Australian Government

Bureau of Meteorology

FLOODING IN THE NORTH AND CENTRAL COASTS OF QUEENSLAND

31 January to 10 February 2007

Township of Giru, south of Townsville after the Haughton River broke its banks. **Picture: AP**

Photo from Front Page of The Australian, February 3-4 2007

FLOODING IN THE NORTH AND CENTRAL COASTS OF QUEENSLAND

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1. Introduction

An active monsoon trough developed across the far north coast in January and produced moderate to heavy rainfall about the northern and central coastline and adjacent interior regions on the 1st and 2nd February.

Flooding developed in most coastal catchments from south of Cairns to Mackay and flood warnings were issued for the Mulgrave/Russell, Johnstone, Tully/Murray, Herbert, Haughton, Burdekin, Don and Pioneer Rivers. The most significant flooding was in the Tully/Murray, Pioneer and Haughton Rivers. Major flooding along the Haughton River resulted in a record peak flood level at Giru of 2.95 metres early on 2nd February, with floodwaters flowing through the township.

This trough deepened further on 6th February into Tropical Cyclone 'Nelson' in the Gulf of Carpentaria. TC Nelson moved across Cape York Peninsula and weakened to a tropical rain depression on 7th February before it entered the Coral Sea near Cairns and moved steadily away from the Queensland coastline in a south-easterly direction. The development of TC Nelson did not worsen the flood situation and the rainfall on the North Tropical coast eased significantly as it weakened and moved off the coast.

2. Meteorological Situation

Queensland: An active monsoon trough extended across northern Australia and the Coral Sea to the Solomon Islands with an embedded low pressure system over the Northern Territory near Gove and another near Georgetown. Areas of rain and isolated thunderstorms occurred northeast of a line from Rockhampton to Emerald to Richmond and about the Gulf country with most of the heavier falls north of Mount Isa to Mackay. .

North and Central Queensland: The active monsoon with widespread rain, showers and storms persisted through the first week of February as a low near Gove moved to the southern Gulf of Carpentaria and developed into tropical cyclone Nelson by the 6th and another low developed over the Coral Sea. Strong north to northwest winds to the north of the monsoon trough and tropical cyclone Nelson combined to drive large seas and swells through the Gulf of Carpentaria and resulted in the rescue of staff from the cargo ship Wunma. Tropical cyclone Nelson reached category 2 whilst over the southeast Gulf of Carpentaria before weakening to a low over the southeast Gulf country during the 7th. The low subsequently moved off the east coast and slipped southeast, easing the conditions in the north though isolated showers and thunderstorms persisted.

Figure 1: Weather Charts for Australia 31 Jan 2007 to 7 Feb 2007

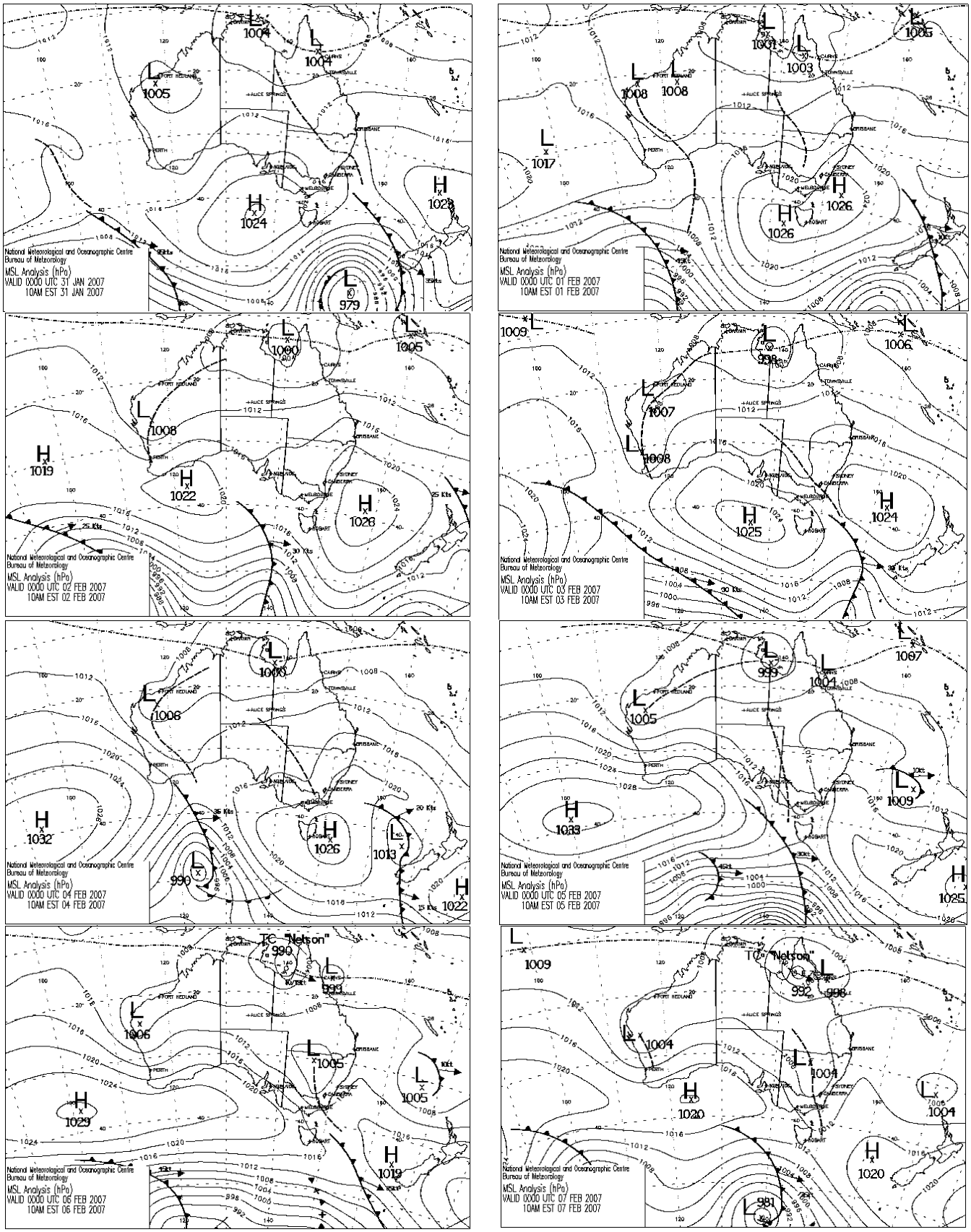
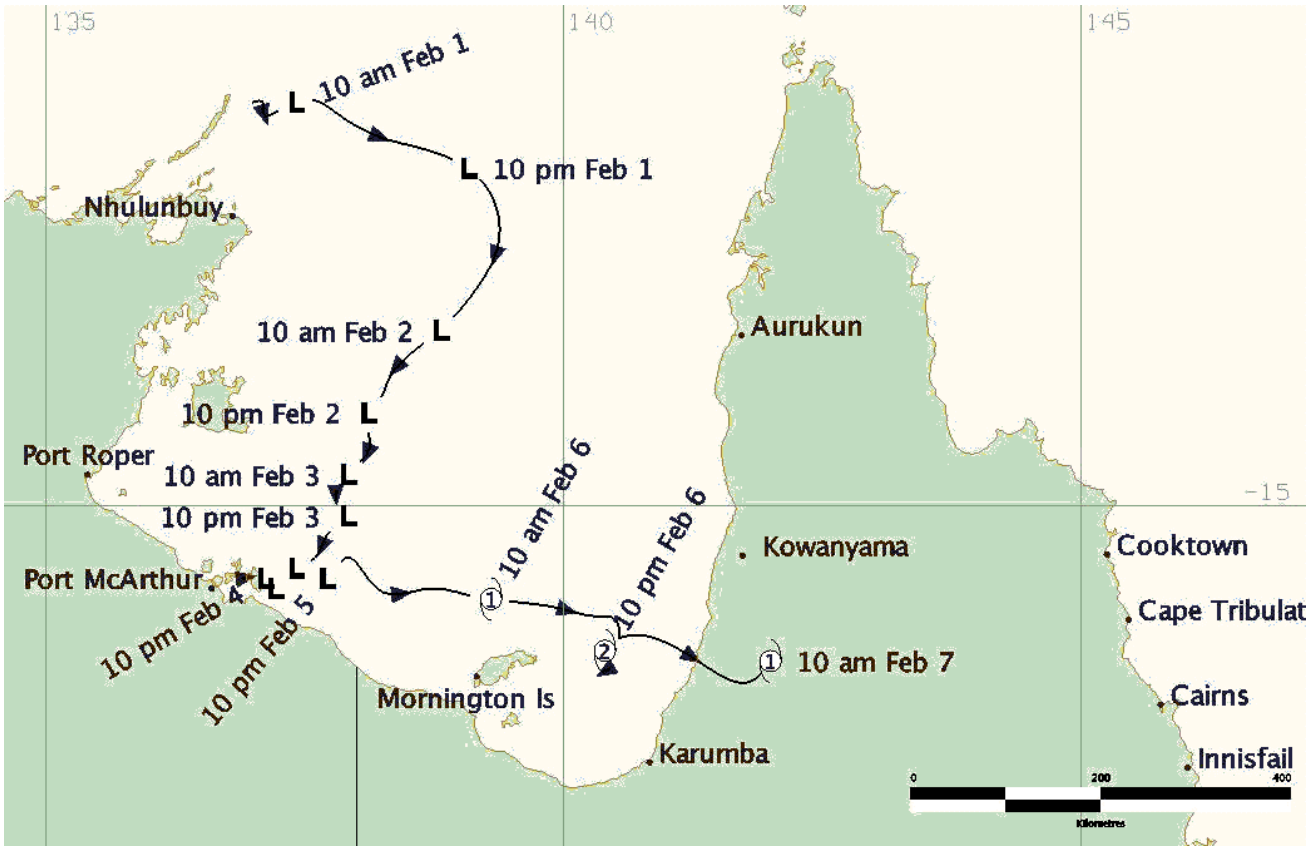


Figure 2: Cyclone Track for TC Nelson Feb 2007



3. Rainfall

An active monsoon and the development of tropical cyclone Nelson in the Gulf of Carpentaria brought above average falls to parts of the Gulf and northeast tropical coast.

A low pressure system over Cape York Peninsula, embedded in an active monsoon trough, brought moderate to heavy falls of rain to parts of the tropical and Central Coasts and adjacent interior regions on the 1st and 2nd. Heavy falls were again recorded around Innisfail on the 5th and 6th. A listing of new rainfall records appears below.

Table 1. Daily Rainfall – Highest on Record for any month

Location	Dist	New Record	Previous record	Record Length (years)
Kareeya Tm	31	226.0 mm 05th	225.2 mm 18 Mar 1980	26
Stirling	32	305.0 mm 01st	276.0 mm 10 Jan 1998	35
Wilson Beach	33	460.6 mm 02nd	459.7 mm 19 Jan 1970	38
Warden Bend	33	268.6 mm 02nd	258.4 mm 31 Dec 1990	37

Table 2. Daily Rainfall – Highest on Record for February

Location	Dist	New Record	Previous record for month	Record Length (years)
Gamboola Station	28	156.0 mm 07th	123.4 mm 13 Feb 1999	26
Butcher Hill Station	31	110.0 mm 07th	87.0 mm 17 Feb 1998	29
Kareeya Tm	31	226.0 mm 05th	221.4 mm 08 Feb 1977	26
Stirling	32	305.0 mm 01st	239.0 mm 15 Feb 2002	35
Mount Dangar	33	303.4 mm 02nd	222.0 mm 03 Feb 1991	46
Roma Peak	33	222.8 mm 02nd	218.0 mm 03 Feb 1991	44
Kelsey Ck Dittmer Rd	33	309.0 mm 02nd	187.5 mm 21 Feb 1962	44
Wilson Beach	33	460.6 mm 02nd	287.8 mm 25 Feb 1997	38
Warden Bend	33	268.6 mm 02nd	257.0 mm 03 Feb 1991	37
Hecate	33	349.2 mm 02nd	238.0 mm 06 Feb 1979	48
Proserpine Airport	33	283.8 mm 02nd	205.0 mm 06 Feb 1979	25

Figure 3 presents a summary of rainfall for the 7 days to 9am 6th February 2007.

