



Australian Government
Bureau of Meteorology



Floods associated with Tropical Cyclone OLGA

January and February 2010



1	2
3	4
5	6

1. Flood waters spilling from Beardmore Dam – Photo by David Woodman
2. Flood waters travel over the Baralaba Weir – Photo courtesy of Nathan Besch (Q Build)
3. Flood waters through Giru – Photo courtesy of Burdekin Shire Council
4. Floodwaters in Roma at the intersection of Charles Street and Lowell Street – Photo courtesy of Maranoa Regional Council
5. Flood waters at the Mackay Alert Gauge near the Forgan Smith Bridge – Photo courtesy of Mackay Regional Council
6. A boat is wedged under a bridge on the Coomera River – Photo courtesy of Courier Mail

Note:

1. Data in this report has been operationally quality controlled but errors may still exist.
2. This product includes data made available to the Bureau by other agencies. Separate approval may be required to use the data for other purposes. See Appendix 1 for DERM Usage Agreement.
3. This report is not a complete set of all data that is available. It is a representation of some of the key information.

Table of Contents

1. Introduction	1
2. Meteorological Summary	1
2.1 Meteorological Analysis	1
Figure 2.1.1 Track of TC Olga from the 23 rd Jan to the 5 th of Feb 2010.....	3
Figure 2.1.2 MSLP Charts for Australia from the 23 rd Jan to the 7 th Feb 2010.....	4
Figure 2.1.2 (cont.) MSLP Charts for Australia from the 23 rd Jan to the 7 th Feb 2010.....	5
Figure 2.1.3 Radar Images tracking TC Olga's path and associated monsoonal rainfall.....	6
3. Hydrology	7
3.1 Peak River Heights	7
Figure 3.1.1 Peak height map 23 rd January - 24 th February 2010.....	8
Table 3.1.1 Historical peak height comparison.....	9
3.2 Rainfall Maps	17
Figure 3.2.1 Rainfall map of Queensland for the week ending the 1 st of February 2010.....	17
Figure 3.2.2 Rainfall map of Queensland for the week ending the 8 th February 2010.....	18
Figure 3.2.3 Rainfall map for the Central Coast of Qld between 24 th Jan and 1 st Feb 2010.....	19
Figure 3.2.4 Rainfall map for North Qld between 24 th Jan and 1 st of Feb 2010.....	20
Figure 3.2.5 Rainfall map for the Capricornia Coast between 25 th Jan and 3 rd of Feb 2010.....	21
3.3 Rainfall Intensity	22
Figure 3.3.1 Record Rainfall totals recorded in the 24 hours to 9am on the 7 th Feb 2010.....	22
Figure 3.3.2. Hourly Hyetographs for Clagiraba Rd AI and Mt Tamborine AI - Coomera River.....	23
Figure 3.3.2. (con't) Hourly Hyetograph for Canungra Army AI - Coomera River.....	24
Figure 3.3.3. Hourly Hyetographs for Benobble AI and Bromfleet AI - Albert River.....	25
Figure 3.3.4. Rainfall IFD Analysis - Coomera River.....	26
Figure 3.3.4. (con't) Rainfall IFD Analysis - Coomera River.....	27
Figure 3.3.5. Rainfall IFD Analysis - Albert River.....	28
3.4 Rainfall Totals	29
Table 3.4.1 Significant rainfall totals - Central Coast Region.....	29
Table 3.4.2 Significant rainfall totals - Cape York Peninsula and the Gulf Country.....	33
Table 3.4.3 Significant rainfall totals - Mackenzie River catchment.....	36
Table 3.4.4 Significant rainfall totals - Queensland Capricornia Coast Region.....	36
Table 3.4.5 Significant rainfall totals - Balonne and Maranoa River catchments.....	39
Table 3.4.6 Significant rainfall totals - Warrego, Paroo and Bulloo River catchments.....	41
Table 3.4.7 Significant rainfall totals - Barcoo River catchments.....	42
Table 3.4.8 Significant rainfall totals - Southeast Queensland.....	42
3.5 Flood hydrographs associated with TC Olga	48
Figure 3.5.1 Flood hydrographs - Townsville Area.....	48
Figure 3.5.2 Flood hydrographs - Haughton River.....	49
Figure 3.5.3 Flood hydrographs - Pioneer River.....	51
Figure 3.5.4 Flood hydrographs - Fitzroy River catchment.....	53
Figure 3.5.5 Flood hydrographs - Baffle Creek.....	59
Figure 3.5.6 Flood hydrographs - South East Queensland Coastal Rivers and Streams.....	60
Figure 3.5.7 Flood hydrographs - Condamine and Balonne Rivers.....	65
Figure 3.5.8 Flood hydrographs - Warrego River.....	68
Figure 3.5.9 Flood hydrographs - Paroo River.....	69
Figure 3.5.10 Flood hydrographs - Bulloo River.....	71
Figure 3.5.11 Flood hydrographs - Thomson and Barcoo Rivers and Cooper Creek.....	72
Figure 3.5.12 Flood hydrographs - Gulf Rivers.....	77
4. Warning Services	80
Table 4.1 Flood Warnings and Predictions issued following rainfall associated with TC Olga.....	80
Appendix 1. DERM Usage Agreement	82

