41.4	24.1	11.4	25.9	<b>336.6</b>	48.3	4.3
Buderim	92.5	30.0	55.6	8.9	10.9	<b>108.2</b>	<b>288.3</b>	13.0	0.0
Crohamhurst 73km SSE Gympie	18.3	<b>223.0</b>	40.9	5.6	29.7	21.6	51.1	<b>404.1</b>	46.5
Landsborough	125.7	0.0	62.2	12.7	34.5	43.4	<b>272.2</b>	10.2	25.4
Caboolture	78.0	5.1	20.3	35.1	7.6	38.9	<b>216.9</b>	32.8	0.0
Kilcoy	66.0	63.5	7.6	50.8	17.8	38.1	<b>307.3</b>	25.4	0.0
Woodford	<b>180.3</b>	72.6	7.1	18.5	11.2	47.2	<b>296.2</b>	60.5	0.0
Cressbrook 70km NW Brisbane	60.2	38.4	2.3	38.4	21.8	21.1	<b>270.5</b>	16.0	0.0
Crows Nest	51.5	0.0	1.8	41.7	32.5	18.3	<b>153.4</b>	81.8	0.0
Esk	64.0	80.0	5.6	36.8	13.0	38.9	0.0	<b>252.7</b>	<b>103.4</b>
Franklin Vale 54km ESE Toowoomba	78.7	27.9	9.7	21.6	3.8	43.4	89.7	78.2	3.6
Laidley	83.4	44.5	7.1	17.5	6.1	22.9	<b>135.1</b>	61.0	0.0
Ipswich	68.1	28.4	2.8	6.9	0.8	61.0	<b>209.6</b>	84.3	0.0
Margate	<b>114.8</b>	63.5	6.4	30.5	3.8	58.4	<b>440.7</b>	43.9	2.5
Petrie	<b>115.3</b>	24.9	5.1	17.8	3.3	39.6	<b>380.2</b>	35.6	24.9
Sandgate	<b>117.1</b>	61.0	5.1	27.9	3.6	50.8	<b>356.4</b>	<b>116.3</b>	14.2
Enoggera Reservoir	0.0	66.8	43.2	3.0	15.2	0.5	<b>129.0</b>	<b>221.2</b>	90.9
Gold Creek	<b>116.8</b>	34.3	5.1	20.1	1.8	97.3	<b>283.5</b>	98.3	1.0
Brisbane	82.8	35.8	1.8	21.1	3.3	53.1	<b>212.3</b>	<b>102.4</b>	0.8
Corinda	0.0	48.5	2.3	9.1	0.8	66.0	<b>241.3</b>	<b>120.7</b>	16.5
Lytton	<b>132.6</b>	17.0	5.1	11.7	9.4	57.2	<b>298.2</b>	<b>151.1</b>	1.0
Dunwich	<b>121.2</b>	66.0	10.4	11.9	0.0	32.3	<b>240.3</b>	89.4	0.0
Cleveland	<b>105.4</b>	39.1	2.5	2.3	0.0	55.1	<b>150.1</b>	80.0	0.0
St Helena Is	91.4	16.5	2.5	25.4	1.3	35.6	<b>286.0</b>	<b>130.8</b>	0.0
Beenleigh	<b>114.3</b>	76.7	0.0	5.3	0.0	41.9	<b>191.3</b>	0.0	84.1
Beaudesert	0.0	74.2	79.2	11.7	12.4	0.3	29.2	85.6	<b>111.8</b>
Mundoolin 34 km WNW of Surfers	<b>102.6</b>	80.0	6.1	9.7	0.5	25.4	<b>105.7</b>	85.3	3.0
Nerang	<b>164.1</b>	67.3	3.3	18.5	0.3	13.0	<b>133.9</b>	77.5	18.3
Southport	<b>148.3</b>	49.0	2.5	20.6	0.0	22.1	<b>123.7</b>	88.9	0.5

**Table 2-** In New South Wales 24 Hour rainfall (mm) to 9am (date) February 1893

	10	11	12	13	14	15	16	17	18
Bilambil (Near Tweed heads)	<b>171.7</b>	<b>133.6</b>	6.9	28.7	0.3	13.7	<b>153.7</b>	<b>115.8</b>	8.1
Tweed Heads	0.0	101.6	38.1	0.8	19.1	0.0	33.3	93.0	82.8
Condong near Murwillumbah	<b>169.4</b>	<b>127.3</b>	8.4	19.1	2.3	36.1	<b>209.3</b>	105.9	5.6
Murwillumbah	0.0	<b>160.5</b>	<b>111.8</b>	22.1	18.3	1.0	41.4	<b>201.4</b>	<b>121.2</b>
Byron Bay	0.0	<b>138.9</b>	21.3	15.5	11.9	0.0	<b>130.8</b>	89.4	41.7
Clunes 17km NE Lismore	0.0	<b>114.3</b>	71.6	3.3	17.8	0.0	62.2	150.6	83.3
Lismore	1.5	88.9	57.9	3.0	29.7	0.5	42.7	<b>142.2</b>	83.6
Casino	0.0	67.1	68.6	0.5	7.1	1.5	67.6	132.6	99.3
Roseberry 41km NNW Casino	0.0	73.4	96.5	2.8	25.7	30.0	118.1	88.9	22.4
Bungawalbin (24km S Lismore)	80.0	37.6	0.0	10.2	2.5	17.9	52.1	64.5	0.0
Cumbalum near Ballina	0.0	<b>109.2</b>	47.2	0.0	13.2	0.0	40.1	107.2	<b>101.9</b>
Ballina	1.3	<b>103.6</b>	38.9	5.1	14.5	0.0	34.8	75.3	66.0
Grafton	0.0	26.7	71.6	0.0	10.2	0.0	0.0	12.7	63.5