Figure 3: Rainfall Totals for the 7 Days to 6th February 2007

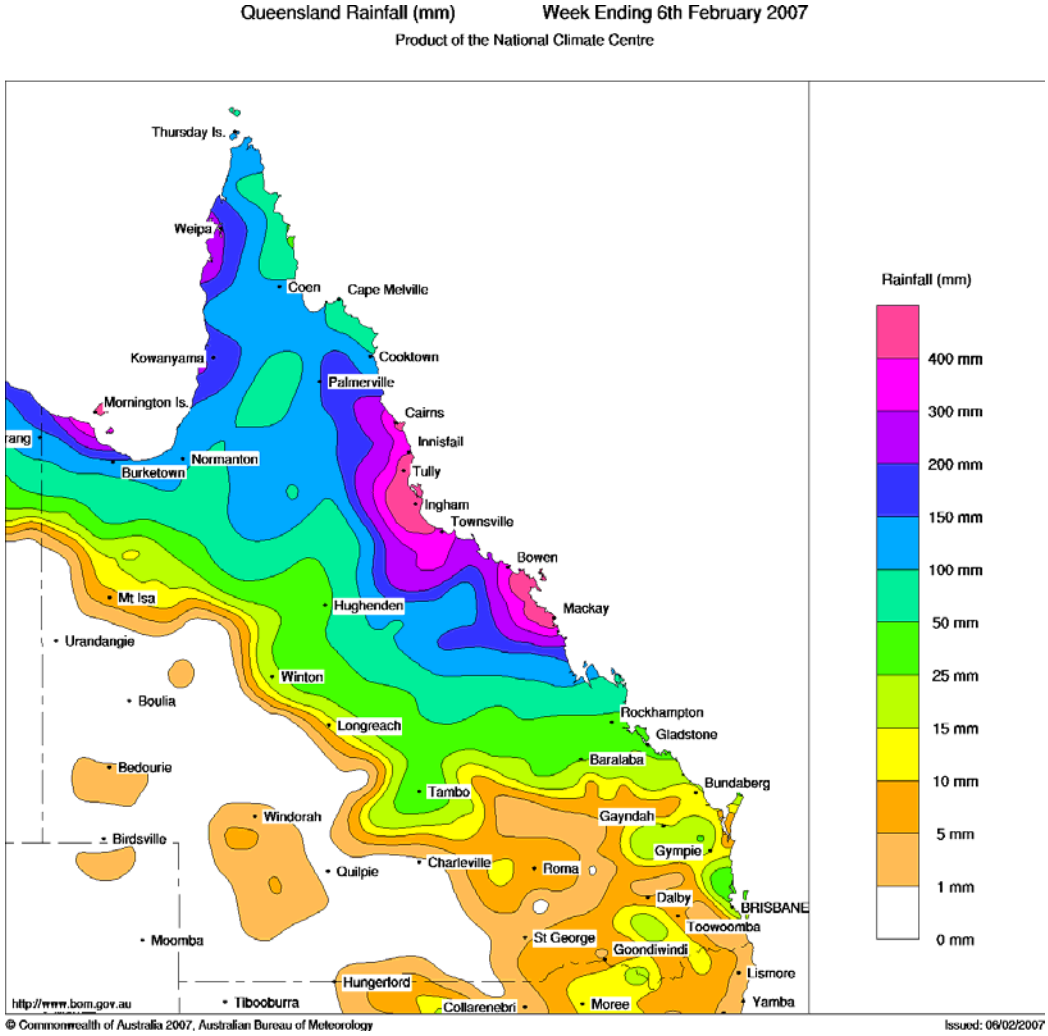
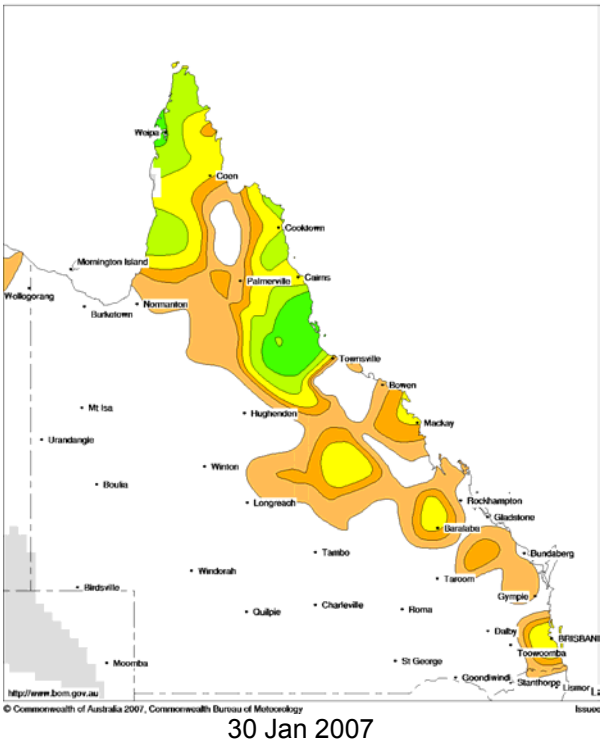
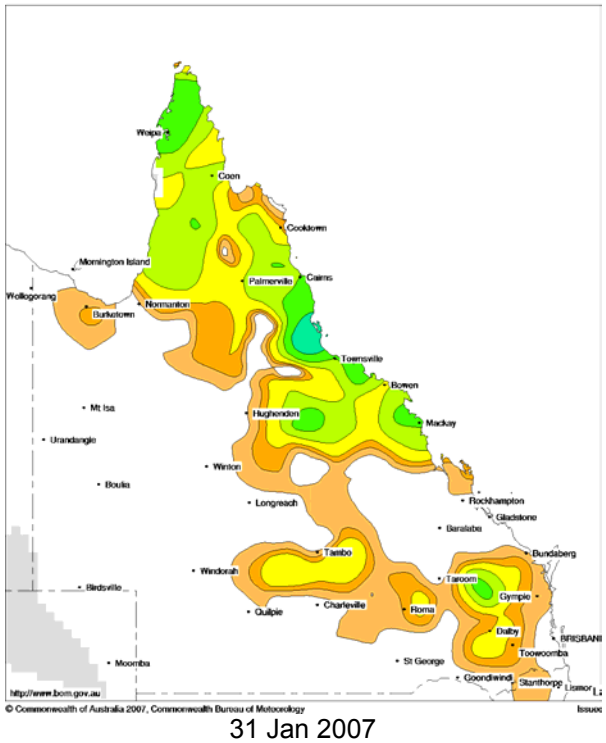


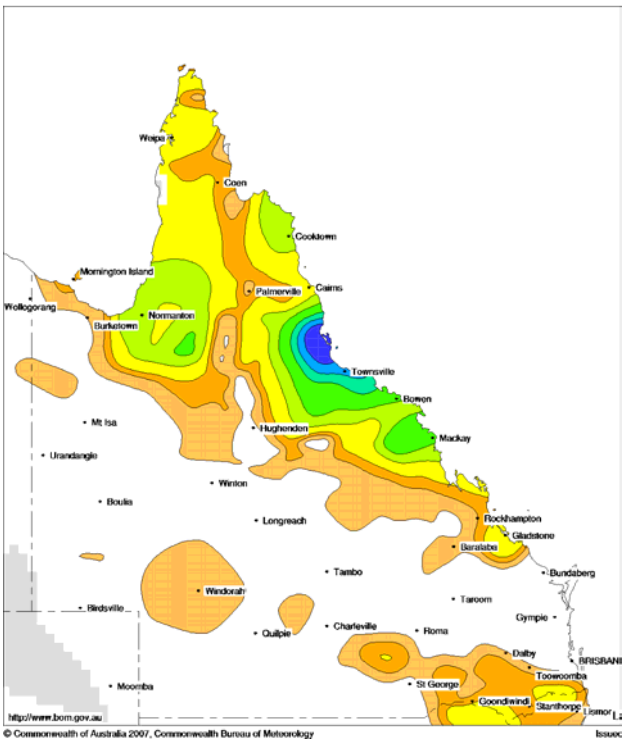
Figure 4a: Rainfall Analysis for Queensland 30 January 2007 to 2 Feb 2007



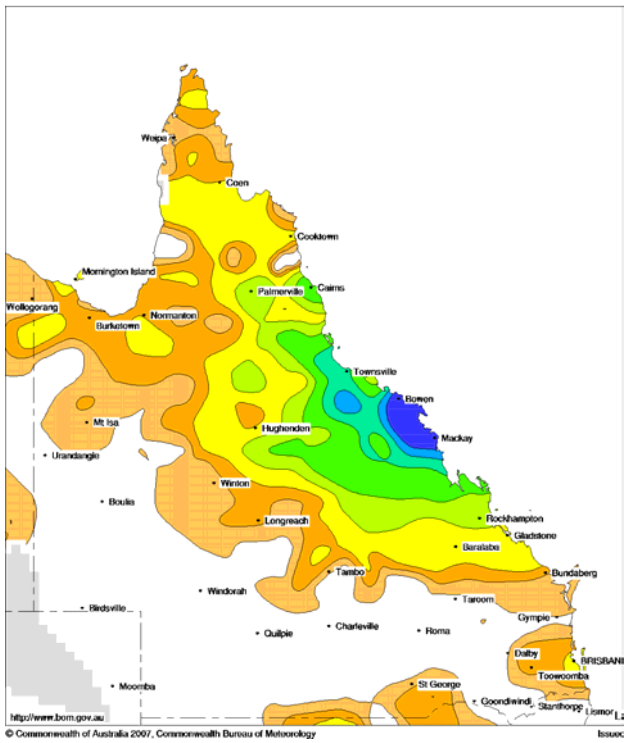
30 Jan 2007



31 Jan 2007



1 Feb 2007



2 Feb 2007

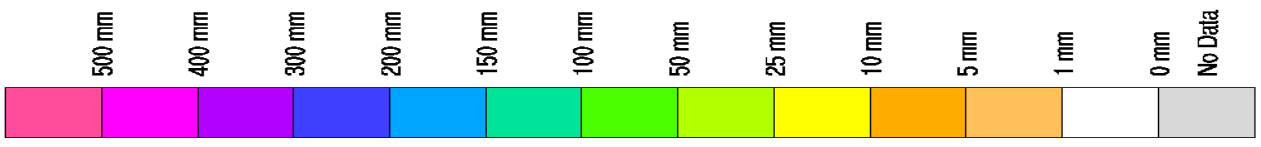
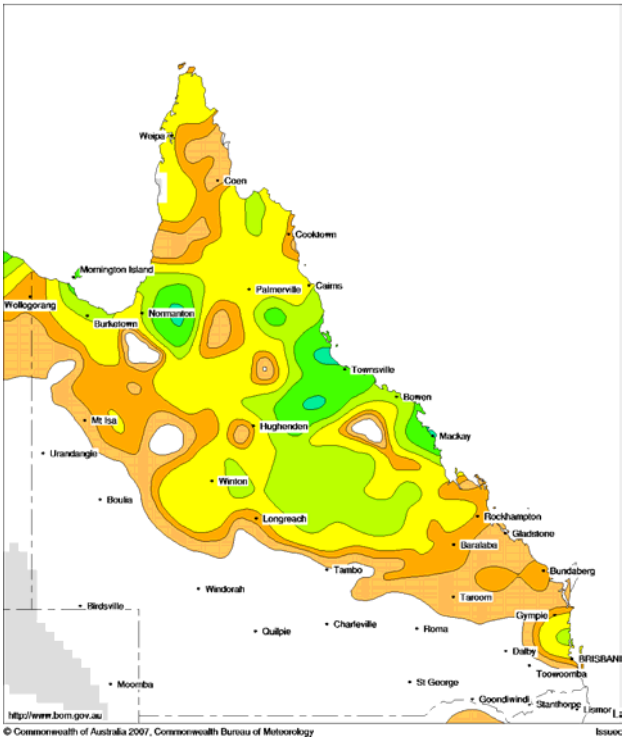
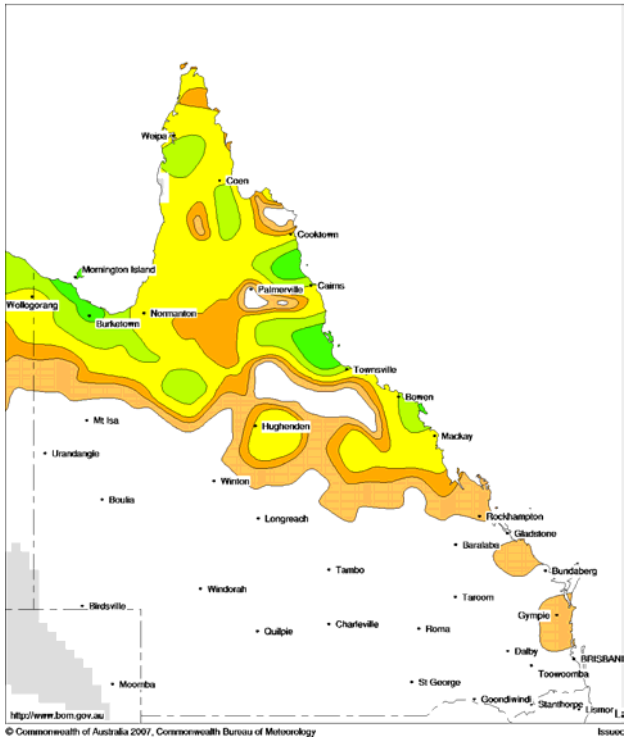


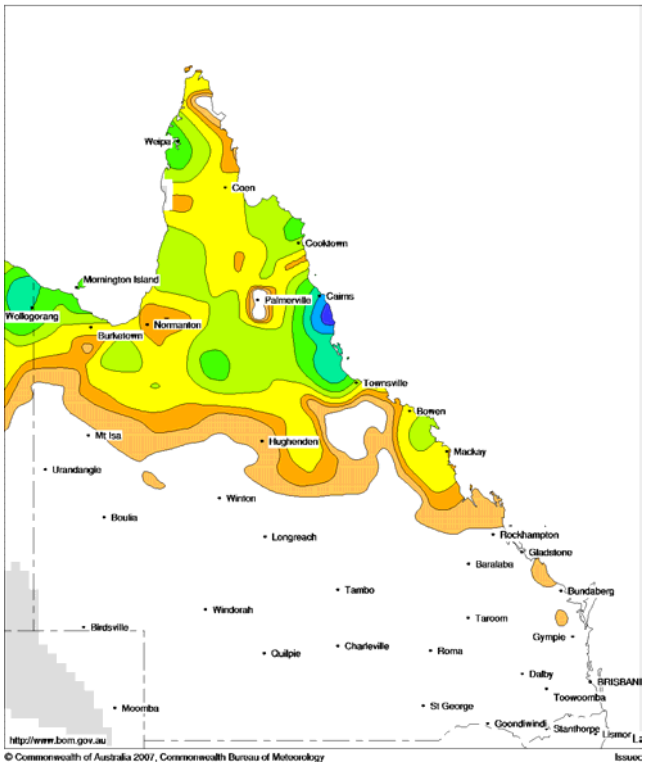
Figure 4b: Rainfall Analysis for Queensland for 3 February 2007 to 6 February 2007