Floods associated with Tropical Cyclone OLGA

January and February 2010

1. Introduction

Heavy rainfall occurred over many parts of Queensland from the 24th of January to the 8th of February associated with Tropical Cyclone (TC) Olga as the system weaved a path across the state. Olga made two coastal crossings and tracked from the north to the south of the state. The most intense rainfall during this period occurred over southeast Queensland where more than 400mm of rain fell in the 24 hours to 9am on the 7th February at Clagiraba Road Alert on the Coomera River.

Major flooding resulting from heavy rainfall associated with TC Olga occurred in the Flinders, Nicholson, Haughton, Fitzroy, Condamine-Balonne, Warrego, Bulloo, Thompson, Barcoo, Cooper and Paroo River catchments.

This report provides a summary and analysis of the meteorology and hydrology of the flooding associated with TC Olga during January and February 2010. The following link provides a complete list of [maps of the relevant river catchments and flood warning stations](#) referred to in this report.

2. Meteorological Summary

In an active phase of the monsoon trough, Tropical Cyclones Neville and Olga developed over the Coral Sea. Tropical Cyclone Neville was very short lived and produced little significant rainfall over Queensland. Tropical Cyclone Olga however, was longer lived and tracked around Queensland as a tropical low and rain depression for close to two weeks, bringing flood producing rainfall to large parts of the state extending from the Gulf Country and North Tropical Coast to the southeast corner of Queensland.

This chapter presents a discussion and analysis of the meteorological conditions that led to cyclone intensification and movement and the subsequent flood producing rains the system brought to a large area of Queensland.

2.1 Meteorological Analysis

A tropical low, embedded in the monsoon trough, was identified over the northern Gulf of Carpentaria on the 18th of January. This low tracked eastward, under strong westerly steering associated with a middle level trough and crossed Cape York Peninsula, entering the Coral Sea north of Cape Melville early on the 19th of January. The system continued to track slowly east-southeast and intensified to become TC Neville, early on the 21st of January. TC Neville was very short lived, weakening below cyclone intensity before midday the same day.

At this time, the monsoon trough extended from Ex-TC Neville to a low pressure system near the Solomon Islands. As Ex-TC Neville remained near stationary off the north Queensland Tropical Coast during the 22nd of January, the low near the Solomon Islands tracked steadily southwest across the northern Coral Sea. This movement led the system to a more favourable environment for development, with reduced wind shear through a deep layer of the atmosphere and increased outflow in the upper levels, both vital ingredients for tropical cyclone development. The low responded and intensified to become TC Olga during the morning of the 23rd of January. A map showing the path of TC Olga is shown as Figure 2.1.1.

A sequence of Mean Sea Level Pressure Charts from the 23rd January to the 7th of February 2010, shown as Figure 2.1.2, describes the movement, intensification and subsequent weakening of TC Olga. The blue shaded region shows areas of rainfall.

TC Olga took on a more westward track during the 23rd of January, steered by low to middle level ridging. The system continued to intensify under the influence of favourable upper outflow and by late evening TC Olga had strengthened further to Category 2 intensity, with mean maximum winds to at least 89 kilometres per hour. Maximum winds recorded at Willis Island as TC Olga passed nearby around 10am on the 23rd of January were sustained 1-minute mean winds of 72 kilometres per hour (39 knots) with gusts to 83kmph (45 knots). Radar imagery of TC Olga passing Willis Island is shown as Figure 2.1.3a and clearly shows the circular bands of rain and thunderstorms.

