

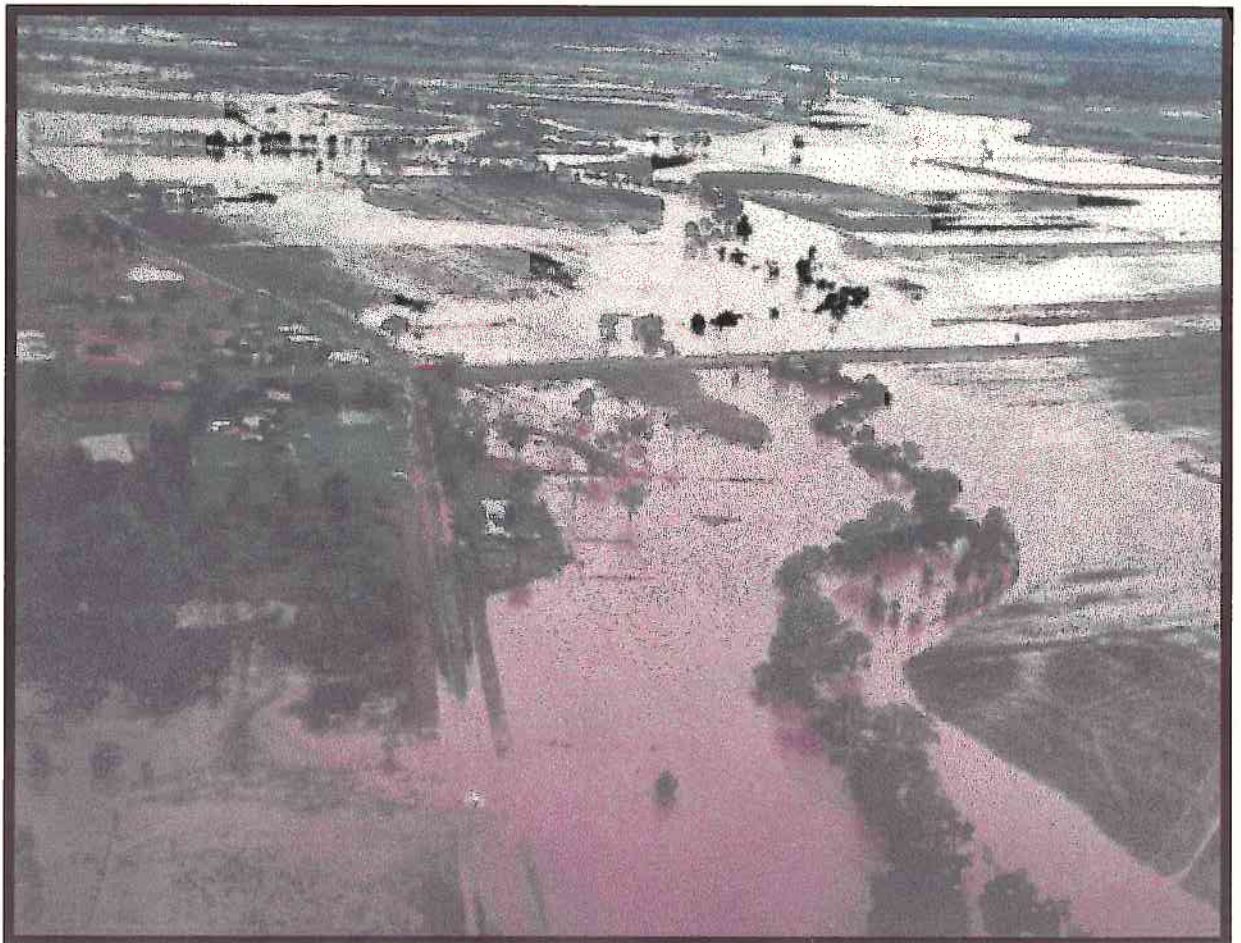


BUREAU OF METEOROLOGY
DEPARTMENT OF THE ENVIRONMENT,
SPORT AND TERRITORIES

SEVERE WEATHER AND FLOODING

SOUTH EAST QUEENSLAND

MAY 1996



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**Queensland Regional Office
Bureau of Meteorology**

July 1996

**Severe Weather and Flooding
South East Queensland
May 1996**

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Severe Weather and Flooding South East Queensland May 1996

1.0 EXECUTIVE SUMMARY

Commencing on 30 April 1996 and continuing into early May, the southeast corner of Queensland experienced extreme weather conditions which lead to severe major flooding in Lockyer Creek, and moderate to major flooding in the Bremer and Logan Rivers and in the Condamine River system at Warwick and Dalby. At the same time, floods also occurred in the Border Rivers system, the Moonie River and the Paroo River.

The weather conditions and flooding were tragically responsible for the loss of five lives.

The heavy seas, strong winds, heavy rainfalls and flooding during this period were associated with an east coast low which persisted in the region for several days. Meteorological forecasts early in the event gave a good indication of the heavy rainfall conditions that started on 30 April but the low persisted, despite regular model indications to the contrary, with the result that heavier rainfall periods re-occurred on another two periods.

Storm force winds, up to 65 knots (121 km/h) in gusts at Moreton Island, directed east to east-northeasterly gales onto the southern Queensland coast causing wild seas and severe beach erosion. Higher than normal tides inundated low lying coastal areas.

Rainfalls exceeding 1000 millimetres were recorded over the 10 day period in some higher locations. Totals between 250 and 400 were common in the Logan-Albert River basin with similar totals in the Brisbane area. Higher totals greater than 600 millimetres were recorded in the Lockyer Creek catchment in the same period. Three day rainfall totals were well below records and Average Recurrence Intervals (ARIs) for 24 and 72 hour totals were about 5 years and 20 years respectively, with significantly higher ARIs for isolated higher locations.

Flooding during the period was the most significant in southeast Queensland for several years. In terms of the area affected, it was probably the most widespread moderate to major flooding since January 1974 with all rivers and streams from the NSW border to Caboolture and west to Dalby and Goondiwindi affected.

However, flooding in most areas was not as severe as January 1974. Worst affected areas were in the Lockyer Creek system where flood levels in the Laidley and Lyons Bridge areas were similar to January 1974. In most other areas, flood levels were significantly lower than the 1974 levels. In the Brisbane River below Lowood to Moggill, flood levels were the highest since January 1974 but were many metres below that reached in 1974. Along the lower Brisbane River, higher than normal tides, coupled with the catchment runoff, caused some inundation of low-lying areas in the Brisbane metropolitan area.

Major flooding occurred along the Bremer River and Warrill Creek but this only resulted in moderate flooding at Ipswich where the first flood peak on 3 May was over 9 metres lower than the January 1974 level. A second lower flood peak occurred a few days later and was influenced by the relatively higher water levels in the Brisbane River.

In the Logan system, levels at Waterford were lower than those which occurred in the floods of February 1991 and about 4 metres below the 1974 levels. Flooding in the lower Albert River was the highest for about 7 years.

At Warwick and Dalby, flood levels were the highest for about 8 years at both locations. Flooding in the lower Condamine-Balonne continued well into May 1996. Floods also occurred in the Paroo, Macintyre, Weir and Moonie River during this period but did not result in any significant flooding.

A Preliminary Flood Warning was first issued on Wednesday 1 May for Coastal Streams between Maryborough and the Gold Coast, well before the onset of any significant flooding. Subsequently, the Flood Warning Centre (FWC) issued over 130 Flood Warnings for rivers in southern Queensland. Included in these warnings were over 50 predictions for 17 locations. These were widely disseminated to emergency response agencies such as Police, SES and Local Governments and the media.

Flooding along the main Condamine-Balonne, in the Macintyre, Weir, Moonie and Paroo Rivers was not as significant as that in the southeast Queensland Rivers but, nevertheless, they have been included in the warning summary to indicate the total number of Flood Warnings that were issued during the period.

In addition to the Flood Warnings, in excess of 200 River Height Bulletins were issued in the period.

The volume of incoming phone calls to the FWC was at times too large to be satisfactorily handled by the operational staff. Enquiries came from a large variety of sources ranging from members of the public to response organisations, particularly Local Government, and the media.

An analysis of the flood warning networks in southeast Queensland showed that about 80% of all (manual and automatic) stations provided adequate or better performance throughout the event. Failure at the other 20% of stations was due to absent manual observers, communications problems with radio and telephone systems, instrument failure, calibration errors or incorrectly reported data. While the failure rate was higher than normal, it generally did not inhibit the ability of the FWC to provide services.

The Bureau - Local Government cooperative ALERT systems in south east Queensland performed very well. About 85% of the stations within these systems worked without fault. Councils were generally satisfied with the systems and the assistance provided by the FWC staff.

Flood forecasting models were available for most of the effected catchment and gave guidance for river height predictions at key locations. However, one difficulty experienced with some models was in the under-estimation of excess rainfall, particularly over such a long event. Further work on model calibration and operation is required to account for this effect.

The computer systems used in the FWC, HYNET and AROS, worked satisfactorily during the event with the telemeter interrogation package, MASTERS, and the ALERT software, both resident on HYNET, performing robustly. However, warning preparation was made difficult at times mainly due to the unreliability of the AROS terminals.

The aim of this report is to document the meteorological and hydrological aspects of the event, and to outline the warning and prediction services given by the Bureau. Some review of the performance of the flood warning and forecasting systems operated by the Bureau of Meteorology is given in the report.

Since the event, the Bureau has conducted internal reviews and participated in meetings with relevant agencies, including Emergency Services and Local Governments, aimed at improving all aspects of the warning services. These activities are ongoing and are not documented within this report.

2.0 INTRODUCTION

In early May 1996, the south east corner of Queensland experienced extreme weather conditions with strong winds and heavy rainfall leading to severe major flooding in Lockyer Creek and moderate to major flooding in the Bremer, Logan and Condamine River system at Warwick and Dalby. At the same time, floods also occurred in the Border Rivers system, the Moonie River and the Paroo River.

The flooding in Lockyer and Laidley Creeks was the worst since 1974 with many houses inundated and residents evacuated. In the Brisbane River, only minor flooding occurred in the Brisbane metropolitan area where flood water coincided with higher than predicted tides as a result of the strong onshore winds.

The extreme weather conditions and flooding were tragically responsible for the loss of five lives.

This report has been produced by the Queensland Regional Office of the Bureau of Meteorology as a record of the severe weather and flooding that occurred in early May 1996. It is intended to be an internal report but is available to external agencies under the conditions outlined on the title page.

2.1 Aim of Report

The aim of this report is to document the meteorological and hydrological aspects of the significant weather and flooding in the south-eastern districts of Queensland during the period 30 April to 10 May 1996.

The report also outlines the warning and prediction services given by the Bureau in the lead-up to and during the event, and provides some review of the performance of the flood warning and forecasting systems operated by the Bureau of Meteorology.

The stations and places named in the report may be located by referring to the Flood Warning Network maps, Figures 1.1 - 1.3, which are included at the end of the report.

2.2 Impact & Damages

Flooding

Two men were drowned in a creek near Cambooya while attempting to ride a raft and a young boy drowned after being swept in to a drain at Gail's Golf Course. An elderly man was also drowned after being swept from his dinghy as he checked his moored yacht in the Brisbane River.

There were several near escapes included three teenagers who were swept down a creek at Logan but were washed up safely. A young man was sucked into a drain in Downfall Creek on Friday afternoon 3 May but fortunately was saved by an off duty fire officer. A man was rescued by a helicopter after escaping from his utility which was swept off Wacol Station Road on Friday. Two cars were also swept off the Oxenford Tamborine road but the occupants reached dry land safely. In the Brisbane suburb of The Gap, emergency workers won a race against rising waters to rescue a teenager whose legs became trapped in Enoggera Creek.

Flood waters inundated houses and businesses at Killarney, Warwick, Dalby, Laidley and in the Logan City area. There was also extensive flooding of rural areas throughout the Brisbane Valley and in the Condamine and Macintyre River catchments.

In the Lockyer Valley, one of the states major fruit and vegetable producers, it has been estimated that flooding has caused the loss of \$50 million worth of produce. Over 120 people were

evacuated from their homes in the Lockyer Valley, during the event.

Motor vehicle accidents and Road Conditions

It was reported that on Thursday 2 May 1996, Police were called to 100 accidents including 32 involving injuries. At the same time, RACQ breakdown workers were receiving calls at the rate of 200 per hour and over 180 roads were closed including three main highways.

On Friday night 3 May, a man was killed when his car rolled in heavy rain near Beenleigh on the Pacific Highway.

Wind

The wind created havoc on Thursday 2 May 1996. It brought down hundreds of trees over southeast coastal districts. The effect of strong wind was particularly bad on Mount Tamborine where fallen trees blocked all major roads at times and damage to 16 buildings was reported. Landslides also closed roads. In other areas, there was isolated roof damage including a block of units being partially unroofed at Surfers Paradise. Several houses had trees fall on them and at least two motorists had trees fall on their vehicles. On Breakfast Creek in Brisbane, houseboats were overturned by the wind. The fallen trees and tree branches were responsible for widespread power blackouts and, in one case, power lines came down on several motor vehicles necessitating a delicate rescue operation. In Brisbane on Thursday 2 May, 40,000 homes were blacked out while 20,000 and 7000 homes lost their power on the Gold and Sunshine Coasts respectively.

Seas

Huge seas and a half metre storm surge combined to produce the worst beach erosion since 1989. Currumbin Surf Lifesaving Club was seriously threatened by the high tides on the nights of Thursday 2 May and Friday 3 May 1996. Sandbagging was needed to prevent flooding from storm surge and waves at Brighton on the northern shores of Moreton Bay on the Thursday night high tide. On both nights, Water Police were kept busy as boats broke their moorings on Moreton Bay and in the Brisbane River.

2.3 Sources of Data

The primary sources of data for this report is the record of meteorological data and analysis held by the Bureau of Meteorology, and the rainfall and river height data collected by the Bureau's Flooding Warning Centre (FWC) during the event. The meteorological data set includes surface and upper air weather observations, satellite pictures and digital radar images. The data received in the FWC is from radio telemetry (ALERT) systems, telephone telemeters and manual observer stations reporting through the Remote Observer Collection System (ROCS).

Additional river height information was obtained from the Queensland Department of Natural Resources, and wave and tide data was obtained from the Queensland Department of Environment and Heritage.

3.0 METEOROLOGICAL CONDITIONS

3.1 East Coast Lows

The wild seas, weather and flooding before and over the May long weekend were associated with a type of weather system known as an east coast low or winter cyclone. These systems can occur at any time of the year although they are more common in autumn and in early winter. The first known east coast low struck the far southern coast of Queensland in August 1846 and drove the vessel *Coolangatta* ashore in the area now bearing its name. More notable recent events with some of their effects are listed below:

July 1965	Wind damage in Brisbane city-floods- 24 hour rainfall totals to 502 mm.
June 1967(a)	Wind gusts to 150 km/hr- major flooding-24 rainfall totals to 636 mm.
June 1967(b)	Culminating event in 1967- winds to hurricane force at Cape Moreton-unprecedented beach erosion on the Gold Coast with houses and sections of roads lost to the sea.
July 1973	Vessel <i>Cherry Venture</i> driven ashore in hurricane force winds-24 hour rainfall totals to 378 mm-floods with 4 drowned.
May 1980	Floods-beach erosion-24 hour rainfall totals to 329 mm.
June 1983	Floods-24 hour rain totals to 349 mm.
April 1984	Widespread roof damage Gold Coast-floods-24 hour totals to 346 mm.
April 1988	Two events produced floods- 24 hour totals to 302 mm and 337 mm.
April 1989	Floods and wind damage- 120 mm in 3 hours in Brisbane.

3.2 Development of May 1996 Event

Sea Level

The development of the May 1996 east coast low was very much in the definitive fashion in which these systems evolve. At 9pm 30 April 1996 a small low was located east of Townsville and by 9am 1 May 1996 it had moved down the coast to be east of Mackay. It reached peak intensity near Brisbane between 9am and 3pm 2 May 1996 with a central pressure of 997 hPa. Figure 3.1 is a sequence of Mean Sea Level (MSL) weather charts illustrating this development. Of particular notice is the compacting of the isobars south and east of the low as it moved down the coast towards a near stationary area of high pressure in the Tasman Sea. This increase in the MSL pressure gradient resulted in a large area of gales being directed onto the southern Queensland coast. The wind plots (from ship and automatic weather station observations) on Figure 3.1 give some indication of the areal extent of these gales.

Upper levels

Preceding the development at sea level, a deep low (Figure 3.2) had reached peak intensity at the 250 hPa level (a level near an elevation of 11km) southwest of Cobar in central New South Wales (NSW) at 9am 1 May 1996. Subsequently the low at sea level moved down the coast intensifying as it moved under the band of strong 250 hPa winds to the north of this upper low.

Middle levels

The sea level low reached peak intensity when it came seawards of the centre of the low at the 700 hPa level (elevation near 3km and illustrated in Figure 3.3). By this time the low at the 700 hPa level was also near peak intensity. The low at the 500 hPa level (elevation just under 6km and also in Figure 3.3) was further to the southwest near Moree and had weakened a little in intensity over the previous 24 hours.

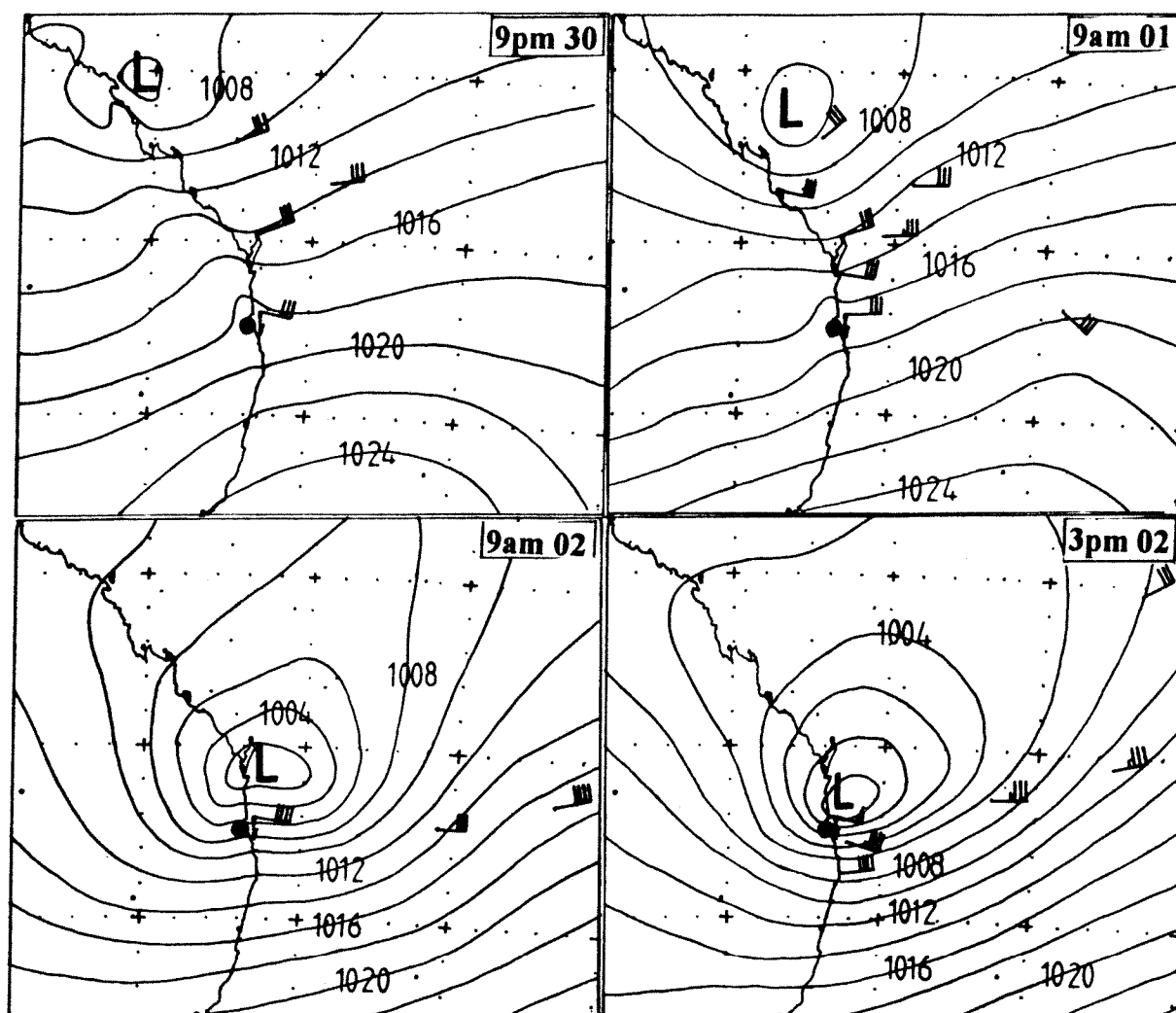


Figure 3.1 Mean Sea Level pressure distribution (hPa)
 Location of Brisbane is marked with a solid circle. Wind plots use the normal convention of bar/half bar/flag to represent 10 knots / 5 knots and 50 knots respectively.

Coupling of low level and upper lows

In summary, the low in the middle and upper atmosphere developed as it moved from the Great Australian Bight area into NSW and reached peak intensity at 9 am 1 May 1996. It was at this stage a weaker feature at lower levels. Further to the northeast the sea level east coast low was beginning to form with warm east to northeast winds flowing onto the coast to the south.

From theoretical studies it has been found that such warm moist onshore low level flow to the east of a developing upper low sets the stage for rapid intensification of a sea level low. Thus the southern upper system and the northern tropical low merged into the one system which by 9am Thursday 2 May 1996 sloped southwestward with height from Brisbane at sea level to near Canberra at 250 hPa.

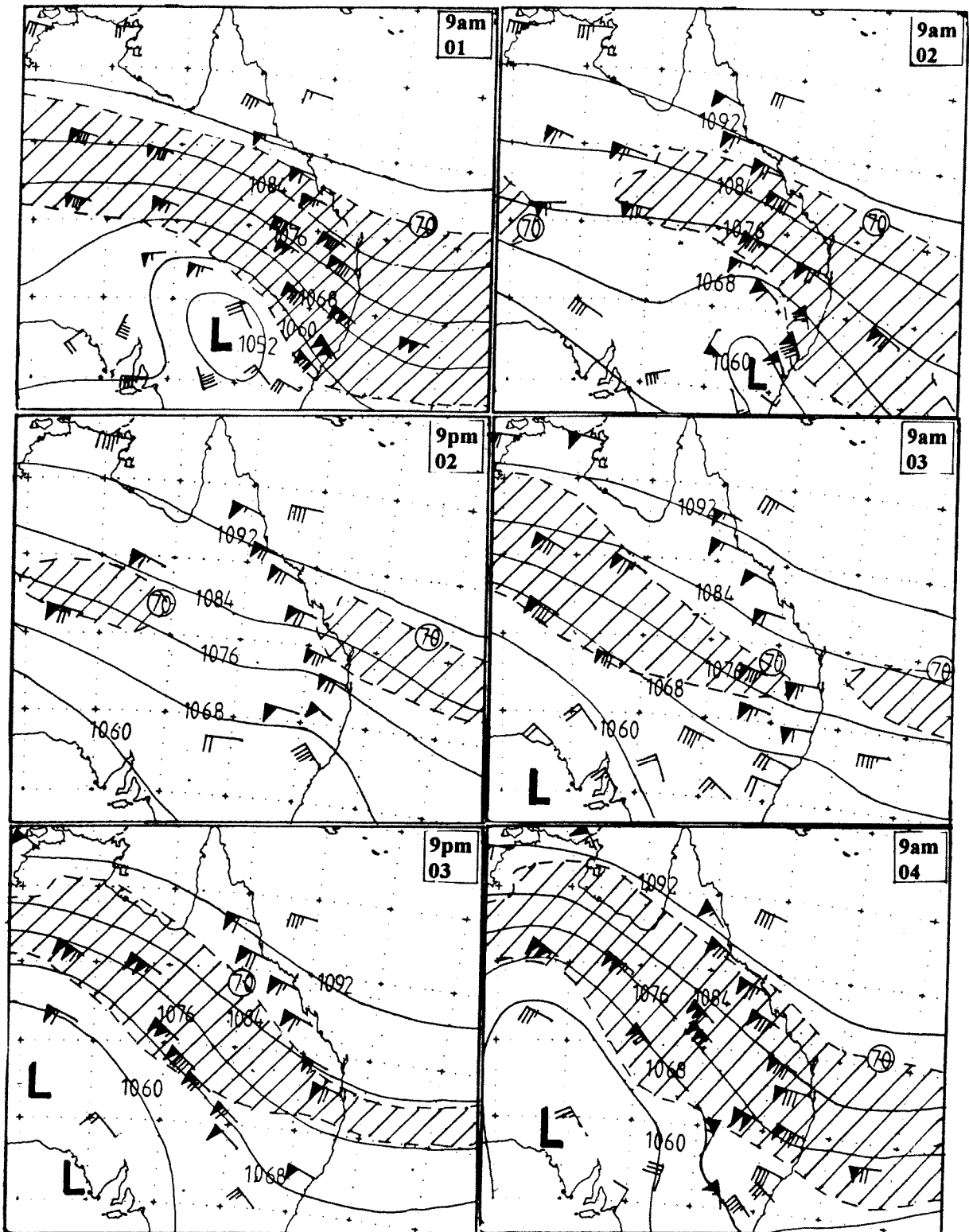


Figure 3.2 Height contours (decametres) and wind observations at 250 hPa
Hatched areas denote regions where wind speeds are greater than 70 knots.

3.3 Weakening and Re-development of Upper Pattern

From Figures 3.2 and 3.3, it can be seen that by 9am 3 May 1996 the low at 500 hPa and 250 hPa had weakened. At 250 hPa the band of strong upper winds (jetstream) over Brisbane during the development of the east coast low had contracted seawards while a new jetstream approached

from the west. The low at 700 hPa was still a strong feature however the winds at this level at Brisbane had changed from northeasterly to easterly coinciding with temporary easing in the heavy rain. Winds from a northeasterly direction at 700 hPa over Brisbane were important in the development of the heavy rains.

By 9am 4 May 1996, a new deep low developed over Central Australia extending up above 250 hPa and below 700 hPa. The new 250 hPa jetstream had strengthened and was over Brisbane. Northeasterly winds at 700 hPa re-developed over Brisbane as a trough at this level extended from Central Australia to the north of Brisbane. The deep central Australian trough peaked in intensity around 9pm 4 May 1996 and the upper jetstream over Brisbane was at its maximum strength at this time with the axis of the jet just south of the Brisbane region.

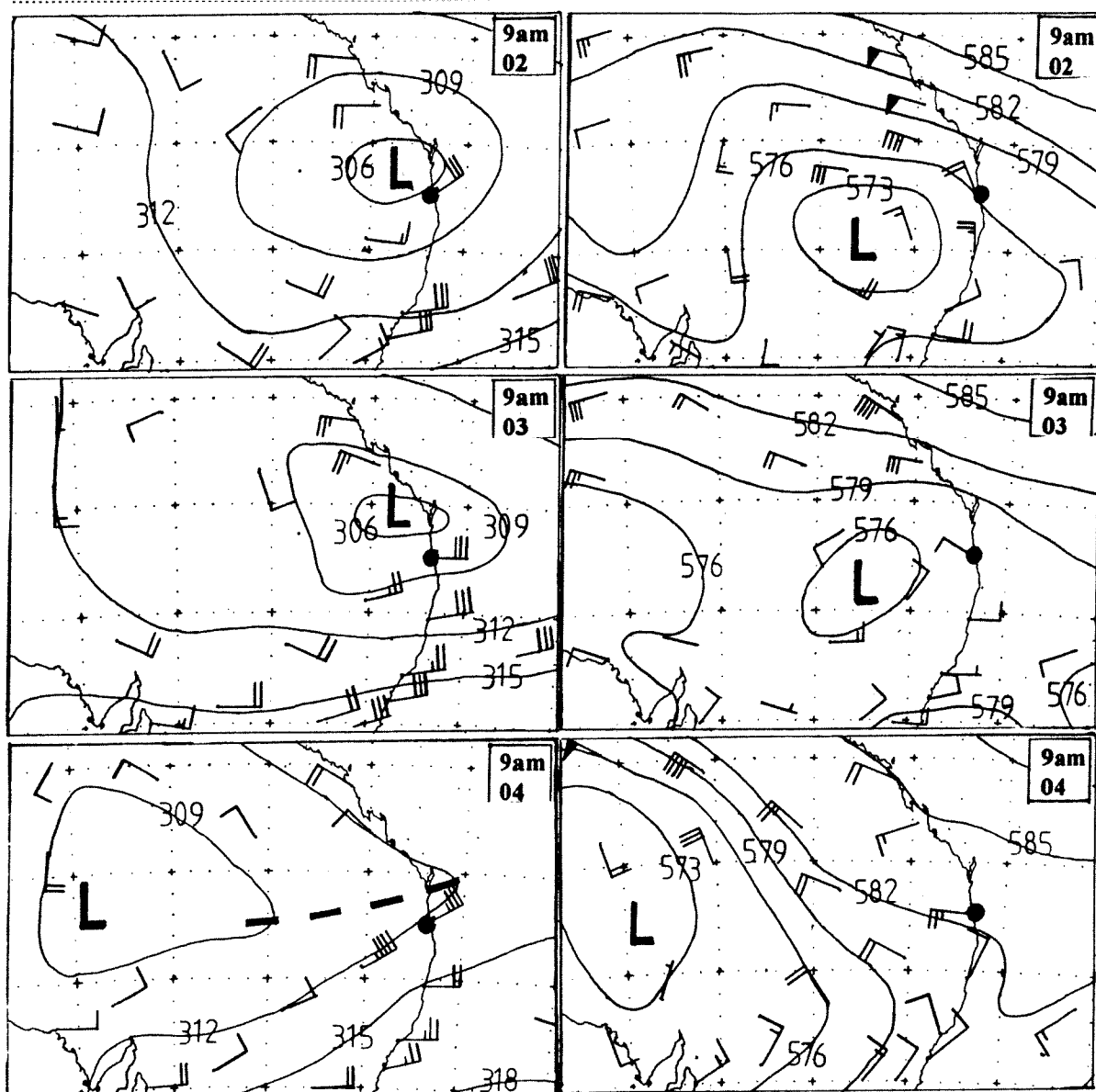


Figure 3.3 Height contours (decametres) and wind observations at 700 hPa (left) and 500 hPa (right)
Location of Brisbane marked with a solid circle. Bold dashed line denotes position of 700 hPa trough.

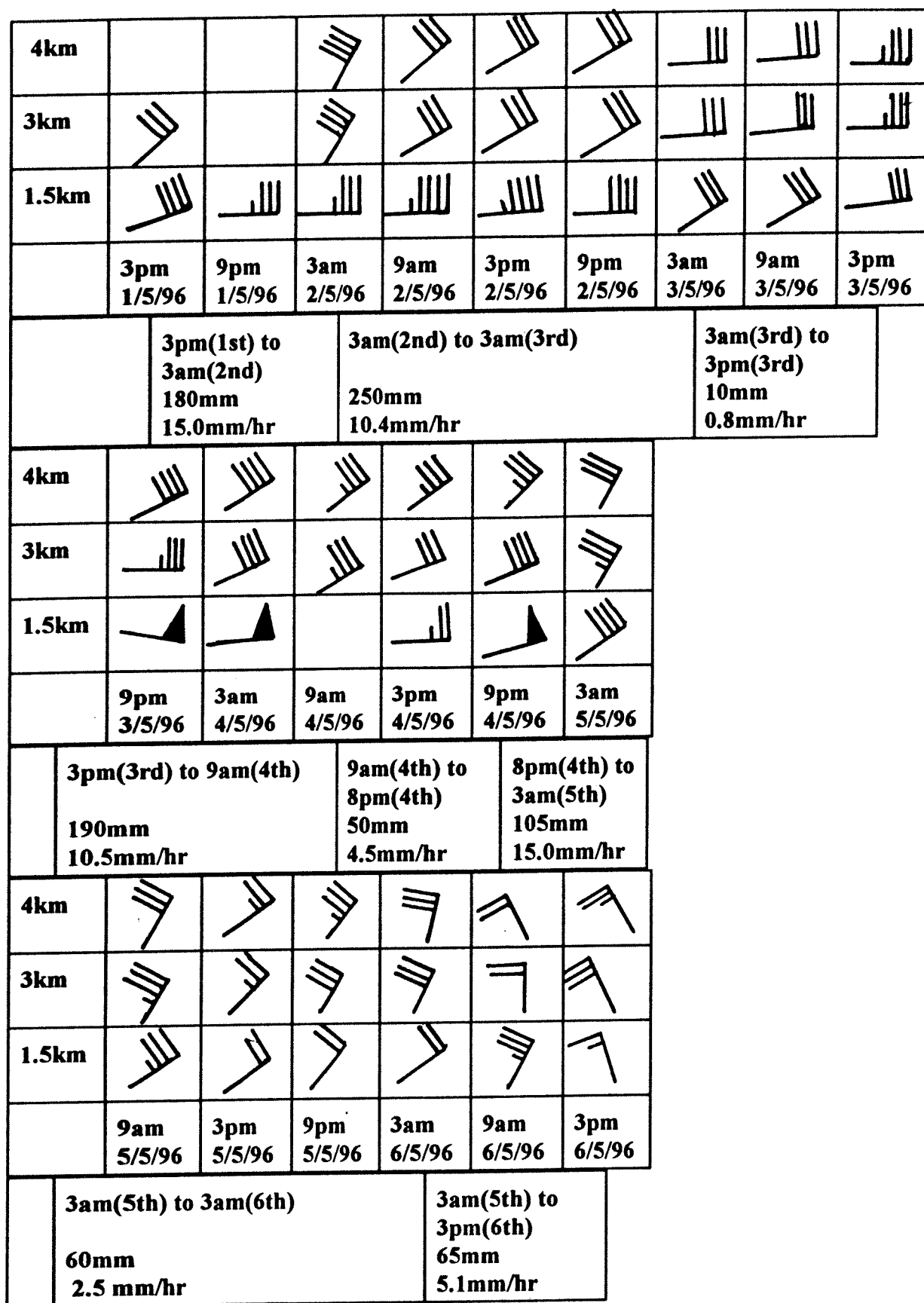


Figure 3.4 Time Series of Brisbane Airport upper winds and Mt Glorious rainfall

3.4 Upper Winds Structure and Rainfall Intensity

In Figure 3.4, a time series of the vertical wind structure obtained from weather balloons released at the Brisbane Airport Meteorological Office is compared with a time series of the rainfall at Mt Glorious. Mt Glorious was selected as it lies at almost the same latitude as the airport and it received by far the most rain in the Brisbane region.