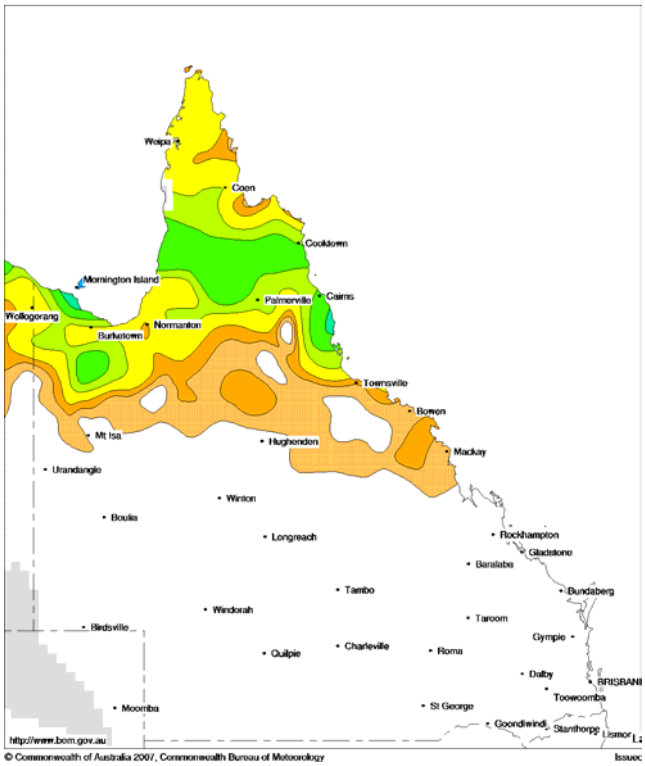
3 Feb 2007



4 Feb 2007



5 Feb 2007



6 Feb 2007

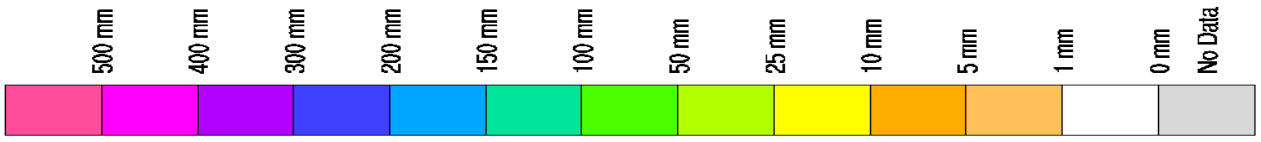


Figure 4c: Rainfall Analysis for Queensland for 7 February 2007 to 8 February 2007

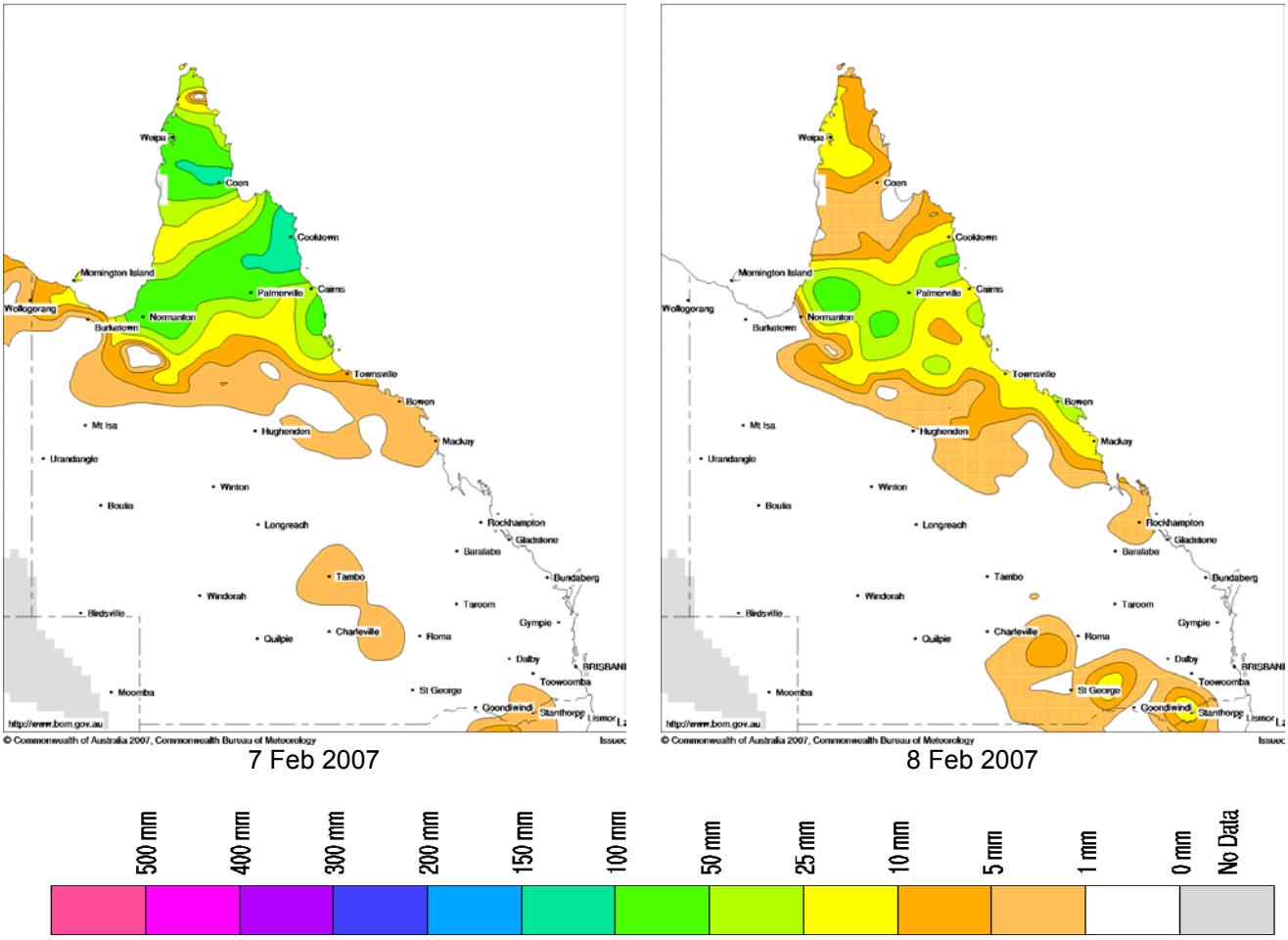


Table 3. ALERT Rainfall Totals for North QLD Catchments

Catchment	Station	Station No	24 Hour Rainfalls to 9am										Total
			30-Jan	31-Jan	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb	
Mulgrave Russell	Gordonvale	531051	7	44	14	54	36	7	227	60	40	5	**494**
	Peets Br	531052	13	71	13	59	37	23	181	56	30	6	**489**
Johnstone	Malanda	31183	5	54	11	19	13	7	114	23	24	12	**282**
	McKell Rd	31184	36	45	13	31	28	31	129	9	19	4	**345**
	Topaz	31187	38	70	45	11	15	27	335	87	62	43	**733**
	Bartle View	31181	68	45	58	5	14	39	257	91	46	17	**640**
	Greenhaven	31182	66	40	42	16	14	30	254	48	32	20	**562**
	Millaa Millaa	31185	50	56	21	15	9	25	284	50	29	12	**551**
	Crawford	32162	69	48	43	9	79	9	238	123	31	15	**664**
	Nerada	32165	59	55	37	11	45	8	235	107	80	30	**667**
	Tung Oil	32166	126	71	42	9	55	16	209	132	111	26	**797**
	McAvoy Br	532023	89	71	38	20	40	19	192	100	112	33	**714**
	Sutties	31186	73	57	82	17	8	48	237	25	0	0	**547**
	Menavale	32164	71	78	78	6	46	11	199	140	44	7	**680**
	Corsis	32161	89	63	49	6	72	18	227	143	82	13	**762**
	Central Mill	32160	106	61	57	10	35	6	188	124	100	25	**712**
	Mourilyan Mill	532025	126	56	89	17	38	48	183	129	140	41	**867**
	Marco St	32020	114	62	38	13	42	19	228	100	52	18	**686**
	Innisfail	32163	71	91	68	28	55	28	166	84	124	56	**771**
Tully	Maalan Rd	531055	101	48	73	21	15	35	251	52	40	25	**661**
	Tully Weir	531056	68	102	55	13	12	53	227	59	47	23	**659**
	Bolinda Estate	531057	112	216	125	15	50	78	252	104	71	30	**1053**
	Koombooloomba	531058	75	95	87	18	17	36	237	75	54	16	**710**
	Jarra Ck	532056	172	168	167	23	46	132	155	165	63	41	**1132**
	Davidsons Ck	532058	109	167	225	17	36	92	133	59	49	26	**913**
	Euramo	532059	39	110	253	30	24	89	108	105	55	7	**820**
	Murray Flats	532060	47	105	246	25	35	105	114	98	44	2	**821**
	Upper Murray	532061	130	55	250	20	11	68	115	28	43	8	**728**
	Bilyana	532062	56	70	245	32	17	73	122	40	63	4	**722**
	Tully	532057	91	109	291	44	49	111	107	156	63	20	**1041**
	Bulgun Ck	532064	203	119	233	86	70	136	203	213	71	49	**1383**
Herbert	Herberton	31198	14	68	14	12	2	6	58	3	20	10	**207**
	Ravenshoe	31200	16	25	23	16	14	26	153	14	20	7	**314**
	Mt Garnet	32169	3	14	97	98	34	57	68	10	20	6	**407**
	Yourka	531047	4	48	84	30	9	89	93	21	17	5	**400**
	Kirrama	32176	9	43	180	48	11	72	75	22	22	4	**486**
	Nash's Crossing	32170	31	80	270	38	15	125	99	59	36	18	**771**
	Wallaman	32172	22	72	252	55	30	95	110	52	46	23	**757**
	Zattas	32184	21	97	311	66	38	86	129	44	36	7	**835**
	Abergowrie	32174	53	89	271	36	38	61	96	36	34	14	**728**
	Michael Ck	32186	49	56	146	73	55	67	142	8	10	3	**609**
	Abergowrie Br	532028	36	123	230	56	51	54	78	31	41	18	**718**
	Peacock Siding	32173	27	117	148	62	66	34	130	17	11	4	**616**
	Poverty Hill	32183	31	114	174	39	36	46	85	10	1	3	**539**
	Ingham	32171	61	145	207	73	100	96	137	30	39	6	**894**
	Gairloch	532027	78	156	226	86	103	101	121	38	32	23	**964**
	Halifax	32185	44	100	199	70	85	119	99	48	15	27	**806**
Maximum			**203**	**216**	**311**	**98**	**122**	**136**	**335**	**213**	**140**	**56**	**1383**

Table 4. ALERT Rainfall Totals for Central QLD Catchments

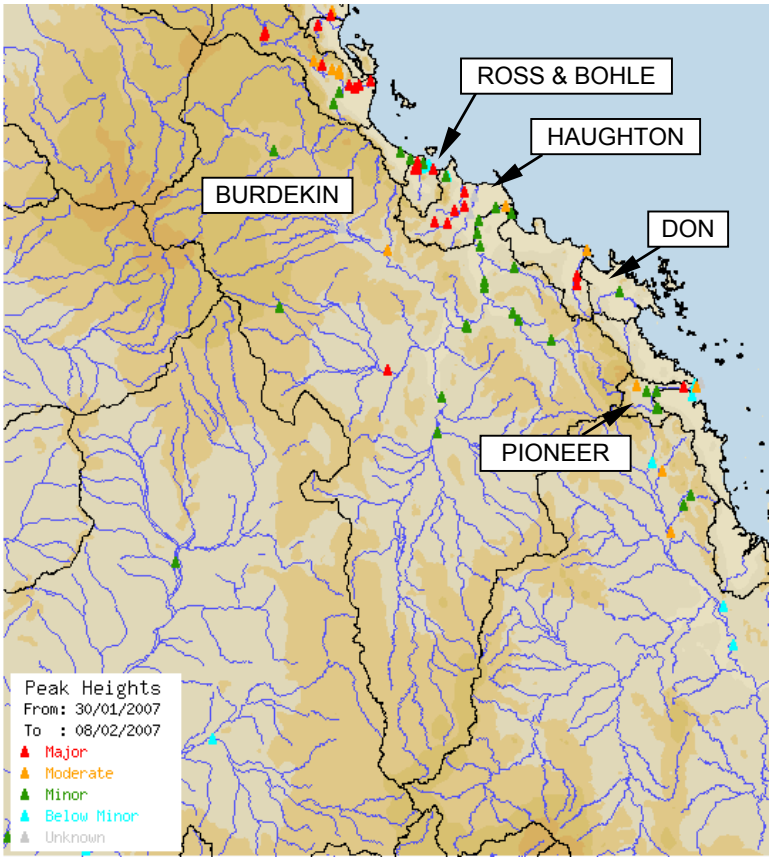
Catchment	Station	Station No	24 Hour Rainfalls to 9am										Total
			30-Jan	31-Jan	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	8-Feb	
Black	Upper Black Rv	532045	27	31	217	207	140	15	31	11	9	17	705
	Upper Bluewater	532047	19	38	257	207	133	27	41	7	10	17	756
	Paradise Logoon	532026	80	130	224	147	157	57	175	2	4	9	985
Ross	The Pinnacles	532041	31	34	169	226	179	9	37	3	6	17	711
	Little Bohle Rv	532044	9	49	198	270	153	13	26	6	5	18	747
	Mt Bohle	532053	3	67	211	168	127	25	22	8	10	32	673
Haughton	Mingela	533050	0	12	76	191	70	3	2	1	0	5	360
	Upper Reid	533053	0	28	100	189	88	4	8	3	8	11	439
	Cameron Hill	533052	0	30	103	159	77	1	4	1	3	17	395
	Mt Piccaninny	533055	0	41	107	116	61	1	6	2	4	13	351
	Donnington AP	533054	2	55	114	119	114	11	6	4	5	10	440
	Powerline	533056	1	48	151	86	73	1	2	1	1	20	384
	Giru	533051	1	42	181	46	112	3	6	2	3	20	416
	Upper Major Ck	533071	3	115	271	127	145	44	18	22	8	46	799
	Major Ck	533072	0	54	169	115	93	8	4	3	11	18	475
	Four Mile	533073	0	30	81	261	61	0	4	0	1	11	449
	Upper Barrattas	533074	0	26	99	173	47	1	3	0	1	15	365
Burdekin	Burdekin Dam	34097	0	21	20	84	1	0	1	0	0	0	127
	Jacks Ck	533015	0	1	16	129	9	3	3	0	0	0	161
	Myuna	33292	0	25	28	136	10	1	1	1	0	0	202
	Dalbeg	33291	0	38	51	136	8	0	1	0	0	2	236
	Mt Pleasant	33290	0	27	49	191	18	8	5	0	1	7	306
	Strathbogie	33289	0	22	46	175	4	3	1	1	0	13	265
	Millaroo	33287	0	20	80	124	21	0	0	0	1	17	263
	Clare	33286	0	53	98	67	26	1	4	1	14	17	281
	Inkerman Br	33288	1	122	93	41	27	4	5	2	2	12	309
	Rita Island	533057	0	89	136	59	45	15	11	6	5	16	382
	Groper Ck	533049	0	69	123	79	21	5	7	6	8	17	335
	Paluma Dam	532063	120	153	283	101	78	140	106	-	0	14	995
	Sellheim	533075	0	7	68	148	72	3	0	2	0	8	308
	Ravenswood	533076	0	15	67	169	49	1	1	0	1	7	310
	Eton Vale	533077	0	18	55	194	10	6	0	0	0	9	292
	Upper Bogie	533078	0	7	26	246	16	11	8	1	0	5	320
	Sutherland	533079	0	4	22	218	3	8	2	0	0	3	260
	The Stonewall	533080	0	1	17	161	3	3	2	0	0	1	188
	Taemus	534010	0	35	15	46	10	1	5	0	0	5	117
	Weetalaba	533081	0	4	12	126	9	4	2	0	0	1	158
	Scartwater	534011	0	26	17	70	6	0	7	0	0	4	130
	Blenheim	533082	0	10	19	116	1	9	2	0	0	1	158
	Eungella Dam	533083	0	9	15	110	8	10	7	1	0	4	164
	St Anns	534012	0	26	14	87	8	6	5	0	0	3	149
Don	Upper Don	33270	2	11	21	178	6	10	17	2	0	4	251
	Boundary Ck	33263	0	10	22	237	10	10	12	1	0	4	306
	Emu Ck	33306	0	26	33	229	16	17	26	0	2	13	362
	Ida Ck	33265	0	24	31	253	14	11	9	0	1	9	352
	Moss Vale	33266	0	15	37	235	19	11	8	1	1	14	341
	Mt Dangar	33267	0	14	32	294	18	14	5	1	1	15	394
	Roma Peak	33269	0	27	38	208	19	15	12	0	0	18	337
	Reeves	33268	0	31	44	252	38	17	10	5	1	31	429
	Bowen PS	33264	0	14	64	193	45	21	14	1	2	23	377