TC Olga continued to move closer to the North Tropical Coast overnight on the 23rd of January, travelling in a west-northwest direction. At this time, Ex-TC Neville moved around the more dominant TC Olga, passing over the top of Willis Island early on the morning of the 24th of January. Gale force winds were reported at the site as the system passed over. Ex-TC Neville then turned west-southwest and tracked slowly towards the Queensland coast on the southern side of TC Olga.

By the afternoon of the 24th of January, TC Olga sat to the near east of Port Douglas and weakened to a tropical low. Both Ex-TC Olga and Neville became embedded in the monsoon trough and meandered off the coast for the next 12 hours before finally crossing to the south of Cairns early on the 25th of January.

TC Olga tracked steadily west across the southern Cape York Peninsula and through the Gulf Country and then became near stationary over the Northern Territory to the near east of Borroloola on the 27th of January. At this time heavy falls of rain were produced by Ex-TC Olga and along the Monsoon Trough extending from Olga to the North Tropical Coast. Radar imagery from Mornington Island as the system tracked across land to the south of the Gulf of Carpentaria is shown in Figure 2.1.3b.

Ex-TC Olga remained near stationary for the next two days before interacting with an upper trough moving across south-eastern Australia. This system steered Ex-TC Olga eastward, back over water in the Gulf of Carpentaria on the 29th of January. The low tracked east and re-intensified into a Category 1 Tropical Cyclone near Mornington Island by 10pm that evening. The monsoon trough extended from TC Olga across Cape York Peninsula to cross the North Tropical Coast between Cardwell and Townsville and continued to bring heavy rain and thunderstorms to the region.

Upon re-intensification to a Tropical Cyclone, Olga tracked steadily southeast and by 7am on the 30th of January had moved inland to the near southwest of Karumba. By this time the monsoon trough extending from TC Olga, had tracked further southward along the east coast and was producing heavy rainfall between Townsville and Bowen.

TC Olga weakened into a rain depression within hours of making landfall and tracked steadily southeast, to be positioned to the northeast of Longreach by 10am on the 31st of January. The monsoon trough crossing the east coast was consequently dragged further southward to the Central Coast region producing heavy rainfall over the Pioneer River catchment. Radar imagery from Mackay at 11:30pm on the 30th of January, see Figure 2.1.3c, shows the rain and thunderstorms associated with the Monsoon Trough linked to Ex-TC Olga.

Ex-TC Olga then remained near stationary for 24 hours before resuming its track, this time to the southwest, dragging the monsoon trough southward to the Capricornia Coast region. This resulted in further heavy rainfall extending through the central and southern interior and also about the Capricornia coast in the area of maximum convergence on the monsoon trough. By 10am on the 3rd of February Ex-TC Olga was located over the far northeast corner of South Australia positioned ahead of an approaching deep layered trough system to the west. The Monsoon Trough extending from the low still remained over the Capricornia coast region producing further heavy rainfall.

The deep trough over the Great Australian Bight moved into north-western New South Wales and merged with the low. The system tracked eastward across the southern border of the state to be located over the Maranoa district by the 5th of February with the associated upper level trough tilting eastward ahead of the surface low. The middle to upper level trough and associated cold air then cut off from the surface low and moved northward over the southern interior of the state. This combined

with building easterlies about the southeast Queensland coast to produce a broad area of warm air advection and large scale uplift over the southeast corner of the state. Widespread showers, thunderstorms and heavy rain resulted, producing falls in excess of 200 mm in the region by 9am on the 7th of February.

As the developing ridge extended northward along the east coast, so did the area of instability and heavier rainfall. By this time also, the surface low associated with Ex-TC Olga was difficult to locate, although the middle level low was still evident. It tracked westward inland again during the 8th, to be northwest of Charleville by the evening and then further westward over the Channel country by the 9th. The system, though somewhat weaker, continued to produce scattered showers and thunderstorms through the southern interior causing further river rises over flooded catchments.

Figure 2.1.1 Track of TC Olga from the 23rd Jan to the 5th of Feb 2010.