First Period of Heavy Rain

Over the twelve hours from 3pm 1 May 1996 Mt Glorious averaged 15 mm of rain per hour. This was the period when the MSL low was intensifying and moving closer to Brisbane. At 1.5 km elevation the winds had previously been northeasterlies. During this period the winds at this level were turning more easterly while at 3km and 4km northeasterly winds were increasing. This meant that the wind direction changed anticlockwise with height. When winds with such strong speeds back with these heights, it is an indication there is large scale lifting of the onshore airflow which results in heavy rain. The wind structure favourable for heavy rain remained intact until 3am 3 May 1996. The rainfall averaged 10.4 mm per hour over the 24 hour period up to this time.

Light Rain Period

Following the heavier rain was a 12 hour stretch from 3am 3 May 1996 when Mt Glorious received only 8mm. It should be noted that this occurred as the winds veered (turned clockwise) instead of backing between 1.5km and 3km. The veering resulted from the 700 hPa wind turning easterly (as the middle and upper level low weakened) and the 1.5 km winds turned northeasterly. As shown in Figure 3.5, the east coast low had moved well inland by 9am 3 May 1996 and a weak trough extended from it through the Brisbane area. In these situations the heavy rain and strong onshore winds always lie south of the coastal sea level trough. By 3pm the trough moved northward up to the Fraser Island area and the winds at 1.5 km turned easterly again.

Second Period of Heavy Rain

After 3pm 3 May 1996 the heavy rain commenced again with the backing with height wind structure returning as the winds at 3km and above turned northeasterly. As discussed above, these northeasterlies developed as the new central Australian system extended its influence across to the Brisbane area. This influence also resulted in a new low developing at sea level just northeast of Brisbane (Figure 3.5). A sequence of radar imagery covering this period is studied below.

Light Rain Period

After the second period of light rain, further heavy rain recommenced at Mt Glorious until 9am 4 May 1996 when, as shown in Figure 3.5, the sea level trough slipped south of Brisbane and the rain eased. From the light winds at Brisbane and Cape Moreton at 3pm the coastal sea level trough was still south of Brisbane and this was still the case at 6pm (not shown in Figure 3.5).

Third Period of Heavy Rain

From Figure 3.5, it can be seen that the coastal sea level trough had intensified by 9pm 4 May 1996 and was north of Brisbane. Also from Figure 3.4, the 1.5 km winds strengthened and were backing with height above this level. Heavy rain fell for 7 hours around this time while the upper jetstream was at its peak above Brisbane. The central Australian system then began to weaken and by 9am 5 May 1996 the coastal sea level trough had weakened. The 1.5 km winds turned northeasterly and the winds lost their backing with height structure. Consequently, the rains then tapered off.

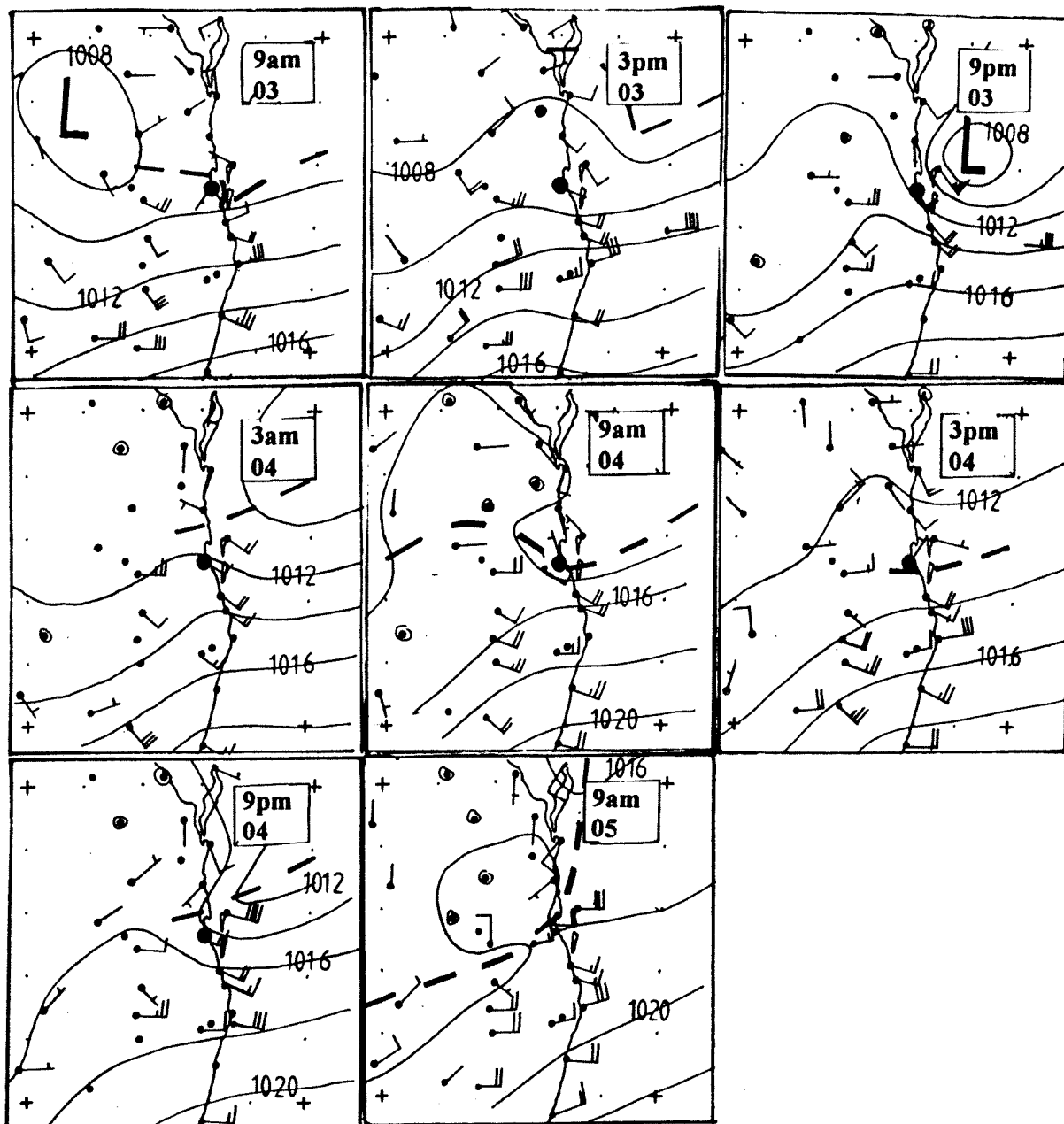


Figure 3.5 Mean Sea Level pressure distribution and wind observations
Location of Brisbane marked by solid circle. Trough position marked by bold dashed line.

3.5 Radar Characteristics

The development of the second burst of heavy rain is now examined from a radar perspective. At 9am 3 May 1996 the extensive coastal rain areas (Figures 3.6 and 3.7) lay to the south of Brisbane and the sea level trough. From Figure 3.5 between 9 am and 3am 3 May 1996 the coastal trough moved offshore from Brisbane and the extensive coastal rain area broke up. All that was left was a narrow rainband which moved back over Brisbane between noon and 3pm.

The rainband then remained nearly stationary and developed presumably as the 700 hPa trough and sea level low developed just to the north of Brisbane. It illustrates how narrow a zone of heavy rain affected the populated coastal region over this period.

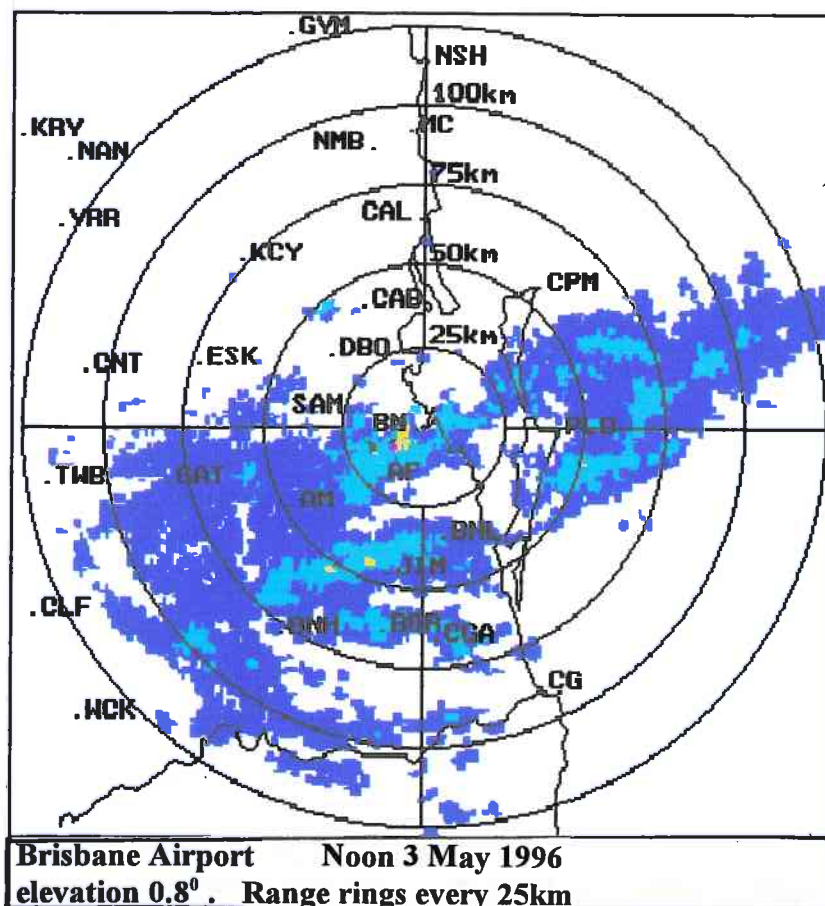
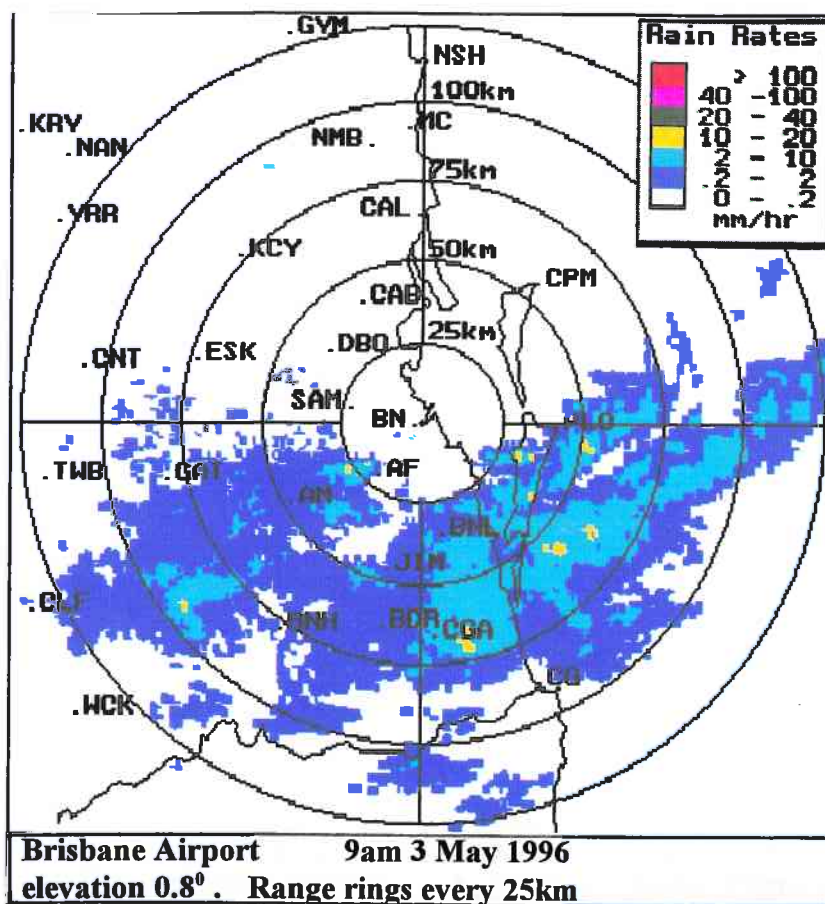


Figure 3.6 Digitised radar imagery from Brisbane Airport weather watch radar

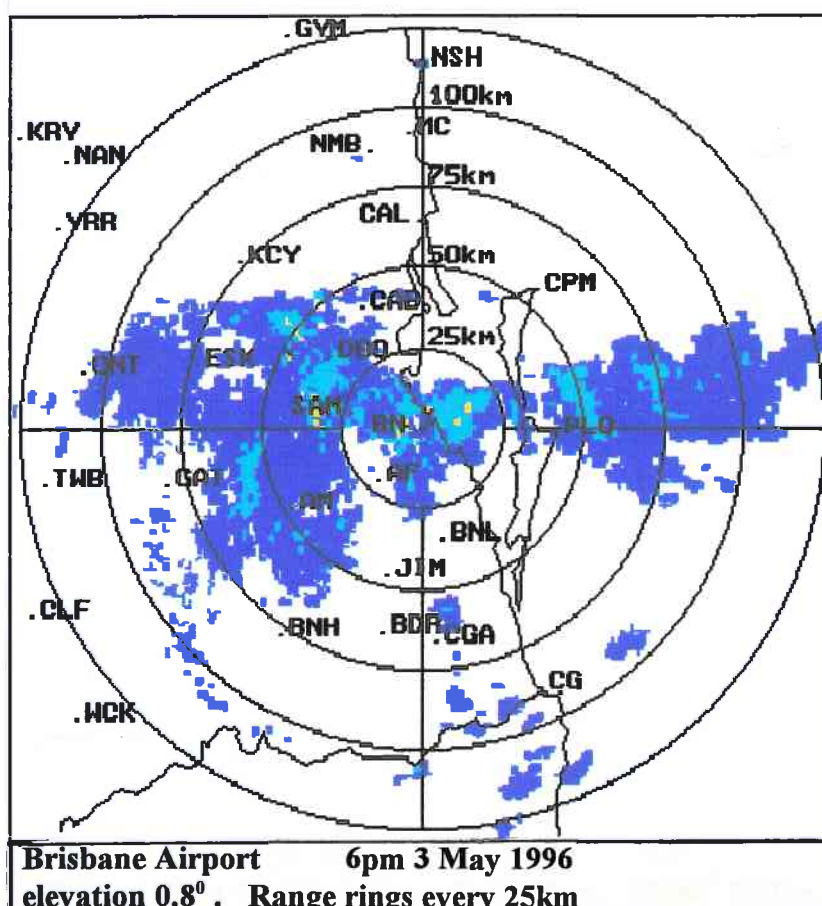
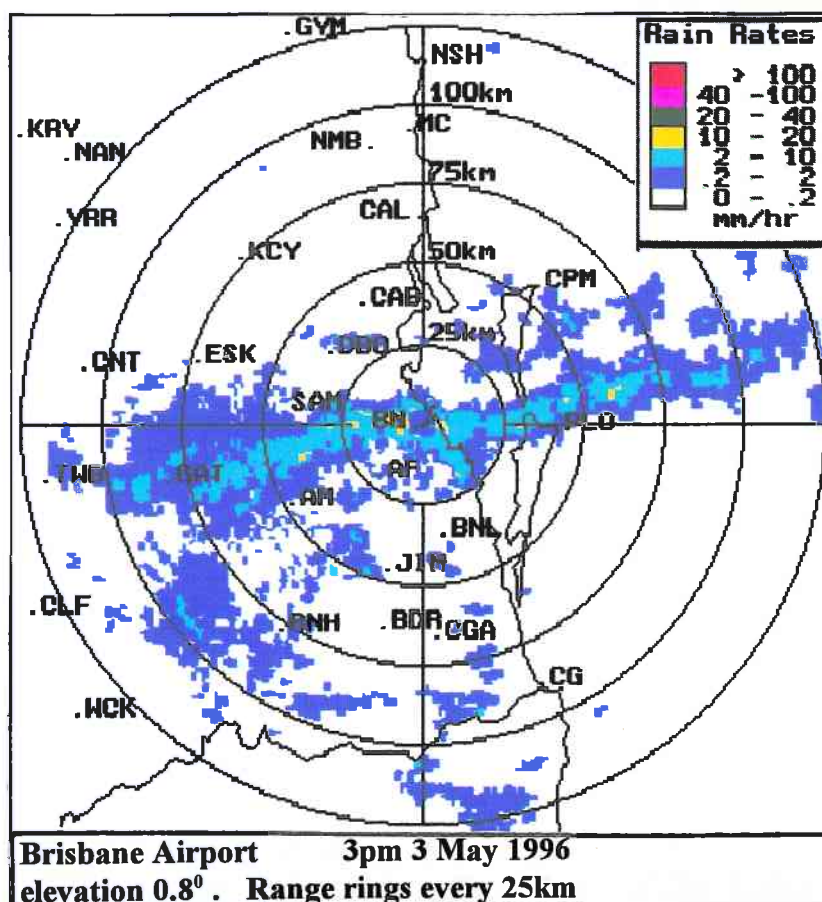


Figure 3.7 Digitised radar imagery from Brisbane Airport weather watch radar

3.6 Forecasting Aspects and Computer Generated Forecasts

Forecasting the development

Forecasts leading up to the event were good. On the afternoon of Wednesday 1 May 1996, the forecasts indicated that an east coast low would develop along the Southeast Coast. As a result, warnings were issued to cover damaging winds over land, gales with heavy swells over adjacent waters and coastal stream flooding.

The global computer model MSL forecasts that were available that afternoon for 9pm the next day are shown in Figure 3.8 and are compared with the actual conditions. All models forecast a low to develop in the general vicinity of southeast Queensland. The United Kingdom (UK) model, while not forecasting the central pressure near 1000 hPa, did forecast the intense pressure gradient south of the low well. The UK model predicted the location of the centre but it had the intense wind and rain south of the Brisbane area. The European (EC) model was nearly as good though it had a weaker pressure gradient south of the low. The American (US) model provided useful guidance and it did imply strong winds over the Brisbane area although it did not forecast the intensity of the pressure gradient south of the low. The Australian model (Gasp) was the inferior model depicting the centre of the low too far north. In earlier model runs the US was the first to forecast the possibility of an east coast low development.

Forecasting the cessation of the wind and heavy rain

Figure 3.9 shows the global model outputs on Thursday morning 2 May 1996. The EC, UK and particularly the Gasp forecasted a contraction of the wind and heavy rain into NSW. The US was the only model to forecast that the low would remain stationary although, like the other models, it failed to predict the intense pressure gradient. The pattern forecasted by the US model would not have been contributory to heavy rain over southeast Queensland. Generally the models moved the middle level low southeastward and weakened it but did not forecast the interaction with the new central Australian low. This resulted in the models suggesting a movement of the rain into NSW and clearing Queensland too early.

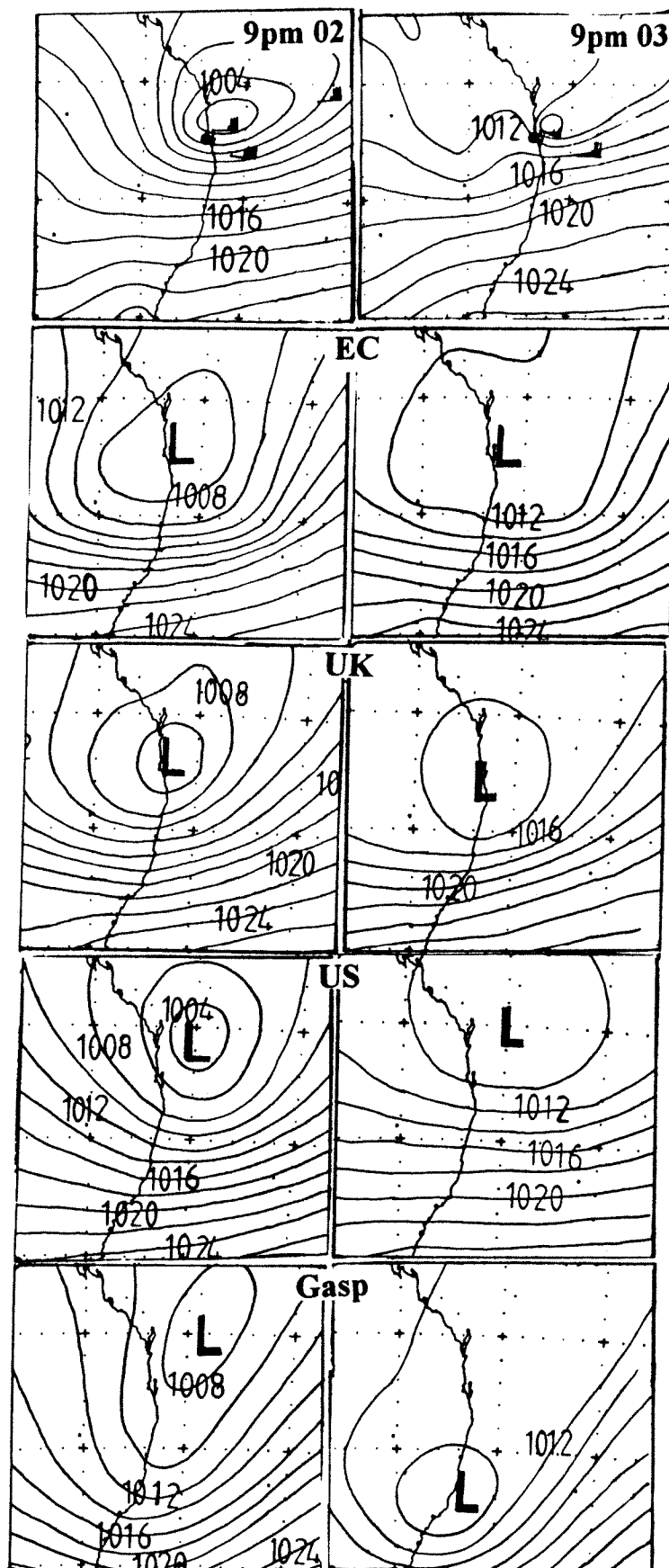


Figure 3.8

Mean Sea level pressure distribution (hPa) & Global Computer Model forecasts

Mean Sea level pressure distribution (hPa) for 9pm 2 May 1996 together with Global Computer Model forecasts for that time based on data at 9m 30 April 1996. European model marked EC, United States of American model marked US, United Kingdom model marked UK and Australian model marked Gasp.

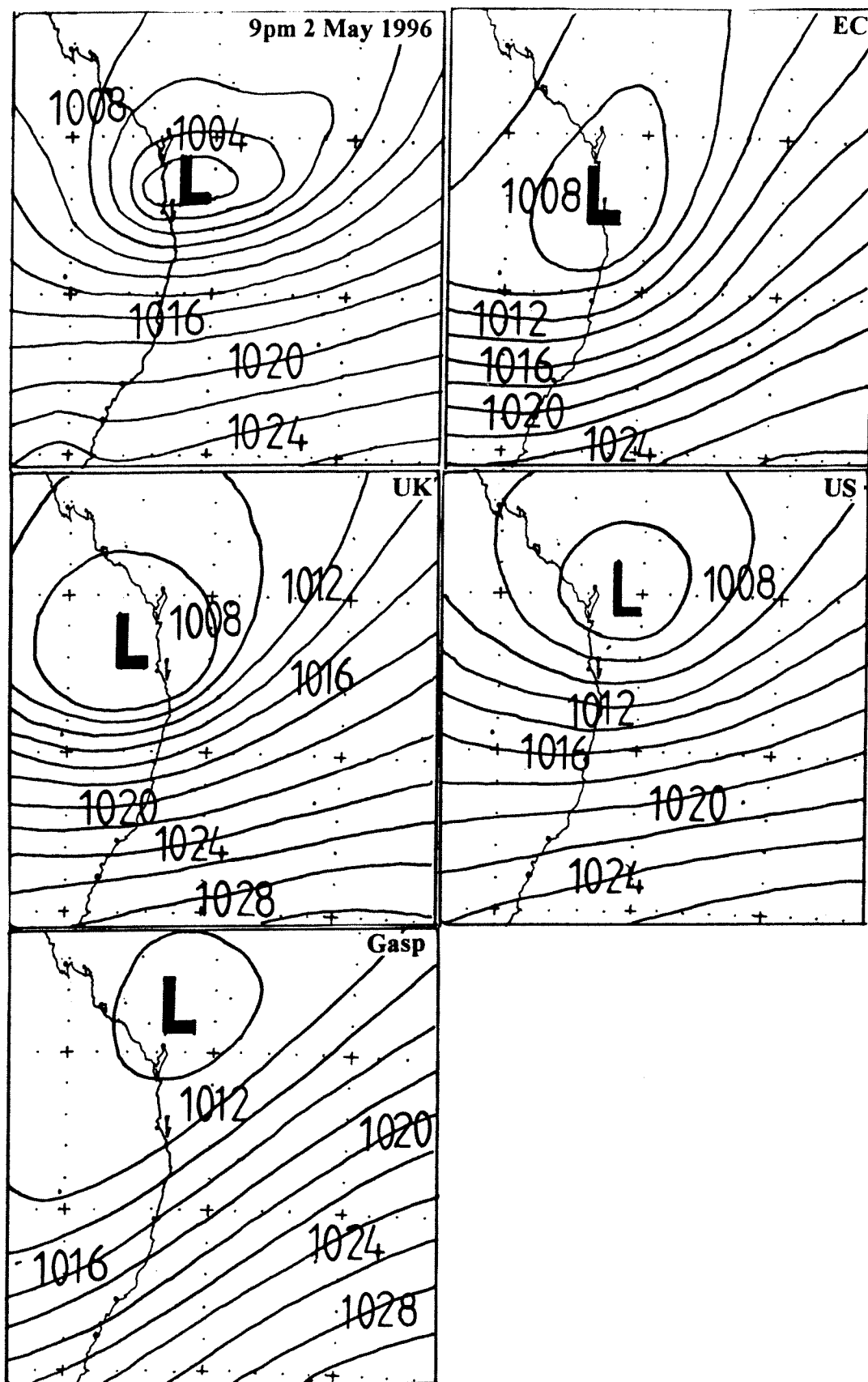


Figure 3.9 Mean Sea Level pressure distribution (hPa) for 9pm 2 May 1996 (left hand panels) 9pm 3 May 1996 (right hand panels)
Top two panels are the analysis for these times. The rest of the panels are Global Computer Model Forecasts based on data at 9pm 1 May 1996 and marked as in Figure 3.8

4.0 WIND AND SEAS

4.1 Wind

The strongest wind measured on a land based instrument was at the Cape Moreton Automatic Weather Station (AWS) located at an elevation of 90 metres on Moreton Island. This was at 5am on 2 May 1996 when the sustained wind (averaged over 10 minutes) was 55 knots (102 km/hr) from the east-southeast. The maximum wind gust then was 65 knots (121 km/hr). At a similar elevation, Double Island Point AWS reported an average wind of 44 knots (82 km/hr) and gusts to 54 knots (100 km/hr) from the east southeast at 2.41am 2 May 1996.

At beach level the maximum recorded wind was from the Gold Coast Seaway AWS where it averaged 30 knots (56 km/hr) from the southeast with gusts to 50 knots (93 km/hr) at 9.45am 2 May 1996. The weather balloon released from the Brisbane Airport Meteorological Office at 3pm 2 May 1996 was driven along by a 70 knot (130 km/hr) easterly wind at 2000 feet (610 metres) above Brisbane. Aircraft leaving and arriving at Brisbane airport reported 50 knot (93 km/hr) winds at 1000 feet (305 metres) elevation during 2 May 1996.

4.2 Seas

From Figure 3.1 an extensive area of east to east-northeasterly gales or near gales were directed onto the southern Queensland coast from 30 April 1996 to 2 May 1996. The term significant wave height is used in the following discussions and, in a wave sample, it refers to the average height of the highest third of the waves in the sample. It tends to be what observers notice as the average wave height and what surfers observe as the average wave height in a 'set' of waves. Gale force winds theoretically can produce waves of a significant wave height of 7 metres. However this generally never occurs as the development of waves is limited by the distance the wind of constant direction blows over the sea (fetch) and the time it blows (duration).

East coast lows form to the north of slow moving large high pressure areas and near stationary wind fields are generated over the ocean south and east of the lows as they intensify and move south. They are extremely efficient producers of large waves and this event was no exception. Figure 4.1 shows wave data from a wave rider buoy located east of Brisbane and 7 km seawards off Point Lookout on Stradbroke Island. The significant wave height can be seen to have built up to nearly 7 metres over 1 May 1996 and 2 May 1996 with maximum wave heights of just over 12 metres. The wave period also increases with fetch and duration and this can be seen to have also increased and peaked at nearly 14 seconds on 3 May 1996. For waves with a deepwater height of 7 metres, those with periods of 14 seconds are expected to reach a height of around 10 metres in a breaking zone with a shoreward seabed slope of 1 in 20. Similar waves with 8 second periods would be expected to reach a breaker height of 7.2 metres in the same breaking zone. Therefore the increase in period would be associated with an increase in the destructive power of the waves.

Strong to gale force easterly winds were directed onto the coast near Brisbane for much of the period up to 5 May 1996 and, as shown in Figure 4.1, this resulted in only a gradual easing of the heavy seas over the period.

The wind and wild seas resulted in higher than normal tides especially on the high tide on the evening of 2 May 1996. The Gold Coast Seaway was 0.51 metres above predicted high tide and 0.18 metres above the Highest Astronomical Tide (HAT). On the same tide the Brisbane bar was 0.39 metres above the predicted level and just above HAT. The Sandgate foreshore at Flinders Avenue suffered inundation from the sea on this tide. It appears that this area is still vulnerable to serious inundation from Moreton Bay like that experienced with Tropical cyclone *Dinah* in 1967.

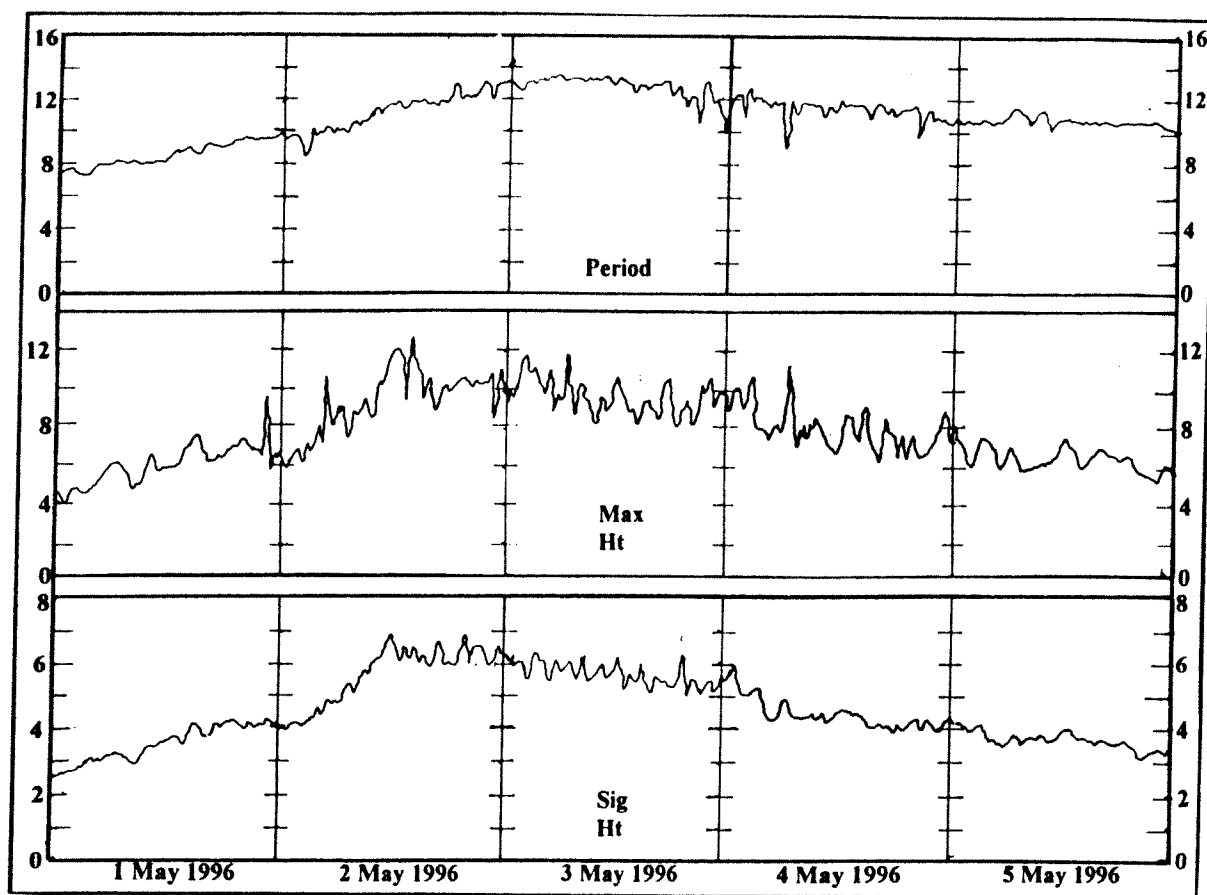


Figure 4.1 Wave rider buoy data

The buoy is located in 60 metres of water 7 km off Point Lookout on North Stradbroke Island from 0001 local time 1 May 1996 to 2400 local time 5 May 1996. Period in seconds (top), maximum wave height in metres (centre) and significant wave height in metres (lower).

5.0 RAINFALLS

5.1 Summary

Very heavy rainfall fell in the southeast corner of Queensland during the period 30 April to 9 May 1996. Several places recorded over a metre of rainfall with the most notable being Mt Tamborine with over 1100 millimetres.

On the south coast, rainfall totals in the period ranged from 250 mm along the coast to over 1000 mm in the hinterland. Similarly, totals over 250 mm were common in the Logan-Albert river basin with heavier falls between 700 and 1100 mm along the higher areas between Darlington and Mt Tamborine. In the Bremer-Warrill catchment, totals between 300 to 500 mm were common while the heavier falls in the Lockyer Creek system were over 600 mm in Laidley Creek. Falls of 600 to 700 mm were widespread in the Brisbane metropolitan area.

In the upper Condamine, totals ranged from 150 mm at Yangan to over 480 mm at The Head. Rainfall totals in Myall Creek were generally around 150 mm.

5.2 Rainfall Totals

Tables of the notable daily rainfalls are given below for each of the flood effected catchments for the period 30 April 1996 to 9 May 1996.