Pioneer	Greenmount	533058	46	59	67	217	80	14	23	2	1	13	522
	Bakers Ck	533063	16	53	58	198	75	19	25	2	1	14	461
	Plevna	533035	2	37	63	202	45	0	0	0	0	0	349
	Ridgelands	533038	12	76	97	281	72	31	34	3	1	13	620
	Teemburra Dam	533041	12	54	87	250	46	19	33	1	1	8	511
	Clarke Range	533084	8	75	96	299	116	51	101	16	8	17	787
	Whitefords	33301	7	21	77	182	12	18	14	1	0	10	342
	Hannaville	533040	2	27	37	160	15	17	9	3	0	11	281
	Sarichs	33299	9	34	82	224	26	19	18	1	0	11	424
	Eungella	533039	13	84	92	260	83	31	41	8	2	17	631
	Gargett	33304	15	52	104	254	41	21	15	2	1	8	513
	Dows Ck	533036	31	62	110	275	70	28	22	5	1	12	616
	Mirani Weir	33302	17	42	107	246	34	26	16	1	1	9	499
	Dumbleton Rocks	33300	23	57	62	233	97	16	16	1	1	15	521
	Hospital Br	533060	14	53	63	259	125	16	14	2	0	20	566
	Mackay	33303	9	45	50	258	127	16	9	6	0	26	546
	Rowallan Pk	533062	16	73	62	310	156	18	14	3	0	32	684
	Gooseponds	533061	23	51	54	236	126	16	10	7	0	26	549
Maximum			**120**	**153**	**283**	**310**	**202**	**140**	**175**	**22**	**19**	**46**	**995**

4. Flooding

4.1` Central Coast Flooding

Central Coast Flooding



Pioneer River

With the onset of widespread rainfall along the coastline at the end of January, moderate flooding quickly developed and flood warnings commenced on 1st February. The heaviest rainfall was recorded in the 12 hours to 4am on 2nd February with between 140 and 190 mm, and a maximum hourly rainfall of 46 mm was recorded at 10am in the lower Pioneer River.

The Pioneer River at Mackay peaked with the high tide at 7.0 metres at 11am on 2nd February. Moderate flooding quickly subsided and flood warnings were finalised on 3rd February.

Don River

Widespread heavy rainfall along the coast at the end of January resulted in major flooding quickly developing in the Don River, and flood warnings re-commenced on 1st February. The heaviest rainfall was recorded in the 12 hours to 9pm on 1st February with between 120 and 190 mm, and a maximum hourly rainfall of 48 mm was recorded at 4pm at Mt. Dangar.

Major flooding in the upper reaches of the Don River subsided to moderate levels within 12 to 24 hours. The Don River at Bowen Pump Station peaked at 5.34 metres with moderate flooding at 11pm on 1st February. Flood warnings were finalised on 4th February.

Burdekin River

Widespread heavy rainfall across the upper Burdekin Basin and moderate rainfall elsewhere in early February resulted in major flooding quickly developing above the Burdekin Falls Dam, and minor to moderate flooding downstream of the dam site. Major flood warnings commenced on 2nd February.

Inflows to the Burdekin Falls Dam reached a peak level of 3.8 metres above the spillway on 4th February. Downstream of the dam site floodwaters were controlled to a moderate flood level. Flood warnings continued to be issued until 9th February.

Haughton River

Widespread heavy rainfall across the upper Haughton River in early February resulted in major flooding quickly developing , and major flood warnings commenced on 1st February. The heaviest hourly rainfall of 35 mm was recorded at 5am at Upper Major Creek on 1st February.

Major flooding along the Haughton River resulted in a record peak flood level at Giru of 2.95 metres early on 2nd February, with floodwaters flowing through the township. Flooding quickly subsided to the minor flood level on 3rd February, and flood warnings were finalised on 4th February.

Ross River

Widespread heavy rainfall across the Ross River basin in early February resulted in moderate to major flooding in the Bohle River and Stuart Creek area. The heaviest rainfall was recorded in the 2 hours to 2pm on 1st February with between 70 and 150 mm. Flood warnings were issued for the general coastal rivers between Townsville and Mackay on 2nd February.

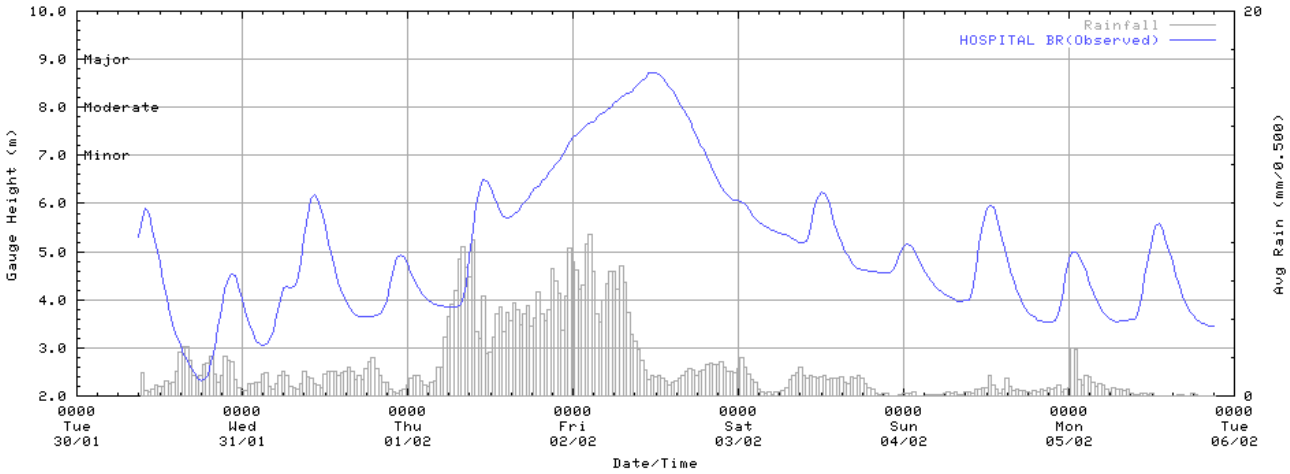
Repeated daily storm events with renewed river rises resulted in multiple flash flood events on the Bohle River and Stuart Creek. Uncontrolled flows from the Ross River Dam during this period saw below minor flooding downstream in the Ross River. General flood warnings were finalised on 4th February.

Black River

Widespread heavy rainfall across the Black River basin in early February resulted in only minor flooding, which was covered in the general flood warning for coastal rivers between Townsville and Mackay on 1st February.

Figure 5a: River Heights - Pioneer River

Hospital Bridge - Pioneer River



Mackay - Pioneer River

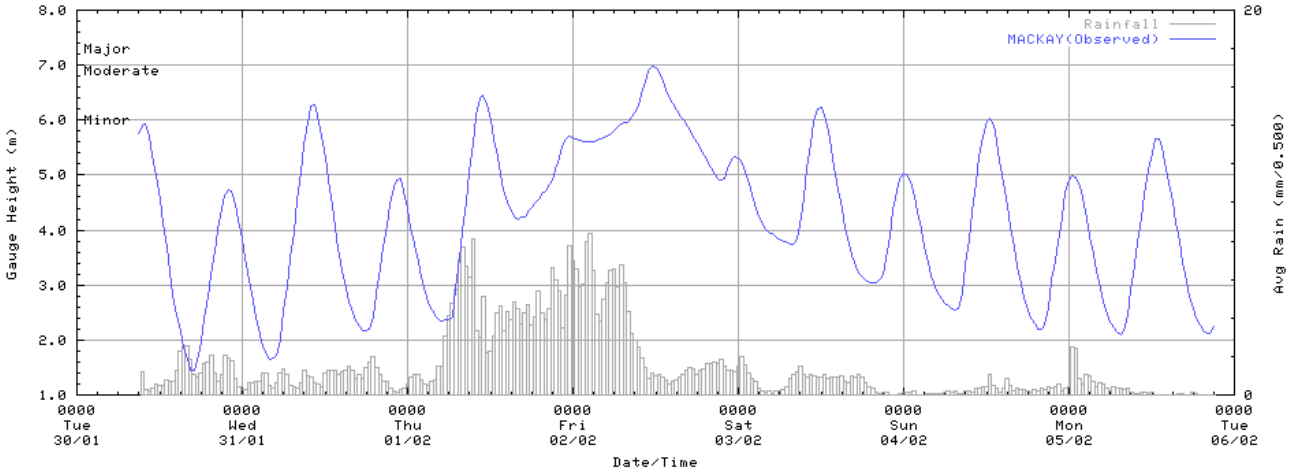


Figure 5b: River Heights - Don River

Bowen Pump Station - Don River

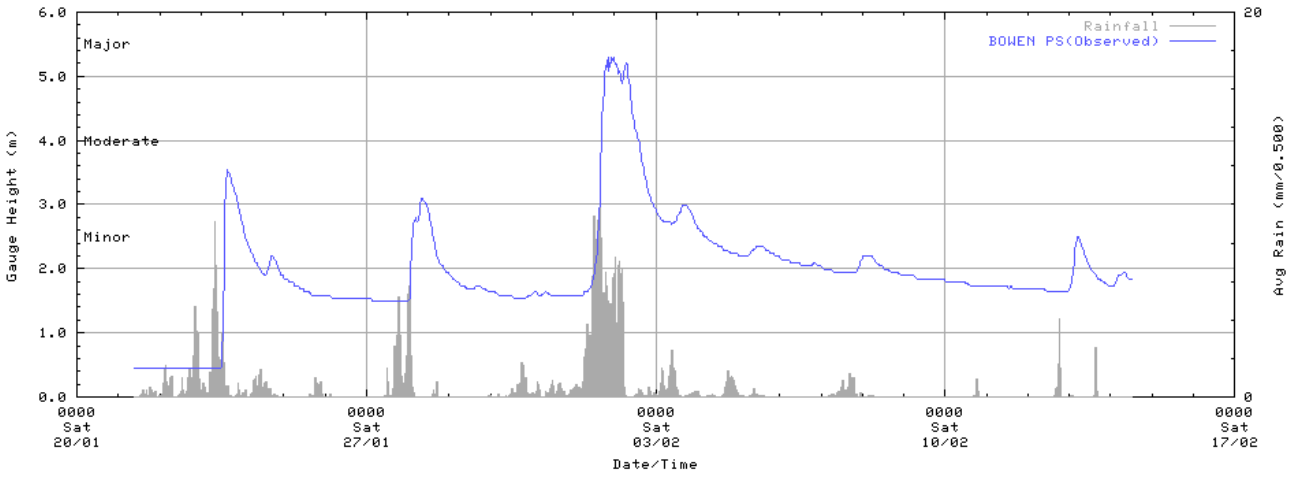
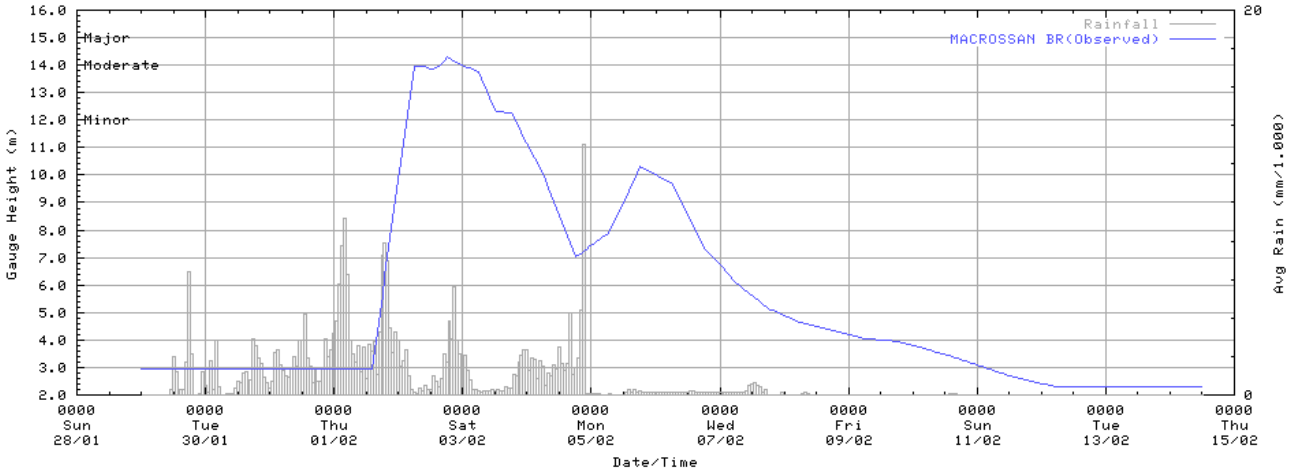
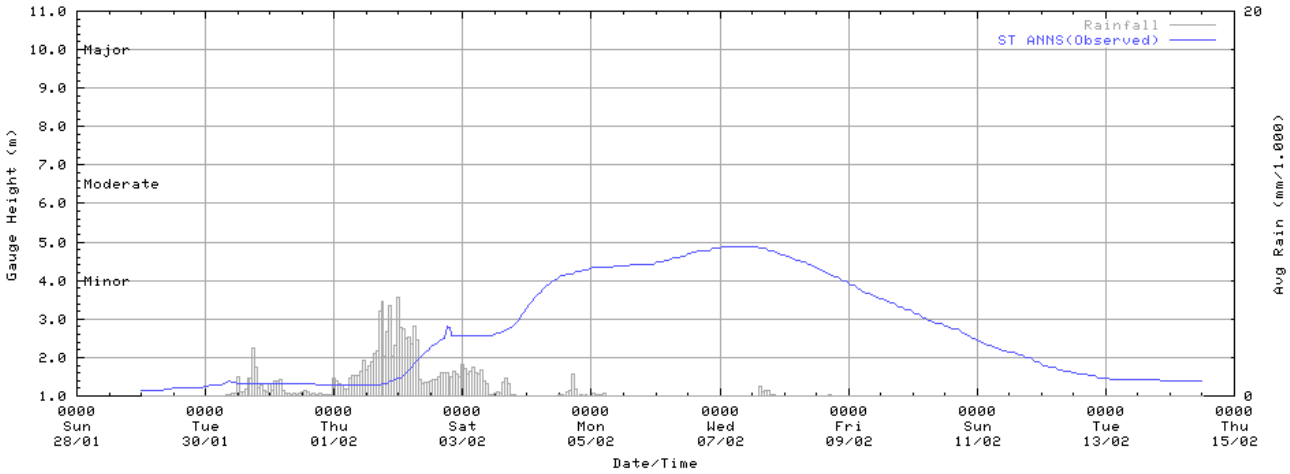