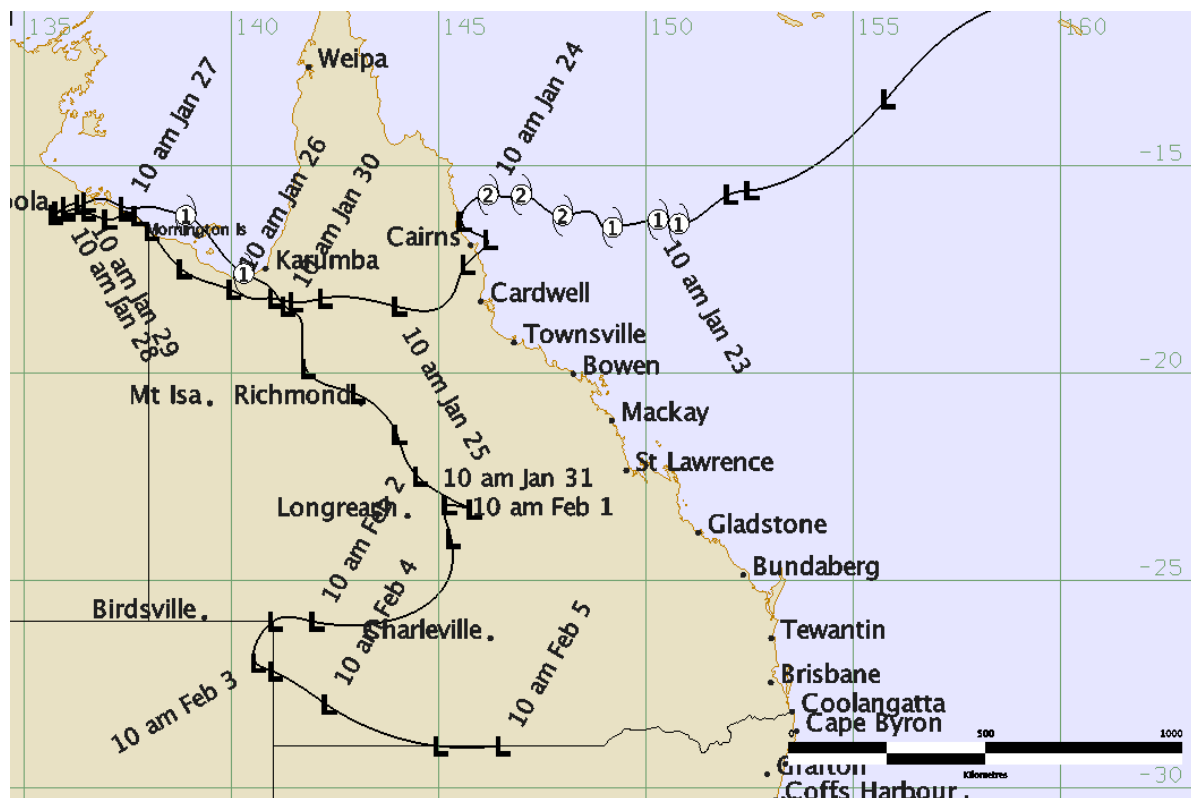


Figure 2.1.2 MSLP Charts for Australia from the 23rd Jan to the 7th Feb 2010.