Table 5.1 Daily Rainfall (mm) for the Nerang and Coomera Rivers

Station Name	April	May 1996									Total
	30	1	2	3	4	5	6	7	8	9	
Numinbah AL	2	68	83	158	85	91	83	60	2	0	632
Springbrook AL	3	114	180	230	187	120	161	91	9	3	1098
Little Nerang AL	3	84	128	130	80	80	113	55	19	1	693
Hinze Dam AL	1	61	147	113	61	56	74	50	1	0	564
Clearview AL	0	50	175	109	49	45	55	33	2	0	518
Air Sea Rescue AL	0	25	111	47	11	5	9	37	20	0	265
Miami	0	52	113	39	18	7	8	59	16	1	313
Beechmont AL	2	69	113	137	62	67	102	63	5	0	620
Norwell	0	28	106	203	53	56	51	12	3	0	512

Table 5.2 Daily Rainfall (mm) for the Logan and Albert Rivers

Station Name	April	May 1996									Total
	30	1	2	3	4	5	6	7	8	9	
Darlington TM	1	54	85	187	120	68	39	125	8	2	689
Lumeah TM	1	26	62	53	30	17	52	59	0	0	300

Bromfleet TM	0	29	93	144	79	62	33	53	1	0	494
Forest Home TM	0	32	63	79	23	35	53	27	2	0	314
Canungra	1	53	163	218	123	139	93	42	1	0	833
Mt Tamborine	2	77	249	272	176	163	166	57	2	0	1164
Diekmans Br TM	0	31	59	44	17	15	41	42	9	0	258
Foxley	1	38	34	37	14	11	20	80	0	0	235
Rudds Lane TM	0	29	40	33	5	5	28	65	1	0	206
Cannon Cove TM	1	26	60	51	22	36	42	21	0	1	260
Round Mtn TM	0	36	71	40	11	18	30	53	2	0	261
Beaudesert TM	1	39	124	75	28	32	43	51	0	0	393
Yarrahappini TM	1	35	96	108	38	56	69	58	0	0	461
Wilsons Peak AL	1	42	82	62	29	76	158	7	0	3	460
Boonah TM	0	28	56	55	36	35	43	23	1	0	277
Romani TM	1	36	109	107	35	63	52	60	1	0	464
Logan City	0	47	132	166	16	70	52	17	1	0	501

Table 5.3 Daily Rainfall (mm) for the Brisbane River

Station Name	April	May 1996									Total
	30	1	2	3	4	5	6	7	8	9	
Peachester TM	3	74	153	176	9	23	38	8	0	0	484
Woodford TM	0	52	89	149	28	20	17	3	0	1	359
Lindfield	1	34	49	39	13	4	15	0	0	1	156
Yarraman	0	41	78	12	14	3	2	0	0	0	150
Toogoolawah AL	0	50	100	71	34	10	13	2	0	0	280
Esk	0	53	121	103	48	30	15	1	0	0	371
Gatton AL	0	48	100	85	82	131	18	1	0	0	465
Thornton AL	0	46	119	154	85	99	95	26	1	1	626
Glenore Grove AL	0	39	101	60	66	121	24	1	0	0	412
Lyons Bridge AL	0	37	90	36	76	109	4	1	0	0	353
Lowood AL	0	45	123	66	107	123	18	3	0	0	485
Rosewood TM	0	51	131	108	35	82	48	3	0	0	458
Kalbar AL	0	33	64	75	26	29	37	7	0	0	271
Harrisville AL	0	34	74	82	31	23	38	4	1	0	287
Amberley AL	0	44	106	102	28	51	33	6	0	0	370

Greenbank	0	49	124	122	49	65	45	47	0	0	501
Brisbane AL	0	42	163	110	128	169	30	19	0	0	661
Mt Glorious	0	104	270	198	180	170	105	26	1	0	1054

Table 5.4 Daily Rainfall (mm) for the Condamine River

Station Name	April	May 1996									Total
	30	1	2	3	4	5	6	7	8	9	
The Head	2	40	94	85	26	106	114	17	0	4	488
Killarney AL	0	14	44	46	14	26	35	38	0	4	221
Cherrabah TM	1	29	71	32	14	18	43	10	0	4	222
Oakington	1	21	49	64	40	83	104	13	0	0	375
Yangan AL	1	13	40	27	7	10	34	15	0	0	147
Dalveen TM	2	24	55	38	22	24	49	2	0	1	217
Warwick TM	0	18	53	22	3	8	42	6	0	0	152
Cambooya	0	24	62	71	26	69	20	0	0	0	272
Leyburn TM	0	18	60	87	17	50	33	0	0	0	265
Toowoomba	1	43	97	122	96	115	19	2	0	0	495
Oakey	1	23	53	56	19	19	5	0	0	0	176
Dalby	1	25	102	41	24	0	0	0	0	0	193

5.3 Rainfall Temporal Patterns

The rainfall was never intense for long periods of time with even the high rainfall areas typically only averaging 10-15 millimetres an hour at peak periods.

Figure 5.1 shows rainfall mass curves for selected stations in south east Queensland. At some stations, the three periods of heavy rainfall on 1 May, after 3pm 3 May and beginning late on 4 May are identifiable. The onset of the first period of heavy rainfall shows up clearly at Beaudesert while the steepness of the mass curve shows up the second and third periods of heavier rain at Thornton.

The mass curves at Wilsons Peak and Killarney also show the short intense burst of rain early on 6 May which resulted in the flood peak at Warwick later that day.

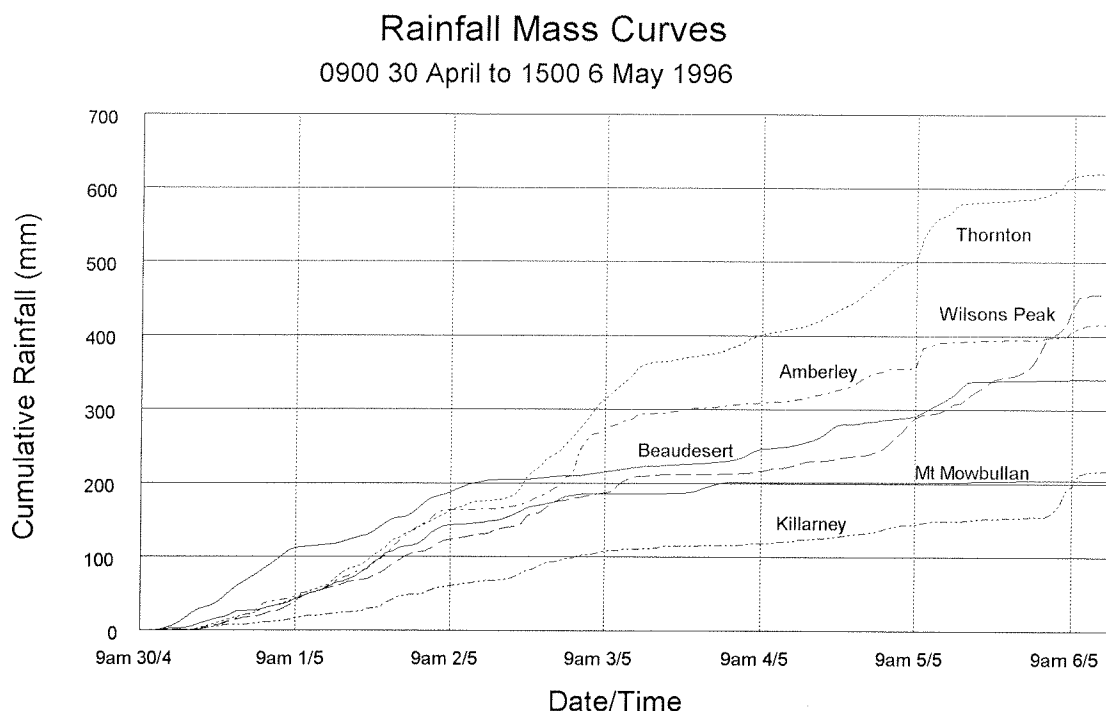


Figure 5.1 Rainfall Mass Curves

5.4 Record Rainfalls

An analysis of 3 day rainfall totals was carried out at selected stations and compared with climatological records, as shown in Table 5.5

Table 5.5 Comparison of Record Three Day Rainfall Totals

Station	Feb 1931	Jan 1947	Jan 1974	May 1996
Brisbane Airport	445*	261*	576	395
Mt Tamborine	497	947	1227	698
Mt Glorious	-	299	1152	648
Thornton	195	327	574	358
Springbrook	818	1298	1151	597

* Recorded at Brisbane RO

This table shows three day rainfall totals recorded during early May were well below (about 50% at Mt Tamborine and Mt Glorious) those recorded during other periods of significant flooding

5.5 Rainfall Frequencies

Rainfall frequencies were examined at a number of sites around southeast Queensland. Of note were the Intensity-Frequency-Duration(IFD) results for Mount Tamborine and Mount Glorious. By referring to Figures 5.1 and 5.2, it can be seen that, although the short duration rainfall intensities for this event at these two locations were not particularly remarkable, the longer duration intensities were significant, exceeding 100 year rainfalls at Mt Tamborine for rainfall durations of 2 and 3 days.

Table 5.6 Average Recurrence Intervals of Selected Stations

Station	Duration (hrs)					
	3	6	12	24	48	72
Springbrook	-	-	-	1-2	5-10	5-10
Mt Tamborine	< 1	1-2	5	20-50	> 100	> 100
Beaudesert	-	-	-	2-5	5-10	5-10
Logan City	-	-	-	2-5	2-5	2-5
Gatton	-	-	-	2-5	10-20	20-50
Thornton	-	-	-	5-10	20-50	50-100
Harrisville	-	-	-	1-2	2-5	2-5
Brisbane City	-	-	-	2-5	10-20	20-50
Mt Glorious	1	2	5-10	10-20	20-50	50-100
Oakington	-	-	-	5-10	20-50	20-50
Dalby	-	-	-	2-5	10-20	10-20

The short duration rainfall intensities at Mt Tamborine, less than 12 hours , were not statistically significant with ARIs generally less than 5 years. However, the longer duration intensities are significant. The observed rainfall intensities at Mount Tamborine for both 48 and 72 hours significantly exceeded the 1 in 100 years ARI. At Mount Glorious, the ARIs were not quite as significant as those at Mount Tamborine. Again the average rainfall intensity for duration less than 12 hours were less than 5-10 years ARI while the average intensities in the 48-hour and 72-hour time intervals were more significant.

In most other areas affected by this rainfall event, the ARI's were much less significant. However, there was considerable variation. For example, the ARI for the 72 hour storm at Thornton was 50-100 years while just 25 km to the east at Harrisville, the ARI for a similar duration was only 2-5 years. Other stations listed in Table 5.6 highlight the general significance of the rain throughout southeast Queensland. At Dalby, the 72 hour rainfall intensity had an ARI of between 10 and 20 years, while at Springbrook, in the Gold Coast hinterland, the 72 hour intensity has an ARI of only 5 to 10 years.

It is generally assessed that the rainfall event had an ARI about 5 years for the 24 hour rainfall, with considerable variation, but for the total over 72 hours the ARI was generally about 20 years but greater than 100 years in isolated locations. This illustrates that it was the duration of the rainfall, not the intensity, that distinguishes this event.

DESIGN RAINFALL INTENSITY DIAGRAM

LOCATION 27.975 S 153.200 E * NEAR.. Mt Tamborine

* ENSURE THE COORDINATES ARE THOSE REQUIRED,
SINCE DATA IS BASED ON THESE AND NOT THE LOCATION NAME.

ISSUED 17TH JUNE 1996 REF. -FN4410

(RAW DATA: 48.55, 10.38, 3.52, 87.84, 19.28, 7.04, 100, 116)

PREPARED BY -- HYDROMETEOROLOGICAL ADVISORY SERVICE -- MELBOURNE

(C) COMMONWEALTH OF AUSTRALIA, BUREAU OF METEOROLOGY 1987

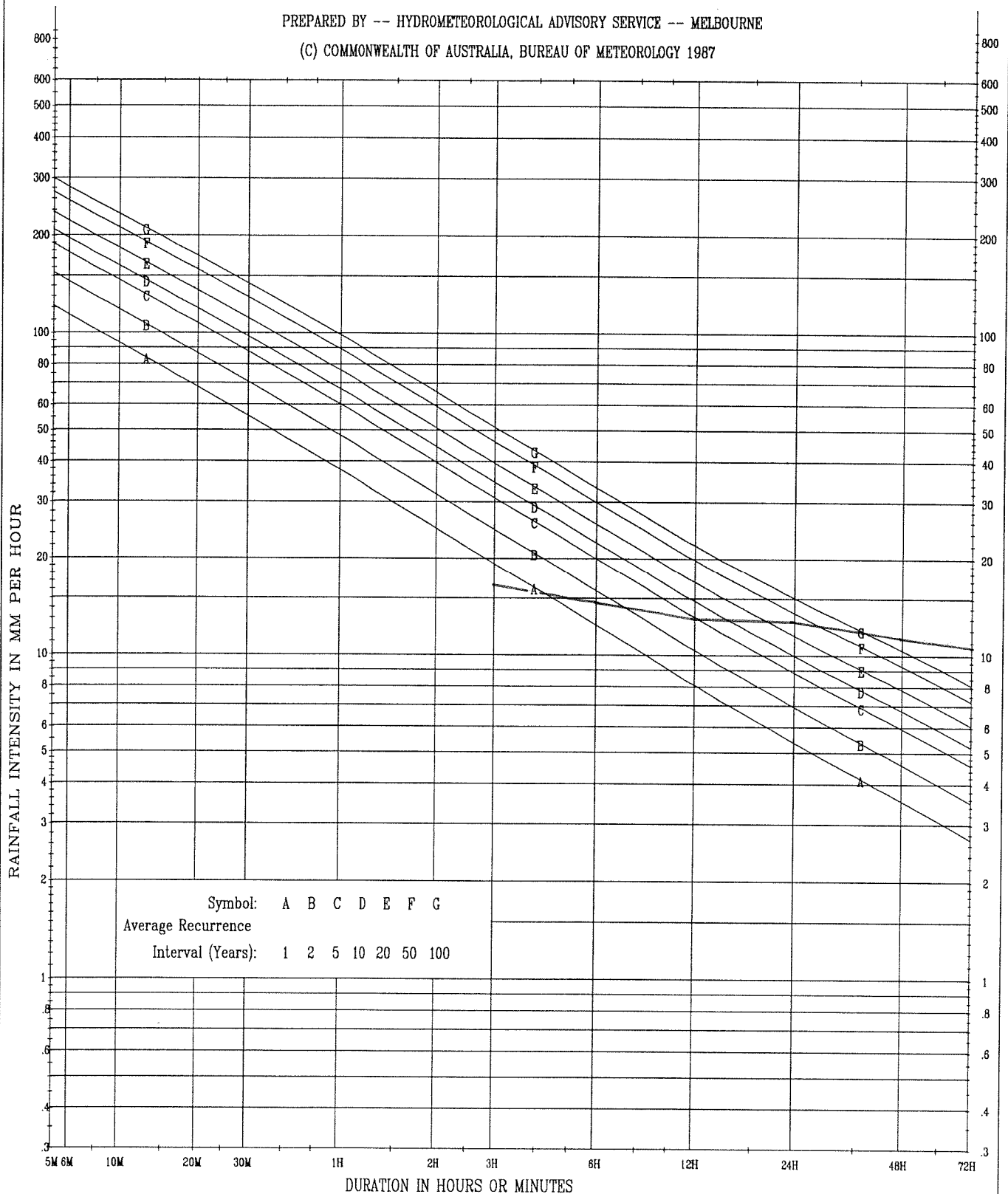


Figure 5.2 Intensity-Frequency-Duration Diagram for Mt Tamborine

DESIGN RAINFALL INTENSITY DIAGRAM

LOCATION 27.325 S 152.775 E * NEAR.. Mt Glorious

* ENSURE THE COORDINATES ARE THOSE REQUIRED.
SINCE DATA IS BASED ON THESE AND NOT THE LOCATION NAME.

ISSUED 17TH JUNE 1996 REF. -FN4410

(RAW DATA: 48.84, 10.43, 3.48, 88.62, 20.07, 8.00, 200, 116)

PREPARED BY -- HYDROMETEOROLOGICAL ADVISORY SERVICE -- MELBOURNE

(C) COMMONWEALTH OF AUSTRALIA, BUREAU OF METEOROLOGY 1987

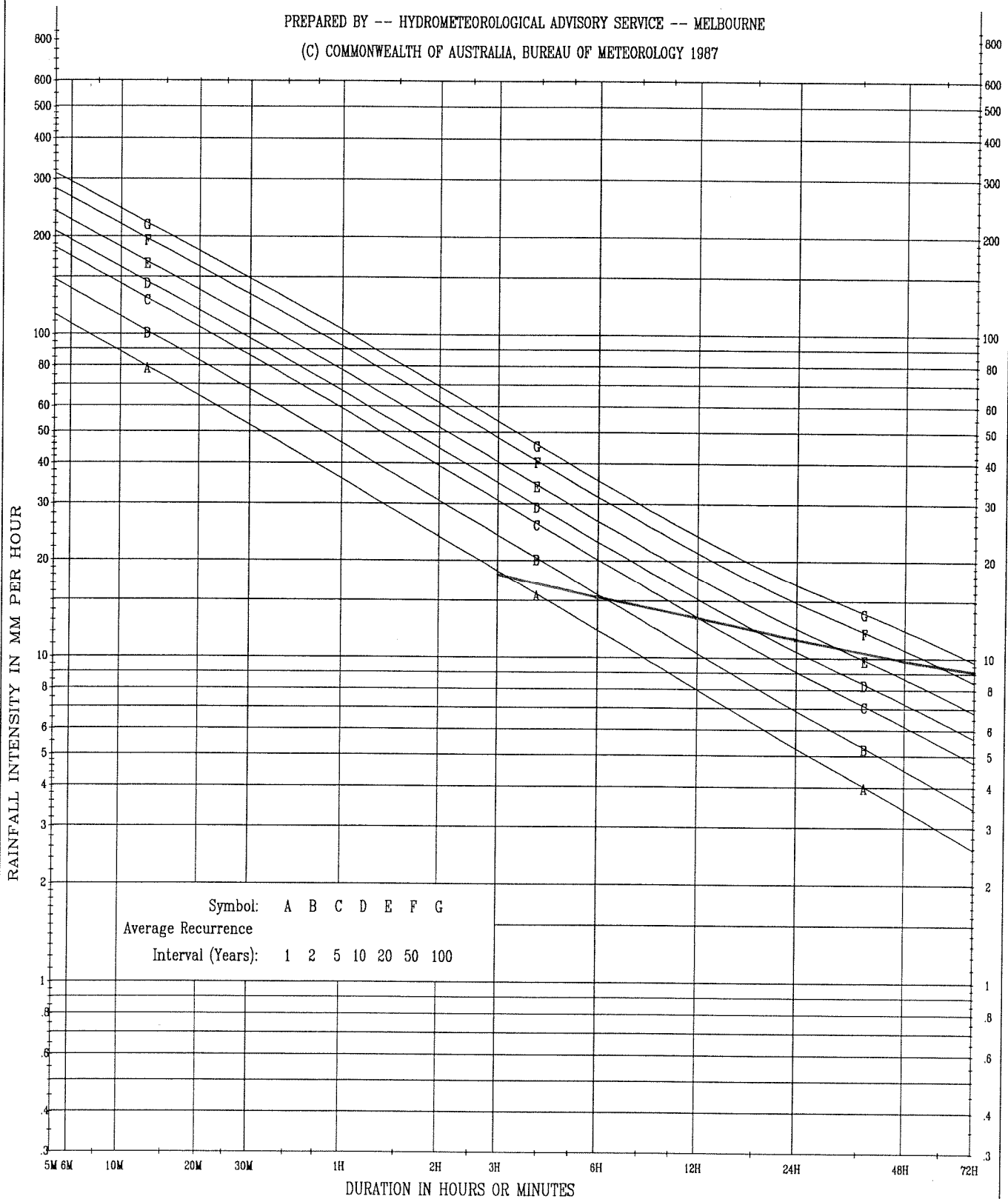


Figure 5.3 Intensity-Frequency-Duration Diagram for Mt Glorious

6.0 FLOODS

6.1 Summary

Flooding during the period 30 April to 9 May 1996 was the most significant in southeast Queensland for several years. In terms of the area affected, it was probably the most widespread moderate to major flooding since January 1974 with all rivers and streams from the NSW border to Caboolture and west to Dalby and Goondiwindi affected. Table 6.1 provides a summary of the flood peaks reached during this event and, for comparison purposes, the height of the most recent significant flood at each location

Flooding in most areas was not as severe as January 1974. Worst affected areas were in the Lockyer Creek system where flood levels in the Laidley and Lyons Bridge areas were similar to January 1974. In most other areas, flood levels were significantly lower than the 1974 levels. In the Brisbane River below Lowood to Moggill, flood levels were the highest since January 1974 but were many metres below that reached in 1974. Along the lower Brisbane River, higher than normal tides, coupled with the catchment runoff, caused some inundation of low-lying areas in the Brisbane metropolitan area.

Major flooding occurred along the Bremer River and Warrill Creek but this only resulted in moderate flooding at Ipswich where the first flood peak on 3 May was over 9 metres lower than the January 1974 level. A second lower flood peak occurred a few days later and was influenced by the relatively higher water levels in the Brisbane River.

In the Logan River system, levels at Waterford were lower than those which occurred in the floods of February 1991 and about 4 metres below the 1974 levels. Flooding in the lower Albert River was also the highest for about seven years.

At Warwick and Dalby, flood levels were the highest for about eight years at both locations. Flooding in the lower Condamine-Balonne continued well into May 1996.

Floods also occurred in the Paroo, Macintyre, Weir and Moonie River during this period but did not result in any significant flooding.

Table 6.1 May 1996 Flood Peaks: A Comparison with Recent Major Floods

Catchment	Station	May 96 Flood		Flood Class	Most Recent Significant Flood		Comments
		Date	Height (m)		Date	Height (m)	
Nerang R	Clearview	6th	5.48	Minor	Apr 89	5.85	
Albert River	Lumeah	6th	9.95	Major	Apr 89	9.98	2nd highest flood recorded
	Bromfleet	7th	13.95	Moderate	Apr 89	15.65	
Logan River	Macleans Bridge	7th	15.00	Moderate	Feb 91	18.55	
	Waterford	7th	7.50	Moderate	Feb 91	9.06	4.8m below Jan 74 flood
Stanley R	Woodford TM	2nd	6.75	Moderate	Apr 89	7.44	
Laidley Creek	Mulgowie	5th	9.09	Major	Feb 76	8.75	Similar to Jan 74 (9.10m)
	Laidley	6th	8.50	Major			

Lockyer Creek	Glenore Grove	5th	14.30	Major	June 83	14.00	Highest since Jan 74(14.94m)
	Lyons Bridge	5th	16.44	Major	June 83	15.90	Similar to Jan 74(16.54m)
Warrill Creek	Amberley BVRT	3rd	6.75	Major	Dec 91	7.53	
Bremer River	Rosewood	3rd	6.20	Major	Apr 88	6.46	2nd highest since Jan 74
	Walloon AL	3rd	7.37	Major	Apr 88	7.58	1.4 m below Jan 74(8.70m)
	Ipswich	3rd	11.31	Moderate	Dec 91	13.10	9.4m below Jan 74 flood
Bundamba Creek	Bundamba School	3rd	17.17		Dec 91	17.58	
Oxley Creek	Beatty Road	3rd	6.79	Major	Apr 90	6.68	Highest since Jan 74
Brisbane River	Lowood BVRT	5th	12.26	Minor	June 83	11.10	Highest since Jan 74
	Mt Crosby	5th	14.10	Moderate	Jun 83	12.43	Highest since Jan 74(26.74m)
	Moggill	6th	7.10	< Minor	Jun 83	5.26	Highest since Jan 74(19.93m)
	Port Office	4th	2.00	Minor			Highest since Jan 74(5.45m)
Condamine River	Warwick	6th	6.50	Moderate	Apr 88	6.55	
	Tummalville	6th	10.26	Major	Apr 88	10.56	
	Loudoun Bridge	5th	10.32	Major	Apr 88	10.45	
	Eldnarvale	7th	13.32	Major	Apr 88	14.20	
Myall Creek	Dalby	3rd	2.90	Major	Jun 83	3.80	Highest since Feb 88
Macintyre Brook	Inglewood Weir	6th	10.04	Major	Jan 96	11.11	
Macintyre River	Goondiwindi	8th	8.74	Major	Jan 96	10.60	
Weir River	Retreat Bridge	4th	10.15	Major	Jan 96	10.65	
Moonie River	Tartha	4th	6.08	Major	Jan 96	6.35	

6.2 Bremer River and Warrill Creek

Rainfalls commenced in the catchments of the Bremer River and Warrill Creek on Tuesday 30th April and continued until Tuesday 7th May. Some significant 7 day rainfall totals in the Bremer River catchment include 540mm at Rosewood, 465mm at Adams Bridge and 435mm at Walloon.

As seen in Figure 6.1, the onset of the heavier rainfall on the 1st and 2nd May caused a sharp rise in the Bremer River and Warrill Creek in the early morning of Thursday 2nd May. Initial losses for both systems was estimated to be about 75 to 100 millimetres. The Bremer River at Rosewood and Walloon continued to rise during Thursday and peaked at a moderate flood height on Thursday afternoon before beginning to fall slowly. Renewed heavy rainfall in the area that night and during Friday 3rd May caused renewed rises in the Rosewood and Walloon areas and a major flood peak

of 6.20 metres was recorded at Rosewood at noon on Friday 3rd. Downstream a major flood peak of 7.37 metres at the Walloon BVRT/ALERT site was recorded at noon. This peak is the highest recorded at Walloon since the floods of January 1974 when the peak at Walloon was 8.70 metres.

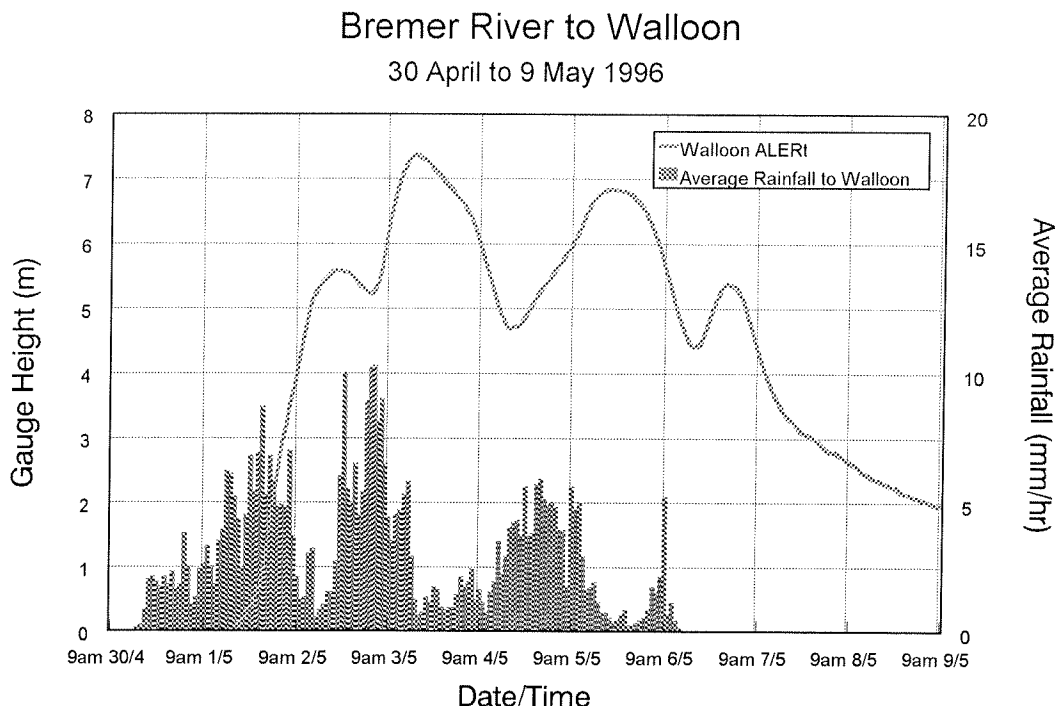


Figure 6.1 Flood Hydrograph for Bremer River at Walloon

Rainfalls were generally lighter in the Warrill Creek catchment during this period with Kalbar reporting 260mm, Harrisville 286mm and Amberley 370mm. A major flood peak of 6.75 metres was reported from the Amberley BVRT site at about 9pm on Friday 3rd. Whilst there was major flooding at Amberley it was not of the same magnitude as the flooding that was occurring in the Walloon area and the peak was about 3.4 metres below the January 1974 peak. Upstream at Harrisville and Kalbar major flooding was also occurring during Friday. These floodwaters caused no further rises at Amberley during Saturday 4th May. Figure 6.2 shows average catchment rainfall and the flood hydrograph for Amberley.

The combined runoff from the upper Bremer River and Warrill Creek, as well as that from Purga Creek, during Thursday 2nd and Friday 3rd caused a moderate flood peak of 11.31 metres at the David Trumpy Bridge in Ipswich at 9pm on Friday 3rd May. This is well below the January 1974 flood level in Ipswich of 20.70 metres and also below the last significant flood event during December 1991 when the river reached 13.10 metres. In Ipswich, the floodwaters caused a few road closures but no evacuations were necessary.

Further rainfall was reported in the catchment on the afternoon of Saturday 4th and morning of Sunday 5th with the heaviest falls in the Rosewood to Walloon area. Renewed rises and major flooding were reported from stations in the Bremer River and Warrill Creek but they were below the levels reached during Friday. The subsequent peak at Ipswich was 9.85 metres at 11pm on Sunday 5th with moderate flooding. During this peak, flood levels in the Ipswich area were significantly affected by backwater flooding due to the higher than normal levels in the Brisbane River around Moggill. Refer to Figure 6.3 for the flood hydrographs at Walloon, Amberley and Ipswich.

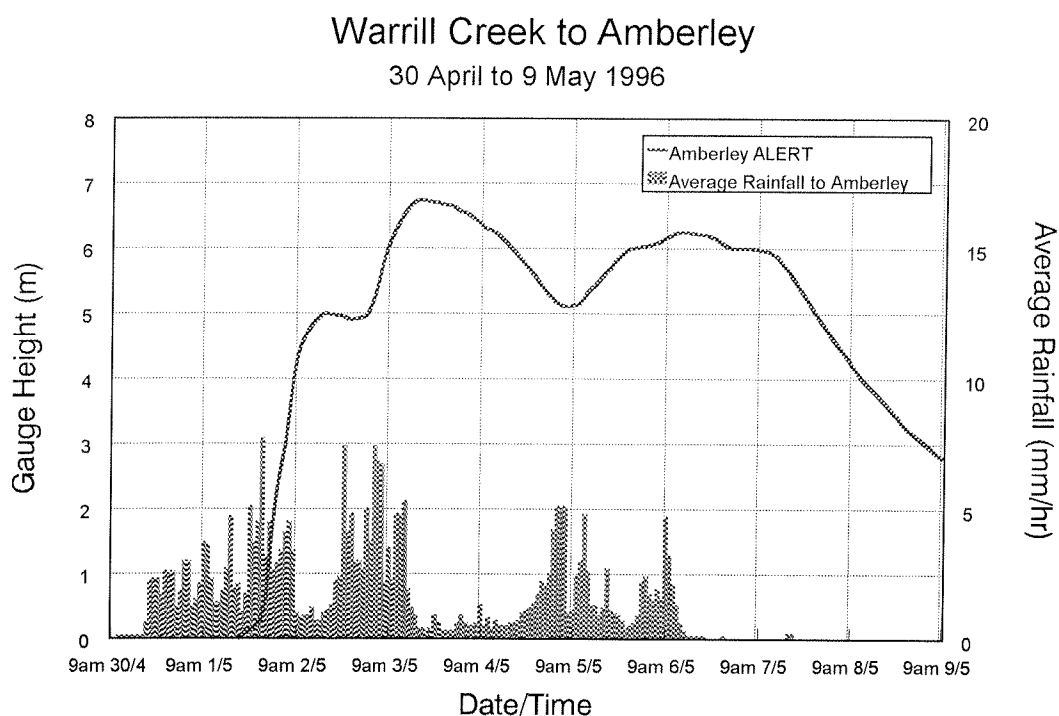


Figure 6.2 Flood Hydrograph for Warrill Creek at Amberley

Rainfall continued in the headwaters of Warrill Creek during Sunday 5th and the morning of Monday 6th and the level at Amberley continued to rise peaking at about 6.25 metres at noon on Monday 6th. However, no further rises were reported in the Bremer River at Ipswich.

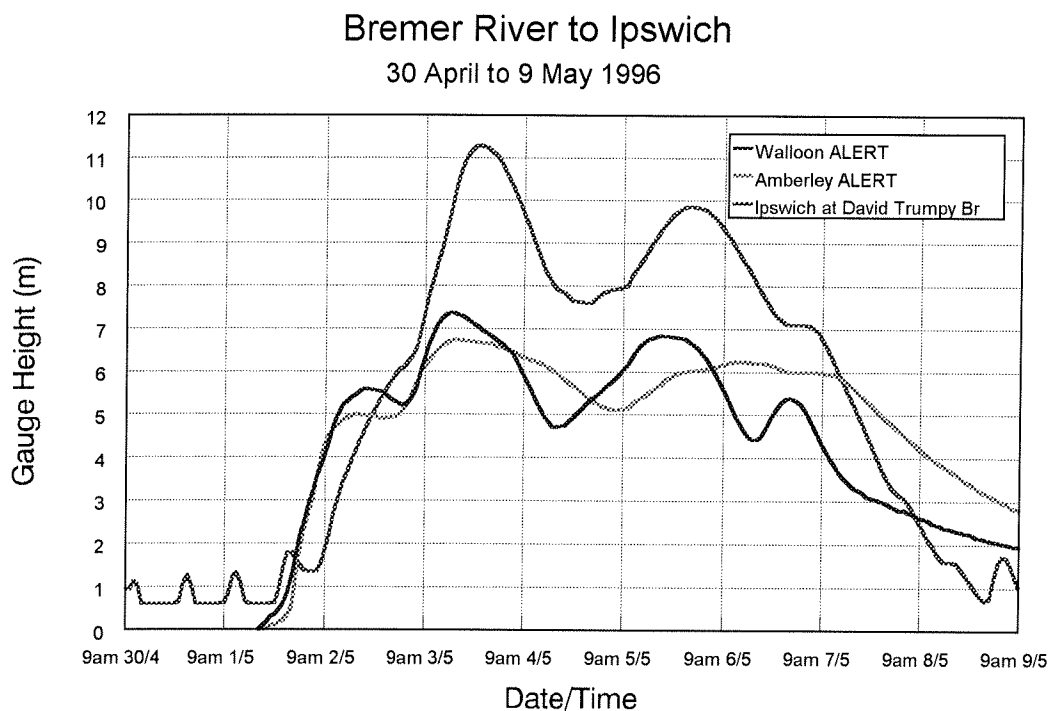


Figure 6.3 Flood Hydrographs for the Bremer River to Ipswich

6.3 Laidley and Lockyer Creeks

Rainfall occurred in the Laidley Creek catchment from the 30th April to the 7th May 96 with some of the more significant 7 day rainfall totals including 583 mm at Thornton and 543mm at Showground Weir in Laidley.

Heavy rainfall commenced during Wednesday 1st and became heavier during the night of Thursday 2nd. Runoff commenced at the Mulgowrie on Laidley Creek during the evening of Wednesday 1st and a major flood peak of 9.00 metres was reached at 2.30pm on Friday 3rd. At the staff gauge site at Laidley a major flood peak of 8.15 metres was reached by 3pm on Friday 3rd. Figure 6.4 has the full hydrograph for Mulgowrie which is upstream of Laidley and provides a good illustration of how quickly the creek in this area responds to rainfall.