Figure 5c: River Heights - Burdekin River

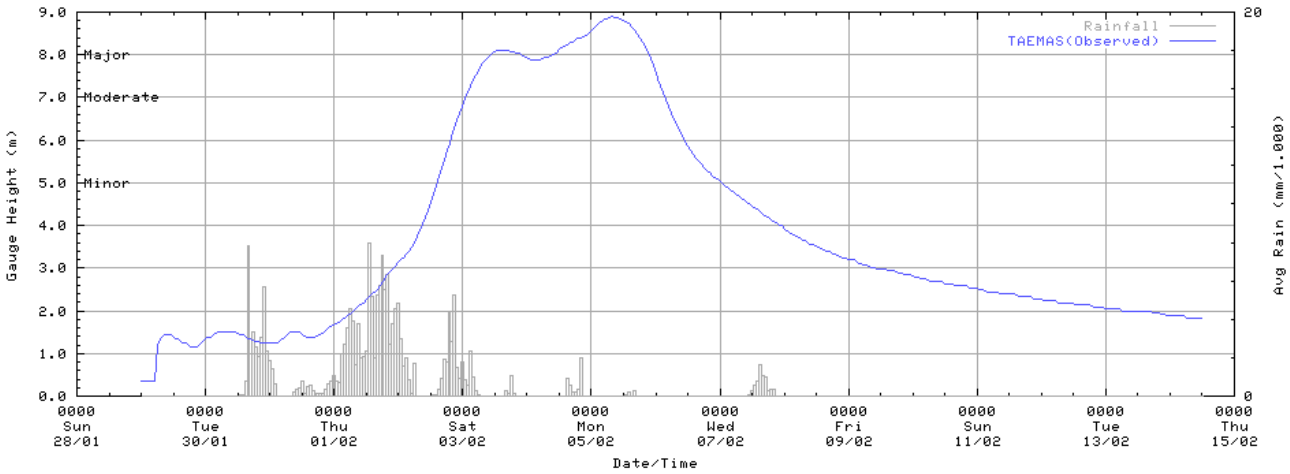
Macrossan Bridge (Sellheim) - Burdekin River



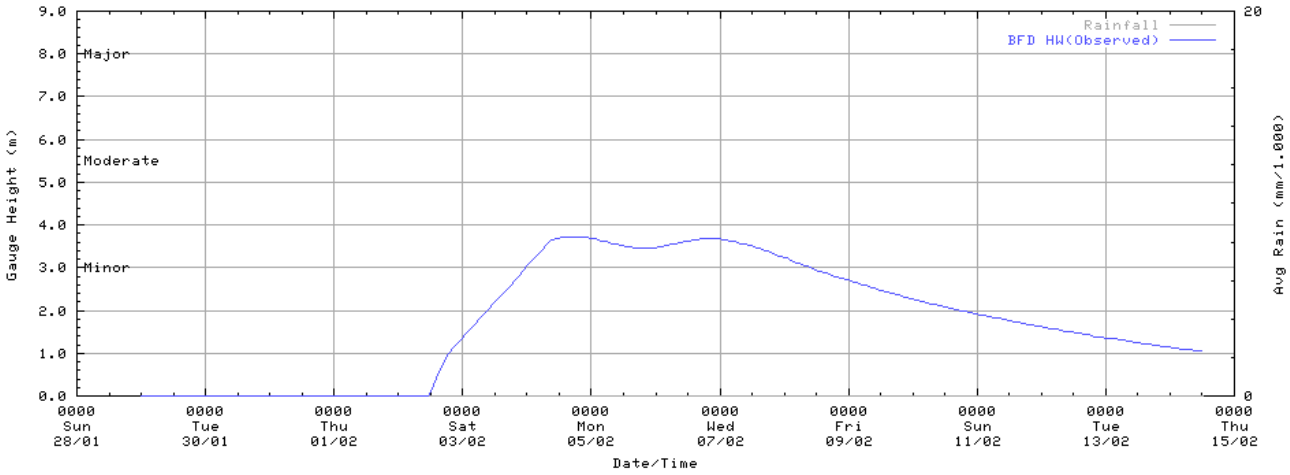
St Anns - Suttor River



Taemas - Cape River



Burdekin Falls Dam HW - Burdekin River



Inkerman Bridge - Burdekin River

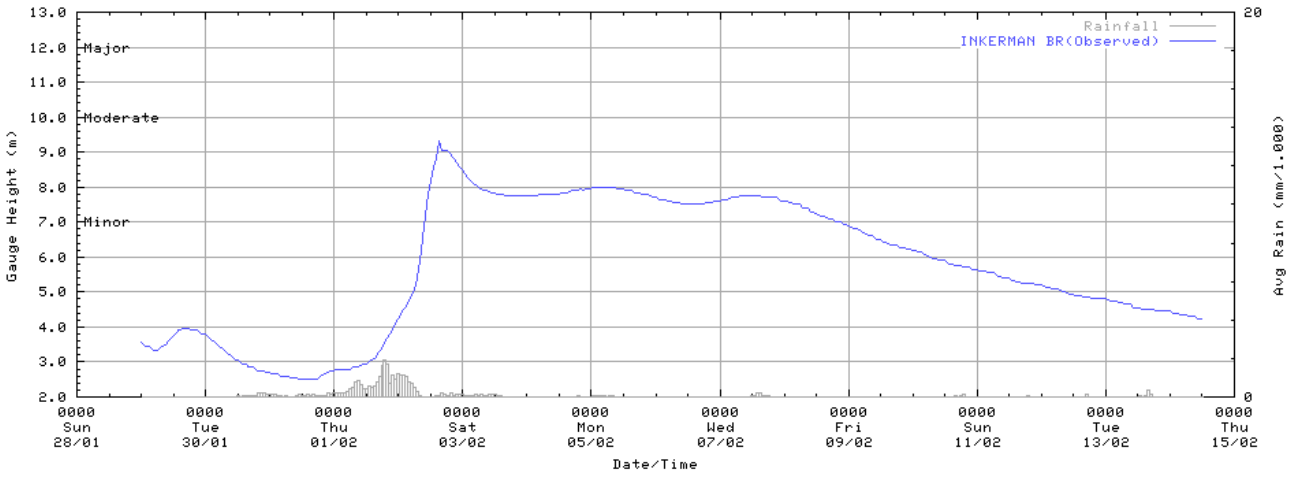
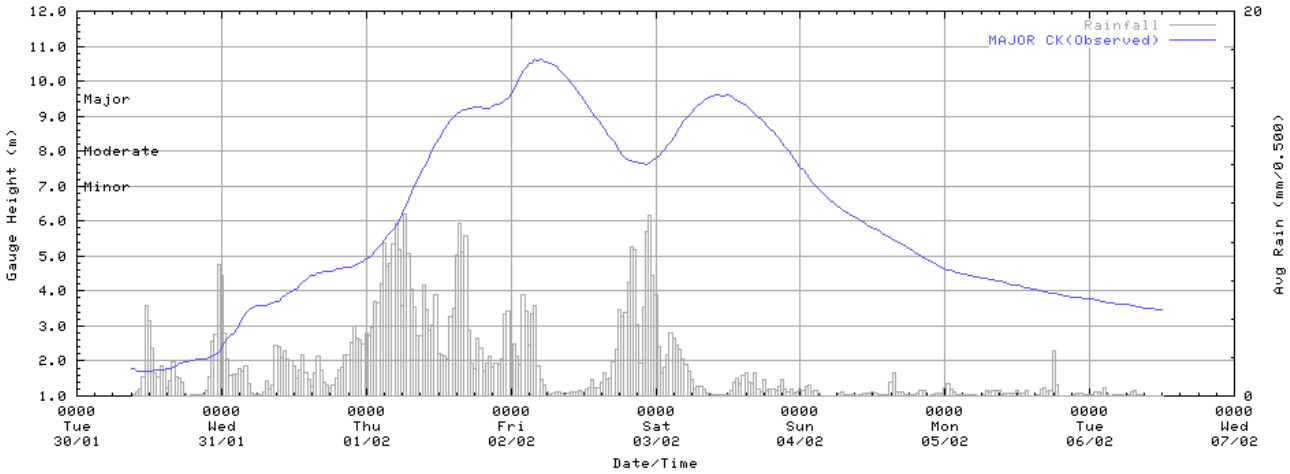
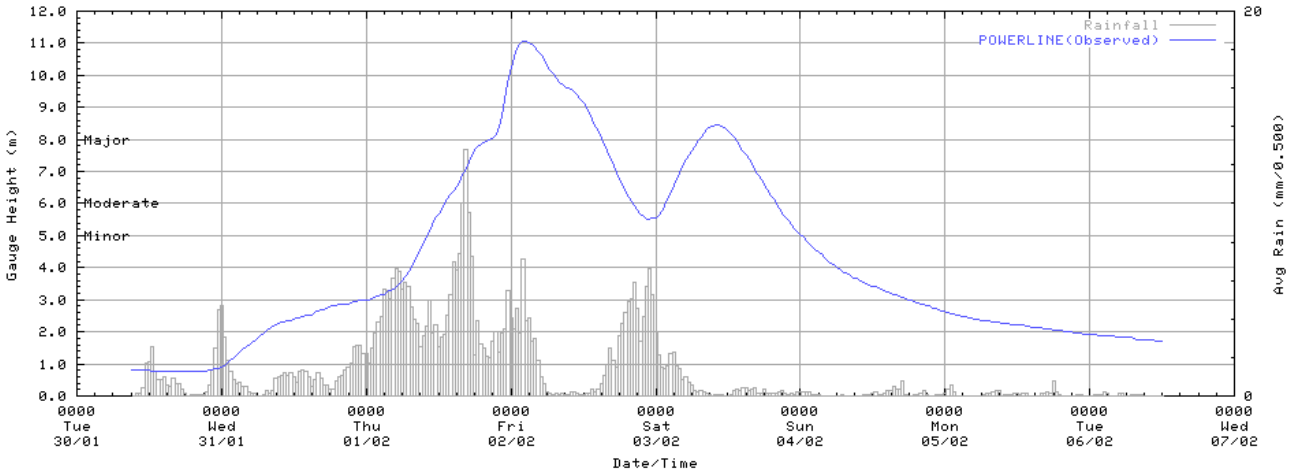


