



GULF RIVERS FLOODS MARCH 1998

1. Introduction

Heavy almost continuous rainfall occurred along the coast of the Gulf Country between Burketown and Normanton and inland to about the Flinders Highway from 26 February to 6 March 1998. Severe flooding to major flood level occurred in the lower reaches of the Nicholson, Albert, Gregory, Leichhardt and Lower Flinders Rivers. Rainfalls and flood levels in the Burketown area were particularly high. Flooding was less severe in the eastern parts of the Gulf with only moderate flooding recorded in the Norman River at Normanton.

The extensive flooding resulted in the closure of the majority of the roads in the area and the isolation of properties and towns for up to several weeks. Airstrips were also either closed or had restricted runways. Some isolated properties were evacuated but reports indicate that only three residences in Burketown were affected by floodwaters. A few properties suffered damage in the rains due to poor roofing. The flooding was confined to the lower parts of the Gulf rivers systems and consequently receded quicker than usual.

2. Meteorological Situation

Following the degeneration of Tropical Cyclone May into a rain depression on 26 February, heavy rain fell almost continuously along the coast of the Gulf Country. This low pressure system was a predominant feature of a monsoonal trough extending from the Gulf to the east coast of the Cape York Peninsula. The depression remained almost stationary over the Gulf for several days before slowly moving north west. Rain finally started to ease on 4 March.

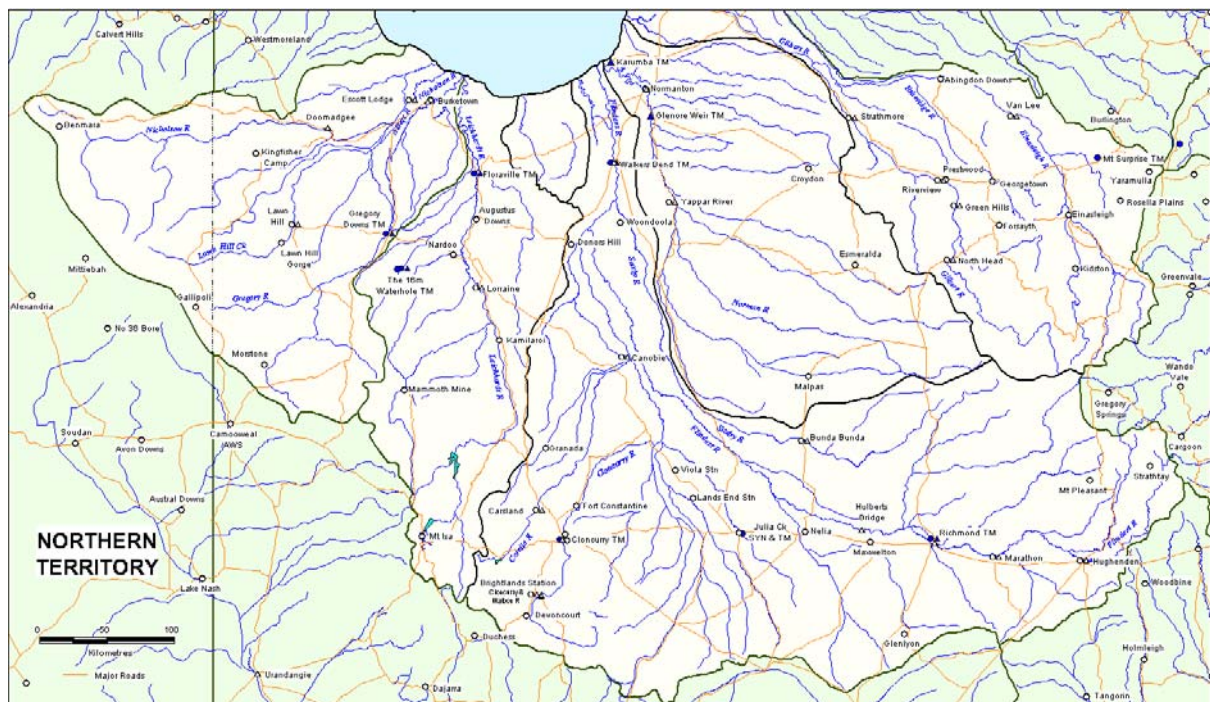


Figure 1 Gulf Rivers Flood Warning Network

3. Flood Warning Network

The current network of rainfall and river height stations operated by the Bureau of Meteorology in the Gulf Rivers is shown in Figure 1. There are only a few automatic telemeter rainfall and river height stations in the catchments and the majority of the observations rely on manual daily reporting stations.