Flood levels in Laidley Creek commenced to ease during the night of Friday 3rd and morning of Saturday 4th. Further heavy rainfalls in the catchment during Saturday caused renewed rises during Saturday night with a second major flood peak occurring at Laidley during Sunday 5th. This

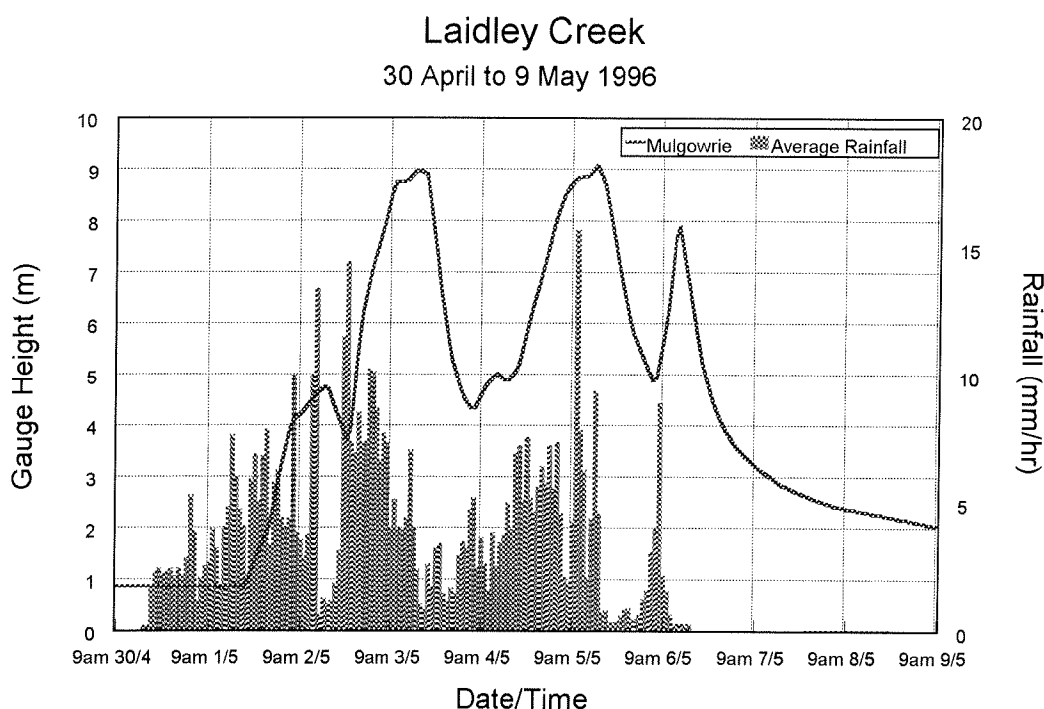


Figure 6.4 Flood Hydrograph for Laidley Creek at Mulgowrie

peak reached 8.20 metres and occurred at 9am Sunday with the level holding reasonably steady for several hours. The peak upstream at Mulgowrie was 9.09 metres at 2pm on Sunday with major flooding.

Flood levels commenced to recede in Laidley during Monday morning before rising again that afternoon as rainfall recurred in the catchment. A major flood peak of 8.50 metres was reported from the Laidley site at 3pm on Monday 6th but flood levels fell quickly and the effects of this third flood peak were not as severe as the previous two peaks.

In the Lockyer Creek catchment, some of the heavier rainfalls reported during this period included Gatten 463mm, Glenore Grove 412mm and Lyons Bridge 373mm.

Runoff from Lockyer Creek and tributaries caused a rapid rise in water level at Glenore Grove during Thursday 2nd with major flooding commencing in this area early on the morning of Friday 3rd. The peak 13.62 metres was recorded at the Glenore Grove BVRT/ALERT site at 9am on Friday 3rd.

Flood levels started to recede slowly at Glenore Grove during Friday afternoon and Saturday morning but started to rise again as further rainfall fell upstream and a second major flood peak of 14.30 metres was reached at 9am on Sunday 5th. Refer to Figure 6.5 for hydrographs of Lyons Bridge and Glenore Grove.

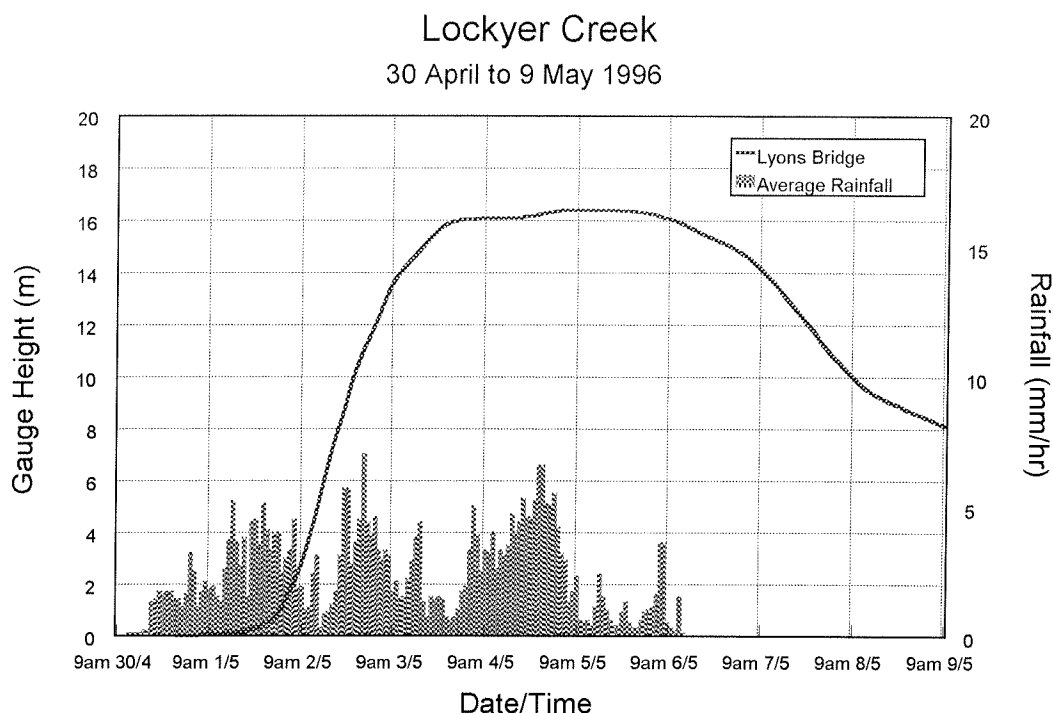


Figure 6.5 Flood Hydrograph for Lockyer Creek at Lyons Bridge

The flood level at Glenore Grove remained above major flood height from early Friday morning till late on Sunday night. The peak of 14.30 metres is the highest flood peak at Glenore Grove since January 1974 when it reached 14.94 metres.

Downstream at the Lyons Bridge BVRT site, the flood level peaked at 16.44 metres at 9am on Sunday 5th, only 0.10 metres below the peak of the January 1974 flood. The level at Lyons Bridge remained above major flood level from the morning of Friday 3rd until early afternoon on Tuesday 7th.

Flooding in the Lockyer Creek catchment caused extensive crop damage. Evacuations were carried out around Laidley and in the Glenore Grove area. The Warrego Highway was cut near Glenore Grove and numerous other roads were cut during the period isolating farming properties.

6.4 Brisbane River below Lowood

Some significant seven day rainfalls for this sub-catchment include 447mm at Lowood, 487mm at Savages Crossing, 630mm at Kenmore and 661mm at Brisbane City.

Initially elevated tide levels in Moreton Bay caused by the low pressure system and gale force winds caused higher than normal tides in the Brisbane River in the city reaches. At the Port Office, the tide recording instrument registered a high tide of 1.73 metres AHD at 9.30pm on Thursday 2nd May. This is 0.44 metres above the predicted high tide at the Port Office.

Runoff from the first peak in the Bremer River caused river levels in the Brisbane River at the Moggill gauge to rise to about 5.4 metres AHD during Saturday 4th (Refer to Figure 6.6). This is well below the minor flood level at Moggill of 10.0 metres AHD. This runoff combined with the elevated

tide levels and local runoff in the Brisbane City reaches caused higher than normal tides at the Port Office gauge, situated at the lower end of Edward Street, during Saturday 4th and Sunday 5th. The observed high tide at the Port Office on Saturday 4th May at 10.55pm was 1.99 metres AHD which is 0.61 metres above the predicted tide. On Sunday 5th May the high tide at 11.38pm was 1.94 metres AHD which is 0.57 metres above the predicted high tide. Minor flood level at the Port Office is 1.70 metres AHD.

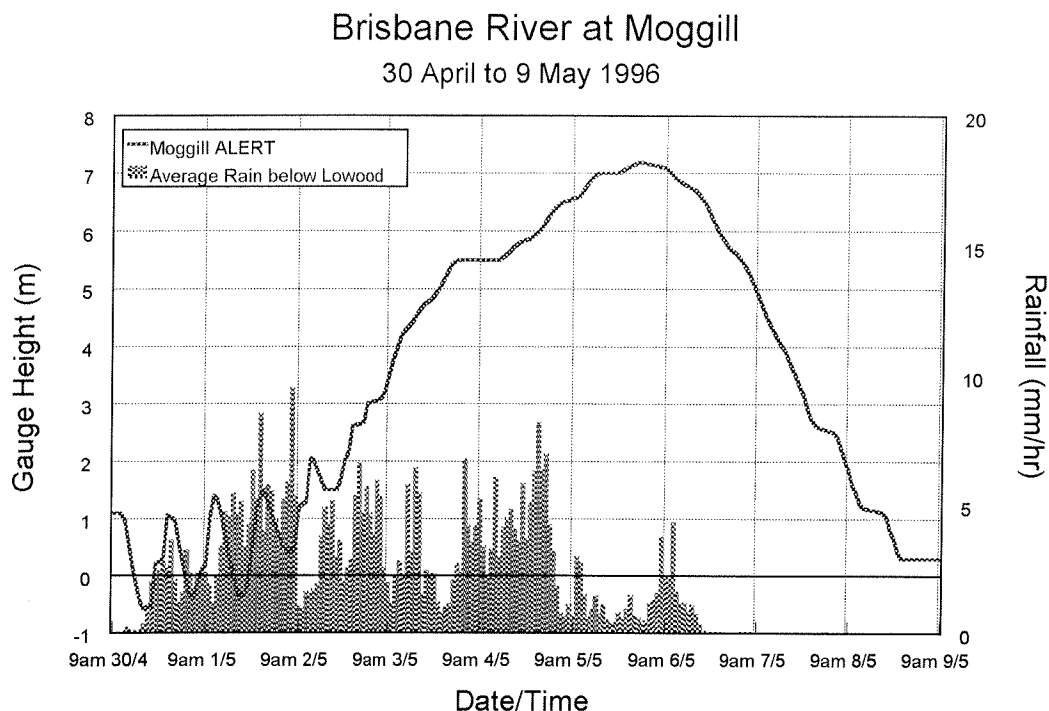


Figure 6.6 Flood Hydrograph for the Brisbane River at Moggill

Upstream at Lowwood, the Brisbane River started to rise as floodwaters from Lockyer Creek moved downstream. A minor flood peak of 12.26 metres occurred at the Lowwood telemetry station at about 9pm on Sunday 5th. Downstream at the Mount Crosby Weir the flood peaked at 14.10 metres at 12 noon on Sunday 5th. These floodwaters combined with runoff from the Bremer River produced a Moggill peak of about 7.10 metres AHD at about 3am on Monday 6th (Refer to Figure 6.6). As detailed in Figures 6.7 and 6.8, the effect at the Port Office was a height at 12 noon on Monday 6th of 1.60 metres AHD (0.79 metres above predicted) and 1.74 metres AHD (0.40 metres above predicted) at the next high tide just after midnight.

Flood levels at gauges on the Brisbane River downstream of Lowwood during this event were the highest recorded since January 1974. They were however well under flood levels recorded during January 1974 when the height at Mount Crosby was 26.74 metres, at Moggill 19.93 metres and at the Port Office 5.45 metres AHD.

During this event, inflow from the Stanley river and tributaries caused the storage level in Somerset Dam to rise from about 54% to just over Full Supply Level. Moderate flooding in the Upper Brisbane River caused the storage level in Wivenhoe Dam to rise from 57% to nearly 90% of Full Supply Level. During this flood event there were no releases from Wivenhoe Dam or Somerset Dam.

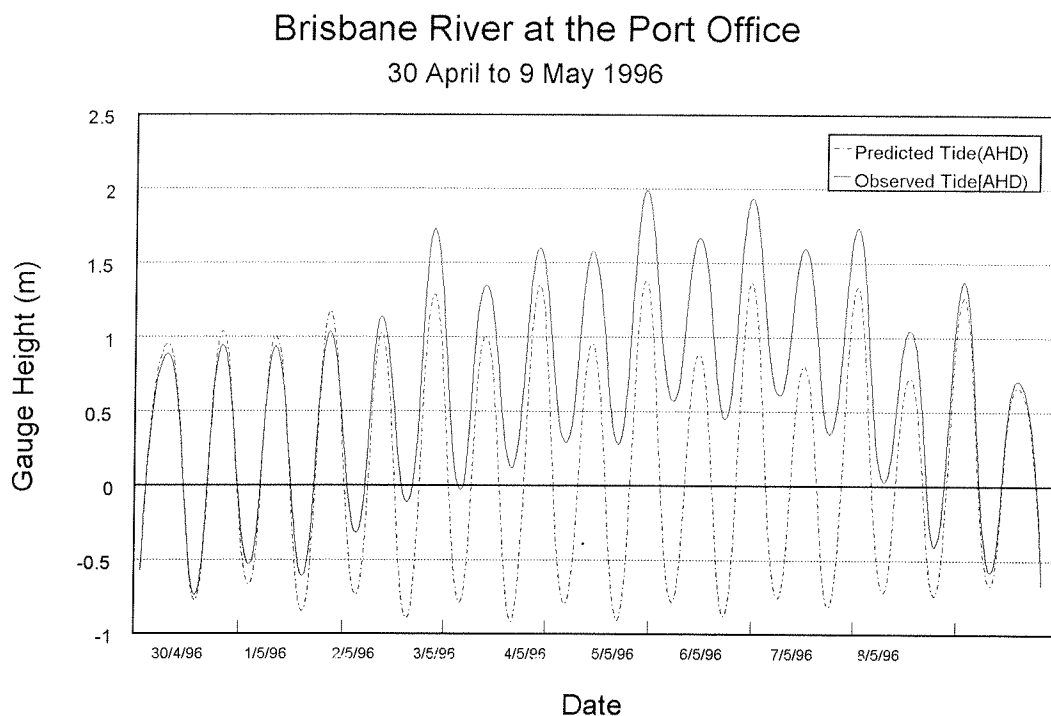


Figure 6.7 Recorded and Predicted Tides at Port Office on the Brisbane River

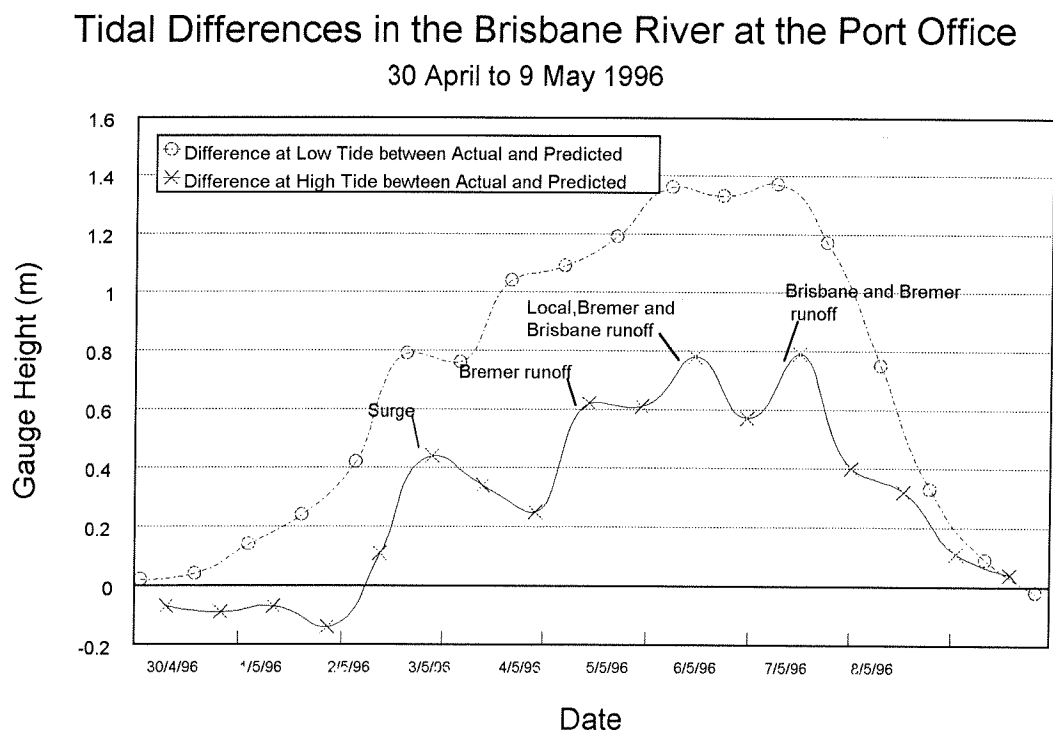


Figure 6.8 Differences between Recorded and Predicted Tides at the Port Office

6.5 Logan & Albert Rivers

Rainfalls commenced on the Tuesday 30th April and continued until Tuesday 7th May. Like most southeast Queensland catchments, the Logan and Albert Rivers were relatively dry and a considerable amount of the rainfall up to 100 mm or so in the first few days caused only freshes in the streams. After average catchment falls of 35 mm on Wednesday 1st and a further 85mm

on Thursday 2nd, the catchments were virtually saturated and further rainfalls during the next few days had an immediate effect upon river levels.

By late evening on Thursday 2nd, river levels in most of the tributaries of the Logan and Albert catchments had commenced rising. With continued heavy rain overnight Thursday and Friday, river levels in the lower reaches of the catchment were rising quickly. Average falls of 90mm were recorded to 9am Friday. Some very heavy 24 hour falls of over 250 mm were recorded in the Mt Tamborine area which caused quick rises in the Albert River between Beaudesert and Bromfleet during Thursday. The Albert River at Bromfleet continued rising overnight and peaked at 13.6 metres with moderate flooding at around 9am Friday 3rd (Refer to Figure 6.9).

In the Logan River, which has a catchment area about twice the size of the Albert River catchment, rises continued during Friday, helped along by some heavy falls of 100 - 200 mm in the lower reaches of the catchment during Thursday. The Logan River eventually peaked in the Macleans Bridge area with moderate flooding about midnight Friday. The floodwaters arrived in the Waterford area several hours later at around 6am with a major flood peak of about 6.9 metres. At this level the Waterford Bridge was inundated by about 1.8 metres and was impassable. The bridge remained inundated by flood waters and impassable for the next 5 days.

During Friday night and Saturday, the rainfall eased considerably with catchment average falls of about 40 mm recorded to 9am Saturday. General falls of 45mm were also recorded to 9am Sunday which were sufficient to maintain moderate flood flows in the rivers. Rainfalls picked up again during Sunday night and Monday, with average falls of approximately 50mm recorded to 9am Monday 6th and again on Tuesday 7th.

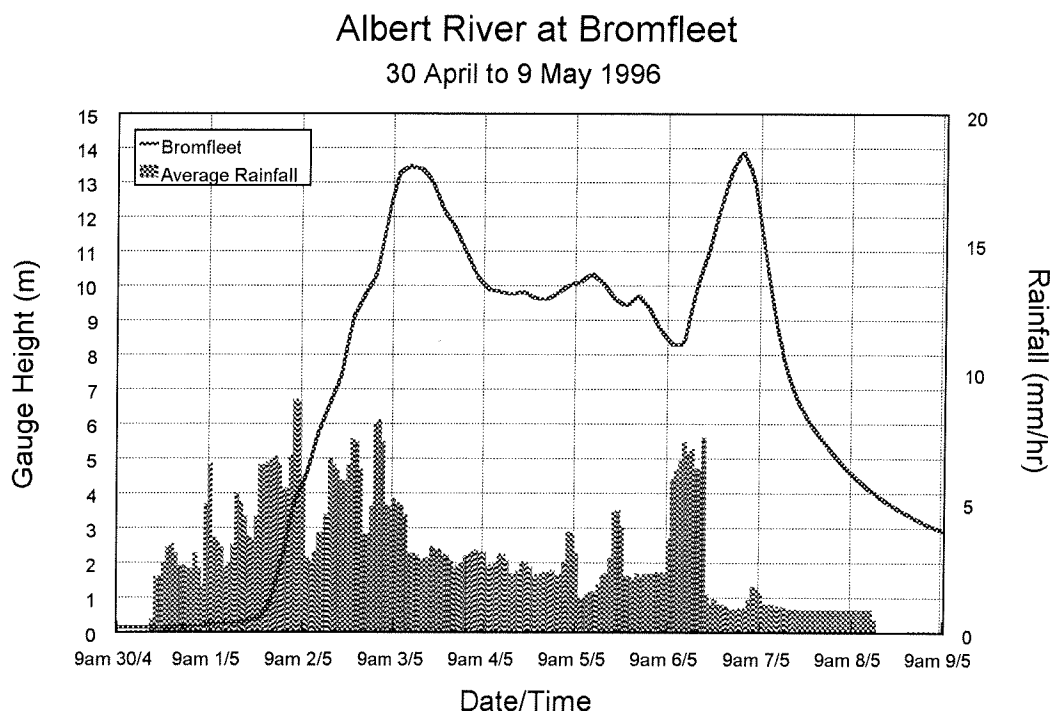


Figure 6.9 Flood Hydrograph for the Albert River at Bromfleet

River levels in the Logan and Albert Rivers again rose in response to these further falls. The Albert River at Bromfleet rose quickly during Monday due to further very heavy falls of over 150 mm in the Mt Tamborine area on both Sunday and Monday. The river peaked at around 3am on Tuesday 7th at 13.95 metres causing moderate flooding, but remained just below the bridge height of 14.2 metres. In the Logan River, flood levels dropped several metres after the peak on early Saturday but commenced rising again on Sunday afternoon. The steady rises continued until the river peaked again at Macleans Bridge on Tuesday afternoon at 15 metres (about 2 metres below the

bridge deck). The flood peak travelled downstream and peaked in the Waterford area about 9pm Tuesday at about 7.5 metres, about 2 metres above the Waterford Bridge (Refer to Figure 6.10).

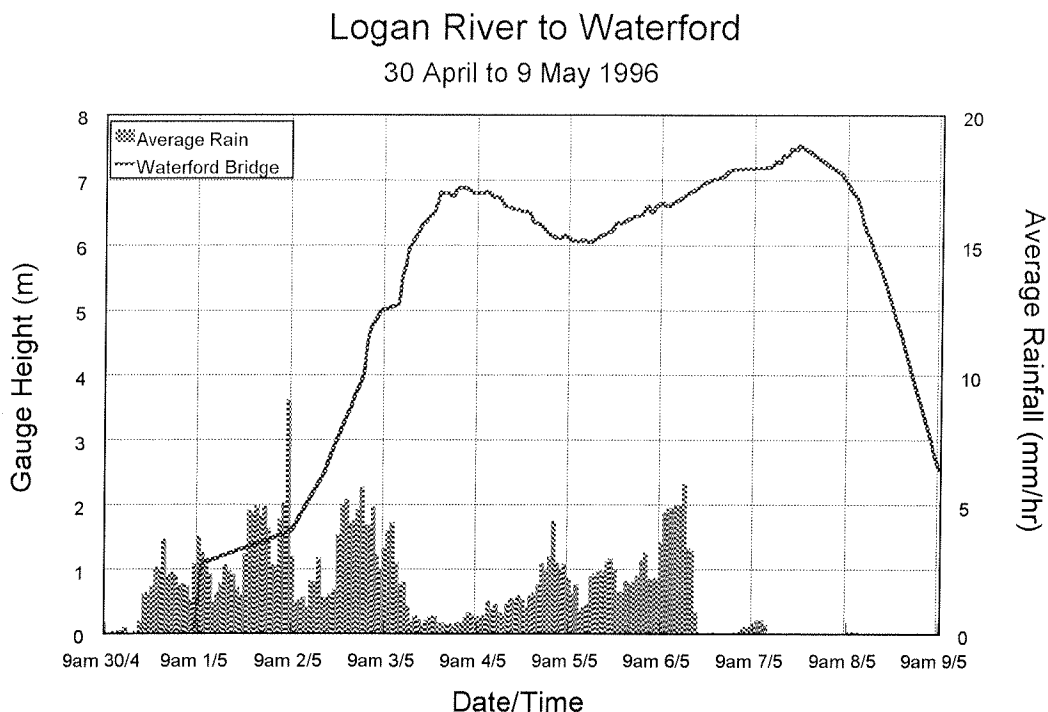


Figure 6.10 Flood Hydrograph for the Logan River at Waterford

No significant residential flooding was caused by the Logan River, but flood levels in the upper reaches of the catchments caused considerable rural flooding and road flooding.

In the Logan City area heavy rainfalls during Saturday 4th caused sharp rises in Slacks and Scrubby Creeks which caused flooding of low lying properties in the Marsden area. Several hours advance warning were provided by the Logan City Council Flood Centre of the impending flood which peaked early Sunday morning. Several properties were inundated to depths up to 0.5 metres, but actions by the local residents including removal of cars and lifting of furniture kept flood damages to a minimum.

The rainfall eased considerably during Tuesday 7th, and all river levels had dropped back to below flood levels by Thursday 9th.

6.6 Condamine River to Warwick

The Condamine River catchment upstream of Warwick was relatively dry in the lead up to the May flood event with only 20 to 30 mm of rainfall being recorded during April. Widespread general rains commenced on the 30th April and continued until it cleared around 7th May. Although average rainfalls of 20 mm were recorded to 9am on Wednesday 1st, rivers did not commence rising until about 9am Thursday after further general falls of 40 to 60 mm were recorded. The heaviest falls occurred in the upper reaches of the Condamine River above Killarney. The heavy rain continued during Thursday and by 9am Friday another 40mm had been dumped across the catchment with some falls of over 100 mm upstream of Killarney. By Friday morning river levels in the Killarney area had risen about 3 metres, Connolly Dam had commenced spilling and river levels were rising quickly in the Warwick area. At this stage, although the catchment was saturated with reasonable flows in all the creeks, there was no major river flooding and all roads remained open.

The rain eased off during Friday with falls of only 10 to 20mm reported to 9am Saturday. All river levels, which had peaked during Friday, fell back to below flood levels during Saturday.

Rainfalls picked up again during the next few days and combined with a saturated catchment, river levels rose very sharply in response to the further rain. Average 24 hour catchment falls of 30mm to 9am Sunday 5th, and a further 45mm to 9am Monday 6th, with isolated falls of 75 to 100 mm in the Killarney area caused rapid river rises and widespread flooding.

The Condamine River at Killarney rose quickly during Monday morning to a major flood peak of 6.15 metres at 11am. The river broke its banks and inundated the main street with water up to 1 metre deep. Several businesses suffered damage and losses due to the flood waters.

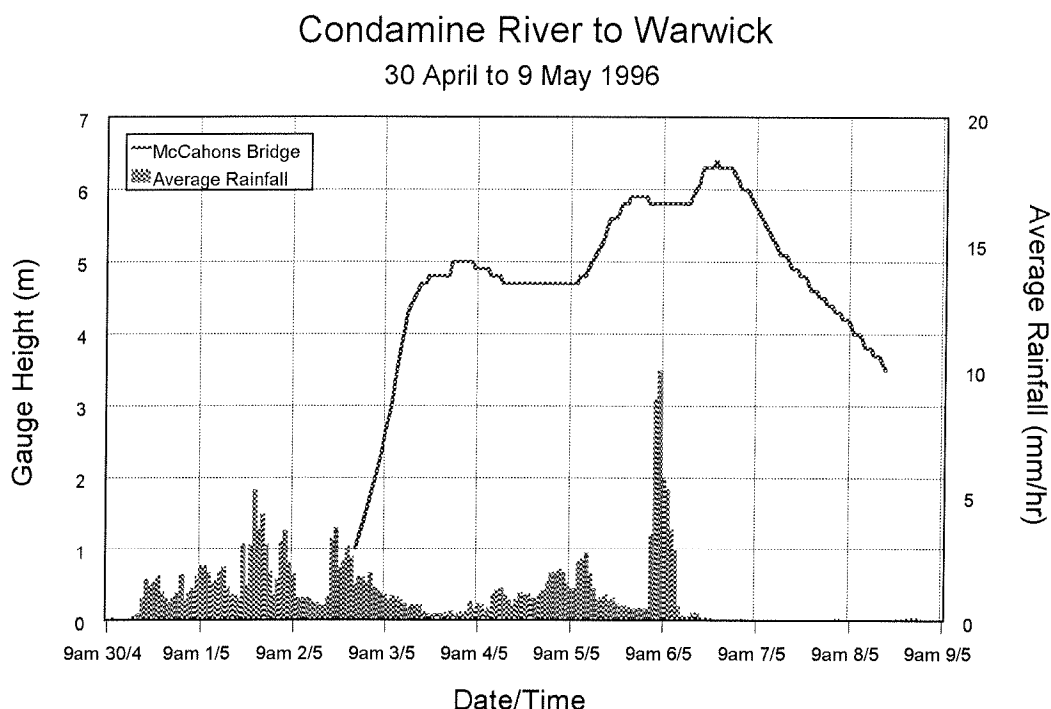


Figure 6.11 Flood Hydrograph for the Condamine River at Warwick

At the same time Killarney was flooding, fast river rises were being reported in all tributaries upstream of Warwick causing widespread flooding of rural properties. As can be seen in Figure 6.11, the Condamine River at McCahon Bridge had been steady at around 5.0 metres for a day or so, but during Monday morning it started rising steadily as the main floodwaters from upstream areas moved downstream. The river eventually peaked at McCahon Bridge at a height of about 6.6 metres about 9pm Monday night. This caused major flooding in the Warwick area, requiring the evacuation of 23 premises in flood threatened areas. Many of these properties experienced flooded yards and one house suffered above floor flooding.

Local State Emergency Service and Council staff provided advance warning of the expected flood inundation which allowed local residents to prepare their properties for flooding and to evacuate to emergency accommodation if required. At the peak of the flood, with both the McCahon Bridge and Madsen Bridge impassible, Warwick was totally isolated from Brisbane, its main supply link. Although during the peak of the flood many roads and crossing were impassable, local emergency services were well prepared in advance of the rising waters.

The Warwick flood peak of 6.6 metres was the highest since the record flood of February 1976 when the Condamine River at McCahon Bridge rose to a height of 9.10 metres causing major residential flooding in the Warwick area.

6.7 Myall Creek to Dalby

Myall Creek to Dalby experienced heavy rainfalls during the period Wednesday 1st to Saturday 4th May. This caused considerable flooding in the Dalby area where the creek rose to a height of 2.90 metres on the Patrick Street gauge. This was the highest recorded flood level since 1988 when a flood height also of 2.90 metres was reached. The flood was characterised by several days of widespread rains which produced average falls of 20 to 50 mm during Thursday 1st May, followed by another 24 hours of 80 to 100mm falls to 9am Friday 4th. As can be seen in Figure 6.12, river levels commenced rising sharply during Thursday and the continuous steady rain throughout Friday maintained river rises until the Myall creek finally peaked at Dalby at 2.90 metres at 9.30pm on Friday 3rd. The rainfalls generally eased during Saturday and river levels had dropped back below flood level by Monday 6th.

During the peak of the flood all major roads to Dalby were cut, many not re-opening for several days. Several business were affected by the floodwaters, and a local evacuation centre was set up to house local evacuees and stranded travellers. The Dalby S.E.S and Town Council workers were kept busy with local flood control operations throughout the weekend.

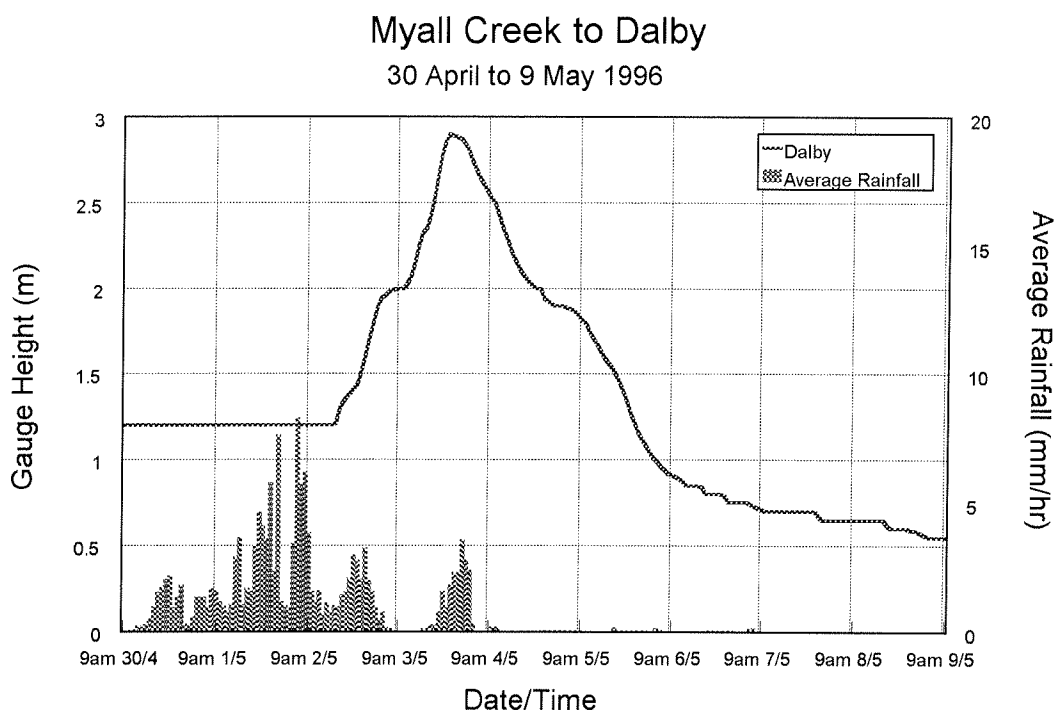


Figure 6.12 Flood Hydrograph for Myall Creek to Dalby

7.0 FLOOD WARNING SERVICES

7.1 Summary

During the period 30 April to 9 May 1996, the Bureau's Flood Warning Centre (FWC) in Brisbane issued over 130 Flood Warnings, summarised in Table 7.1, for rivers in southern Queensland. Appendix A contains copies of the warnings for selected river basins. These were widely disseminated to response agencies such as the Police and Local Governments, to the media, and to a wide range of other agencies requiring flood information.