Figure 5d: River Heights - Haughton River

Major Creek - Major Creek



Powerline - Haughton River



Giru - Haughton River

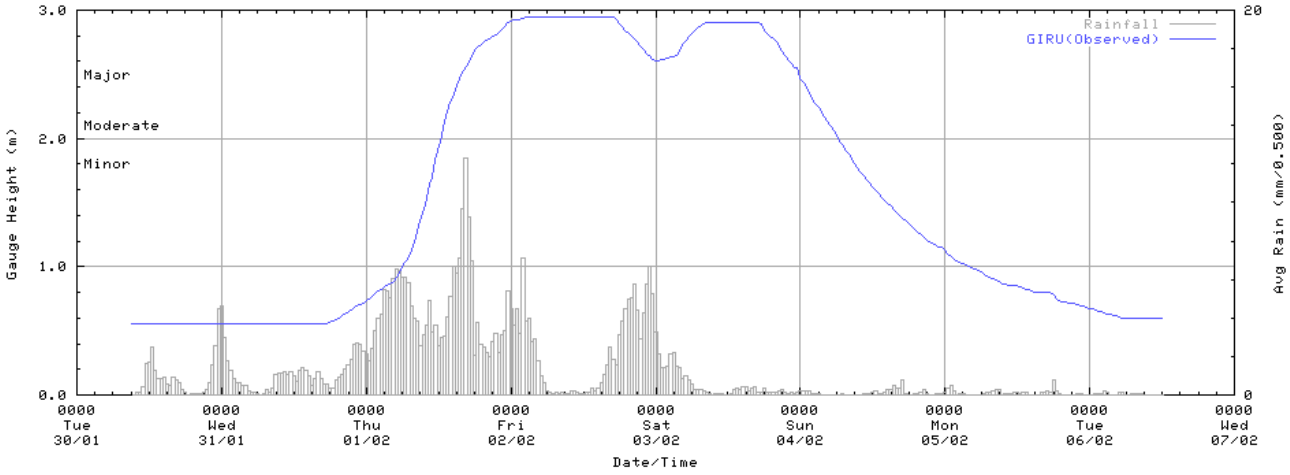
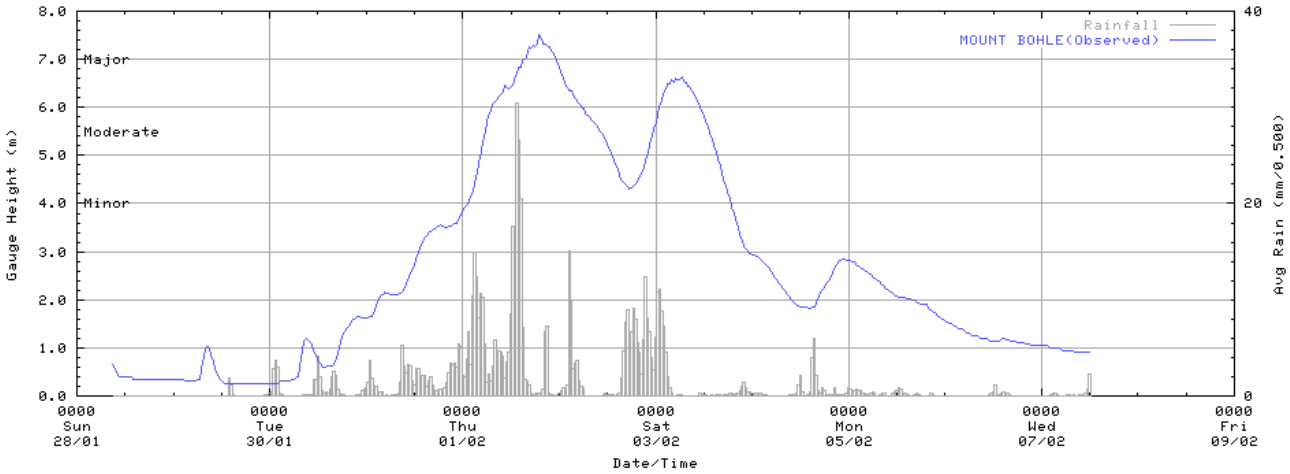


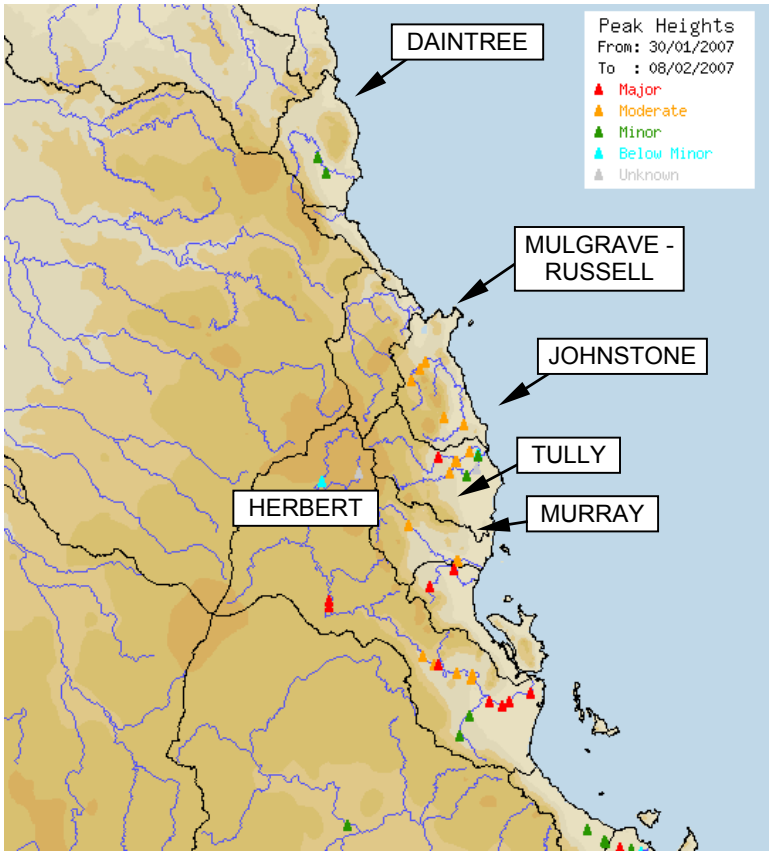
Figure 5e: River Heights - Ross & Bohle Rivers

Mount Bohle - Bohle River



4.2 North Tropical Coast Flooding

North Tropical Coast Flooding



Herbert River

Moderate flood warnings had commenced on 31st January and quickly advanced to major flooding on 1st February, mainly confined to the lower Herbert River. The heaviest rainfall was recorded in the 2 hours to 11pm on 1st February with between 20 and 60 mm, which also included the heaviest hourly record of 43 mm at Gairloch.

Two major flood peaks were recorded at Gairloch, with the highest recorded peak of 11.69 metres at 2pm on 1st February, followed by second and slightly smaller peak of 11.39 metres at 8pm on 5th February. Flood warnings were finalised on 9th February.

Tully and Murray Rivers

Minor flood warnings had commenced on 31st January and quickly advanced to major flooding on 1st February. The highest rainfall was recorded in the 6 hours to 11pm on 31st January with between 120 and 190 mm, which also included the heaviest hourly rainfall of 53 mm recorded at Tully township. Two moderate flood peaks were recorded on the Tully River at Euramo, with an initial recorded peak of 8.49 metres at 4pm on 1st February. Additional heavy rainfall over the next few days produced a second and larger flood peak of 8.74 metres at 6am on 6th February. Both peaks put floodwaters 0.5 to 0.85 metres over the level of the Bruce Highway. Similar flood peaks were recorded on the Murray River at Murray Flats, but river levels reached the major flood level with similar rises over the Bruce Highway. Flood warnings were finalised on 9th February.

A second flood event occurred when renewed rain fell on an already wet catchment early on 19th February, which saw flooding quickly recommence and minor flood warnings issued by the afternoon. Minor to moderate flooding occurred on both the Tully and Murray Rivers, with flood warnings being finalised on 23rd February.

Johnstone River

Flood warnings were issued for the general coastal rivers between Cairns and Townsville on 30th January. Further heavy rainfall early in February resulted in a major flood warning being issued for the Johnstone River on 5th February. The flash flooding event peaked at 5.08 metres with the high tide at Innisfail at 11am, with the heaviest hourly rainfall total of 41 mm recorded at Topaz. Flood warnings were finalised on 6th February.

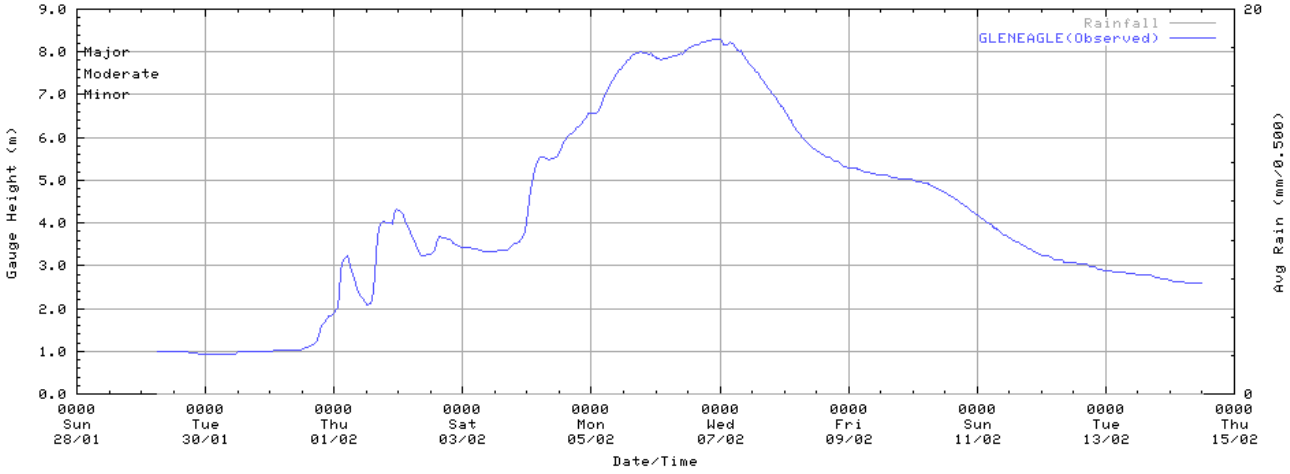
Mulgrave and Russell River

Widespread heavy rainfall across the Mulgrave & Russell River basins in early February resulted in a minor flood warning being issued for coastal rivers between Cairns and Townsville on 3rd February. Further heavy rainfall and the possibility of flash flooding resulted in the issuing of a major flood warning on 5th February. The heaviest hourly rainfall recorded was 33 mm at Gordonvale.

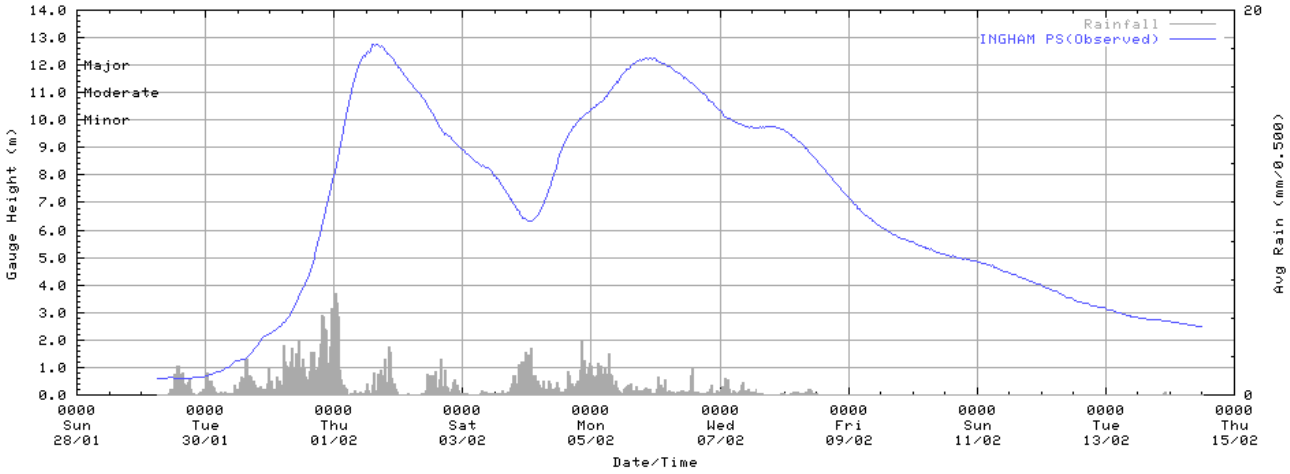
A moderate flood peak of 13.8 metres was recorded at 4pm on 5th February at Gordonvale, with river levels remaining below the level of the Bruce Highway. Flood warnings were finalised on 6th February.