4. Rainfall

Daily rainfall totals in millimetres for the flood period for rainfall stations in the network are listed in Table 1 and are also shown in Figure 2. The highest rainfall was recorded at Burketown, with 1065 mm over the 7 day period commencing 9 am 26 February. The previous highest 7 day total was 702 mm in 1891. Within this period, the peak 24 hour, 48 hour and 72 hour totals at Burketown all approximate to greater than a 1 in 100 year event. At Normanton, the 24 hour, 48 hour and 72 hour totals are less notable, between a 1 in 2 and 1 in 20 year event.

Highest totals were recorded along the coast between Escott Lodge and Normanton extending approximately 150 kilometres inland. The period of heaviest rain was the first 3 days, 26 to 28 February, but significant falls were still recorded over the following 4 days.

Table 1 : Daily Rainfalls (mm, totals to 9am)

Rainfall Station	27/2/98	28/2/98	1/3/98	2/3/98	3/3/98	4/3/98	5/3/98	7 Day
Nicholson River								
Wollogorang	18	1	8	42	21	6	3	99
Calvert Hills	15	66	2		11	13		107
Bowthorn	53		52					105
Lawn Hill	107	81	0	24	20	0	2	234
Lawn Hill Gorge	88	76	44	36	35	4		283
Westmoreland	51			35		60/3		146
Morstone	15	64	61	14	5			159
Burketown (Syn)	366	80	297	83	72	124	43	1065
Escott Lodge	335	119	132	68	64	97	39	854
Leichhardt River								
Mt Isa (Syn)	1	87	15	18	8	0	0	129
Lorraine			43	4	10	25	12	94
Mammoth Mine	43	93	44	60	7			247
Nardoo	118	218	69	0	32	58	39	534
Floraville (TM)	113	141	52	6	58	106		476
Flinders River								
Gregory Springs	24	12	15	46	19	14	24	154
Woodbine	2	2	3	2		2		11
Strathday	2	9	31/2		14	5	11	72
Hughendon (Syn)	0	3	10	5	4	3	2	27
Mt Pleasant		9	10	9	9	2	5	44
Richmond	2	8	5	24	6	15		60
Maxwelton		10	10	35	5	7		67
Glenlyon			9		13			22
Nelia	5	22		24				51
Duchess		13	7		7			27
Devoncourt		20	12	2	21			55
Brightlands Station	0	27	23	4	25	4		83
Carsland	0	91	19	46	26			182
Cloncurry (Syn)	6	84	13	18	20	1		142
Cloncurry (TM)	10	79	14	16	16			135
Fort Constantine		81	17	48	30			176

Julia Creek (Syn)	2	31	13	36	5			87
Julia Creek (TM)	1	29	11	39	2			82
Granada	18	79	28	38	14			177
Canobie	79	55	30	30	9	31	17	251
Wondoola Station	73	98	66	10	29	173	130	579
Norman River								
Malpas	19			44		14	37	114
Yappar River	75	143	40	10	26	140	78	512
Esmeralda	10			42	22	17	95	186
Croydon (Syn)	20	59	40			38	54	211
Normanton (Syn)	121	75	106	20	78	127	136	663
Gilbert River								
Einasleigh	19		41	11	20	15	44	150
Rosella Plains				7	9	11	36	63
Mt Surprise (TM)	3		17	5	10	11	30	76
Forsayth			33	2	14	13	62	124
Green Hills	7		41/3		16	15	49	128
North Head		32/2	12	20	16	17	61	10
Georgetown (Syn)	7	6	23	5	17	21	36	115
Van Lee	4		57	12	11	19	25	128
Strathmore	20	42	47	14	17	42	39	221