Table 7.1 Flood Warning Summary: 30 April - 9 May 1996

Catchment	Initial Warning	Final Warning	Number of Warnings	Number of Predictions
Paroo River	9.50am 1/5/96	(2)	11	11
Coastal Streams	4.05pm 1/5/96(1)	8.45pm 6/5/96	17	0
Warrill Creek & Bremer River	11.25am 2/5/96	9.35am 8/5/96	23	6
Condamine-Balonne	12.10pm 2/5/96	(2)	17	15
Logan-Albert	7.10am 3/5/96	6.05am 9/5/96	20	8
Lockyer Creek & Brisbane River	8.35am 3/5/96	9.30am 8/5/96	21	6
Macintyre & Weir Rivers	10.20am 3/5/96	(2)	16	6
Moonie River	12.35pm 3/5/96	(2)	7	1

(1) Preliminary Flood Warning for all coastal streams south of Maryborough.

(2) Warnings for these rivers continued after 9 May and are not included in the above totals.

Flooding along the main Condamine-Balonne, in the Macintyre, Weir, Moonie and Paroo Rivers was not as significant as that in the southeast Queensland rivers but have been included in the warning summary to indicate the total number of Flood Warnings that were issued during the period. In addition to the Flood Warnings, in excess of 200 River Height Bulletins were issued in the period.

The volume of incoming phone calls to the FWC was at times too large to be satisfactorily handled by the operational staff. Enquiries came from a large variety of sources ranging from members of the public to response agencies and the media.

7.2 Interaction with External Agencies

FWC staff were in constant telephone contact with Queensland Emergency Services and local agencies throughout the period of the flood and also provided regular updates to the media through live and taped interviews.

There was considerable consultation with staff from the Ipswich, Brisbane and Logan City Councils and the operators of the South East Queensland Water Board dams with regard to river height predictions and to supply data and short term rainfall forecasts. All enquiries regarding flooding in specific areas in the Ipswich area were forwarded to the Ipswich City Council Flood Centre which was in operation 24 hours a day for most of the event. The Brisbane City Council also operated a flood information centre but this was not in operation at all times and, as a result, there were many enquiries regarding flooding in the Brisbane area directed to the FWC.

The volume of consultations with external agencies and public and media enquiries was at times

very high, exceeding the staff resources available to the FWC to handle the enquiries. During peak times at least five staff were needed.

7.3 Initial Warning

A Preliminary Flood Warning was first issued on Wednesday 1st May for Coastal Streams between Maryborough and the Gold Coast. This general warning was for widespread heavy rainfalls causing stream rises, flooding of low lying areas and hazardous road conditions for the next few days.

This generalised warning for coastal streams was renewed regularly throughout the event even after specific catchment warnings were issued. Besides providing some warning for smaller coastal streams, it essentially provided advice about the location and movement of the heavy rain band, a summary of rainfalls, both observed and forecast, and some action statements for motorists and landholders in low lying areas.

7.4 Warrill Creek and Bremer River

A Preliminary Flood Warning was first issued on Wednesday 1st May for Coastal Streams between Maryborough and the Gold Coast. This general warning was for widespread heavy rainfalls causing stream rises, flooding of low lying areas and hazardous road conditions for the next few days.

The first specific Flood Warning for the Warrill Creek and Bremer River was issued at 11.25 am on Thursday 2nd. This warning referred to heavy rainfalls in the Rosewood, Walloon and Amberley areas with minor to moderate flooding peaking by that afternoon. River levels in the Ipswich area would remain below minor flood level. A further warning that afternoon at 4.25 pm referred to a flood peak at Ipswich of about 5.2 metres. The warning issued at 9.35pm that night forecast **"a low level peak of about 5.5 metres overnight."** The warning also forecast further rain overnight.

The next warning issued at 6.30am on Friday 3rd warned of renewed rises caused by heavy overnight rainfalls of 50 to 100 millimetres. Moderate to major flooding in the Bremer River and Warrill Creek was expected during Friday with minor flooding in the Ipswich area during the afternoon. The next warning issued at 12.55pm warned of fast rises and major flooding in the Rosewood and Walloon areas. The warning predicted **"The Bremer River at Ipswich to reach about 11.5 metres later today with further rises possible overnight."** Subsequent warnings issued at 4pm, and 9pm Friday reported on upstream peaks and revised the Ipswich forecast to 12.5 metres with moderate flooding.

The river eventually peaked at 11.3 metres at around 9pm Friday evening. The warnings issued during Friday provided approximately 9 hours lead time to the Ipswich peak as can be seen in Figure 7.1.

Warnings issued during Saturday 4th referred to falling river levels throughout the catchment but with the possibility of some further rainfalls. The warning issued at 10.35pm that night reported heavy rainfall in the previous 6 hours causing renewed rises in the Bremer River downstream to Walloon and possible rises in Warrill Creek. Further rain was forecast overnight and during Sunday.

The warning issued at 7.55am on Sunday 5th reported an easing of the rain during the previous few hours although further rain was expected. Renewed rises were occurring at Rosewood and Walloon but were well below the flood peaks of the previous two days. Minor flooding was expected to be maintained downstream of Ipswich. The next warning issued at 1.00pm reported that further rain in the previous 3 hours had caused renewed rises at Rosewood and Walloon on the Bremer River and also at Harrisville and Amberley on Warrill Creek. The warning stated **"The river at Ipswich is expected to continue to rise and peak later tonight at a similar level to the peak of**

11.3 metres on Friday night.” The warning issued at 5.25pm Sunday revised the Ipswich peak forecast to about 11 metres on the morning of Monday the 6th. The 9.15pm warning Sunday night reported major flood peaks in the Walloon and Amberley areas. The forecast for Ipswich was revised to **“a peak about 10.5 metres at 6am on Monday morning with moderate flooding.”**

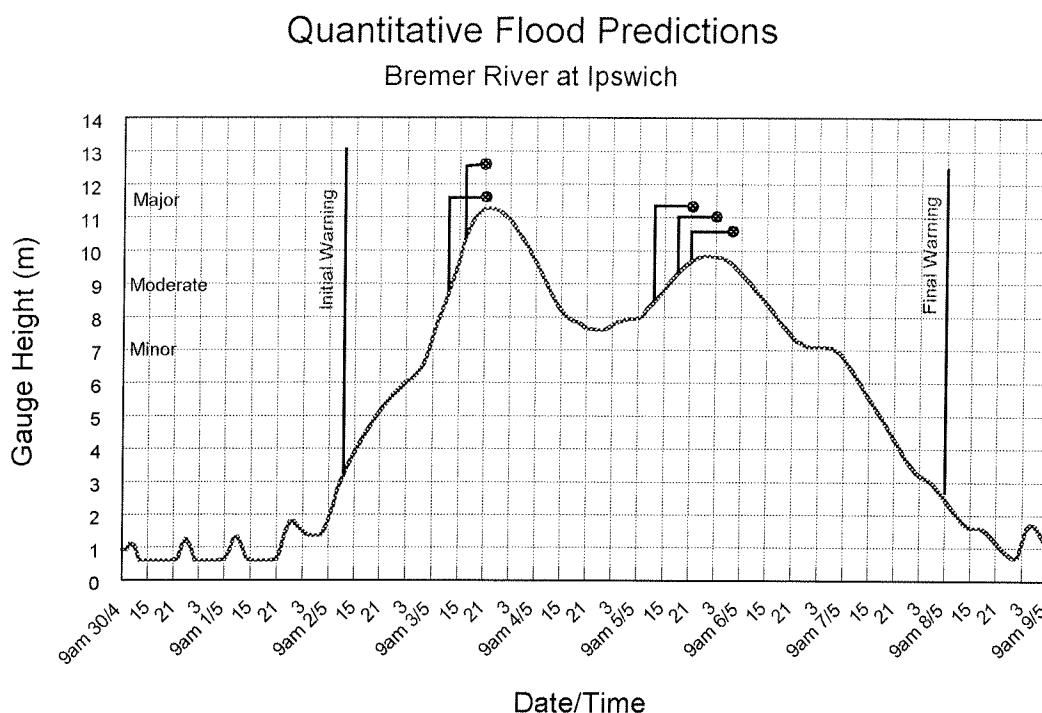


Figure 7.1 Quantitative Flood Predictions - Bremer River at Ipswich

The Bremer River finally peaked early on Monday morning at about 9.85 metres. The warnings issued during Sunday provided approximately 12 hours lead time to the Ipswich flood peak.

Subsequent warnings issued during Monday 6th and Tuesday 7th referred to general easing of the rainfalls and falling flood levels throughout the catchment. The final warning was issued at 9.35am on Wednesday 8th.

7.5 Lockyer Creek and Brisbane River

The first Flood Warnings were issued during Thursday 2nd May and referred to flooding in the Stanley River. The warnings referred to major flooding expected overnight at Woodford.

The next flood warning was issued for the Stanley River, Upper Brisbane River and Lockyer Creek at 8.35am on Friday 3rd. The warning reported 50 to 150mm falls in the previous 24 hours causing moderate flooding at Gregor Creek on the Brisbane River and expected river rises and major flood levels in the Lockyer Creek around Laidley during the day. The next warning issued at 1.35pm Friday reported a moderate peak at Gregor Creek. The warning also referred to major flooding in the Laidley Creek and lower Lockyer Creek at Lyons Bridge. Subsequent warnings issued at 6.40pm and 10.15 pm Friday reported on current flood levels and stated that no releases were expected from Wivenhoe Dam. The warning text also mentioned **“Many road crossings remain flooded”** and that **“Motorists should avoid the area.”**

The next warning issued at 8.40am Saturday 4th reported on the minor flooding expected to develop in the Brisbane River between Lowood and Mt Crosby. It also stated that **“On the Brisbane River higher than normal water levels will occur between Moggill and the City reaches during the weekend particularly with the high tide.”** Subsequent warnings issued at 12.20pm and 4.45pm

that day referred to flood levels easing in Laidley Creek, major flooding in Lockyer Creek and fast river rises and minor flooding between Lowood and Mt Crosby that day and overnight. **"Higher than normal levels are expected in the City reaches during the weekend, with the Saturday night high tide expected to be least as high as Friday night high tide and possibly higher."** The next warning at 9.25pm Saturday evening reported heavy rainfall causing renewed rises and major flooding on Lockyer Creek at Glenore Grove with renewed rises also on Laidley Creek.

The warning issued at 6.45am on Sunday 5th reported further general falls of 50 to 75 millimetres. Renewed rises were reported from the lower Lockyer Creek with major flooding and rises were occurring in Laidley Creek. On the Brisbane River, minor flooding was expected from Lowood to Mount Crosby during the day. In the City reaches higher than normal water levels were expected to occur during the next 48 hours with the high tides. **"The Brisbane River at the Brisbane City Gauge is expected to reach 2.2 metres on the high tide tonight . . . with a similar level on Monday night."** The next warnings issued at 1.00pm and 5.05pm that day reported that flood levels in Lockyer Creek at Glenore Grove and Lyons Bridge were higher than on Friday. The warning also stated **" The Brisbane River at Moggill is expected to rise to 8 metres tonight."**

The warnings provided approximately 12 to 24 hours advance warning of flood levels in the lower reaches of the Brisbane River downstream of Moggill. All warnings issued during Saturday 4th and Sunday 5th also stated that **"Residents in low lying areas affected by the tide should closely monitor the rising tides and shift property as necessary."**

Warnings issued on Monday 6th referred to the Brisbane river peak of about 2.10 metres overnight Sunday. The river at Moggill was expected to remain steady during the day and higher than normal tides were expected in the city reaches during the day particularly with the high tide around midnight with a similar level as the previous night. The warning issued at 10.25am that day referred to renewed rises and moderate flooding in Laidley Creek that were expected to prolong flooding around Laidley. The warning issued at 4.25pm referred to major flood levels peaking at Laidley with renewed rises at Glenore Grove extending downstream to Lyons Bridge but below levels of the previous day.

The warning issued at 8.20 am on Tuesday 7th stated that river levels were falling throughout the Laidley and Lockyer Creeks and on the Brisbane River between Lowood and Mt Crosby. The river levels below Moggill to the City were expected to be higher than normal tides. A further warning was issued at 4.05pm that day. The final flood warning for Lockyer Creek and the Brisbane River below Mt Crosby was issued at 9.30am on Wednesday 8th.

7.6 Logan & Albert Rivers

Preliminary Flood Warnings were first issued on Wednesday 1st May for Coastal Streams between Maryborough and the Gold Coast. The general warning was for widespread heavy rainfalls causing stream rises, flooding of low lying areas and hazardous road conditions for the next few days. The first specific flood warning for the Logan and Albert Rivers was issued at 7.10 am on Friday 3rd. This warning referred to heavy rainfalls and rising river levels throughout the Logan and Albert Rivers. At this stage river levels were below minor flood but rising in response to heavy falls over the lower reaches of the catchment.

A further warning issued at 1.20 pm on Friday 3rd warned of fast river rises in the upper reaches of the Logan River. It also forecast possible flooding of low lying areas in the Waterford area overnight due to floodwaters and higher than normal tides. Moderate flood levels in the Albert River during the afternoon were predicted.

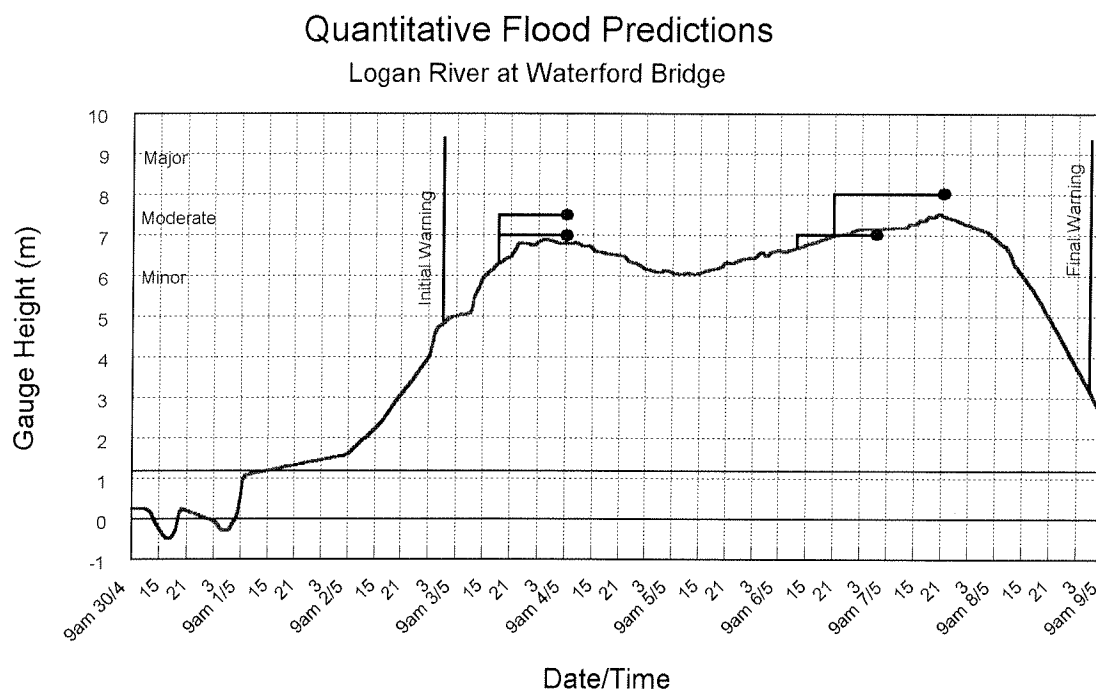


Figure 7.2 Quantitative Flood Predictions - Logan River at Waterford Bridge

The next warning issued at 6.20pm Friday 3rd referred to a peak at Yarrahappinni, and a forecast **..Waterford is expected to rise to 7.0 to 7.5 metres later tonight and peak Saturday morning.** The next warning issued at 9.40pm Friday 3rd also forecast an **overnight peak of 7.0 to 7.5 metres.**

The river peaked at Waterford at 6.90 metres at around 4am Saturday. The flood warning provided approximately 24 hours lead time to the Waterford peak and predicted the actual height to within 0.5 metres. At this level the Waterford Bridge was inundated by about 1.8 metres and was impassable. The bridge remained inundated by flood waters for the next 5 days.

Subsequent warnings issued at 6.15am, 12.00pm and 4.25pm during Saturday 4th reported generally lighter rainfalls and falling river levels. The warning issued at 4.10pm Sunday 5th, reported on recent rainfalls and the forecast of further rainfall with moderate falls overnight.

The 9.40pm Sunday 5th warning referred to renewed rises and major flooding in the Teviot Brook, and flood levels persisting in the Waterford area overnight. Warning was also given of expected flooding in the Eagleby area with the high tides overnight.

The warning issued at 1.15pm Monday 6th referred to renewed rises in the upper reaches of the Logan catchment from Rathdowney to Round Mountain and forecast a **Waterford peak near 7 metres by about 6am Tuesday.**

The warning issued at 9.10pm Monday 6th revised the Waterford forecast to take into account widespread heavy falls in the catchment in the last 24 hours to **.. peak just over 8 metres by about 6am Tuesday evening.** Subsequent warnings issued at 6.55am, 12.15am and 6.50 pm on Tuesday 7th confirmed the Waterford forecast of around 8.0 metres overnight. The river peaked at Waterford at about 7.5 metres at around 9pm Tuesday night with about 2.5 metres of water over the Waterford Bridge and Moderate flooding in the area. This second Waterford peak was forecast with approximately 24 hours lead time to the peak and an accuracy of 0.5 metres.

7.7 Condamine River to Warwick

Preliminary Flood Warnings were issued at 4pm Wednesday 1st for Coastal Streams between Maryborough and the Gold Coast. Although no rivers were in flood at this time, the warning text warned of forecast heavy rainfalls overnight, with stream rises, flooding of low lying areas and hazardous road conditions.

The Initial Flood Warning for the Condamine River and Tributaries was issued at 12.10 pm Thursday. The warning text mentioned widespread rainfalls of 50 to 75 mm over the eastern Darling Downs and forecast significant river rises during the next 1 to 2 days in tributaries of the Condamine River. At this stage river levels were well below flood level but had commenced rising due to rainfalls on the now saturated catchment.

The Flood Warning issued at 11.45 am Friday 3rd reported further falls of 50 to 75 mm over the eastern Downs and significant rises and flooding in tributary creeks. At this time all river levels upstream of Warwick were steadily rising but were still below flood level. The Condamine River at Killamey had risen about 3 metres overnight. Connolly Dam filled overnight and commenced spilling about 9am Friday.

The next few warnings issued at 4.45 pm Friday 3rd, 10.50 am Saturday 4th, 5.40 pm Saturday 4th did not specifically mention tributaries of the Condamine upstream of Warwick as rainfalls eased during Friday and Saturday and river levels began to fall back below flood level. No significant river flooding had occurred to this time.

Rainfalls picked up again late Saturday and the next flood warning issued at 10.35 am Sunday mentioned the overnight rainfalls and forecast minor flood levels in the Warwick area for the next 24 hours. At this stage the river at McCahon Bridge was about 4 to 5 metres with minor local flooding. These conditions remained the same until early Monday morning when heavy rains returned.

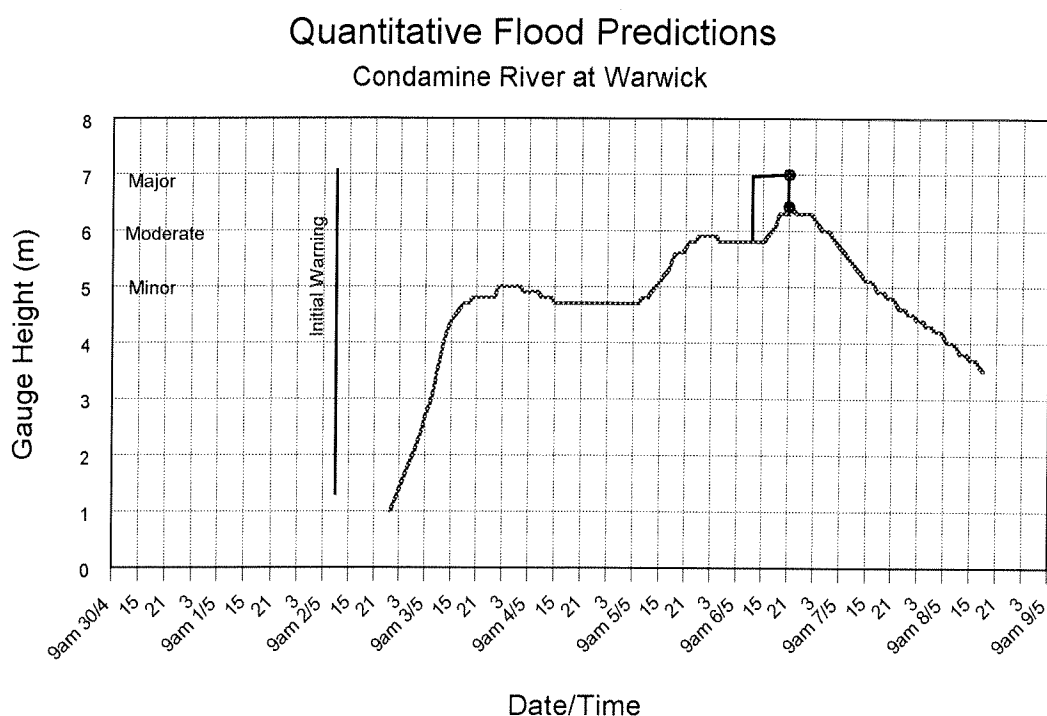


Figure 7.3 Quantitative Flood Predictions - Condamine River at Warwick

The warning issued at 11.40 am Monday 6th, referred to heavy rainfalls over the catchment in the past 6 hours and fast river rises in the headwater tributaries. The Condamine River at Killarney rose quickly during Monday morning to a major flood peak of 6.15 metres at 11am causing major flooding in the Killarney area.

The warning also forecast **"The Condamine River at Warwick is expected to rise quickly during the next 6 hours. Moderate to major flood levels of 6.5 to 7.0 metres are expected to be reached during the afternoon and this evening."** These predictions are shown in Figure 7.2.

The Condamine River at McCahon Bridge rose from about 5.90 metres Monday morning to a peak height of about 6.6 metres around 9pm Monday night.

The Flood Warning and subsequent direct briefings to Council and S.E.S staff in the Warwick area during Monday effectively provided about 9 hours lead time to the flood peak. This was adequate advance warning for local flood response activities to be undertaken, including evacuations, road closures etc. Flood damages in the Warwick area were kept to a minimum and no injury or loss of life was reported.

7.8 Myall Creek to Dalby

Flood warnings for the Myall Creek to Dalby were included in warnings for the Condamine-Balonne Rivers and Tributaries.

The initial warning for Myall Creek was issued at 12.10 pm Thursday 2nd. The warning mentioned widespread rainfalls of 50 to 75 mm over the eastern Downs, including 100mm at Dalby and Mt Mowbullin. The text also warned of stream rises throughout the Myall Creek catchment.

The next warning issued at 11.45am Friday 3rd, mentioned further heavy rains and significant rises in the tributary creeks. The warning forecast **"Myall Creek at Dalby is expected to peak at about 2.5 metres later today causing minor flooding."** At the time of issue, Myall Creek at Dalby was about 2.0 metres and rising.

During Friday significant direct consultation took place between Bureau staff and staff from Dalby Town Council with regard to expected flooding in the Dalby area. Discussions with Council staff served to confirm the flood forecasts and to ensure local emergency response personnel were fully briefed on expected flood conditions.

The next warning issued at 4.45 pm on Friday 3rd revised the Dalby forecast to **". . . peak at around 3 metres later this evening causing moderate flooding."**

Rises continued at Dalby throughout Friday until the Myall Creek finally peaked at Dalby at 2.90 metres at around 9.30 pm Friday night.

The flood warnings and direct briefing with Dalby Town Council staff during the lead up to the flood peak on Friday provided sufficient advance lead time for relevant local flood response activities to be carried out.

Quantitative Flood Predictions

Myall Creek at Dalby

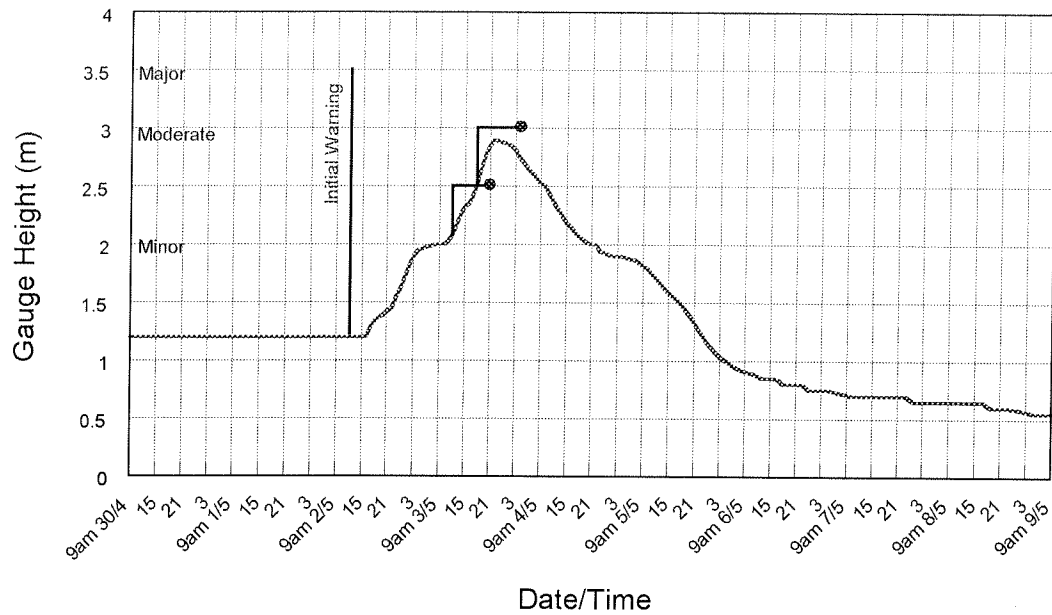


Figure 7.4 Quantitative Flood Predictions - Myall Creek at Dalby

8.0 FLOOD MONITORING AND WARNING SYSTEMS

8.1 Flood Warning Networks

A performance analysis has been carried out on all operational flood warning rainfall and river height stations in the South Coast, Logan-Albert, Brisbane, upper Condamine to Warwick and Myall Creek to Dalby catchments. All manual and automatic, which includes telephone and radio telemetry stations, are included in the analysis, including those operated by State and Local Government agencies. Note that the number of rainfall stations does not include Bureau daily reporting rainfall stations and synoptic stations.

Rainfall Stations

In total, there were over 150 rainfall stations potentially available for flood warning. Table 8.1 indicates the number of stations in each catchment and the method of reporting. Of these, 70% gave excellent data every day during the 10-day interval considered. A further 10% of stations reported most of the time, missing out on some reports on one or two days. The remaining 20% of stations were unsatisfactory, either not reporting at all or only reporting spasmodically.

The manual rainfall stations reported well, with the exception of four of the ten stations in the Brisbane catchment which didn't report at all. Eighty-five percent (85%) of observers reported either every day or just missing out on one or two occasions, leaving 15% who failed to report. Some of the manual stations are now not required because of the availability of automatic data.

Of the automatic stations, about 70% reported well, a further 10% reported satisfactorily (i.e. data missing on one or two days), and the remaining 20% were very poor. Overall there were 34 automatic stations for which data was not available during the event.

Table 8.1 Flood Warning Networks

Basin	Rainfall					River Height				
	ROT	PH	TM	ALERT	BVRT	ROT	PH	TM	ALERT	BVRT
South Coast	0	0	4	10	0	2	0	1	6	0
Logan-Albert R	3	0	18	2	0	11	0	16	1	0
Brisbane R	10	0	12	62	7	16	3	35	51	10
Condamine R to Warwick	3	0	4	12	0	5	0	5	7	0
Myall Ck to Dalby	1	0	0	6	0	1	0	0	3	0
Total	17	0	38	92	7	35	3	57	58	10

ROT - Manual station reporting by Remote Observer Terminal
PH - Manual station reporting by telephone
TM - Automatic station reporting by telephone telemetry
ALERT - Automatic station reporting by radio telemetry
BVRT - Brisbane Valley Radio Telemetry system

River Stations

Over 150 river height stations were operational in the analysed catchments at the commencement of the event, with 80% available either via telephone or radio telemetry as shown in Table 8.1

Of the 35 volunteer observer river height stations, 22 (70%) either did not report at all (there was no current observer at two stations) or reported infrequently. Automatic stations are providing data

from the volunteer observer sites at some locations which will be closed or retained for backup observations only.

Generally, the telephone telemetered river height stations proved very reliable with only about 10 stations (15%), either not available due to communications problems, instrument failure or incorrect data. There was a higher unavailability of data from ALERT river height stations considered in total, over 50%. This figure is unduly high as a number of stations in the Brisbane River basin either were not received by the FWC, possibly due to a faulty receiver, or had instrument or calibration errors.

8.3 Southeast Queensland ALERT Systems

The FWC receives real time flood data from a number of rainfall and river height ALERT systems installed throughout Queensland. Most of these ALERT systems were installed as cooperative projects between the Bureau and a Local Government. In southeast Queensland, there are eight such ALERT systems which provide real time information direct to both a local Council and to the FWC in Brisbane.

In general, these south east Queensland ALERT systems performed very well throughout the May flood event. Out of a total of 82 ALERT stations, approximately 70 stations or 85% of the network worked without fault throughout the event. About 12 stations or 15% of the network either did not send any data during the event, or did not accurately report. Some of the non-reporting stations were due to unserviceable equipment prior to the start of the event. Comparison of ALERT data with data from other sources (e.g. manual observations, telephone telemeter data) indicates that most of the ALERT data was consistent with other instrumented or manual data.

The real time information from these sites is used both by the Bureau for flood forecasting operations, and by the relevant Local Government for local flood response activities. Approximately 10 Local Governments used the information provided by the various ALERT systems for planning or managing local flood responses. The local activities ranged from routine monitoring of rainfalls and flood levels in the local catchment, to emergency evacuation of flood threatened residential areas.

Most Local Governments involved in a cooperative ALERT system use the Bureau-supplied ALERT software package. The software was upgraded in late 1995 with enhanced data display facilities. Feedback was that the ALERT software performed well (but within its known limitations), with only a few minor problems experienced on a coupled of the local Council base stations. These problems were usually fixed locally by rebooting the base station computer, or by FWC staff dialling in from Brisbane and correcting problems remotely.

Graphic displays of rainfall catchment maps were widely used by local Council staff for local emergency planning and for briefing of local staff on catchment conditions. Rainfall and river height summaries and graphical displays were also widely used by local staff. The ALERT staff gauge "Bar Graph" display was found to be very useful by several Councils, particularly where local flood effects could be referenced to flood heights at the key forecast location (e.g. critical levels at which bridge deck heights, or water on roads occurred). Some of this information was originally provided by the Bureau, however many more localised flood effects need to be determined and/or documented by the relevant local Council.

Several of the Councils also have remote dial in facilities so that rainfalls and river heights conditions could be monitored out of hours by Council officers. Alarm pagers, triggered by preset rainfall and river height conditions, were also used by several of the Councils to provide early warning of impending flood conditions.

Table 8.2 summarises the performance of southeast Queensland ALERT networks during the event.

Table 8.2 Southeast Queensland Local Government ALERT Systems

ALERT System	No of Stations	Station Failures	Details of Failures
Maroochy	12	1 rainfall	Montville station failed during event due to water entry into electronics
Logan Creeks	8	1 rainfall	Waterford Rainfall station failed during event
Myall Creek	6	2 rainfall	Mt Mowbullin & Mt Brigalow stations unserviceable prior to event
Nerang	11	-	All stations worked properly throughout the event
Ipswich	12	4 river 1 rainfall	5 stations were non operational prior to the flood event.
Oxley Creek	14	-	All stations worked properly throughout the event.
Burrum/Cherwell	7	1 rain/river 1 river	Pacific Haven & Lenthalls Dam stations were non operational prior to start of event
Warwick	12	1 rain/river	Glengallan Creek failed prior to event
Total	82	12	Approx 85 % of stations worked without fault throughout the event.

Note that Table 8.2 only includes those ALERT Stations installed and operated as part of a cooperative project with the Bureau of Meteorology. The Brisbane City Council and the South East Queensland Water Board also operate ALERT systems for the monitoring of flood conditions in the Brisbane Metropolitan area and the Brisbane River catchment respectively.

Although the Bureau uses real time information from these two ALERT systems, details of the performance of these networks would best be provided by the respective agency.

8.4 Flood Forecasting Models

Several hydrologic models, shown in Table 8.3, were used during the event for assistance in predicting heights and/or degree of flooding.

The models on the whole were an effective way of assembling and displaying data and gave guidance for river height predictions at many locations. However, a difficulty experienced with some of the rainfall based models was related to the effect of the relatively long duration of the event on the estimation of excess rainfall and the effect on baseflow.

Most of the operational models were calibrated using an initial loss-continuing loss model, with typical values of continuing loss between 1.5 and 2.5 mm per hour. As indicated earlier, the average rainfall intensity especially between the heavier periods was relatively small and often close to the adopted continuing loss rate. This resulted in the excess rainfall being underestimated during these periods and, consequently, the models underestimating hydrograph recessions and second flood peaks. There appeared to be improved performance when using a proportional runoff coefficient in preference to a continuing loss model.

In addition to the effect of the loss problem, the impact of base flow was probably underestimated in such a prolonged event. It is likely that base flow during the later stages of the flood period was much higher than estimated by the models.

Using the URBS model in split mode, ie subcatchment routing is treated separately to channel routing, also appears to improve the forecasting model performance. The combine effect of this options will be investigated using all the calibration events to verify their validity.

Table 8.3 Flood Forecasting Models

Basin	Catchment	Model
South Coast	Nerang R to Buds Beach	URBS Runoff-Routing Model
Logan-Albert	Albert R to Wolffdene	URBS Runoff-Routing Model
	Albert R to Bromfleet	Unit Hydrograph
	Logan R to Waterford	URBS Runoff-Routing Model
	Logan R to Yarrahappini	Unit Hydrograph
Brisbane	Bremer R to Ipswich	URBS Runoff-Routing Model
	Bremer R to Ipswich	Unit Hydrographs & Routing Model
	Lockyer Ck to Lyons Br	Unit Hydrograph
	Bundamba Ck to Blackstone Br	Unit Hydrograph
	Kedron Bk to Gympie Rd	Unit Hydrograph
	Bulimba Ck to Mansfield Tavern	Unit Hydrograph
	Moggill Ck to Misty Morn	Unit Hydrograph
	Oxley Ck to Beatty Rd	Unit Hydrograph
Border	Borders R to Goondiwindi	URBS River Routing Model
Condamine-Balonne	Upper Condamine R to Warwick	Unit Hydrograph
	Upper Condamine R to Warwick	URBS Rainfall Runoff Model
	Myall Ck to Dalby	Unit Hydrograph
	Myall Ck to Dalby	URBS Rainfall Runoff Model
Paroo	Parroo R to Hungerford	URBS River Routing Model

8.5 FWC Computer Systems

The computer systems used in the FWC remained operational during the event with little down time.