Figure 5f: River Heights - Herbert River

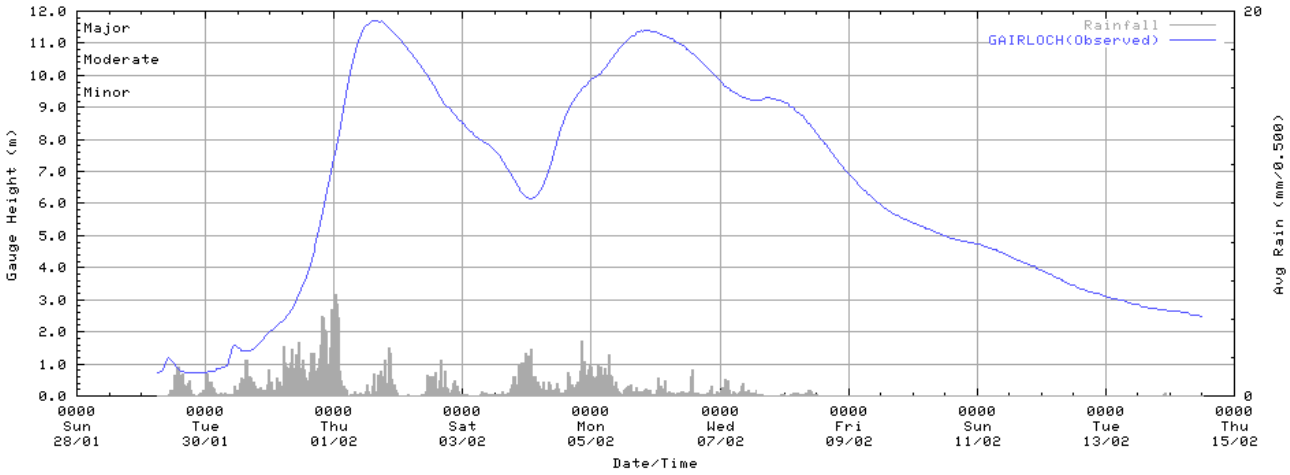
Gleneagle - Herbert River



Ingham PS - Herbert River



Gairloch - Herbert River



Halifax - Herbert River

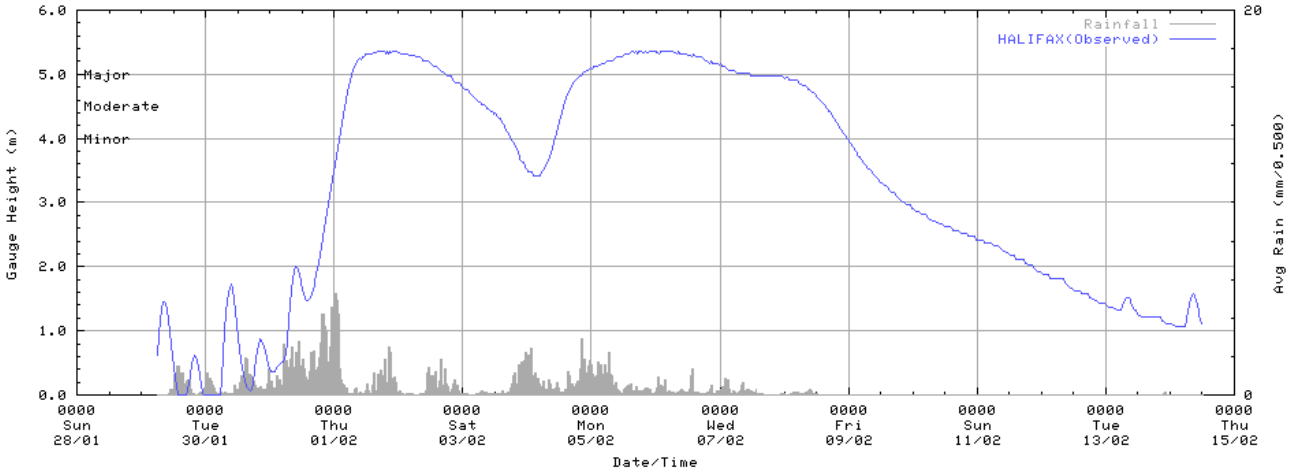
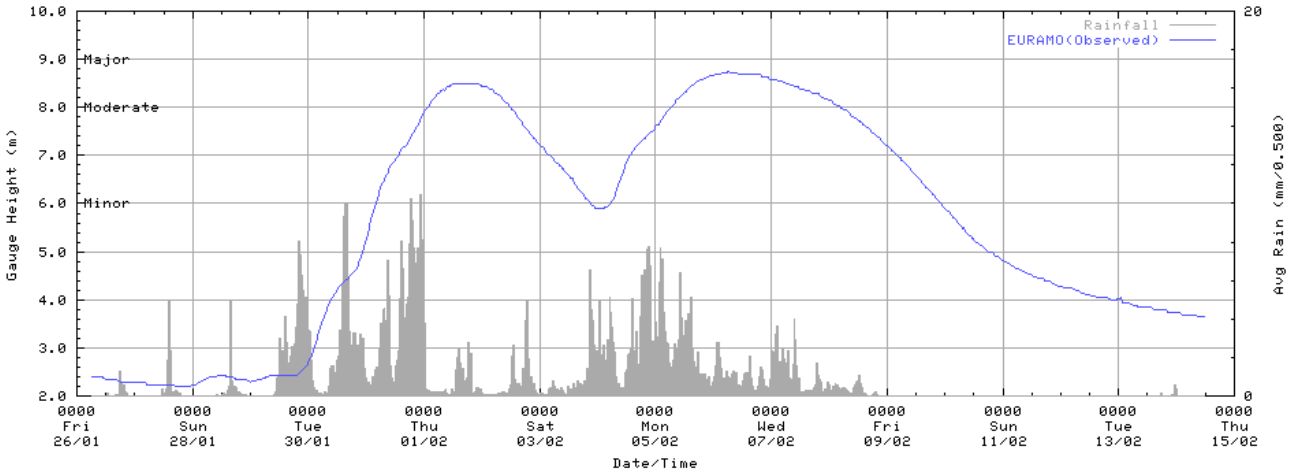


Figure 5g: River Heights - Tully & Murray Rivers

Euramo - Tully River



Murray Flats - Murray River

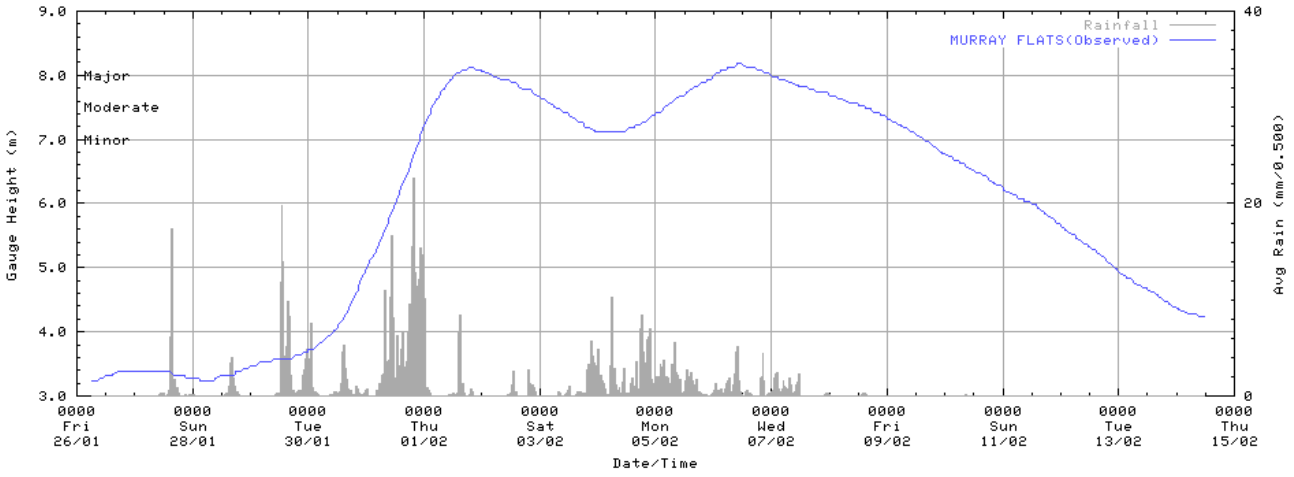
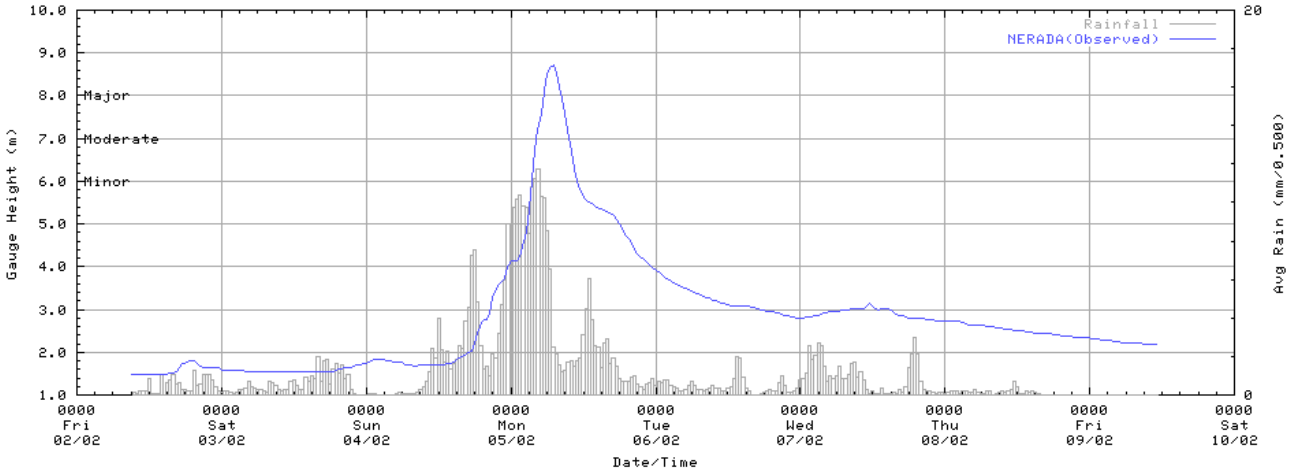
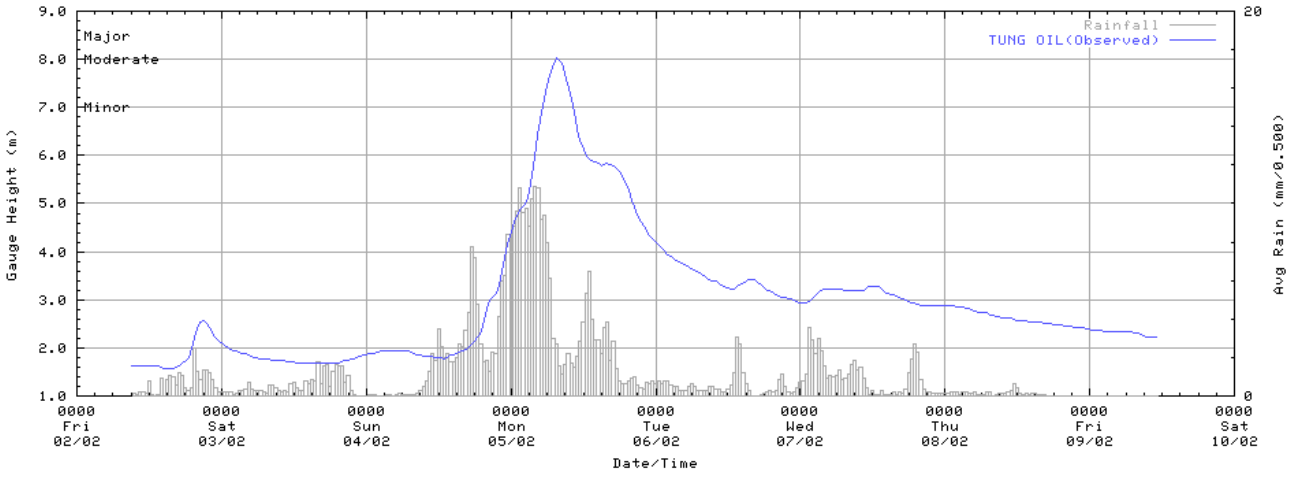