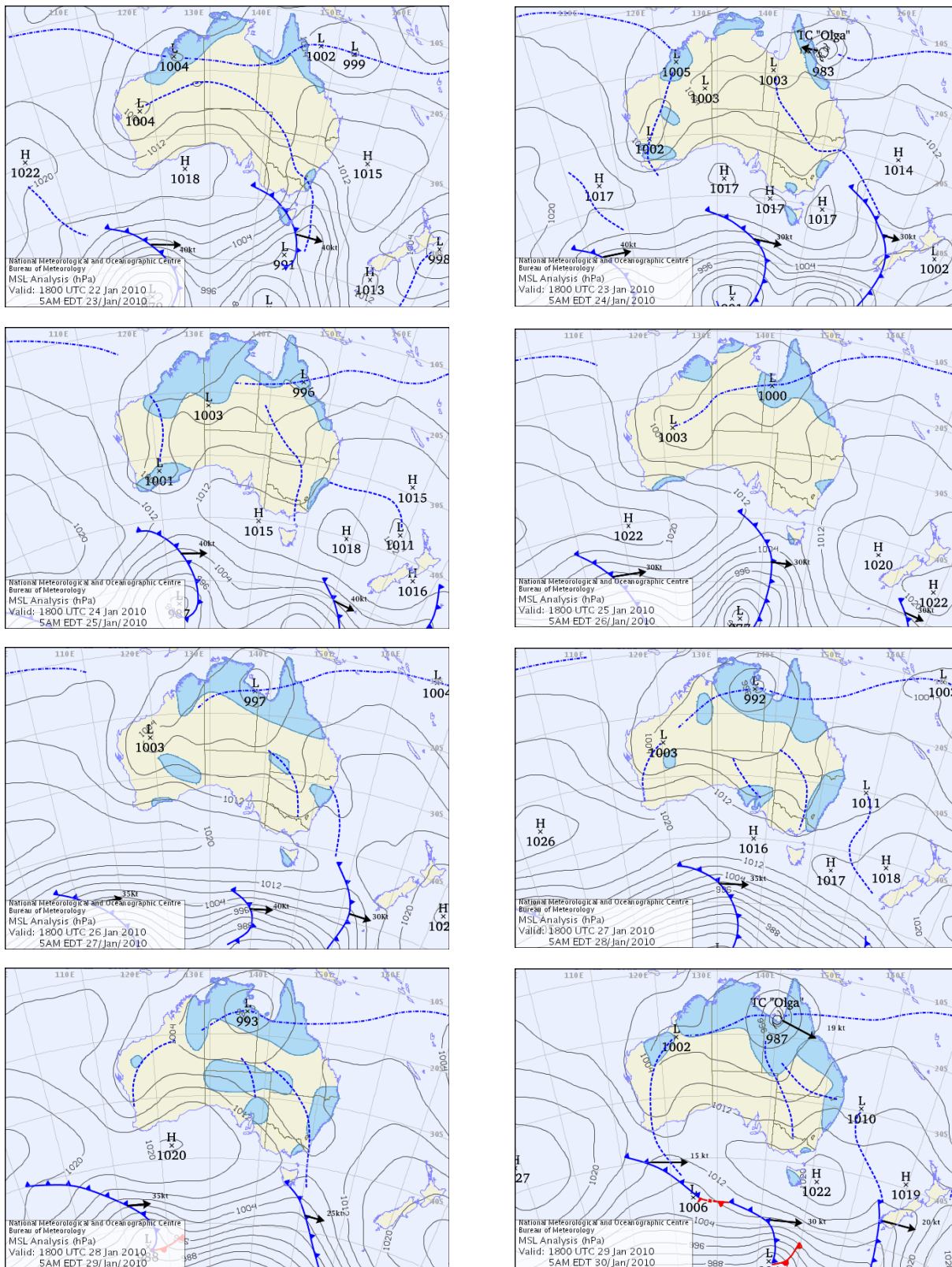


Figure 2.1.2 (cont.) MSLP Charts for Australia from the 23rd Jan to the 7th Feb 2010.