The telemeter interrogation package, MASTERS, and the ALERT software, both resident on HYPNET, worked very well.

The warning preparation system in AROS was the only system to cause problems and this was due mainly to the age and unreliability of the dumb terminals. There was only one terminal in the FWC that could be used reliably for warning preparation during the early part of the event.

Appendix A

FLOOD WARNINGS FOR SELECTED RIVER BASINS

Coastal Rivers	Pages A1 - A6
Logan/Albert River basin	Pages A7 - A16
Bremer River basin	Pages A17 - A27
Brisbane River basin	Pages A28 - A42

PRELIMINARY FLOOD WARNING FOR COASTAL STREAMS SOUTH FROM MARYBOROUGH
TO THE GOLD COAST

Issued at 4.05 pm on Wednesday, 01/05/96
by the Bureau of Meteorology, Brisbane.

Widespread rain with moderate to heavy falls are forecast for tonight and tomorrow in coastal areas south from Maryborough to the Gold Coast.

Fast stream rises are expected to occur overnight in smaller coastal streams and creeks causing flooding of low lying areas and roads.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings. Property owners in low lying areas should beware of rising water levels.

PRELIMINARY FLOOD WARNING FOR COASTAL STREAMS SOUTH FROM MARYBOROUGH
TO THE GOLD COAST

Issued at 4.20 pm on Wednesday, 01/05/96
by the Bureau of Meteorology, Brisbane.

Widespread rain with moderate to heavy falls are forecast for tonight and tomorrow in coastal areas south from Maryborough to the Gold Coast.

Fast stream rises are expected to occur overnight in smaller coastal streams and creeks causing flooding of low lying areas and roads.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings. Residents in low lying areas should beware of rising water levels.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH FROM BUNDABERG

Issued at 7.20 am on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Very heavy rains overnight have caused significant stream rises and local flooding. Highest rainfalls of 150 to 250 millimetres were in the Bundaberg area, the Sunshine Coast and Brisbane metropolitan area. In the Brisbane area, rainfalls have been heavier in the northern suburb creeks causing local flooding and road traffic problems.

The heavy rain has cleared to the north of the Gympie area, and is forecast to clear from the Sunshine Coast in the next few hours, and from the Brisbane area later this morning. Local flooding will ease slowly during the day.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH FROM GYMPIE
TO THE GOLD COAST

Issued at 4.05 pm on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

The heaviest rainfalls in the 6 hours to 3pm today have been in the Peachester and Woodford area, and again in the northern Brisbane suburbs and Pine Rivers. Six hour falls of 50 to 100 millimetres have been reported in these areas. Further rain is forecast for tonight breaking to showers tomorrow.

The northern edge of the heavy rains is around the Sunshine Coast and moving southwards.

Fast stream rises and local flooding will continue overnight in coastal streams south of the Sunshine Coast/Gympie area.

Residents in low lying areas should beware of rising water levels.

Road conditions will be hazardous. Motorists are warned not to enter

flooded road crossings.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH FROM GYMPIE
TO THE GOLD COAST**

Issued at 9.25 pm on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Fast stream rises and local flooding will continue overnight in coastal streams south of the Sunshine Coast to the border. The main problem areas are expected to be in the Caboolture River and tributaries, and the Burpengary Creek and the Pine Rivers areas.

The northern edge of the heavy coastal rains is south of Caloundra. The heaviest rainfalls in the 6 hours between 3pm and 9pm have been in the Pine Rivers to Caboolture area inland to the ranges. The highest reported total is 200 millimetres at Mt Mee between 9am and 8pm.

Further rain is forecast for tonight breaking to showers tomorrow.

The next warning will be issued at about 6-30am Friday.

Residents in low lying areas should beware of rising water levels.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 6.10 am on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Fast stream rises and flooding will continue today in coastal streams south of the Sunshine Coast to the border. The heavy rain areas are now south of Brisbane and Ipswich extending to the NSW border. Rain is forecast to continue today easing slowly from the north.

Highest rainfalls since 9am yesterday are 150 to 200 millimetres including 180 millimetres at Mt Tamborine and Mt Glorious, and about 200 millimetres at Mt Mee, Waterford and Springbrook.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Stanley River, Lockyer-Laidley Creeks and the Logan-Albert Rivers.

Residents in low lying areas should beware of rising water levels.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 12.20 pm on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Fast stream rises and flooding will continue today in coastal streams south of the Sunshine Coast to the border. The heavy rain areas are continuing south of Brisbane and Ipswich extending to the NSW border. Further rain is forecast for today.

The heaviest falls of 10 to 20 millimetres in the last 3 hours have been in the southern Brisbane suburbs, Oxley Creek and around Logan City.

In Oxley Creek, a further rise of about 0.8 metres is expected at Beatty Road during today and overnight. Rises in the lower reaches downstream of Beatty Road are expected to be up to 2 metres.

Road conditions will be hazardous. Motorists are warned not to enter

flooded road crossings.

Residents in low lying areas should beware of rising water levels. In particular, low lying areas close to the coast and affected by tides are likely to experience higher than normal high tides this evening.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Stanley River, Lockyer-Laidley Creeks and the Logan-Albert Rivers.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE SUNSHINE COAST TO THE GOLD COAST

Issued at 3.35 pm on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Fast stream rises and flooding have continued during today in coastal streams south of the Sunshine Coast to the border. The heavy rain areas are continuing south from Brisbane and Ipswich extending to the NSW border. Further rain is expected overnight tonight.

The area of heavy rainfall has remained stationary for the last 6 hours through the the southern suburbs of Brisbane and Ipswich with falls up to 50 millimetres.

In Oxley Creek, major flooding in the lower reaches are expected to peak overnight tonight.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings.

Residents in low lying areas should beware of rising water levels. In particular, low lying areas close to the coast and affected by tides are likely to experience higher than normal high tides this evening.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Stanley River, Lockyer-Laidley

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE SUNSHINE COAST TO THE GOLD COAST

Issued at 7.05 pm on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

The rainfall band that was stationary over Brisbanes southern suburbs during today has begun to move north west. Some further falls are expected tonight, as this band moves across the Pine, Upper Stanley and Caboolture areas.

Major flooding continues in the lower reaches of Oxley Creek where the level is expected to remain high during the night.

Road conditions will be hazardous throughout the night. Motorists are warned not to enter flooded road crossings.

Residents in low lying areas should be aware of rising water levels. In particular, low lying areas close to the coast and affected by tides are likely to experience higher than normal high tides this evening.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Stanley River, Lockyer-Laidley Creeks and the Logan-Albert Rivers.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE SUNSHINE COAST TO THE GOLD COAST

Issued at 10.25 am on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

The heavy rainfall band is almost stationary between Brisbane and Caloundra. Falls of 150 to 180 millimetres have been recorded

during the past 24 hours.

The heaviest rain is currently in the northern Brisbane suburbs and the Pine Rivers and Caboolture areas. Rainfall has eased to the south of Brisbane. Water levels in streams in these areas will continue to be at high levels during today.

Residents in low lying areas should be aware of rising water levels. In particular, low lying areas close to the coast and affected by tides are likely to experience higher than normal high tides, particularly on the high tide later tonight.

Road conditions remain hazardous. Motorists are warned not to enter flooded road crossings.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Upper Brisbane River and the Logan-Albert Rivers.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 3.35 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

The heavy rainfall band has remained stationary over Brisbanes inner southern suburbs and Northern suburbs for the last 6 hours. Heavy rainfall of up to 70 millimetres has been reported in the last 6 hours with an average of around 50 millimetres.

This rainfall will continue to cause rises in Brisbane metropolitan creeks. Residents in low lying areas affected by creeks and tides should take the necessary precautions. The high tide tonight is expected to be at least as high as last night and possible higher.

Road conditions remain hazardous. Motorists are warned not to enter flooded road crossings.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Upper Brisbane River and the Logan-Albert Rivers.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 8.55 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

The heavy rainfall band has intensified and now extends from Caloundra south to Brisbane's Northern suburbs.

The highest rainfall totals in the last 15 hours have been around Brisbane's central and eastern suburbs where up to 150 millimetres has been reported. The Lockyer creek catchment has averaged 80 millimetres in the same period and the Northern suburbs have received an average of 120 millimetres.

This rainfall will continue to cause rises in Brisbane metropolitan creeks. Residents in low lying areas affected by creeks and tides should take the necessary precautions. The high tide tonight is expected to be at least as high as Friday nights and possible higher.

Road conditions remain hazardous. Motorists are warned not to enter flooded road crossings.

Flood Warnings will continue today for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Upper Brisbane River and the Logan-Albert Rivers.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 7.40 am on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

The heavy rainfall band from Brisbane north to Caloundra and extending to the Ranges has weakened during the past few hours. The heavy rain has generally eased but further periods of rain will continue today.

The highest rainfalls overnight have been over Brisbane's northern suburbs and the Pine Rivers where 50 to 100 millimetres has been reported since 6pm last night. The Lockyer creek catchment has averaged 50 to 75 millimetres in the same period. The Bremer-Warrill catchments have recorded 25 to 50 millimetres night.

Flooding in the smaller coastal creeks and streams north of Brisbane should generally ease during today, however residents in low lying areas affected by tides should continue to be aware of rising water levels with the high tides.

Flood peaks are yet to be reached in some of the larger creeks and rivers. Flood Warnings are current for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Brisbane River and the Logan-Albert Rivers.

Road conditions remain hazardous. Motorists are warned not to enter flooded road crossings.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 1.50 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Rainfalls in the region from Caloundra to the NSW border have been generally below 25 millimetres in the last 6 hours with the heaviest falls in the Bremer River above Ipswich.

Flooding in the smaller coastal creeks and streams should generally ease during today, however residents in low lying areas affected by tides should continue to be aware of rising water levels with the high tides later tonight.

Flood peaks are yet to be reached in some of the larger creeks and rivers. Flood Warnings are current for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Brisbane River and the Logan-Albert Rivers.

Road conditions remain hazardous and motorists are warned not to enter flooded road crossings.

**RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST**

Issued at 7.05 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Rainfalls in the region from Caloundra to the NSW border have been generally below 25 millimetres in the last 9 hours with the heaviest falls, up to 50 millimetres, in Tenthill and Laidley Creeks and in the Bremer River upstream of Ipswich.

Flooding in the smaller coastal creeks and streams should generally ease during tonight, however residents in low lying areas affected by tides should continue to be aware of rising water levels with the high tides later tonight.

Flood peaks are yet to be reached in some of the larger creeks and rivers. Flood Warnings are current for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Brisbane River and the Logan-Albert Rivers.

Road conditions remain hazardous and motorists are warned not to enter flooded road crossings.

Further rain with some moderate falls is forecast overnight.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST

Issued at 9.05 am on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Rainfalls in the region from Noosa to the NSW border have been generally below 30 millimetres in the last 12 hours with the heaviest falls, up to 80 millimetres, in the Gold Coast Hinterland. Further rainfall is expected during today with some moderate falls.

Flooding in the smaller coastal creeks and streams has generally eased overnight, however residents in low lying areas affected by tides should continue to be aware of rising water levels with the high tides later tonight.

Flood Warnings are current for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Brisbane River and the Logan-Albert Rivers.

Road conditions remain hazardous and motorists are warned not to enter flooded road crossings.

Further rain with some moderate falls is forecast overnight.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST

Issued at 2.50 pm on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Rainfalls in the region from Noosa to the NSW border have been generally below 30 millimetres in the last 9 hours with the heaviest falls, up to 60 millimetres, in the Gold Coast hinterland. Further rainfall is expected today and tonight with some moderate falls.

Flooding in the smaller coastal creeks and streams continues to ease, however residents in low lying areas should continue to be aware of rising water levels with the high tides later tonight.

Flood Warnings are current for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Lower Brisbane River and the Logan-Albert Rivers.

Road conditions remain hazardous in some areas and motorists are warned not to enter flooded road crossings.

RENEWAL OF FLOOD WARNING FOR COASTAL STREAMS SOUTH OF THE
SUNSHINE COAST TO THE GOLD COAST

Issued at 8.45 pm on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Rainfalls in the region from Noosa to the NSW border in the 12 hours up to 8pm have generally eased. Some heavy falls, up to 120 millimetres, were reported in the Gold Coast hinterland but rain in this area has eased since 6pm.

Only showers are expected in the area during tonight.

Flooding in the smaller coastal creeks and streams continues to ease, however residents in low lying areas should continue to be aware of rising water levels with the high tides later tonight.

Flood Warnings are current for specific rivers including the Bremer River, Warrill Creek, Lockyer Creek, Lower Brisbane River and the Logan-Albert Rivers.

Road conditions remain hazardous in some areas and motorists are warned not to enter flooded road crossings.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 7.10 am on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Heavy rains since midnight have caused rising stream levels throughout the Logan and Albert Rivers and tributaries. River rises are expected to continue today causing moderate flooding.

Flood levels are generally below minor flood level at 6am this morning but will rise quickly during the day. The main rises are occurring in the lower Logan around Macleans Bridge and Waterford. At 5am, the Logan River at Waterford Bridge was 3.9 metres rising and about one metre below the bridge level.

The heaviest falls of 100 to 200 millimetres for the 21 hour period since 9am yesterday have been in the Logan City area and in the Albert River at Darlington and Bromfleet.

Further rain is forecast for today, particularly in the Logan-Albert headwaters areas towards the NSW border.

Latest river heights :

Albert River at Bromfleet	11.7 m rising at 6am
Teviot Brook at The Overflow	6.1 m rising at 6am
Logan River at Yarrahappinni	7.3 m rising at 6am
Logan River at Macleans Bridge	10.0 m rising at 6am
Logan River at Waterford	3.9 m rising at 5am

The next warning will be issued at about 11-00 am Friday.

FLOOD WARNING FOT THE LOGAN AND ALBERT RIVERS

Issued at 1.20 pm on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Very fast river rises to minor flood levels have been reported in the upper logan river today. River levels at Yarrahappinni are nearing their peak. At noon, Yarrahappinni was 13.0 metres with minor to moderate flooding.

Downstream in the Macleans Bridge to Waterford area, minor flood levels are continuing to rise. The Logan River at Waterford is about 10 centimetres above the bridge at noon. Further rises are expected for at least the next 6 hours.

Low lying areas in the lower Logan below Waterford may be affected by higher than normal high tides tonight.

Moderate flood levels are peaking on the Albert River at Bromfleet. Rises and moderate flooding are expected in the lower Albert this afternoon.

Further rain is forecast for today.

Latest river heights :

Albert River at Bromfleet	13.5 m steady at noon
Teviot Brook at The Overflow	7.7 m rising at noon
Logan River at Round Mountain	8.9 m rising slowly at noon
Logan River at Yarrahappinni	13.0 m rising slowly at noon
Logan River at Macleans Bridge	12.7 m rising at noon
Logan River at Waterford	5.1 m rising at noon

The next warning will be issued at about 6-00 pm Friday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 6.20 pm on Friday, 03/05/96

by the Bureau of Meteorology, Brisbane.

Very fast river rises and areas of minor to moderate flooding have been reported in the upper Logan River, Teviot Brook and Albert rivers during today.

The Logan River at Yarrahappinni is expected to peak in the next few hours near its current level. Downstream in the Macleans Bridge to Waterford area, minor flood levels are continuing to rise. The Logan River at Waterford is expected to rise to 7.0 to 7.5 metres later tonight and peak Saturday morning.

Low lying areas in the lower Logan below Waterford may be affected by higher than normal high tides tonight.

Moderate flood levels have peaked on the Albert River at Bromfleet. Moderate flooding will extend downstream to the lower Albert River overnight.

Further rain is forecast for tonight.

Latest river heights :

Albert River at Bromfleet	13.06m falling at 6pm
Teviot Brook at The Overflow	7.89m falling at 6pm
Logan River at Round Mountain	8.74m falling at 6pm
Logan River at Yarrahappinni	13.27m rising at 6pm
Logan River at Macleans Bridge	13.25m rising at 3pm
Logan River at Waterford	6.30m rising at 6pm

The next warning will be issued at about 10pm Friday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 9.40 pm on Friday, 03/05/96

by the Bureau of Meteorology, Brisbane.

Very fast river rises and areas of minor to moderate flooding have been reported in the upper Logan River, Teviot Brook and Albert rivers during today.

The Logan River at Yarrahappinni peaked at 13.28 metres around 6pm today causing minor flooding. Minor flooding continues downstream in the Macleans Bridge to Waterford area. The Logan River at Waterford is expected to rise to around 7.0 to 7.5 metres overnight and peak around this level Saturday morning.

Low lying areas in the lower Logan below Waterford may be affected by higher than normal high tides tonight.

Moderate flood levels have peaked on the Albert River at Bromfleet. Moderate flooding will extend downstream to the lower Albert River overnight.

Some further rain is forecast for tonight but is not expected to significantly affect flood levels.

Latest river heights :

Albert River at Bromfleet	12.20m falling at 9pm
Teviot Brook at The Overflow	7.60m falling at 9pm
Logan River at Round Mountain	8.45m falling at 9pm
Logan River at Yarrahappinni	13.22m falling at 9pm
Logan River at Macleans Bridge	13.52m rising slowly at 9pm
Logan River at Waterford	6.50m rising at 9pm

The next warning will be issued at about 6am Saturday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 6.15 am on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

The Logan River at Waterford is at its peak of 6.9 metres at 6am this morning. The river level is about 2 metres over the Waterford Bridge. Minor flood levels in the Waterford area and downstream will remain at about the current level today and fall more quickly tonight.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides this morning.

At Macleans Bridge, the Logan River peaked at 13.55 metres at 1am this morning and is continuing to fall slowly. River levels upstream of Macleans Bridge are generally falling below minor flood level.

Moderate flood levels have peaked on the Albert River at Bromfleet.

Some further rain is forecast for today, but is not expected to significantly affect flood levels.

Latest river heights :

Albert River at Bromfleet	10.28m falling at 6am
Teviot Brook at The Overflow	7.45m falling at 6am
Logan River at Round Mountain	7.41m falling at 6am
Logan River at Yarrahappinni	13.06m steady at 6am
Logan River at Macleans Bridge	13.19m falling at 3am
Logan River at Waterford	6.90m steady at 6am

The next warning will be issued at about noon Saturday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 12.00 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

The Logan River at Waterford has commenced to fall slowly. At noon, the flood level had fallen about 10 centimetres to 6.8 metres. The river level is about 1.8 metres over the Waterford Bridge. Minor flood levels in the Waterford area and downstream will remain at about the current level today and fall more quickly tonight.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides around midday and again tonight.

At Macleans Bridge, the Logan River peaked at 13.55 metres at 1am this morning and is continuing to fall slowly. River levels upstream of Macleans Bridge are generally falling below minor flood level.

Moderate flood levels have peaked on the Albert River at Bromfleet.

Some further rain is forecast for today, but is not expected to significantly affect flood levels.

Latest river heights :

Albert River at Bromfleet	10.28m falling at 6am
Teviot Brook at The Overflow	7.33m falling at 9am
Logan River at Round Mountain	6.73m falling at 11-30am
Logan River at Yarrahappinni	11.36m falling at 11-30am
Logan River at Macleans Bridge	12.70m falling at 9am
Logan River at Waterford	6.80m falling at noon
Logan River at Eagleby	3.55m rising slowly at 9am

The next warning will be issued at about 4pm Saturday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 4.25 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

The Logan River at Waterford has commenced to fall slowly. At 3pm it was 6.70 metres which is about 1.70 metres over the bridge. Minor flood levels in the Waterford area and downstream will remain steady before falling more quickly tonight.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides tonight.

Minor flooding continues to ease on the Albert River at Bromfleet.

The current weather conditions are expected to continue overnight.

Latest river heights :

Albert River at Bromfleet	9.74m falling at 3pm
Teviot Brook at The Overflow	7.06m falling at 3pm
Logan River at Yarrahappinni	10.80m falling at 3pm
Logan River at Macleans Bridge	11.80m falling at 3pm
Logan River at Waterford	6.70m falling at 3pm
Logan River at Eagleby	3.55m rising slowly at 3pm

The next warning will be issued at about 10pm Sunday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 10.35 am on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

The Logan River at Waterford is continuing to fall slowly. At 9am it was 6.10 metres which is about one metre over the bridge. Minor flood levels in the Waterford area and downstream will continue to fall slowly during today.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Minor flooding is continuing on the Albert River at Bromfleet with some renewed rises.

The current weather conditions are expected to continue today.

Latest river heights :

Albert River at Bromfleet	10.11m rising at 9am
Teviot Brook at The Overflow	7.72m rising at 9am
Logan River at Yarrahappinni	11.25m rising at 9am
Logan River at Macleans Bridge	11.04m rising at 9am
Logan River at Waterford	6.10m falling at 9am

The next warning will be issued at about 5pm Sunday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 4.10 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Recent rainfall has caused renewed rises and major flooding in the Teviot Brook. This will maintain high river levels in the Logan River downstream to Macleans Bridge but they are not expected to reach the heights of Saturday morning.

Minor flooding at Waterford and downstream will continue overnight.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Minor flooding is continuing along the Albert River.

Further rainfall with some moderate falls is forecast for tonight.

Latest river heights :

Albert River at Bromfleet	10.07m falling at 3pm
Teviot Brook at Boonah	6.75m rising at 3pm
Teviot Brook at The Overflow	7.50m rising at 3pm
Logan River at Yarrahappinni	12.11m rising at 3pm
Logan River at Macleans Bridge	11.92m rising at 3pm
Logan River at Waterford	6.05m steady at 3pm
Logan River at Eagleby	3.37m rising slowly at 3pm

The next warning will be issued at about 9pm Sunday.

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 9.40 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Recent rainfall has caused renewed rises and major flooding in the Teviot Brook with a peak expected at Boonah overnight. This will maintain high river levels in the Logan River downstream to Macleans Bridge but they are not expected to reach the heights of Saturday morning.

At Waterford, the river level will remain around its current level overnight, causing minor flooding, before commencing to fall late Monday morning.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Minor flooding is continuing along the Albert River.

Further rainfall with some moderate falls is forecast for tonight.

Latest river heights :

Albert River at Bromfleet	9.41m falling at 9pm
Teviot Brook at Boonah	7.45m rising at 9pm
Teviot Brook at The Overflow	8.00m rising at 9pm
Logan River at Yarrahappinni	12.57m rising at 9pm
Logan River at Macleans Bridge	12.61m rising at 9pm
Logan River at Waterford	6.25m rising slowly at 9pm

The next warning will be issued at about 10am Monday

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 9.55 am on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Major flooding should peak in the Teviot Brook at Boonah in the next few hours. Moderate flooding will extend down to the Overflow during today.

Renewed rises and minor flooding have been reported in the upper reaches of the Logan River from Rathdowney to Round Mountain.

The floodwaters from Teviot Brook and the Upper Logan will maintain minor flood levels in the Lower Logan River during today and into tomorrow.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Further rainfall with some moderate falls is forecast for today.

Latest river heights :

Albert River at Bromfleet	8.29m falling at 9am
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Teviot Brook at Boonah	8.00m steady	at 9am
Teviot Brook at The Overflow	8.21m rising	at 9am
Logan River at Rathdowney	7.74m rising	at 9am
Logan River at Round Mountain	8.77m rising	at 9am
Logan River at Yarrahappinni	12.75m rising	at 9am
Logan River at Macleans Bridge	13.05m steady	at 9am
Logan River at Waterford	6.65m rising	at 9am

The next warning will be issued at about 1pm Monday

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 1.15 pm on Monday, 06/05/96

by the Bureau of Meteorology, Brisbane.

The rainfall in the last 3 hours has been generally less than 25 millimetres. Major flooding is peaking in the Teviot Brook at Boonah. Minor flooding will extend down to The Overflow during today.

Renewed rises and minor flooding have been reported in the upper reaches of the Logan River from Rathdowney to Round Mountain.

The floodwaters from Teviot Brook and the Upper Logan will maintain minor flood levels in the Lower Logan River during today and tomorrow. The Logan River at Waterford Bridge is expected to continue rising slowly and peak near 7 metres by about 6am Tuesday morning. This is similar to the level reached on Saturday.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Further rainfall with some moderate falls is forecast for today.

Latest river heights :

Albert River at Bromfleet	8.29m steady	at noon
Teviot Brook at Croftby	4.91m rising	at noon
Teviot Brook at Boonah	6.40m steady	at noon
Teviot Brook at The Overflow	8.25m rising	at noon
Logan River at Rathdowney	8.93m rising	at noon
Logan River at Round Mountain	9.19m rising	at noon
Logan River at Yarrahappinni	12.74m steady	at noon
Logan River at Macleans Bridge	13.11m rising	at noon
Logan River at Waterford	6.60m rising	at noon

The next warning will be issued at about 5pm Monday

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 5.05 pm on Monday, 06/05/96

by the Bureau of Meteorology, Brisbane.

Moderate rainfall totals of 40 to 80 mm have been reported in the headwaters of the Logan River and have caused strong rises in the upper reaches.

Renewed rises and minor flooding have been reported in the upper reaches of the Logan River from Rathdowney to Round Mountain. The main flood waters are now approaching the Round Mountain area.

On Teviot Brook, the flood peak is in the lower reaches around The Overflow.

The floodwaters from Teviot Brook and the Upper Logan will maintain minor flood levels in the Lower Logan River during today and tomorrow. The Logan River at Waterford Bridge is expected to continue rising slowly and peak just over 7 metres by about 6am Tuesday morning. This is similar to the level reached on Saturday.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Renewed rises in the upper reaches of the Albert River will not cause renewed flooding in the lower reaches where minor flooding continues to ease.

Rainfall is expected to ease overnight.

Latest river heights :

Albert River at Lumeah	8.70m rising at 5pm
Albert River at Bromfleet	10.64m rising at 5pm
Teviot Brook at Croftby	2.45m falling at 5pm
Teviot Brook at Boonah	6.40m rising at 2pm
Teviot Brook at The Overflow	8.66m rising at 5pm
Logan River at Rathdowney	10.31m rising at 5pm
Logan River at Round Mountain	12.09m rising at 5pm
Logan River at Yarrahappinni	13.32m rising at 5pm
Logan River at Macleans Bridge	13.39m rising at 3pm
Logan River at Waterford	6.80m rising at 3pm

The next warning will be issued at about 10pm Monday

FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 9.10 pm on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Since 6pm Monday, only small rainfall totals have been reported in headwaters of the Logan and Albert Rivers and upper river levels continue to fall.

On the Logan River, the main flood waters are now approaching the Round Mountain area causing moderate flooding in the area.

On Teviot Brook, the flood peak is in the lower reaches around The Overflow causing minor flooding in the area.

The floodwaters from Teviot Brook and the Upper Logan will maintain minor flood levels in the lower Logan River during the next 24 to 36 hours.

The Logan River at Waterford Bridge is expected to continue rising slowly and peak at about 8 metres Tuesday evening. This is about 1 metre above the level reached on Saturday.

Flooded areas in the lower reaches of the Logan below Eagleby will be affected by the high tides again tonight.

Renewed rises in the upper reaches of the Albert River will only cause minor flooding in the lower reaches around Wolfdene during Tuesday.

Rainfall is expected to ease overnight.

Latest river heights :

Albert River at Lumeah	9.36m falling at 9pm
Albert River at Bromfleet	12.13m rising at 9pm
Teviot Brook at Croftby	1.87m falling at 9pm
Teviot Brook at The Overflow	8.52m falling at 9pm
Logan River at Rathdowney	9.45m falling at 9pm
Logan River at Round Mountain	13.05m rising slowly at 9pm
Logan River at Yarrahappinni	14.13m rising at 9pm
Logan River at Macleans Bridge	13.65m rising at 6pm
Logan River at Waterford	7.00m rising at 9pm

The next warning will be issued at about 7am Tuesday

RENEWAL OF FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 6.55 am on Tuesday, 07/05/96
by the Bureau of Meteorology, Brisbane.

No significant rainfall has been reported overnight in the headwaters of the Logan and Albert Rivers and upper river levels continue to fall.

On Teviot Brook, the flood peak is in the lower reaches around The Overflow causing minor flooding in the area.

On the Logan River, the main flood waters are now in the Yarrahappini area causing moderate flooding. Moderate flooding will extend down to Waterford during today with a peak of around 8 metres expected Tuesday evening. This is about 1 metre above the level reached on Saturday.

Renewed rises in the upper reaches of the Albert River will cause moderate flooding in the lower reaches around Wolfdene during today.

Some showers are forecast for today.

Latest river heights include :

Albert River at Lumeah	3.52m falling at 6am
Albert River at Bromfleet	13.18m falling at 6am
Teviot Brook at The Overflow	8.58m steady at 6am
Logan River at Rathdowney	5.06m falling at 6am
Logan River at Round Mountain	10.78m falling at 6am
Logan River at Yarrahappinni	14.82m rising at 6am
Logan River at Macleans Bridge	14.77m rising at 6am
Logan River at Waterford	7.25m steady at 6am

The next warning will be issued at about 12 Noon Tuesday

RENEWAL OF FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 12.15 pm on Tuesday , 07/05/96

by the Bureau of Meteorology, Brisbane.

No significant rainfall has been reported overnight in the headwaters of the Logan and Albert Rivers.

On the Logan River, the main flood waters are just downstream of Yarrahappini area causing moderate flooding. The Logan River at Yarrahappini peaked at 14.8 metres earlier this morning and all river levels upstream are continuing to fall.

Moderate flooding will extend down to Waterford during today with a peak of around 8 metres expected Tuesday evening. This is about 1 metre above the level reached on Saturday and about 0.7 metres above its current level.

The Albert River at Bromfleet continues to fall quickly and moderate flooding will ease in the lower reaches around Wolfdene during today.

Latest river heights include :

Albert River at Bromfleet	8.95m falling at noon
Teviot Brook at The Overflow	8.10m falling at noon
Logan River at Round Mountain	7.56m falling at noon
Logan River at Yarrahappinni	14.70m falling at noon
Logan River at Macleans Bridge	15.00m rising at noon

The next warning will be issued at about 7pm Tuesday

RENEWAL OF FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 6.50 pm on Tuesday , 07/05/96

by the Bureau of Meteorology, Brisbane.

No significant rainfall has been reported in the last 24 hours in the

headwaters of the Logan and Albert Rivers.

On the Logan River, the main flood waters are downstream of Macleans Bridge causing moderate flooding. The Logan River at Macleans Bridge peaked at 15.0 metres around noon and all river levels upstream are continuing to fall.

Moderate flooding extends down to Waterford with a peak just under 8 metres expected in a few hours. This is about 1 metre above the level reached on Saturday.

The Albert River at Bromfleet continues to fall quickly and moderate flooding will ease in the lower reaches around Wolfdene during today.

Latest river heights include :

Albert River at Bromfleet	6.63m falling at 6pm
Teviot Brook at The Overflow	7.38m falling at 6pm
Logan River at Round Mountain	6.25m falling at 6pm
Logan River at Yarrahappinni	13.68m falling at 6pm
Logan River at Macleans Bridge	14.76m falling at 6pm

The next warning will be issued at about 7am Wednesday

RENEWAL OF FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 7.10 am on Wednesday, 08/05/96

by the Bureau of Meteorology, Brisbane.

All river levels in the Albert and upper Logan Rivers and Teviot Brook are now below minor flood level. River levels and minor to moderate flooding in the Lower Logan River from Yarrahappini to Waterford will continue to ease during today.

Moderate flooding peaked at Waterford overnight and will ease quickly during today.

Latest river heights include :

Logan River at Yarrahappinni	9.89m falling at 6am
Logan River at Macleans Bridge	11.90m falling at 6am

The next warning will be issued at about 4pm Wednesday

RENEWAL OF FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS

Issued at 4.05 pm on Wednesday, 08/05/96

by the Bureau of Meteorology, Brisbane.

All river levels in the Albert and upper Logan Rivers and Teviot Brook are now below minor flood level. River levels and minor to moderate flooding in the Lower Logan River from Yarrahappini to Waterford will continue to ease during today.

Moderate flooding peaked at Waterford overnight and the river level is still above the bridge deck but continuing to fall.

Latest river heights include :

Logan River at Yarrahappinni	7.50m falling at 3pm
Logan River at Waterford	6.05m falling at 3pm

The next warning will be issued at about 7am Thursday

FINAL FLOOD WARNING FOR THE LOGAN AND ALBERT RIVERS
Issued at 6.05 am on Thursday, 09/05/96
by the Bureau of Meteorology, Brisbane.

All river levels in the Albert and Logan Rivers and Teviot Brook are below minor flood level.

The Logan River at Waterford has fallen below the Waterford Bridge.

Latest river heights include :

Logan River at Yarrahappinni	5.38m falling at 6am
Logan River at Waterford	falling & below bridge

INITIAL FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
ABOVE IPSWICH

Issued at 11.25 am on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Heavy rains in the past 24 hours have caused river rises with minor to moderate flooding around the Rosewood, Walloon and Amberley areas. Flood levels in these areas will peak during the afternoon.

No significant flooding is expected in Warrill Creek in the upstream areas around Harrisville and Kalbar.

Rises will extend downstream along the Bremer River today but flood levels in the Ipswich area will be below minor flood level.

Heavy rain is forecast to continue to clear the area from the north during the afternoon.

Current River Heights include:

Warrill Creek at Harrisville	2.04 m rising at 9am
Warrill Creek at Amberley	4.43 m rising at 9am
Western Creek at Kuss Road	7.00 m steady at 9am
Bremer River at Rosewood	4.93 m rising at 9am
Bremer River at Walloon	5.12 m rising at 9am

The next warning will be issued at about 4pm today.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
ABOVE IPSWICH

Issued at 4.25 pm on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Moderate flood levels are near their peak in the Rosewood, Walloon and Amberley areas. Rises are extending downstream along the Bremer River to the Ipswich area but these will be well below minor flood level. A low-level flood peak of about 5.2 metres is expected at the David Trumpy Bridge around 7pm this evening.

No significant flooding is expected in Warrill Creek in the upstream areas around Harrisville and Kalbar.

Further rain is forecast overnight breaking to showers tomorrow.

Current River Heights include:

Warrill Creek at Harrisville	3.41 m rising at 3pm
Warrill Creek at Amberley	5.00 m rising at 3pm
Western Creek at Kuss Road	6.75 m falling at 2pm
Bremer River at Rosewood	5.28 m rising at 3pm
Bremer River at Walloon	5.84 m rising at 3pm

The next warning will be issued at about 10 am Friday, or earlier if the flood situation changes.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
ABOVE IPSWICH

Issued at 9.35 pm on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Moderate flood levels have peaked in the Rosewood, Walloon and Amberley areas. Rises are extending downstream along the Bremer River to the Ipswich area but these will be well below minor flood level. A low-level flood peak of about 5.5 metres is expected at the David Trumpy Bridge during the next few hours.

Further rain is forecast overnight breaking to showers tomorrow.