Figure 5h: River Heights - Johnstone River

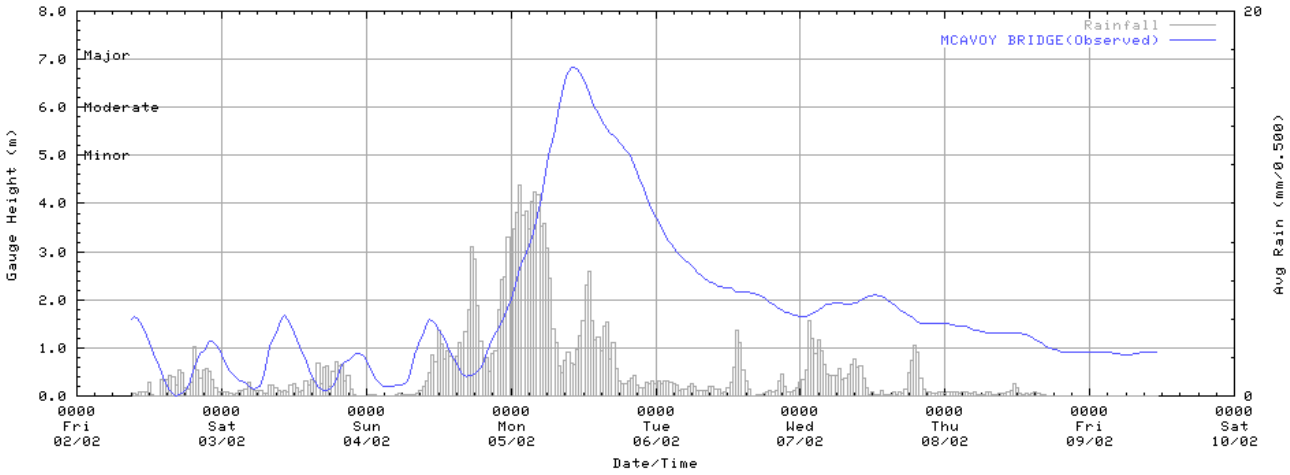
Nerada - Nth Johnstone River



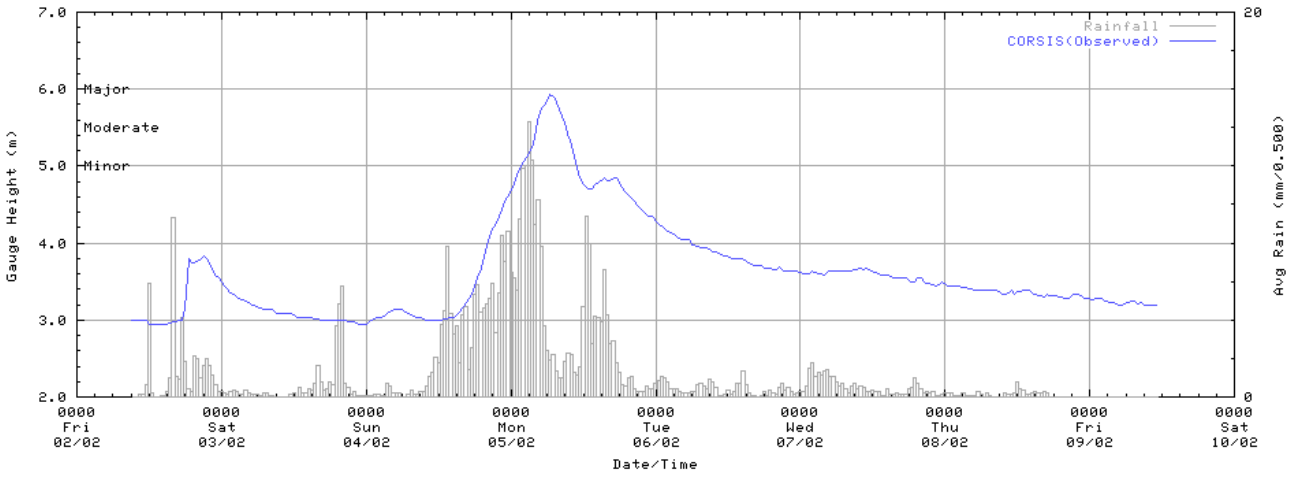
Tung Oil - Nth Johnstone River



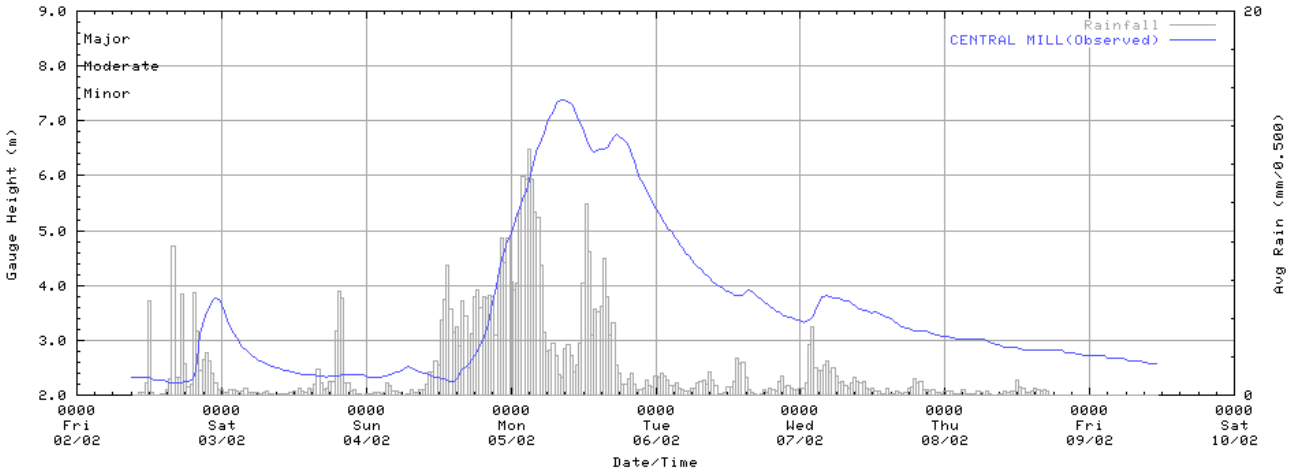
McAvoy Bridge - Nth Johnstone River



Corsis - Sth Johnstone River



Central Mill - Sth Johnstone River



Innisfail - Johnstone River

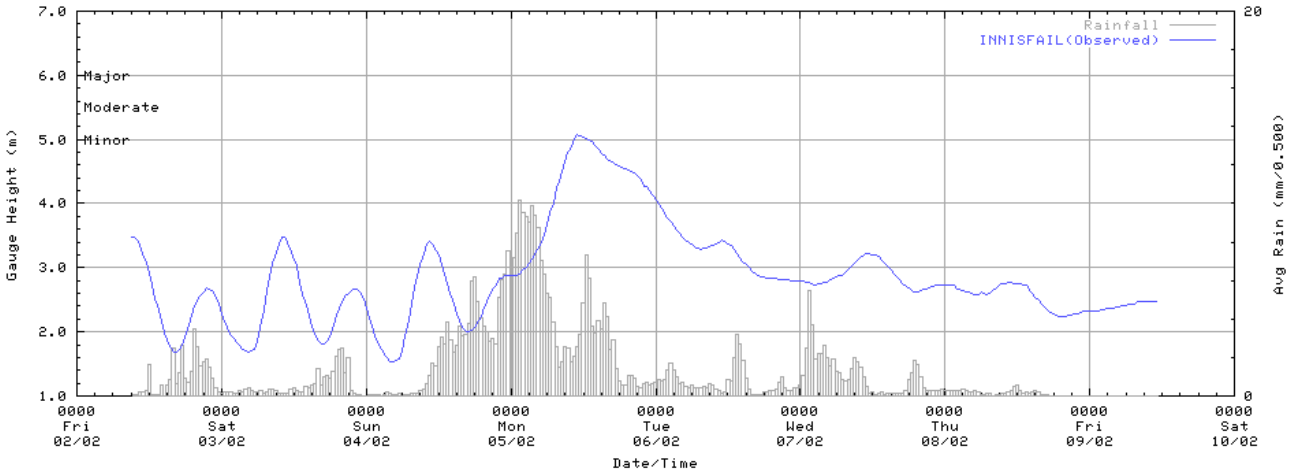
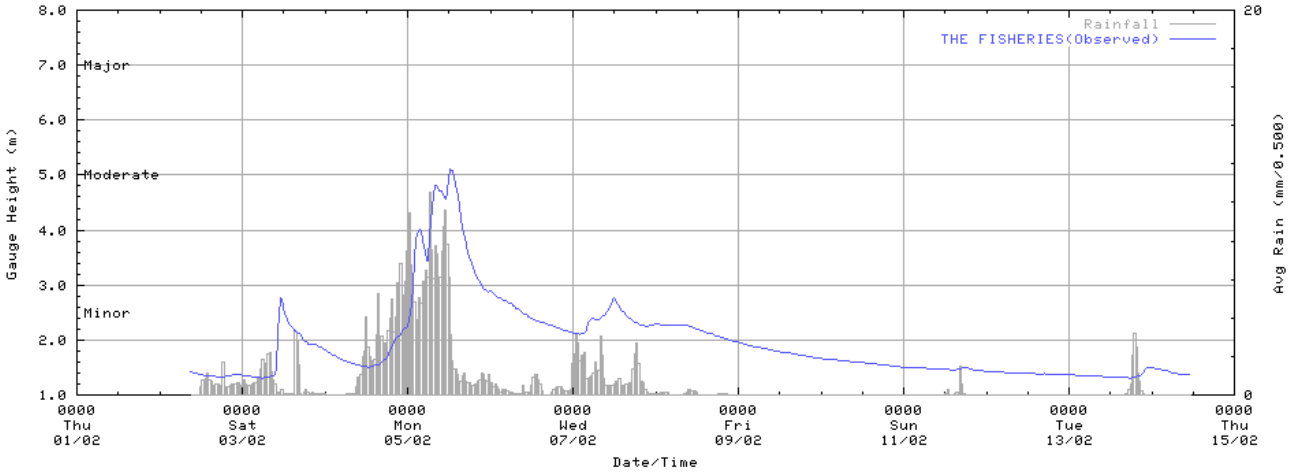
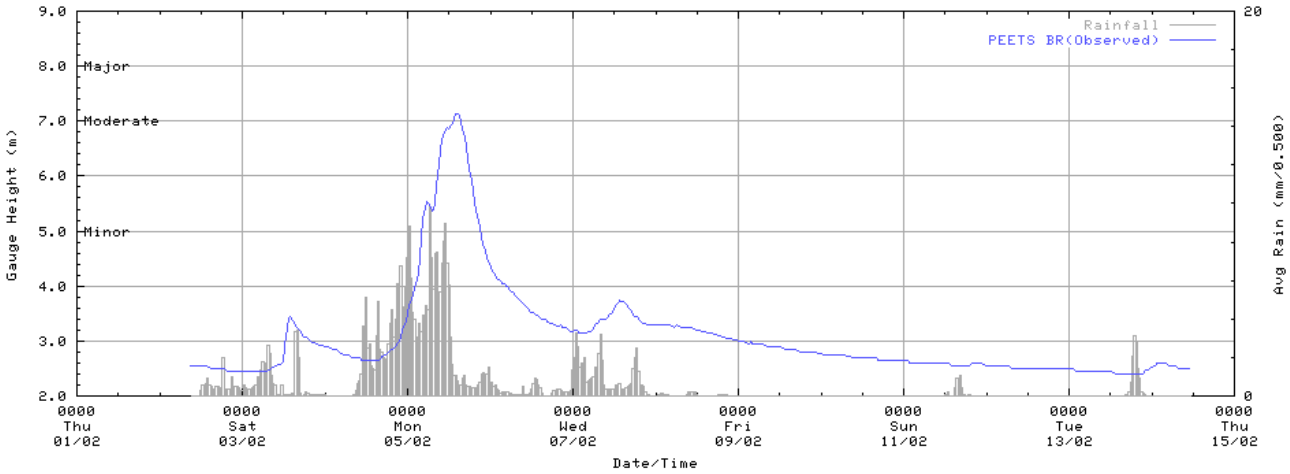


Figure 5i: River Heights - Mulgrave-Russell Rivers

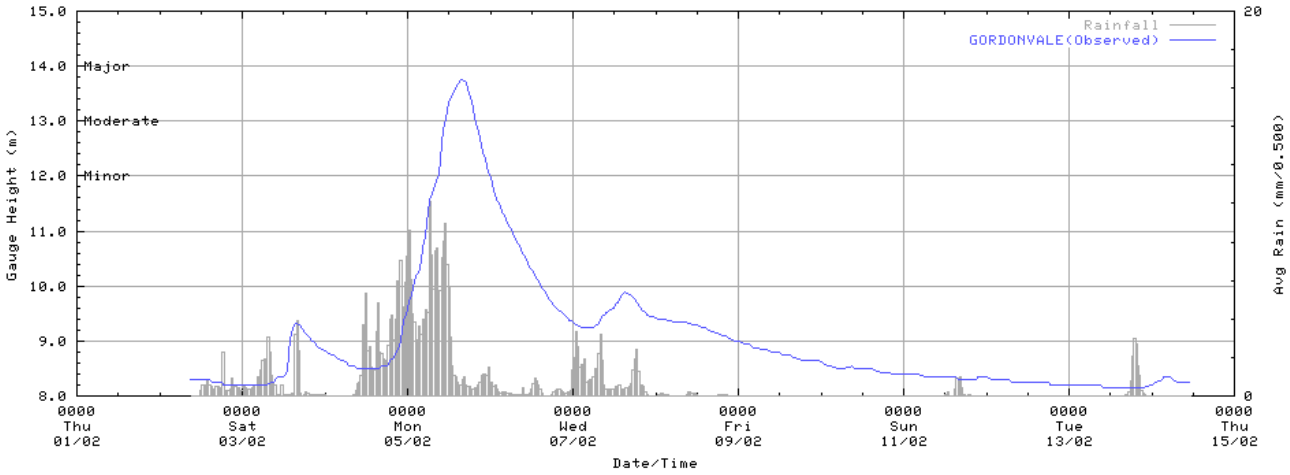
The Fisheries - Mulgrave River



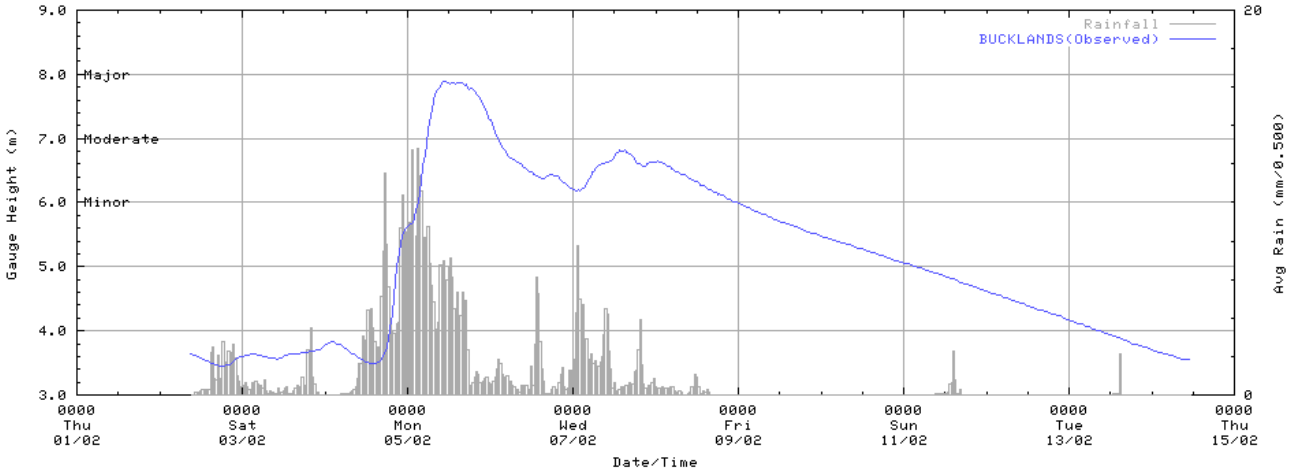
Peets Bridge - Mulgrave River



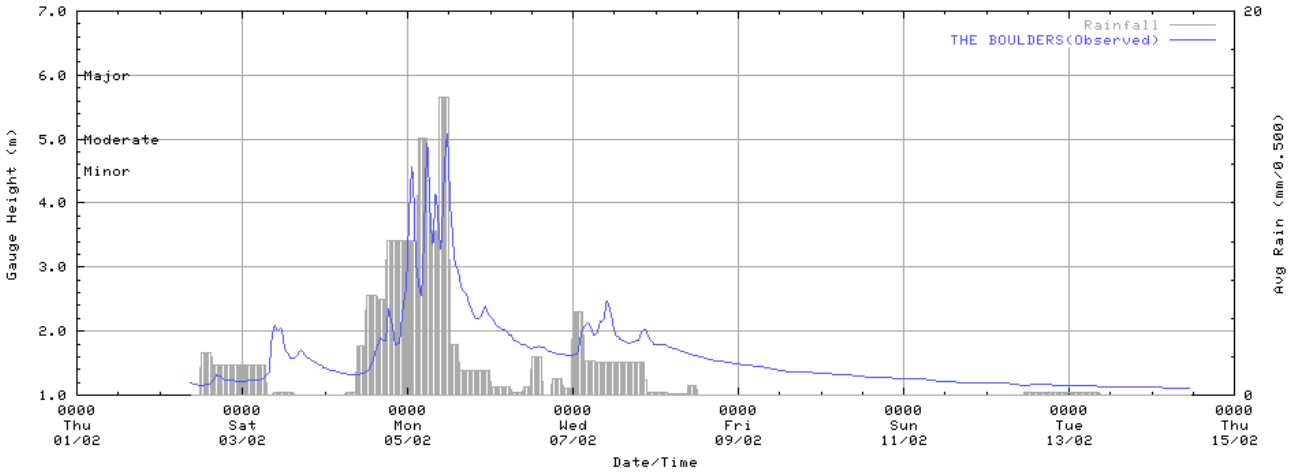
Gordonvale - Mulgrave River



Bucklands - Russell River



The Boulders - Babinda Creek



6. Warning Services

The table below documents the issue of flood warnings for North and Central coast rivers during the period 30 January to 9 February 2007. A total of 173 warnings were issued for the event.

Table 5: Summary of Flood Warnings

Product ID	Basin/Region	First Warning	Last Warning	No.
20700	Coastal Rivers Between Innisfail And Bowen	30/01/2007 15:45	08/02/2007 07:42	35
20712	Mulgrave And Russell Rivers	05/02/2007 09:59	06/02/2007 06:27	5
20715	Johnstone River	05/02/2007 06:32	06/02/2007 06:35	6
20720	Tully River	31/01/2007 06:47	09/02/2007 09:15	24
20725	Herbert River	31/01/2007 08:14	09/02/2007 09:27	29
20730	Coastal Rivers Between Innisfail And Bowen	30/01/2007 15:45	04/02/2007 08:21	15
20740	Haughton River	01/02/2007 07:41	04/02/2007 10:21	12
20745	Burdekin River	02/02/2007 16:03	09/02/2007 09:28	38
20755	Pioneer River	01/02/2007 07:47	03/02/2007 06:54	6