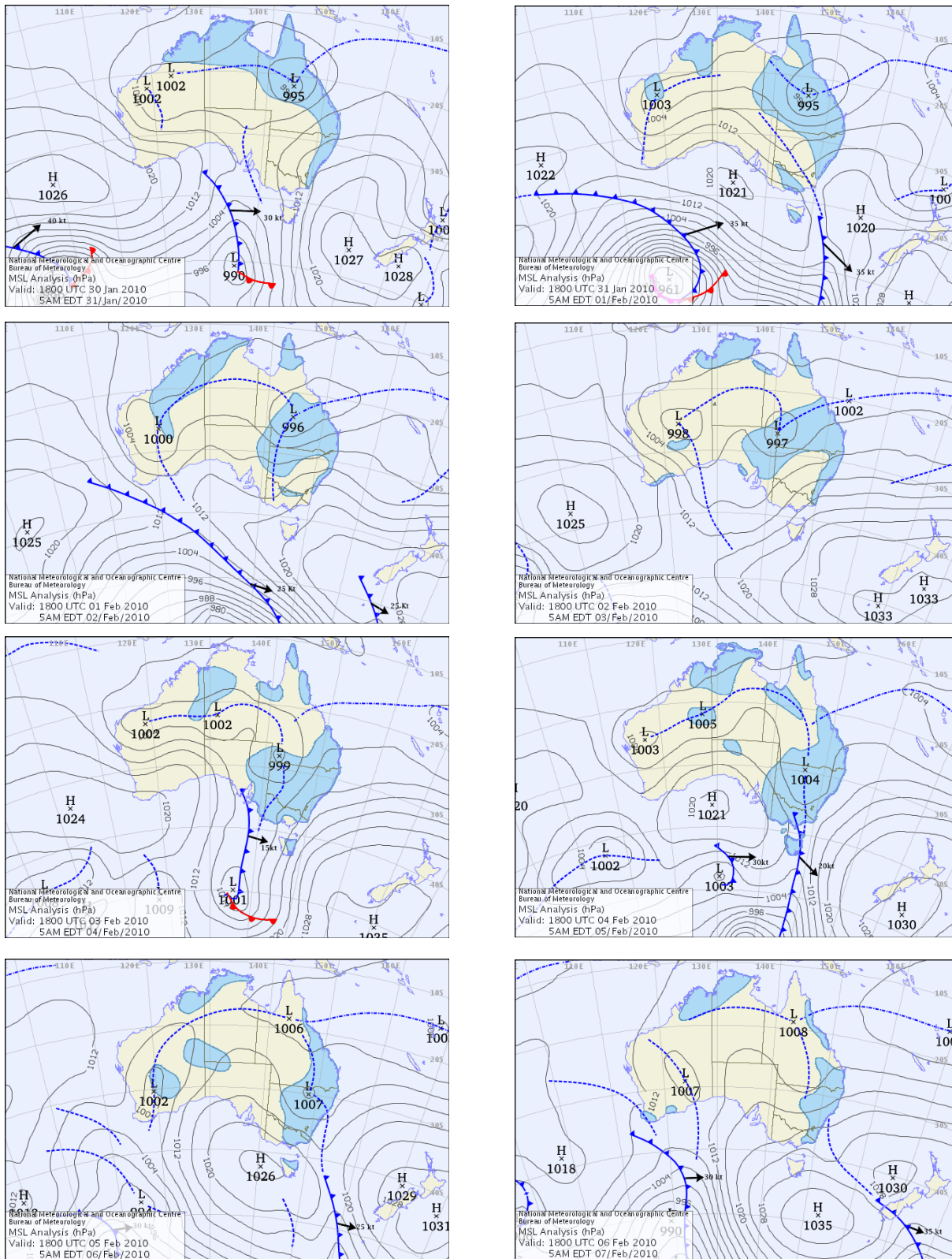
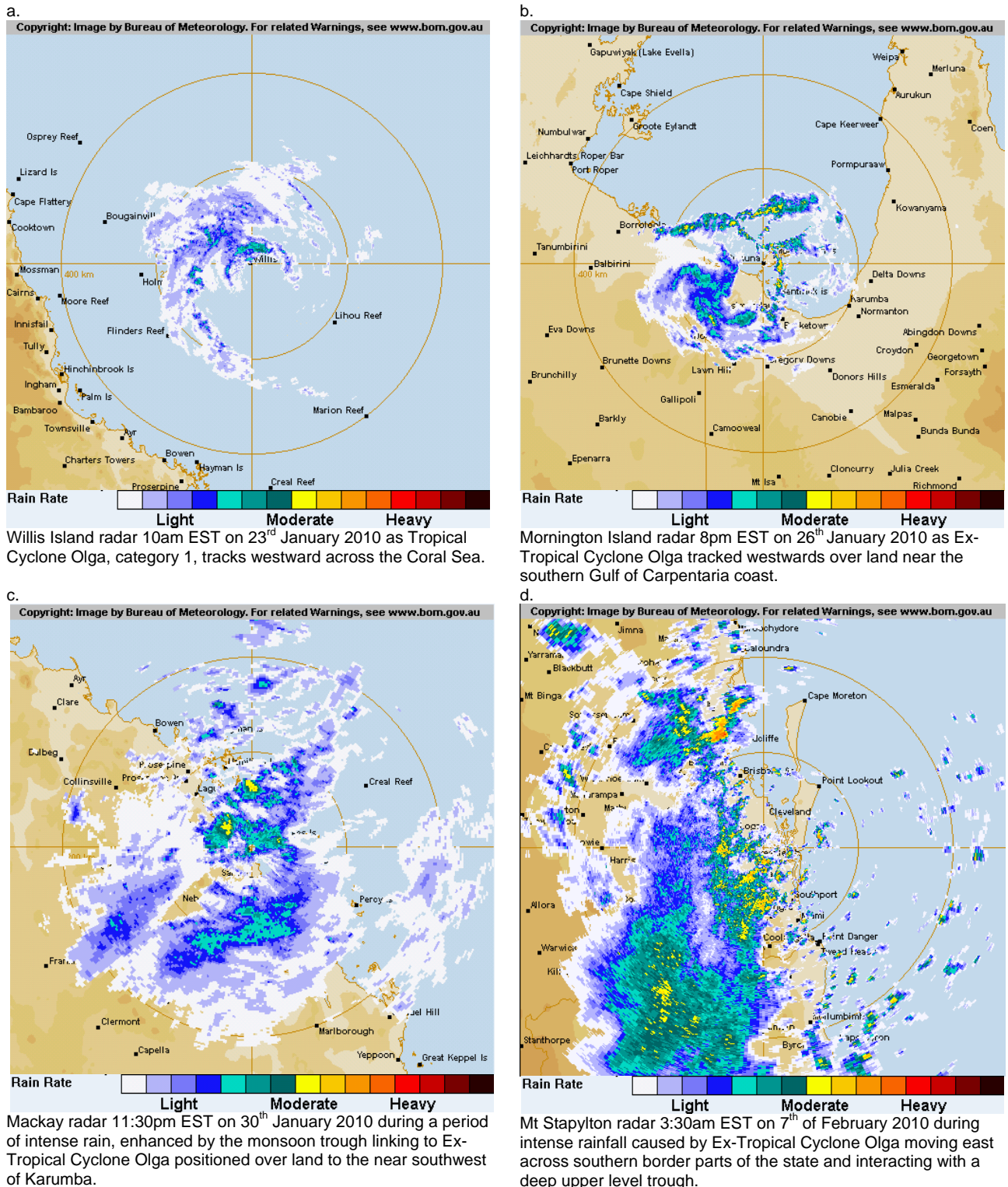