Current River Heights include:

Warrill Creek at Harrisville	4.22 m rising at 9pm
Warrill Creek at Amberley	4.90 m falling at 9pm
Bremer River at Rosewood	5.10 m falling at 9pm
Bremer River at Walloon	6.03 m at peak at 9pm
Bremer River at David Trumpy Bridge	5.3 m rising at 9pm

The next warning will be issued at about 8 am Friday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 6.30 am on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Heavy overnight rains have caused renewed rises in the Bremer River and Warrill Creek. Further river rises causing moderate to major flooding will continue during today. Fast creek rises will occur in Warrill Creek around Kalbar and downstream to Amberley, and in the Bremer River and tributaries above Rosewood.

Rainfalls of 50 to 100 millimetres have been recorded in the 21 hours since 9am Thursday. Further rain is forecast for today.

The David Trumpy Bridge at Ipswich will continue to rise slowly during today causing minor flooding at Ipswich during the afternoon. Further rises are possible tonight but this will depend on rainfalls in the Bremer River and Warrill Creek catchments during today.

Current River Heights include:

Warrill Creek at Kalbar	5.95 m rising at 6am
Warrill Creek at Harrisville	4.27 m rising at 6am
Warrill Creek at Amberley	5.85 m rising at 6am
Western Creek at Kuss Road	7.80 m rising at 6am
Bremer River at Rosewood	5.67 m rising at 6am
Bremer River at Walloon	5.65 m rising at 6am

Bremer River at David Trumpy Bridge 6.56 m rising at 6am

The next warning will be issued at about 11 am Friday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 12.55 pm on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Flood levels are rising quickly on the Bremer River at Rosewood and Walloon causing major flooding. Walloon will continue rising for at least the next 6 hours.

Warrill Creek at Amberley is expected to rise slowly during this afternoon. Flood levels of 6.5 to 7 metres will be maintained into this evening at Amberley.

The combined runoff from the Bremer River and Warrill Creek will continued river rises this afternoon and evening in the Bremer River below their junction at Amberley.

The Bremer River at the David Trumpy Bridge at Ipswich is predicted to reach about 11.5 metres later today or this evening causing moderate flooding. Further rises are possible at Ipswich overnight.

Rainfalls of 20 to 40 millimetres have fallen over most of the catchment areas during the past 6 hours. Further rain is forecast.

For information on flooding in the Ipswich area, Ipswich residents can contact the Ipswich City Council on telephone 3810 6665.

Latest River Heights include:

Warrill Creek at Kalbar	7.20 m rising at 8am
Warrill Creek at Harrisville	5.71 m rising at noon
Warrill Creek at Amberley	6.50 m rising slowly at noon

Western Creek at Kuss Road	7.80 m rising at 6am
Bremer River at Rosewood	6.20 m steady at noon
Bremer River at Walloon	8.20 m rising at noon

Bremer River at David Trumpy Bridge 9.23 m rising at 12-50pm

The next warning will be issued at about 4 pm Friday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 4.00 pm on Friday, 03/05/96

by the Bureau of Meteorology, Brisbane.

Flood levels have peaked on the Bremer River at Rosewood and Walloon causing major flooding.

Warrill Creek at Amberley is expected to peak in the next few hours and remain around 6.5 to 7 metres during this evening.

The Bremer River at the David Trumpy Bridge at Ipswich is expected to peak at about 12.5 metres around 9pm this evening causing moderate flooding.

Rainfalls of 20 to 40 millimetres have fallen over most of the catchment areas during the past 6 hours. Further rainfall is forecast overnight.

For information on flooding in the Ipswich area, Ipswich residents can contact the Ipswich City Council on telephone 3810 6665.

Latest River Heights include:

Warrill Creek at Harrisville	5.80 m rising at 3pm
Warrill Creek at Amberley	6.70 m rising at 3pm

Bremer River at Rosewood	6.24 m falling at 3pm
Bremer River at Walloon	8.12 m falling at 3pm

Bremer River at David Trumpy Bridge 10.14m rising at 3pm

The next warning will be issued at about 9 pm Friday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 9.15 pm on Friday, 03/05/96

by the Bureau of Meteorology, Brisbane.

Moderate to major flood levels are continuing to ease on the Bremer River at Rosewood and Walloon.

Warrill Creek at Amberley has remained steady at around 6.75 metres for the last few hours causing major flooding. Major flooding should begin to ease overnight.

The Bremer River at the David Trumpy Bridge in Ipswich was 11.31 metres and very near its peak at 9pm tonight causing moderate flooding. The flooding in Ipswich is expected to ease slowly overnight.

Some further rainfall is forecast overnight but this is not expected to have a significant effect on flood levels.

For information on flooding in the Ipswich area, Ipswich residents can contact the Ipswich City Council on telephone 3810 6665.

Latest River Heights include:

Warrill Creek at Harrisville 5.91 m rising slowly at 9pm
Warrill Creek at Amberley 6.75 m steady at 9pm

Bremer River at Rosewood 5.93 m falling at 9pm
Bremer River at Walloon 7.52 m falling at 9pm

Bremer River at David Trumpy Bridge 11.31 m nearing peak at 9pm

The next warning will be issued at about 6.30am Saturday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 6.45 am on Saturday, 04/05/96

by the Bureau of Meteorology, Brisbane.

The Bremer River at the David Trumpy Bridge in Ipswich peaked at 11.3 metres at 9pm last night. Moderate flooding in the Ipswich area will continue to ease slowly during today. At 6-30am, the river level had fallen to 10 metres.

Moderate to major flooding is continuing to ease on the Bremer River at Rosewood and Walloon.

Major flood levels in Warrill Creek at Amberley have fallen about 30 centimetres overnight, and will continue to fall slowly today.

Some further rainfall is forecast today but this is not expected to have a significant effect on flood levels. Widespread rain of 25 to 50 millimetres has been reported over the Bremer/Warrill in the past 24 hours.

For information on flooding in the Ipswich area, Ipswich residents can contact the Ipswich City Council on telephone 3810 6665.

Latest River Heights include:

Warrill Creek at Harrisville 5.77 m falling at 6am
Warrill Creek at Amberley 6.45 m falling at 6am

Bremer River at Rosewood 5.25 m falling at 6am
Bremer River at Walloon 6.30 m falling at 6am

Bremer River at David Trumpy Bridge 10.18 m falling at 6am.

The next warning will be issued at about 11am Saturday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 11.00 am on Saturday, 04/05/96

by the Bureau of Meteorology, Brisbane.

The Bremer River at the David Trumpy Bridge in Ipswich peaked at 11.3 metres at 9pm last night. Moderate flooding in the Ipswich area will continue to ease slowly during today. At 10-30am, the river level had fallen to 9 metres.

Moderate to major flooding is continuing to ease on the Bremer River at Rosewood and Walloon.

Major flood levels in Warrill Creek at Amberley have fallen about half a metre since the peak last night, and will continue to fall slowly today.

Some further rainfall is forecast today but this is not expected to have a significant effect on flood levels. Widespread rain of 25 to 50 millimetres has been reported over the Bremer/Warrill in the past 24 hours.

Latest River Heights include:

Warrill Creek at Harrisville 5.55 m falling at 9am
Warrill Creek at Amberley 6.25 m falling at 10-30am

Bremer River at Rosewood 5.00 m falling at 9am
Bremer River at Walloon 5.94 m falling at 9am

Bremer River at David Trumpy Bridge 9.00 m falling at 10-30am

The next warning will be issued at about 5pm Saturday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 5.00 pm on Saturday, 04/05/96

by the Bureau of Meteorology, Brisbane.

The Bremer River at the David Trumpy Bridge in Ipswich peaked at 11.3 metres at 9pm Friday. Minor flooding in the Ipswich area will continue to ease overnight.

Minor flooding is continuing to ease on the Bremer River at Rosewood and Walloon.

Major flood levels in Warrill Creek at Amberley are expected to continue falling slowly overnight and during Sunday.

The current weather conditions are expected to continue overnight.

Latest River Heights include:

Warrill Creek at Harrisville 4.74 m falling at 3pm
Warrill Creek at Amberley 6.05 m falling at 3pm

Bremer River at Rosewood 4.66 m falling at 3pm
Bremer River at Walloon 4.91 m falling at 3pm

Bremer River at David Trumpy Bridge 8.06 m falling at 3pm

The next warning will be issued at about 10am Sunday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 10.35 pm on Saturday, 04/05/96

by the Bureau of Meteorology, Brisbane.

Heavy rainfall has been reported in the catchment of the Bremer River over the last 6 hours. The heavier totals for the 12 hours to 9pm include Rosewood 86 millimetres and Walloon 60 millimetres.

This rainfall is causing renewed rises in the Bremer River downstream to Walloon. The Bremer river at the David Trumpy Bridge in Ipswich was 7.64 metres at 9pm and continues to fall slowly with minor flooding.

Major flood levels in Warrill Creek at Amberley will continue overnight and rises are possible if the rainfall moves into the catchment.

Further rainfall is expected overnight and during tomorrow.

Latest River Heights include:

Warrill Creek at Harrisville 3.70 m falling at 9pm
Warrill Creek at Amberley 5.60 m falling at 9pm

Bremer River at Rosewood 5.00 m rising at 9pm
Bremer River at Walloon 5.23 m rising at 9pm

Bremer River at David Trumpy Bridge 7.69 m falling at 9pm

The next warning will be issued at about 8am Sunday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 7.55 am on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Overnight rainfalls have averaged 25 to 50 millimetres over the Bremer River and Warrill Creek catchments. Rain has generally eased during the past few hours, although further periods of rain will continue today.

The overnight rains have caused renewed rises in the Bremer River around Rosewood and Walloon. These are well below the flood peaks recorded in the past two days. The Bremer river at the David Trumpy Bridge in Ipswich was 7.93 metres at 6am. Minor flooding downstream of Ipswich along the Bremer to its junction with the Brisbane River will be maintained during the next 24 hours.

Moderate flood levels in Warrill Creek at Amberley are continuing to fall slowly.

Latest River Heights include:

Warrill Creek at Harrisville	3.95 m rising at 6am
Warrill Creek at Amberley	5.00 m falling at 6am

Bremer River at Rosewood	5.47 m rising at 6am
Bremer River at Walloon	6.04 m rising at 6am

Bremer River at David Trumpy Bridge 7.93 m steady at 6am

The next warning will be issued at about noon Sunday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 1.00 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

The rainfall in the last 3 hours has averaged about 15-20 millimetres mainly over the catchment of Warrill Creek.

The recent rainfall has caused renewed rises in the Bremer River around Rosewood and Walloon and in Warril Creek at Harrisville.

Warrill Creek at Walloon was 6.86 metres and rising at noon today causing Major flooding. Major flooding has also developed on Warrill Creek at Harrisville and Amberley.

The Bremer River at the David Trumpy Bridge in Ipswich is expected to continue to rise to a peak later tonight causing moderate flooding in the area. This peak is expected to be similiar to the 11.3 metre of Friday night.

Further rainfall is forecast for this afternoon.

Latest River Heights include:

Warrill Creek at Harrisville	5.10 m rising at noon
Warrill Creek at Amberley	5.40 m rising at noon

Bremer River at Rosewood	5.88 m rising at noon
Bremer River at Walloon	6.86 m rising at noon

Bremer River at David Trumpy Bridge 8.52 m rising slowly at noon

The next warning will be issued at about 5pm Sunday.

*** CORRECTED RE-ISSUE ***

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 1.10 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

The rainfall in the last 3 hours has averaged about 15-20 millimetres mainly over the catchment of Warrill Creek.

The recent rainfall has caused renewed rises in the Bremer River around Rosewood and Walloon and in Warril Creek at Harrisville and Amberley.

The Bremer River at Walloon was 6.86 metres and rising at noon today causing Major flooding. Major flooding has also developed on Warrill Creek at Harrisville and Amberley.

The Bremer River at the David Trumpy Bridge in Ipswich is expected to continue to rise to a peak later tonight causing moderate flooding in the area. This peak is expected to be similiar to the 11.3 metre of Friday night.

Further rainfall is forecast for this afternoon.

Latest River Heights include:

Warrill Creek at Harrisville	5.10 m rising at noon
Warrill Creek at Amberley	5.40 m rising at noon
Bremer River at Rosewood	5.88 m rising at noon
Bremer River at Walloon	6.86 m rising at noon

Bremer River at David Trumpy Bridge 8.52 m rising slowly at noon

The next warning will be issued at about 5pm Sunday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 5.25 pm on Sunday , 05/05/96

by the Bureau of Meteorology, Brisbane.

Rainfall throughout today has caused renewed rises in the Bremer River around Rosewood and Walloon and in Warrill Creek at Harrisville and Amberley.

River levels are continuing to rise in the Rosewood to Walloon section of the Bremer River causing major flooding in these areas.

On Warrill Creek, the creek at Kalbar peaked at 9.70 metres at noon and renewed rises with major flooding will continue downstream to Amberley tonight.

The Bremer River at the David Trumpy Bridge in Ipswich is expected to continue to rise to a peak of about 11 metres Monday morning with moderate flooding in the area.

Further rainfall with some moderate falls is forecast for tonight.

Latest River Heights include:

Warrill Creek at Harrisville	5.55 m rising at 3pm
Warrill Creek at Amberley	5.55 m rising at 3pm
Bremer River at Rosewood	5.90 m rising at 3pm
Bremer River at Walloon	7.27 m rising at 3pm

Bremer River at David Trumpy Bridge 9.02 m rising at 3pm

The next warning will be issued at about 9:30pm Sunday.

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 9.15 pm on Sunday , 05/05/96

by the Bureau of Meteorology, Brisbane.

No signifcant rainfalls have been reported in the Bremer River above

Ipswich in the last 3 hours.

In the Bremer River, the main flood waters are approaching Walloon where a peak of about 8.5 metres will occur in the next few hours, causing major flooding in the area.

On Warrill Creek, the main flood waters have just passed Harrisville and a peak will occur at Amberley in the next few hours with major flooding.

The Bremer River at the David Trumpy Bridge in Ipswich is expected to continue to rise to a peak of about 10.5 metres around 6am Monday morning with moderate flooding in the area.

Further rainfall with some moderate falls is forecast for tonight.

Latest River Heights include:

Warrill Creek at Harrisville	5.75 m steady at 9pm
Warrill Creek at Amberley	5.90 m rising slowly at 9pm
Bremer River at Rosewood	5.89 m falling slowly at 9pm
Bremer River at Walloon	7.29 m rising slowly at 9pm
Bremer River at David Trumpy Bridge	9.73 m rising at 9pm

The next warning will be issued at about 5am Monday

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 5.20 am on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

No significant rainfalls have been reported in the Bremer River above Ipswich overnight.

In the Bremer River, the main flood waters are in the Ipswich area where at 3am the David Trumpy Bridge was 9.85 metres and steady. Major flooding in the Walloon area and moderate flooding at Ipswich will ease slowly during today.

On Warrill Creek, the main flood waters are in the Amberley area. Major flooding at Amberley will ease slowly during today.

Further rainfall with some moderate falls is forecast for tonight.

Latest River Heights include:

Warrill Creek at Harrisville	5.65 m falling at 3am
Warrill Creek at Amberley	6.05 m rising slowly at 3am
Bremer River at Rosewood	5.44 m falling at 3am
Bremer River at Walloon	6.89 m falling at 3am
Bremer River at David Trumpy Bridge	9.85 m steady at 3am

The next warning will be issued at about 11am Monday

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 11.15 am on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

In the Bremer River, the main flood waters are in the Ipswich area and downstream. Minor flooding below Ipswich to the Brisbane River junction will continue easing very slowly today.

On Warrill Creek, the main flood waters are in the Amberley area where stream levels are rising slowly. Major flooding at Amberley will ease again later today.

Rainfalls up to 25 millimetres have been reported for the past 6 hours, with heavier falls around Wilsons Peak. Further rain is forecast.

Latest River Heights include:

Warrill Creek at Harrisville	5.45 m falling at 9am
Warrill Creek at Amberley	6.20 m rising slowly at 3am

Bremer River at Rosewood	4.75 m falling at 9am
Bremer River at Walloon	5.68 m falling at 9am

Bremer River at David Trumpy Bridge 9.18 m falling at 9am

The next warning will be issued at about 5pm Monday

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 4.45 pm on Monday, 06/05/96

by the Bureau of Meteorology, Brisbane.

In the Bremer River, some renewed rises and minor flooding are being recorded at Adams Bridge and Stokes Crossing. These rises will extend through to Walloon tonight. Minor flooding will continue overnight in the Rosewood to Walloon areas.

Minor flooding below Ipswich to the Brisbane River junction will continue to ease slowly.

On Warrill Creek, rises causing moderate to major flooding will extend from Kalbar to Harrisville overnight. Major flooding at Amberley will be maintained overnight and ease during Tuesday.

Some further rain is forecast tonight in headwater areas, but only showers are expected in the lower parts of the Bremer and Warrill and around Ipswich.

Latest River Heights include:

Warrill Creek at Harrisville	5.30 m falling at 3pm
Warrill Creek at Amberley	6.25 m steady at 3pm

Bremer River at Rosewood	4.70 m steady at 3pm
Bremer River at Walloon	4.74 m falling at 3pm

Bremer River at David Trumpy Bridge 8.23 m falling at 3pm

The next warning will be issued at about 10pm Monday

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER

Issued at 9.45 pm on Monday, 06/05/96

by the Bureau of Meteorology, Brisbane.

Little rain has been reported in the Bremer catchment above Ipswich in the last 6 hours.

In the Bremer River, river levels upstream of Rosewood are falling but small rises will continue between Rosewood and Walloon with moderate flooding continuing overnight in these areas.

On Warrill Creek, river levels have peaked at Kalbar with rises and major floods levels continuing at Harrisville overnight. Major flooding at Amberley will be maintained overnight and ease during Tuesday.

River levels in the Ipswich area will continue to fall, albeit slowly, during Tuesday.

Only showers are forecast for the catchment tonight.

Latest River Heights include:

Warrill Creek at Harrisville	5.40 m rising at 9pm
Warrill Creek at Amberley	6.15 m falling at 9pm
Bremer River at Rosewood	5.25 m rising at 9pm
Bremer River at Walloon	5.42 m rising at 9pm
Bremer River at David Trumpy Bridge	7.31 m falling at 9pm

The next warning will be issued at about 8am Tuesday

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 8.00 am on Tuesday , 07/05/96
by the Bureau of Meteorology, Brisbane.

No significant rainfall has been reported in the catchments overnight.

In the Bremer River, minor to moderate flooding is easing along the river from Rosewood downstream.

On Warrill Creek, moderate flooding is continuing to ease around Harrisville and Amberley with all water levels falling.

River levels at Ipswich are below minor flood level and continuing to fall.

Some showers are forecast for the catchment during today.

Latest River Heights include:

Warrill Creek at Harrisville	5.00 m falling at 8am
Warrill Creek at Amberley	6.15 m falling at 9pm
Bremer River at Rosewood	4.40 m falling at 6.30am
Bremer River at Walloon	5.44 m falling at 3am
Bremer River at David Trumpy Bridge	6.77 m falling at 8am

The next warning will be issued at about 4pm Tuesday

RENEWAL OF FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 3.55 pm on Tuesday , 07/05/96
by the Bureau of Meteorology, Brisbane.

On Warrill Creek, moderate flooding is continuing to ease between Harrisville and Amberley with all water levels falling.

All stream levels along the Bremer River are continuing to fall with only minor flooding in some areas.

River levels at Ipswich are below minor flood level and continuing to fall.

Only a few showers are forecast for the Bremer-Warrill catchments.

Latest River Heights include:

Warrill Creek at Harrisville	4.25 m falling at 3pm
Warrill Creek at Amberley	5.70 m falling at 3pm
Bremer River at Rosewood	3.85 m falling at 3pm
Bremer River at Walloon	3.50 m falling at 3pm
Bremer River at David Trumpy Bridge	5.39 m falling at 3pm

The next warning will be issued at about 10am Wednesday.

FINAL FLOOD WARNING FOR WARRILL CREEK AND BREMER RIVER
Issued at 9.35 am on Wednesday, 08/05/96
by the Bureau of Meteorology, Brisbane.

All stream levels along the Bremer River and Warrill Creek are now
falling below minor flood level.

No further warnings will be issued.

FLOOD WARNING FOR THE STANLEY RIVER
Issued at 4.45 pm on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Very heavy rains of 75 to 110 millimetres have fallen at Woodford and Peachester between 9am and 4pm today.

Very fast river rises are expected to cause major flooding in the Stanley River at Woodford tonight. At 3pm, Woodford was 5.81 metres rising with minor flooding.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings.

Further rain is forecast overnight breaking to showers tomorrow.

The next warning will be issued at about 9pm tonight.

FLOOD WARNING FOR THE STANLEY RIVER
Issued at 9.05 pm on Thursday, 02/05/96
by the Bureau of Meteorology, Brisbane.

Very heavy rains of 130 to 165 millimetres have fallen at Woodford and Peachester between 9am and 6pm today. Rainfall has eased significantly since 6pm.

Major flooding is expected in the Stanley River at Woodford tonight and early Friday. At 9pm, Woodford was 6.74 metres rising with moderate flooding.

Road conditions will be hazardous. Motorists are warned not to enter flooded road crossings.

Further rain is forecast overnight breaking to showers on Friday.

The next warning will be issued at about 7am Friday.

RENEWAL OF FLOOD WARNING FOR THE STANLEY RIVER, UPPER BRISBANE AND LOCKYER CREEK
Issued at 8.35 am on Friday, 03/05/96
by the Bureau of Meteorology, Brisbane.

Stanley River

The Stanley River at Woodford and upstream peaked at 9pm last night and moderate flood levels are now falling. The heavy rain has moved south out of the Stanley catchment. River levels will continue to fall today.

Upper Brisbane above Wivenhoe Dam

The upper Brisbane River catchment above Wivenhoe Dam has received widespread 50 to 100 mm falls over the past 24 hours. The Brisbane River at Gregor Creek is continuing to rise with moderate flooding. The rain has eased over most parts of the upper Brisbane. Rising water levels in the upper Brisbane tributaries are expected to peak later today and overnight.

Lockyer/Laidley Creeks

Very heavy rains of 75 to 150 millimetres have fallen overnight in the Lockyer and Laidley Creeks. The main problem area is in Laidley Creek which has risen quickly to major flood levels. Flood levels along Laidley Creek are expected to continue rising during this morning. Fast stream rises causing major flooding will continue throughout Lockyer Creek during today.

Many road crossings will be flooded during today. Motorists should avoid the area if possible.

6am river heights :

Stanley River at Woodford	6.42 m falling
Brisbane River at Gregor Creek	5.45 m rising
Laidley Creek at Mulgowie	7.84 m rising

Lockyer Creek at Glenore Grove 13.15 m rising fast
Lockyer Creek at Lyons Bridge 13.10 m rising fast

Brisbane River at Lowood below minor flood level

The next warning will be issued at about noon today.

**RENEWAL OF FLOOD WARNING FOR THE STANLEY RIVER, UPPER BRISBANE
AND LOCKYER CREEK**

Issued at 1.35 pm on Friday , 03/05/96
by the Bureau of Meteorology, Brisbane.

Stanley River

The Stanley River at Woodford and upstream peaked at 9pm last night and moderate flood levels are now falling. The heavy rain has moved south out of the Stanley catchment. River levels will continue to fall today.

Upper Brisbane above Wivenhoe Dam

The upper Brisbane River catchment above Wivenhoe Dam has received widespread 50 to 100 mm falls over the past 24 hours. The Brisbane River at Gregor Creek has peaked this morning with moderate flooding easing. The rain has eased over most parts of the upper Brisbane. Rising water levels in the upper Brisbane tributaries are expected to peak later today and overnight.

Lockyer/Laidley Creeks

Very heavy rains of 75 to 150 millimetres have fallen overnight in the Lockyer and Laidley Creeks. The main problem area is in Laidley Creek which has risen quickly to major flood levels. Flood levels along Laidley Creek are continuing to rise slowly at Mulgowie and Laidley, but are expected to peak within the next few hours. Rises are continuing in the lower Lockyer at Lyons Bridge causing major flooding.

Many road crossings will be flooded during today. Motorists should avoid the area if possible.

River heights at noon :

Stanley River at Woodford	6.20 m falling
Brisbane River at Gregor Creek	4.5 m falling
Laidley Creek at Mulgowie	8.77 m rising slowly
Lockyer Creek at Glenore Grove	13.5 m falling
Lockyer Creek at Lyons Bridge	14.50 m rising

Brisbane River at Lowood below minor flood level

The next warning will be issued at about 6pm today.

**RENEWAL OF FLOOD WARNING FOR THE STANLEY RIVER, UPPER BRISBANE
AND LOCKYER CREEK**

Issued at 6.35 pm on Friday , 03/05/96
by the Bureau of Meteorology, Brisbane.

Stanley River

The rainfall in the catchment has generally eased during today but some further rainfall is possible overnight. Moderate flood levels are expected to continue falling overnight.

Upper Brisbane above Wivenhoe Dam

Rainfall has eased during today in the upper Brisbane River catchment above Wivenhoe Dam. Further rainfall is possible overnight.

The Brisbane River at Gregor Creek has peaked and moderate flooding has begun to ease in the area. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks

Heavy rainfall of up to 50 millimetres has been reported in the catchments during today and some further rainfall is possible overnight. Major flooding on Laidley Creek has begun to ease at Mulgowie and is peaking in the Laidley area.

Rises are continuing in the lower Lockyer at Lyons Bridge causing major flooding. Major flooding will continue in Lockyer creek overnight.

Many road crossings remain flooded. Motorists should avoid the area if possible.

Latest River heights include :

Stanley River at Woodford	6.04 m falling at 6pm
Brisbane River at Gregor Creek	4.84 m falling at 6pm
Laidley Creek at Mulgowie	8.65 m falling at 6pm
Lockyer Creek at Glenore Grove	13.2 m falling at 6pm
Lockyer Creek at Lyons Bridge	15.52 m rising at 6pm

Brisbane River at Lowood below minor flood level

The next warning will be issued at about 10pm today.

RENEWAL OF FLOOD WARNING FOR THE STANLEY AND UPPER BRISBANE RIVERS AND LOCKYER CREEK

Issued at 10.15 pm on Friday , 03/05/96
by the Bureau of Meteorology, Brisbane.

Stanley River :

The rainfall in the catchment has generally eased during today but some further rainfall is possible overnight. Moderate flood levels are expected to continue falling overnight.

Upper Brisbane above Wivenhoe Dam :

Rainfall has eased during today in the upper Brisbane River catchment above Wivenhoe Dam. Further rainfall is forecast overnight.

The Brisbane River at Gregor Creek has peaked and moderate flooding has begun to ease in the area. No releases are expected from Wivenhoe Dam.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are expected to cause river rises and minor flooding to develop on the Brisbane River at Lowood during Saturday morning. Minor flooding will also extend downstream to Mt Crosby during Saturday.

Lockyer/Laidley Creeks :

The rainfall has generally eased over the last 3 hours although some further rainfall is forecast overnight. Major flooding on Laidley Creek has begun to ease in the Mulgowie and Laidley area.

Rises are continuing in the lower Lockyer at Lyons Bridge causing major flooding. Major flooding will continue in Lockyer Creek overnight.

Many road crossings remain flooded. Motorists should avoid the area if possible.

Latest River heights include :

Stanley River at Woodford	5.96 m falling at 9pm
Brisbane River at Gregor Creek	5.26 m falling at 9pm
Laidley Creek at Mulgowie	6.89 m falling at 9pm
Lockyer Creek at Glenore Grove	13.20 m falling at 9pm
Lockyer Creek at Lyons Bridge	15.90 m rising at 9pm

Brisbane River at Lowood 7.52 m rising at 9pm

The next warning will be issued at about 7am Saturday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER and
LOCKYER CREEK

Issued at 8.40 am on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

Stanley River :

Minor flood levels in the Stanley River at Woodford and upstream
are expected to continue to fall today.

Upper Brisbane above Wivenhoe Dam :

The Brisbane River at Gregor Creek peaked yesterday although there
is a renewed rise this morning. No releases are expected from
Wivenhoe Dam.

Lockyer/Laidley Creeks :

Flooding on Laidley Creek is easing in the Mulgowie and Laidley area.

The main flood peak in Lockyer Creek is around Lyons Bridge. Major
flooding will continue in lower Lockyer Creek today.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are causing river rises and minor
flooding to develop in the Brisbane River at Lowood. Rises and minor
flooding will also extend downstream to Mt Crosby during today.

Brisbane River below Moggill :

Higher than normal water levels will occur in the Brisbane River
below Moggill to the City reaches during the weekend, particularly
with the high tides this morning and around midnight tonight.
This will be caused by the runoff in the Brisbane River and
the very high predicted tides.

Residents in low lying areas affected by the tide should closely
monitor the rising tide today and tonight, and shift property
as necessary.

Latest River heights include :

Brisbane River at Gregor Creek	4.60 m rising at 6am
Laidley Creek at Mulgowie	4.26 m falling at 6am
Lockyer Creek at Glenore Grove	12.81 m falling at 6am
Lockyer Creek at Lyons Bridge	16.12 m rising at 6am
Brisbane River at Lowood	8.82 m rising at 6pm
Brisbane River at Mt Crosby	8.22 m steady at 6am

The next warning will be issued at about 3pm Saturday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER AND
LOCKYER CREEK

Issued at 12.20 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

The Brisbane River at Gregor Creek peaked yesterday although there
was a renewed rise this morning. No releases are expected from
Wivenhoe Dam.

Lockyer/Laidley Creeks :

Flooding on Laidley Creek has generally eased in the Mulgowie and
Laidley area, although there are some renewed rises today.

The main flood peak in Lockyer Creek is around Lyons Bridge. Major
flooding will continue in lower Lockyer Creek today.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are causing river rises and minor

flooding to develop in the Brisbane River at Lowood. Fast river rises and minor flooding will continue between Lowood and Mt Crosby today and overnight.

The Mt Crosby overbridge is expected to be cut by rising river levels later today.

Brisbane River below Mt Crosby :

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the weekend, particularly with the high tides this morning and around midnight tonight. This will be caused by the runoff in the Brisbane River and the very high predicted tides.

Residents in low lying areas affected by the tide should closely monitor the rising tide today and tonight, and shift property as necessary.

Latest River heights include :

Brisbane River at Gregor Creek	4.30 m falling at noon
Laidley Creek at Mulgowie	5.04 m rising at noon
Lockyer Creek at Glenore Grove	13.04 m rising at noon
Lockyer Creek at Lyons Bridge	16.14 m steady at noon

Brisbane River at Lowood	9.70 m rising at noon
Brisbane River at Mt Crosby	11.00 m rising at 10am

The next warning will be issued at about 4-30pm Saturday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER and LOCKYER CREEK

Issued at 4.45 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

The Brisbane River at Gregor Creek has continued to fall during today causing minor flooding. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks :

Minor to moderate flooding on Laidley Creek has continued to ease upstream of Laidley. The level at Laidley was 6.30 metres and rising slowly at 3pm causing moderate flooding.

The main flood peak in Lockyer Creek is around Lyons Bridge. Major flooding will continue in the lower Lockyer Creek during tonight.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are causing river rises and minor flooding to develop in the Brisbane River at Lowood. Fast river rises and minor flooding will continue between Lowood and Mt Crosby overnight.

The Mt Crosby weir overbridge will remain closed to traffic overnight and into Sunday.

Brisbane River below Mt Crosby :

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the weekend, particularly with the high tide around midnight tonight. The tide is expected to be at least as high as Friday night and possibly higher.

Residents in low lying areas affected by the tide should closely monitor the rising tide during tonight, and shift property as necessary.

Latest River heights include :

Brisbane River at Gregor Creek	4.08 m falling at 3pm
Laidley Creek at Mulgowie	4.85 m falling at 3pm

Laidley Creek at Laidley	6.30 m rising at 3pm
Lockyer Creek at Glenore Grove	13.43 m rising at 3pm
Lockyer Creek at Lyons Bridge	16.16 m rising slowly at 3pm
Brisbane River at Lowood	10.28 m rising at 3pm
Brisbane River at Mt Crosby	12.05 m rising at 4pm

The next warning will be issued at about 9pm Saturday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER AND LOCKYER CREEK

Issued at 9.25 pm on Saturday, 04/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

The Brisbane River at Gregor Creek has continued to fall during today causing minor flooding. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks :

The heaviest rainfall in the catchment has been in the Gatton and Laidley areas and downstream. An average of 80 millimetres has fallen in this area in the last 15 hours. Rainfalls upstream of these areas have been generally less than 40 millimetres.

The rainfall has caused renewed rises and major flooding in Lockyer Creek at Glenore Grove where the level is now similar to Friday and rising slowly. Downstream at Lyons Bridge, the creek continues to rise slowly causing major flooding.

Renewed rises have also been reported on Laidley Creek at Mulgowie and Laidley causing moderate flooding.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are causing river rises and minor flooding to develop in the Brisbane River at Lowood. Fast river rises and minor flooding will continue between Lowood and Mt Crosby overnight.

The Mt Crosby weir overbridge will remain closed to traffic overnight and into Sunday.

Brisbane River below Mt Crosby :

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the weekend, particularly with the high tide around midnight tonight. The tide is expected to be at least as high as Friday night and possibly higher.

Residents in low lying areas affected by the tide should closely monitor the rising tide during tonight, and shift property as necessary.

Latest River heights include :

Brisbane River at Gregor Creek	4.11 m falling at 9pm
Lockyer Creek at Glenore Grove	13.60 m rising slowly at 9pm
Lockyer Creek at Lyons Bridge	16.26 m rising slowly at 9pm
Laidley Creek at Mulgowie	6.13 m rising at 9pm
Laidley Creek at Laidley	6.30 m rising at 3pm
Brisbane River at Lowood	10.82 m rising at 9pm
Brisbane River at Savages Xing	11.30 m rising at 9pm
Brisbane River at Mt Crosby	12.66 m rising at 9pm
Brisbane River at Moggill	5.46 m rising at 9pm

The next warning will be issued at about 6am Sunday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER AND
LOCKYER CREEK

Issued at 6.40 am on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

The Brisbane River at Gregor Creek has continued to fall during today causing minor flooding. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks :

Renewed rises in the lower Lockyer around Glenore Grove and Lyons Bridge are causing major flooding at levels higher than on Friday and Saturday. Flood levels in this area are expected to be maintained today. Stream levels are also rising in Laidley Creek at Thornton and Mulgowie.

General falls of 50 to 75 millimetres have fallen overnight in the Lockyer valley. Further rain is forecast.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are causing river rises and minor flooding to develop in the Brisbane River at Lowood. Fast river rises and minor flooding will continue between Lowood and Mt Crosby today.

The Mt Crosby weir overbridge will remain closed to traffic for the next 2 to 3 days.

Brisbane River below Mt Crosby :

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the next 48 hours with the high tides at around midnight tonight and midnight Monday night.

The Brisbane River at the Brisbane City Gauge is expected to reach about 2.2 metres on the high tide tonight. This level is only about 10 centimetres higher than Saturday night's level in the Brisbane City area. A similar level will be reached on Monday night.