Note : Blank observations may be missing or zero

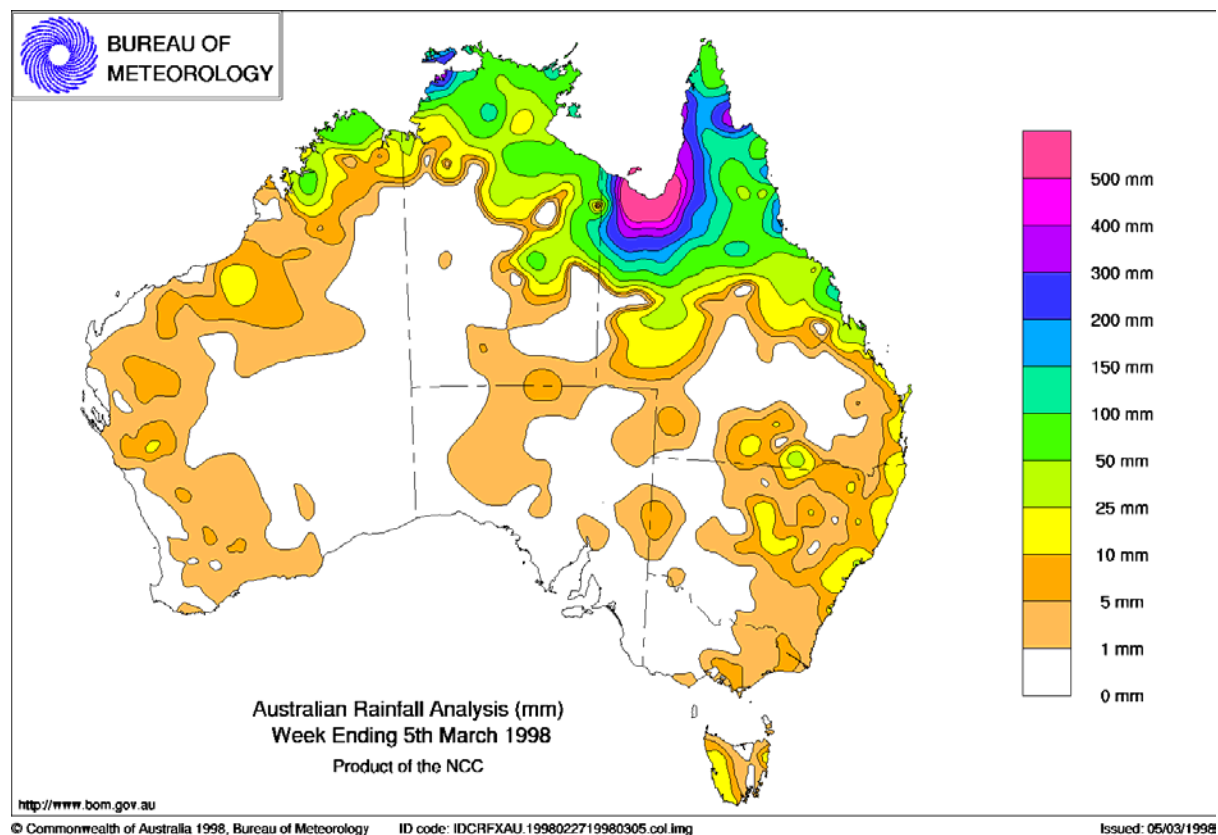


Figure 2 Rainfall Analysis Week Ending 5th March 1998

5. River Heights

River height reports were received from river height stations throughout the Gulf Rivers catchment, with the majority being manual reporting stations. The telemeter stations at Floraville and Gregory Downs were not functioning during the event. The hydrographs for some of the river height stations in each river basin are shown in Figures 3 to 6.

River levels started to rise in the lower reaches of the Gulf rivers, 24 to 48 hours after the start of the heavy rainfall, with peak levels occurring 6½ to 8 days after the start of the rain. The rise and fall of levels was relatively steady. The river levels in the Norman River were slower to recede.

In the Nicholson and Albert Rivers, the peak flood levels were 0.70 m and 0.42 m above the major flood level for Burketown Airstrip and Escott Lodge respectively. The peak level at Escott Lodge was only 0.22 m below the peak recorded for the 1971 flood. No historical flood information is available for Burketown Airstrip.