Figure 2.1.3 Radar Images tracking TC Olga’s path and associated monsoonal rainfall.



3. Hydrology

As Olga tracked a path across Queensland over a period of at least two weeks, heavy rainfall and river flooding occurred in many parts of the state. Major river flooding was recorded in the Haughton, Pioneer, Connors, Isaac, Dawson, Comet, Logan-Albert, Condamine-Balonne, Warrego, Paroo, Bulloo, Barcoo and Gulf Rivers and also along Baffle, Cooper and Wilson Creeks. A new peak height record of 4.1 metres (36 years of record) occurred at Noccundra Hotel on the Wilson River in the Cooper Creek catchment. Elsewhere throughout the state, flood peaks generally ranked below the top ten river heights for each location except at the following sites.

- Giru on the Haughton River, which recorded 2.99 metres and was the third highest on record.
- Benobble Alert on Canungra Creek in the Logan-Albert River catchment, which recorded 6.09 metres and was the fifth highest on record.
- Roma on Bungil Creek in the Condamine-Balonne catchment, which recorded 7.0 metres and was the fifth highest on record.
- Escott Lodge on the Nicholson River, which recorded 10.6 metres and was the fifth highest on record.

This chapter provides a technical summary and analysis of the hydrology of the river flooding associated with tropical cyclone Olga.

3.1 Peak River Heights

Peak heights recorded across the state between the 23rd of January and the 24th of February 2010 resulting from heavy rainfall associated with Tropical Cyclone Olga are shown in Figure 3.1.1.

A comparison of the recorded peak heights resulting from Olga's rainfall with historical peak heights for each location is shown in Table 3.1.1. The ranking of each recorded peak with historical peaks for that site have also been shown. A location where major flooding was recorded is displayed in red.

Figure 3.1.1 Peak height map 23rd January - 24th February 2010.