Residents in low lying areas affected by the tide should closely monitor the rising tide during tonight and again on Monday night, and shift property as necessary.

Latest River heights include :

Brisbane River at Gregor Creek	3.48 m falling at 6am
Lockyer Creek at Glenore Grove	14.22 m rising slowly at 6am
Lockyer Creek at Lyons Bridge	16.44 m rising slowly at 6am
Laidley Creek at Mulgowie	8.52 m rising at 6am
Laidley Creek at the Showgrounds	8.20 m rising at 6am
Brisbane River at Lowood	11.66 m rising at 6am
Brisbane River at Savages Xing	12.35 m rising at 6am
Brisbane River at Mt Crosby	13.80 m rising at 6am
Brisbane River at Moggill	6.50 m rising at 5am

The next warning will be issued at about noon Sunday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER, LOCKYER
CREEK AND THE BRISBANE RIVER BELOW MT CROSBY

Issued at 1.00 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

The Brisbane River at Gregor Creek has continued to fall during today causing minor flooding. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks :

Renewed rises in the lower Lockyer around Glenore Grove and Lyons Bridge are causing major flooding at levels higher than on Friday and Saturday. Flood levels in this area are expected to be maintained today. Stream levels are also rising in Laidley Creek at Thornton and

Mulgowie.

At 9am, the Lockyer Creek at Glenore Grove peaked at 14.29 metres. Lyons Bridge also peaked at 16.44 metres at 9am.

Rainfalls in the last 6 hours have generally been less than 10 millimetres in the last 6 hours. Further rain is forecast.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are causing river rises and minor flooding to develop in the Brisbane River at Lowood. River levels are expected to peak at Lowood and Savages Crossing during this afternoon and this evening. Minor to moderate flooding will continue between Lowood and Mt Crosby today and overnight.

The Mt Crosby weir overbridge will remain closed to traffic for the next 2 to 3 days.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill is 6.90 metres rising at noon. It is expected to continue to rise to 8 metres tonight.
(This is below the minor flood level of 10 metres at Moggill.)

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the next 48 hours, particularly with the high tides at around midnight tonight and midnight Monday night.

The Brisbane River at the Brisbane City Gauge is expected to reach about 2.2 metres on the high tide tonight. This level is about 10 centimetres higher than Saturday night's level in the Brisbane City area. A similar level will be reached on Monday night.

Residents in low lying areas affected by the tide should closely monitor the rising tide during tonight and again on Monday night, and shift property as necessary.

Latest River heights include :

Laidley Creek at Mulgowie	8.86 m rising at noon
Laidley Creek at the Showgrounds	8.20 m falling at noon
Lockyer Creek at Glenore Grove	14.22 m falling slowly at noon
Lockyer Creek at Lyons Bridge	16.43 m steady near peak at noon
Brisbane River at Lowood	12.10 m rising at noon
Brisbane River at Savages Xing	12.35 m rising at noon
Brisbane River at Mt Crosby	14.10 m steady at noon
Brisbane River at Moggill	6.90 m rising at noon

The next warning will be issued at about 5pm Sunday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER, LOCKYER CREEK AND THE BRISBANE RIVER BELOW MT CROSBY

Issued at 5.05 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

No significant rain has fallen in the Upper Brisbane River above Wivenhoe in the last 6 hours and flood levels in the area are continuing to ease. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks :

Rain falls up to 20 millimetres in the last 6 hours are maintaining high river levels in the Tenthill and Laidley Creeks catchments causing major flooding.

Existing high flood levels will continue in the lower reaches of Lockyer Creek around Glenore Grove and Lyons Bridge during tonight.

Brisbane River Wivenhoe to Mt Crosby :

The floodwaters from Lockyer Creek are minor to moderate flooding in the Brisbane River between Lowood and Savages Crossing. Levels will peak in this section of the Brisbane River during this evening.

The Mt Crosby weir overbridge will remain closed to traffic for the next 2 to 3 days.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill is 7.00 metres rising slowly at 3pm. It is expected to continue to rise to 8 metres tonight. (This is below the minor flood level of 10 metres at Moggill.)

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the next 48 hours, particularly with the high tides at midnight tonight and midnight Monday night.

The Brisbane River at the Brisbane City Gauge is expected to reach about 2.2 metres on the high tide tonight. This level is about 10 centimetres higher than Saturday night's level in the Brisbane City area. A similar level will be reached on Monday night.

Further rain with moderate falls is forecast for the Brisbane Valley overnight.

Residents in low lying areas affected by the tide should closely monitor the rising tide during tonight and again on Monday night, and shift property as necessary.

Latest River heights include :

Laidley Creek at Mulgowie	8.64 m falling at 4:30pm
Laidley Creek at Laidley	8.20 m steady at 3pm
Lockyer Creek at Glenore Grove	13.90 m falling slowly at 3pm
Lockyer Creek at Lyons Bridge	16.44 m steady at 3pm
Brisbane River at Lowood	12.20 m rising slowly at 3pm
Brisbane River at Savages Xing	12.50 m rising slowly at 3pm
Brisbane River at Mt Crosby	14.09 m steady at 3pm
Brisbane River at Moggill	7.00 m rising slowly at 3pm

The next warning will be issued at about 9pm Sunday.

RENEWAL OF FLOOD WARNING FOR THE UPPER BRISBANE RIVER, LOCKYER CREEK AND THE BRISBANE RIVER BELOW MT CROSBY

Issued at 9.20 pm on Sunday, 05/05/96
by the Bureau of Meteorology, Brisbane.

Upper Brisbane above Wivenhoe Dam :

No significant rain has fallen in the Upper Brisbane River above Wivenhoe since 9am Sunday and flood levels in the area are continuing to ease. No releases are expected from Wivenhoe Dam.

Lockyer/Laidley Creeks :

No significant rainfall has been recorded in the last few hours and river levels in the Tenthill and Laidley Creeks catchments are being to fall but major flooding is continuing in the area.

Existing high flood levels will continue in the lower reaches of Lockyer Creek around Glenore Grove and Lyons Bridge into Monday.

Brisbane River Wivenhoe to Mt Crosby :

Flood levels between Lowood and Mt Crosby have peaked causing minor flooding along the river. Levels will commence to fall slowly overnight and during Monday.

The Mt Crosby weir overbridge will remain closed to traffic for the next 2 to 3 days.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill is 7.10 metres rising slowly at 9pm. It is expected to continue to rise to about 8 metres tonight, coinciding with the high tide. (This is below the minor flood level of 10 metres at Moggill.)

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during the next 48 hours, particularly with the high tides at midnight tonight and midnight Monday night.

The Brisbane River at the Brisbane City Gauge is expected to reach about 2.2 metres on the high tide late Sunday night. This level is about 10 centimetres higher than Saturday night's level in the Brisbane City area. A similar level will be reached on Monday night.

Further rain with moderate falls is forecast for the Brisbane Valley overnight.

Residents in low lying areas affected by the tide should closely monitor the rising tide late Sunday night and again on Monday night, and shift property as necessary.

Latest River heights include :

Laidley Creek at Mulgowie	6.94 m falling at 9pm
Laidley Creek at Laidley	8.20 m steady at 3pm
Lockyer Creek at Glenore Grove	13.50 m falling slowly at 9pm
Lockyer Creek at Lyons Bridge	16.40 m steady at 9pm
Brisbane River at Lowood	12.25 m steady at 9pm
Brisbane River at Savages Xing	12.55 m steady at 9pm
Brisbane River at Mt Crosby	14.00 m falling at 9pm
Brisbane River at Moggill	7.10 m rising slowly at 9pm

The next warning will be issued at about 5am Monday

**RENEWAL OF FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER
BELOW MT CROSBY**

Issued at 5.05 am on Monday , 06/05/96
by the Bureau of Meteorology, Brisbane.

Lockyer/Laidley Creeks :

Only light rainfall of less than 10 millimetres has been recorded in the last 9 hours. The level at Gatton on Tenthill Creek is now falling at around minor flood level. The flood levels in Laidley Creek are continuing to fall with all areas upstream of Laidley down to minor flood levels. Moderate Flooding in Laidley will ease during today.

Major flooding is easing in the lower reaches of Lockyer Creek around Glenore Grove and Lyons Bridge but levels will remain high through most of today.

Brisbane River Wivenhoe to Mt Crosby :

Flood levels between Lowood and Mt Crosby have peaked causing minor flooding along the river. Levels will continue to fall slowly during today.

The Mt Crosby weir overbridge will remain closed to traffic for the next 1 to 2 days.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill was 7.20 metres and steady at 3am. The level at Moggill is expected to remain through most of today. (This is below the minor flood level of 10 metres at Moggill.)

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during today, particularly with the high tide at around midnight tonight.

The Brisbane River at the Brisbane City Gauge reached around 2.10 metres last night. A similar level is expected tonight around

midnight coinciding with the high tide.

Further rain with some moderate falls is forecast for the Brisbane Valley during today.

Residents in low lying areas affected by the tide should closely monitor the rising tide late tonight, and shift property as necessary.

Latest River heights include :

Laidley Creek at Mulgowie	5.88 m falling at midnight
Laidley Creek at Showground	6.65 m falling at 3am
Lockyer Creek at Glenore Grove	12.55 m falling at 3am
Lockyer Creek at Lyons Bridge	16.28 m falling at 3am
Brisbane River at Lowood	12.00 m falling at 3am
Brisbane River at Savages Xing	12.40 m falling at 3am
Brisbane River at Mt Crosby	13.89 m falling at 5am
Brisbane River at Moggill	7.20 m steady at 3am

The next warning will be issued at about 10am Monday

**RENEWAL OF FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER
BELOW MT CROSBY**

Issued at 10.20 am on Monday , 06/05/96
by the Bureau of Meteorology, Brisbane.

Lockyer/Laidley Creeks :

Only light rainfall of less than 10 millimetres has been recorded in the last 3 hours. The level at Gatton on Tenthill Creek is now falling at around minor flood level. Renewed rises and moderate flooding has been reported on Laidley Creek from Mulgowie to Laidley. The renewed rises will prolong flooding around Laidley and in the lower Lockyer Valley with water levels in the area continuing to fall very slowly.

Major flooding is easing in the lower reaches of Lockyer Creek around Glenore Grove and Lyons Bridge. Flood levels around Glenore Grove have dropped about two metres since yesterday.

Brisbane River Wivenhoe to Mt Crosby :

Flood levels between Lowood and Mt Crosby have peaked causing minor flooding along the river. Levels will continue to fall slowly during today.

The Mt Crosby weir overbridge will remain closed to traffic for at least the next 2 days.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill was 7.00 metres and falling at 9am. The level at Moggill is expected to remain high during the next 24 hours. (This is below the minor flood level of 10 metres at Moggill.)

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during today, particularly with the high tide at around midnight tonight.

The Brisbane River at the Brisbane City Gauge reached around 2.10 metres last night. A similar level is expected tonight around midnight coinciding with the high tide. Levels between Moggill and Jindalee should also be similar to that reached last night.

Further rain with some moderate falls is forecast for the Brisbane Valley during today.

Residents in low lying areas affected by the tide should closely monitor the rising tide late tonight, and shift property as necessary.

Latest River heights include :

Laidley Creek at Thornton	4.00 m rising at 9am
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Laidley Creek at Mulgowie	6.39 m rising at 9am
Laidley Creek at Laidley	5.80 m rising at 9am
Lockyer Creek at Glenore Grove	12.39 m falling at 6am
Lockyer Creek at Lyons Bridge	16.01 m falling at 9am

Brisbane River at Lowood	11.38 m falling at 9am
Brisbane River at Savages Xing	11.90 m falling at 9am
Brisbane River at Mt Crosby	13.74 m falling at 9am
Brisbane River at Moggill	7.00 m falling at 9am

The next warning will be issued at about 4pm Monday

RENEWAL OF FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER BELOW MT CROSBY

Issued at 4.25 pm on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Only light rainfall has been recorded in the last 6 hours. Showers are forecast for tonight.

Lockyer/Laidley Creeks :

Renewed rises and major flooding is peaking in Laidley Creek from Mulgowie to Laidley. At 3pm, Laidley was 8.5 metres and steady.

The Laidley Creek water is causing some renewed rises in the lower Lockyer Creek around Glenore Grove which will extend to the Lyons Bridge area tonight. The rises will continue for the next 6 to 9 hours but flood levels will be about 1.5 metres below Sunday's peak at Glenore Grove. Creek levels will fall during Tuesday.

Brisbane River between Lowood & Mt Crosby :

Flood levels between Lowood and Mt Crosby have peaked causing minor flooding along the river. Levels will continue to fall slowly overnight.

The Mt Crosby weir overbridge will be cut by floodwaters until Tuesday.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill was 6.70 metres falling at 3pm. The level at Moggill is expected to continue falling overnight and tomorrow.

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during tonight, particularly with the high tide at around midnight tonight.

The Brisbane River at the Brisbane City Gauge reached about 2.10 metres last night. A similar level is expected tonight around midnight coinciding with the high tide. Levels between Moggill and Jindalee should also be similar, but slightly less than those on last night's high tide.

Residents in low lying areas affected by the tide should closely monitor the rising tide late tonight, and shift property as necessary.

Latest River heights include :

Laidley Creek at Mulgowie	6.72 m falling at 3pm
Laidley Creek at Laidley	8.50 m steady at 3pm
Lockyer Creek at Glenore Grove	10.75 m rising at 3pm
Lockyer Creek at Lyons Bridge	15.60 m falling at 3pm

Brisbane River at Lowood	10.62 m falling at 3pm
Brisbane River at Savages Xing	11.30 m falling at 3pm
Brisbane River at Mt Crosby	13.39 m falling at 3pm
Brisbane River at Moggill	6.70 m falling at 3pm

The next warning will be issued at about 10pm Monday

RENEWAL OF FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER
BELOW MT CROSBY

Issued at 9.30 pm on Monday, 06/05/96
by the Bureau of Meteorology, Brisbane.

Little rainfall has been recorded in the catchment in last 6 hours and only showers are forecast for tonight.

Lockyer/Laidley Creeks :

River levels along Laidley Creek are generally falling fast and will continue to fall overnight.

The Laidley Creek water caused a small rise in the Glenore Grove area but water levels have commenced to fall again. The current rate of fall at Lyons Bridge may slow tonight but water levels in the lower Lockyer Creek will continue to fall during Tuesday.

Brisbane River between Lowood & Mt Crosby :

Flood levels between Lowood and Mt Crosby have peaked causing minor flooding along the river. Levels will continue to fall slowly overnight.

The Mt Crosby weir overbridge will be cut by floodwaters until Tuesday.

Brisbane River below Mt Crosby :

The Brisbane River at Moggill was 6.10 metres falling at 9pm and will continue falling overnight and tomorrow.

Higher than normal water levels will occur in the Brisbane River below Moggill to the City reaches during tonight, particularly with the high tide at around midnight tonight.

The Brisbane River at the Brisbane City Gauge reached about 2.10 metres late Sunday night. A similar level is expected Monday around midnight coinciding with the high tide. Levels between Moggill and Jindalee should also be similar, but slightly less than those on Sunday night's high tide.

Residents in low lying areas affected by the tide should closely monitor the rising tide late tonight, and shift property as necessary.

Latest River heights include :

Laidley Creek at Mulgowie	4.49 m falling at 9pm
Lockyer Creek at Glenore Grove	10.95 m falling at 9pm
Lockyer Creek at Lyons Bridge	15.21 m falling at 9pm
Brisbane River at Lowood	9.64 m falling at 9pm
Brisbane River at Savages Xing	10.35 m falling at 9pm
Brisbane River at Mt Crosby	12.69 m falling at 9pm
Brisbane River at Moggill	6.10 m falling at 9pm

The next warning will be issued at about 8am Monday

RENEWAL OF FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER
BELOW MT CROSBY

Issued at 8.20 am on Tuesday, 07/05/96
by the Bureau of Meteorology, Brisbane.

No significant rainfall has been reported in the Brisbane Valley overnight. Only showers are forecast.

Lockyer/Laidley Creeks :

River levels along Laidley Creek and Lockyer Creek are continuing to fall slowly. Major flooding will continue to ease slowly in the lower Lockyer Creek around Lyons Bridge today and tonight. Laidley Creek levels are now below minor flood level.

Brisbane River between Lowood & Mt Crosby :

Flood levels between Lowood and Mt Crosby are now falling with minor flooding easing.

Brisbane River below Mt Crosby :

River levels in the lower Brisbane below Moggill to the City will be slightly higher than normal tides today and tonight.

Latest River heights include :

Laidley Creek at Mulgowie	3.38 m falling at 6am
Lockyer Creek at Glenore Grove	8.25 m falling at 8am
Lockyer Creek at Lyons Bridge	14.10 m falling at 8am

Brisbane River at Lowood	8.16 m falling at 8pm
Brisbane River at Savages Xing	8.65 m falling at 8am
Brisbane River at Mt Crosby	11.34 m falling at 6am
Brisbane River at Moggill	4.90 m falling at 8am

The next warning will be issued at about 4pm Tuesday.

**RENEWAL OF FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER
BELOW MT CROSBY**

Issued at 4.05 pm on Tuesday , 07/05/96
by the Bureau of Meteorology, Brisbane.

Lockyer/Laidley Creeks :

River levels along Laidley Creek and Lockyer Creek are continuing to fall. Minor flooding will continue to ease in the lower Lockyer Creek around Lyons Bridge. Laidley Creek levels are well below minor flood level.

Brisbane River between Lowood & Mt Crosby :

Flood levels between Lowood and Mt Crosby are now falling below minor flood level.

Brisbane River below Mt Crosby :

River levels in the lower Brisbane below Moggill to the City will be slightly higher than normal tides tonight.

No significant rainfall has been reported in the Brisbane Valley for the past 24 hours. Only showers are forecast.

Latest River heights include :

Lockyer Creek at Glenore Grove	7.25 m falling at 3pm
Lockyer Creek at Lyons Bridge	12.90 m falling at 3pm

Brisbane River at Lowood	7.34 m falling at 3pm
Brisbane River at Savages Xing	7.86 m falling at 3pm
Brisbane River at Mt Crosby	10.16 m falling at 3pm
Brisbane River at Moggill	4.00 m falling at 3pm

The next warning will be issued at about 10am Wednesday.

**FINAL FLOOD WARNING FOR LOCKYER CREEK AND THE BRISBANE RIVER
BELOW MT CROSBY**

Issued at 9.30 am on Wednesday, 08/05/96
by the Bureau of Meteorology, Brisbane.

Lockyer/Laidley Creeks :

River levels along Laidley Creek and Lockyer Creek are continuing to fall below minor flood level.

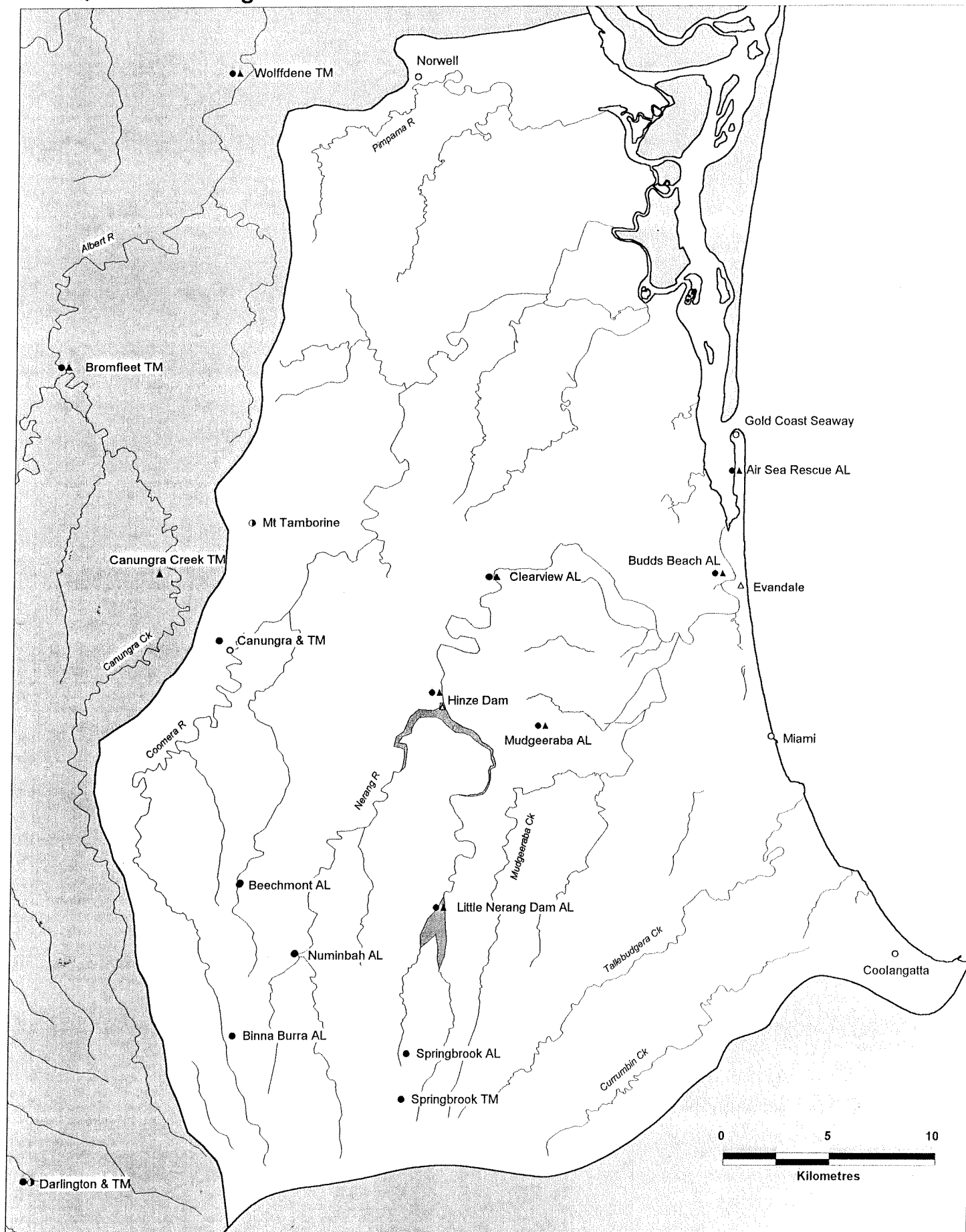
Brisbane River between Lowood & Mt Crosby :

Flood levels between Lowood and Mt Crosby are now falling below minor flood level.

Brisbane River below Mt Crosby :

River levels in the lower Brisbane below Moggill to the City will be close to normal tides tonight.

No further warnings will be issued.

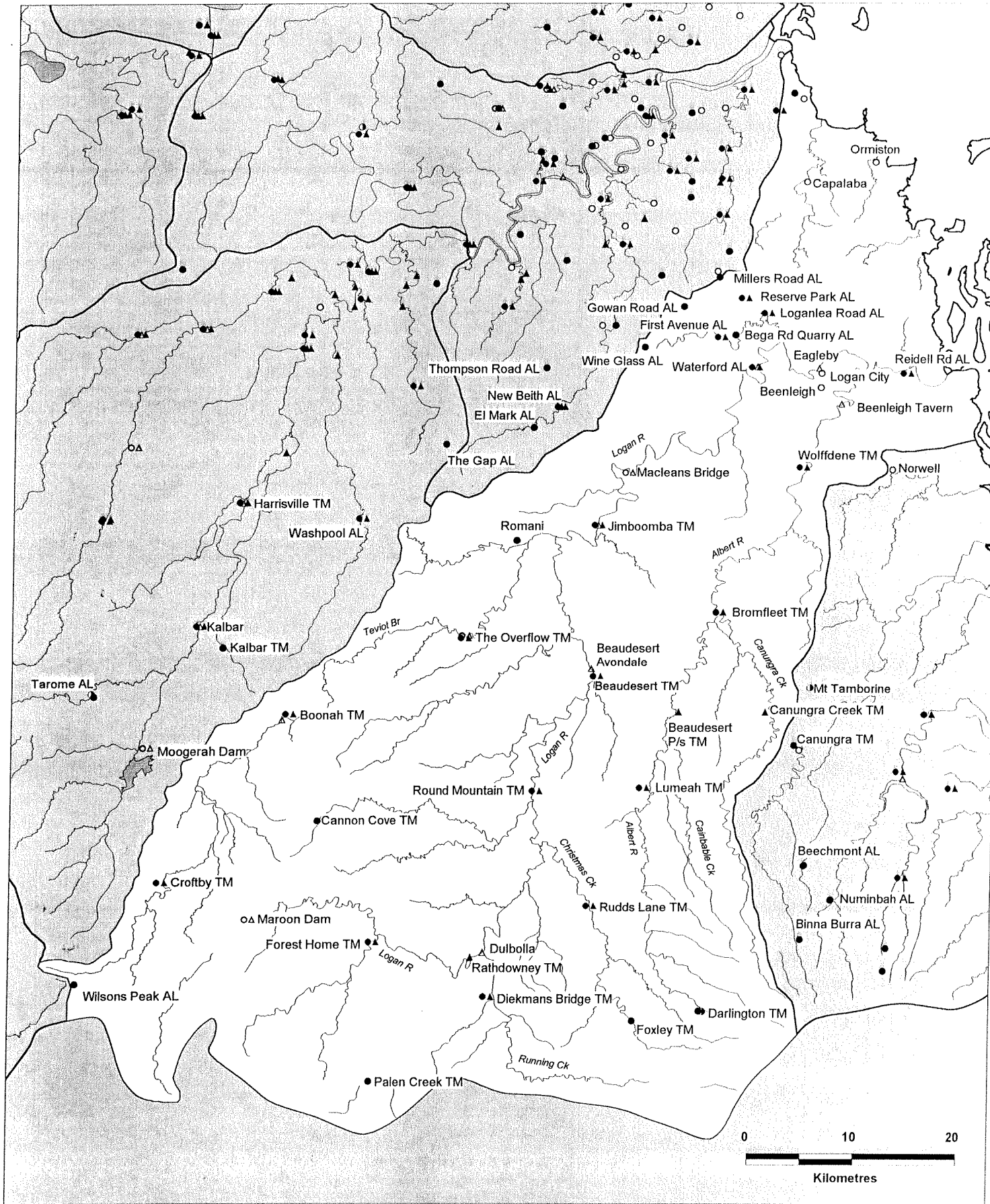


- Manual Heavy Rainfall Station
- Daily Reporting Rainfall Station
- ▲ Manual River Station
- Telemetry Rainfall Station
- ▲ Telemetry River Station

NERANG RIVER FLOOD WARNING NETWORK

Rainfall Period
Ending at

Revised : Nov 1995



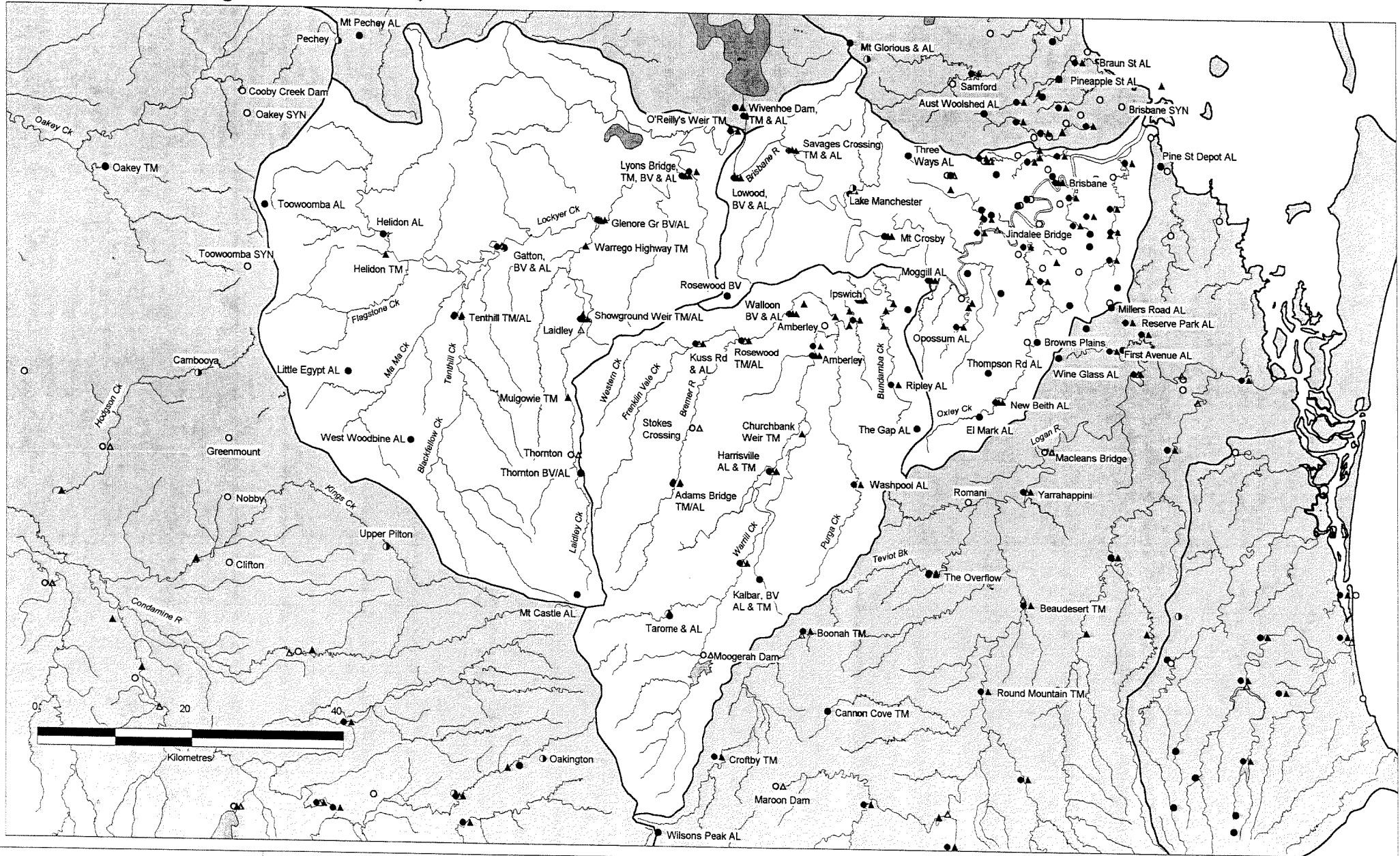
- Manual Heavy Rainfall Station
- Daily Reporting Rainfall Station
- △ Manual River Station
- Telemetry Rainfall Station
- ▲ Telemetry River Station

LOGAN & ALBERT RIVERS

FLOOD WARNING NETWORK

Rainfall Period
Ending at

Revised: Feb 1996

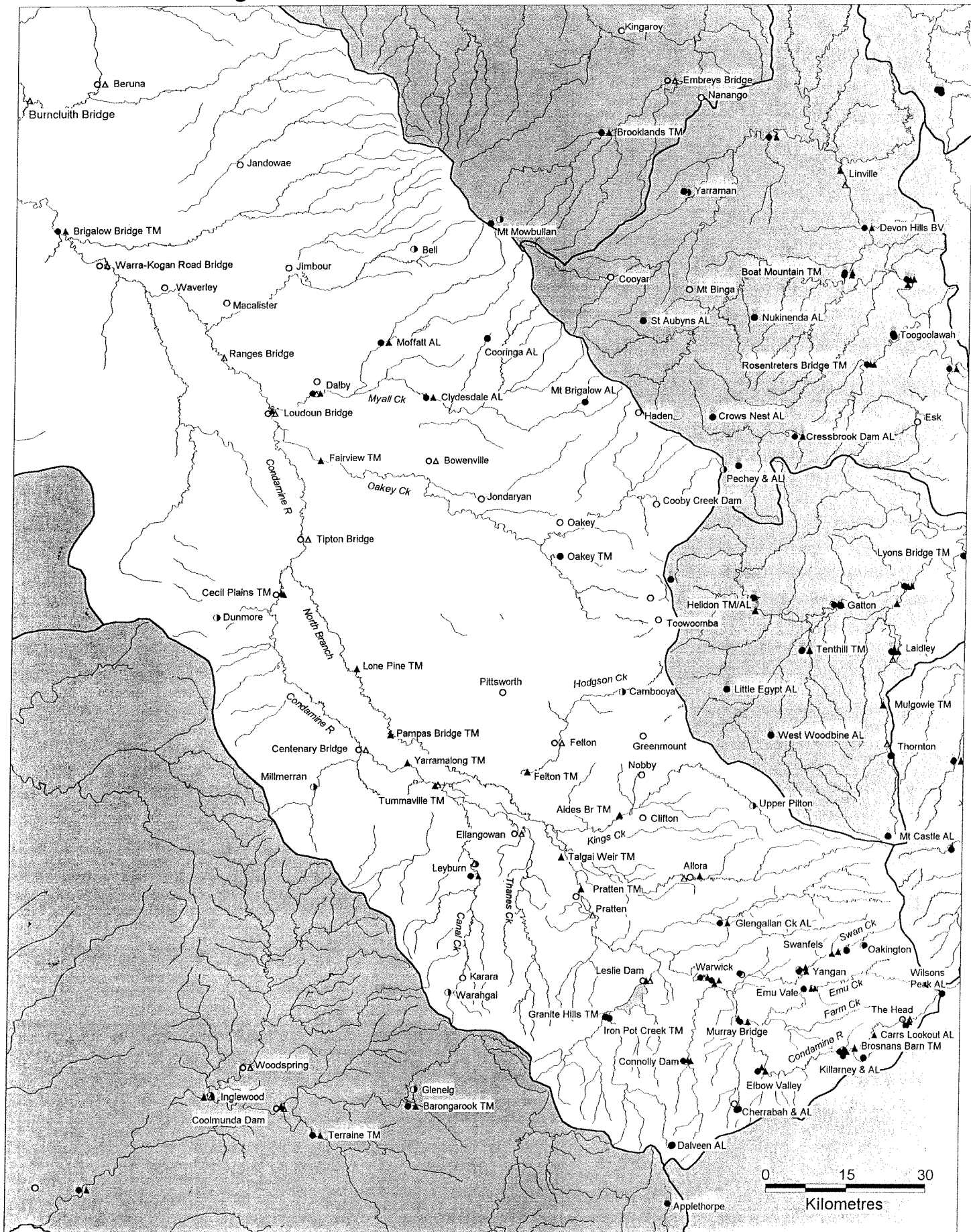


- Manual Heavy Rainfall Station
- Daily Reporting Rainfall Station
- △ Manual River Station
- Telemetry Rainfall Station
- ▲ Telemetry River Station

BREMER RIVER, WARRILL & LOCKYER CREEKS

FLOOD WARNING NETWORK

Rainfall Period
Ending at



- Manual Heavy Rainfall Station
- Daily Reporting Rainfall Station
- ▲ Manual River Station
- Telemetry Rainfall Station
- ▲ Telemetry River Station

UPPER CONDAMINE RIVER FLOOD WARNING NETWORK

Rainfall Period
Ending at

Revised : Nov 1995