In the Leichhardt River, the peak level at Floraville was 9.55 m, 2.55 m above the major flood level classification, but this was also exceeded in the 1971 and the 1974 flood. Upstream, where rain was less, Lorraine only experienced moderate flooding and the peak level has been exceeded three times since 1971.

To the east, in the lower Flinders River at Walkers Bend, flood levels reached 12.5 m. Although this level is classified as a major flood, it has been exceeded six times since 1970. In the Norman River at Normanton, only moderate flooding occurred, and peak flood levels recorded were significantly less than the 1974 and 1991 floods.

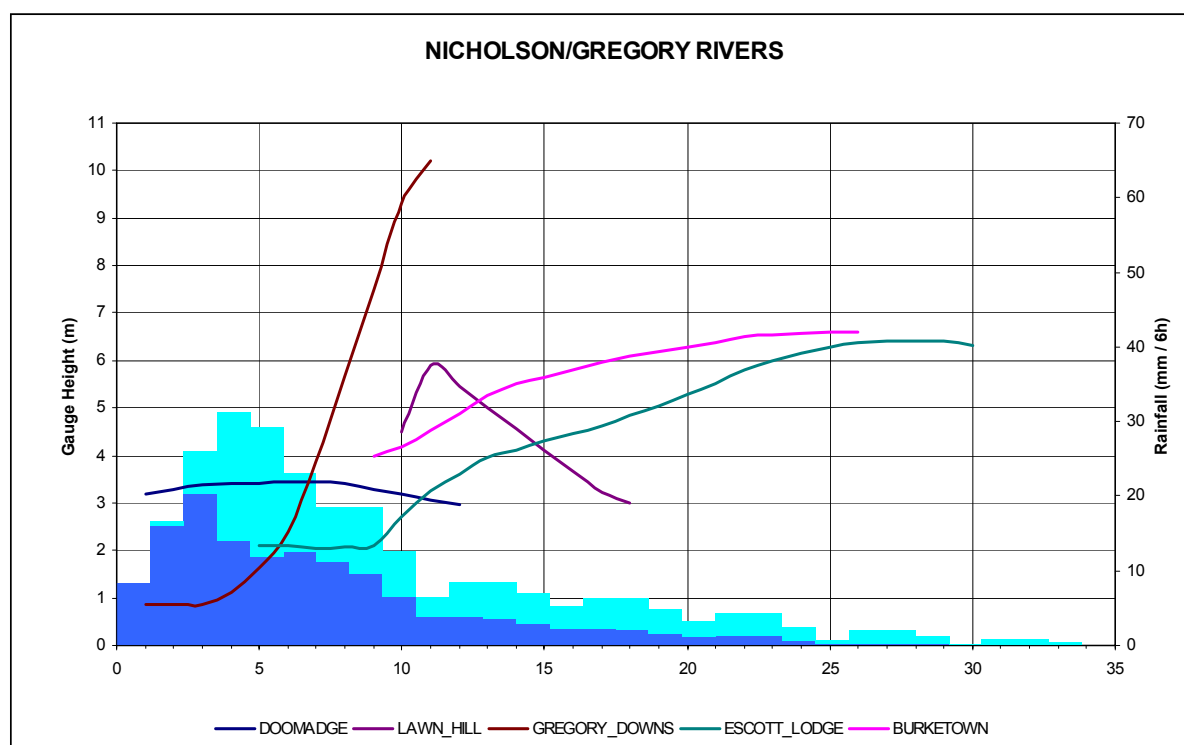


Figure 3 Nicholson/Gregory Rivers

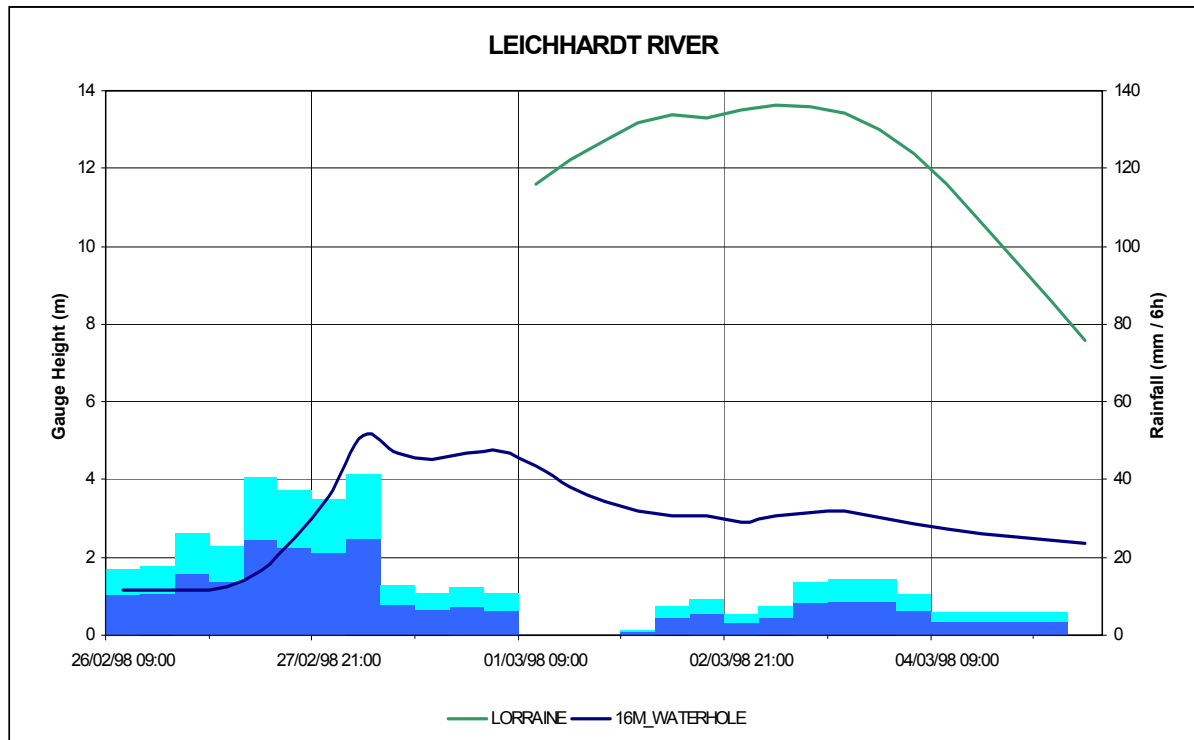


Figure 4 Leichhardt River

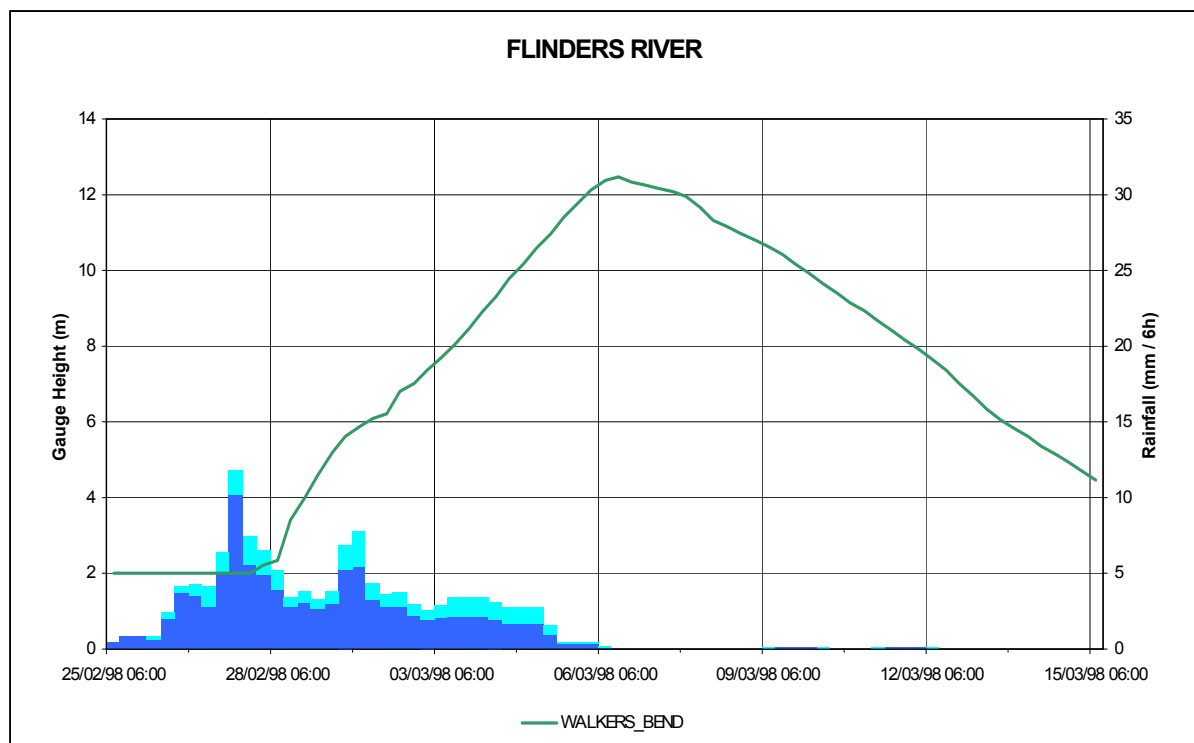


Figure 5 Flinders River

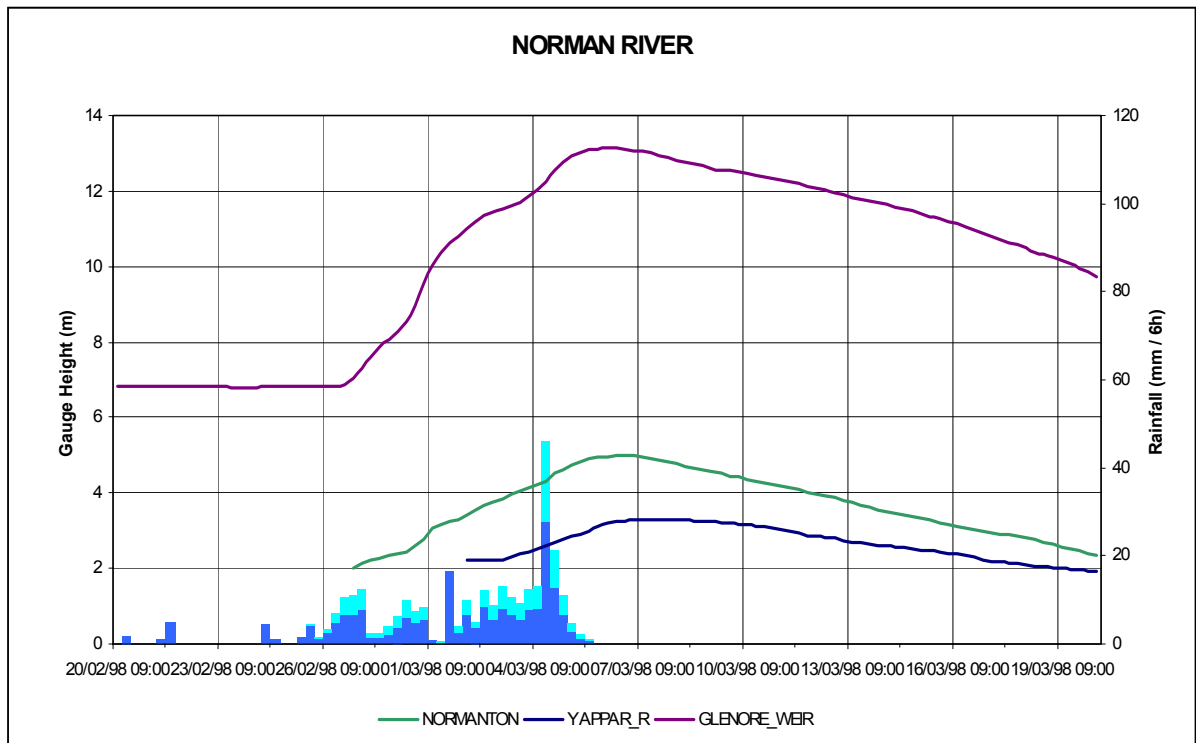


Figure 6 **Norman River**