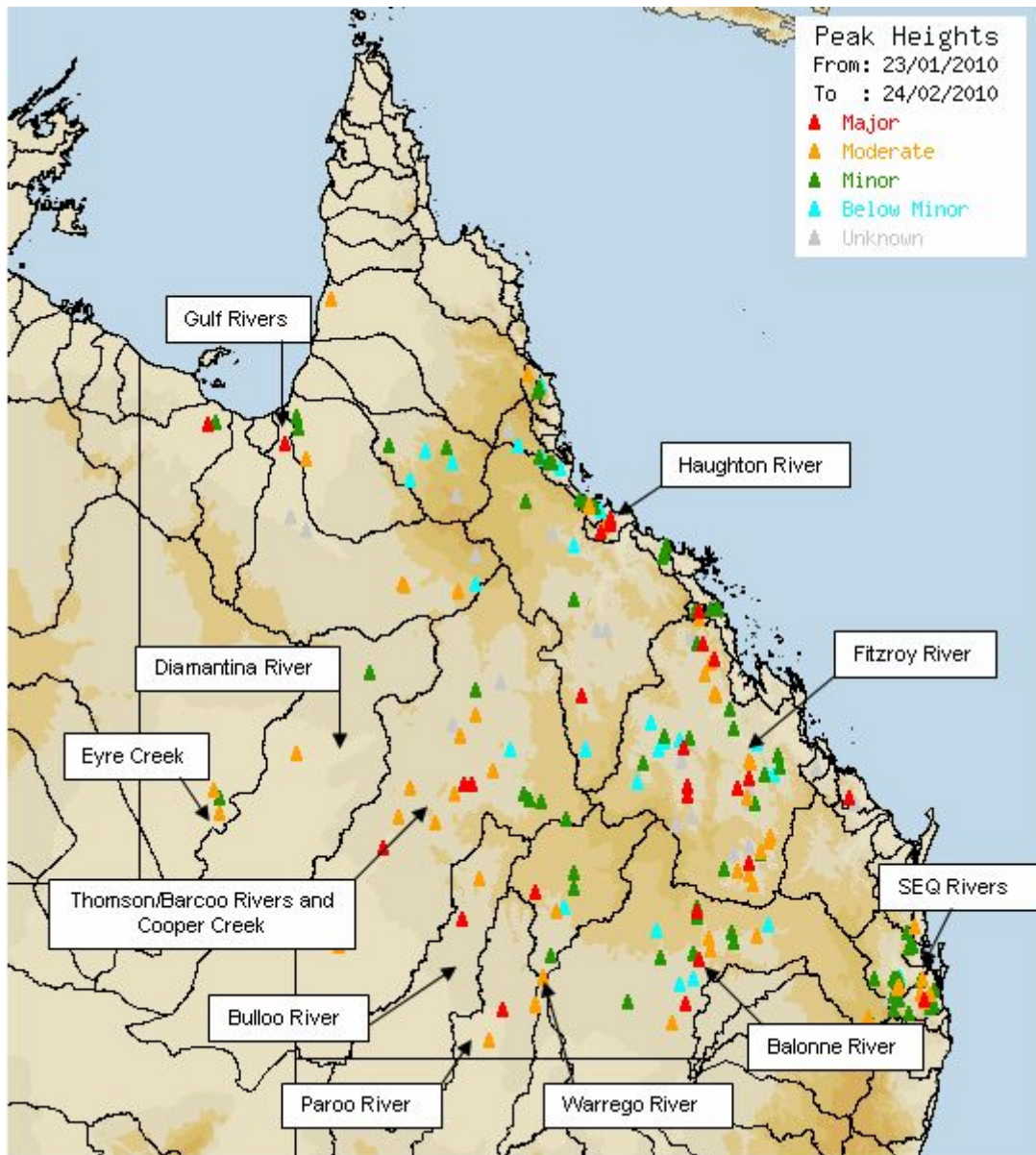


Table 3.1.1 Historical peak height comparison

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Mulgrave/Russell Rivers						
The Fisheries AL/TM	3.65m on the 26/01/2010 at 12:50	Minor	1967	46th	January 2010	11.20m Mar 1967
Peets Bridge AL/TM	5.03m on the 26/01/2010 at 15:20	Minor	1972	101st	January 2009	10.70m Feb 1977
Gordonvale AL	11.41m on the 26/01/2010 at 16:25	Below Minor	1967	45th	January 2009	17.50m Mar 1967
Herbert River						
Abergowrie AL/TM	6.00m on the 31/01/2010 at 02:20	Minor	1969	Equal 154th	February 2009	17.48m Mar 1977
Abergowrie Bridge AL	5.89m on the 31/01/2010 at 05:30	Below Minor	1971	Equal 44th	February 2009	20.65m Mar 1967
Townsville Area						
Bohle River AL	6.74m on the 27/01/2010 at 18:36	Moderate	2000	6th	February 2009	8.30m Feb 2007
	6.19m on the 30/01/2010 at 20:40	Moderate	2000	11th	January 2010	8.30m Feb 2007
Mt Bohle AL	6.06m on the 27/01/2010 at 23:08	Moderate	2000	3rd	February 2007	7.55m Feb 2007
	5.86m on the 30/01/2010 at 21:11	Moderate	2000	5th	January 2010	7.55m Feb 2007
Louisa Creek	5.13m on the 27/01/2010 at 16:00	Minor	2000	Equal 11th	January 2009	5.73m Feb 2008
	5.23m on the 30/01/2010 at 13:50	Minor	2000	Equal 7th	February 2008	5.73m Feb 2008
Ross River Dam AL	39.45m on the 31/01/2010 at 12:28	N/A	1999	3rd	April 2000	40.97m April 2000
Mysterton AL	3.12m on the 27/01/2010 at 17:23	Below Minor	2000	7th	January 2008	3.37m Feb 2007
	3.07m on the 30/01/2010 at 15:07	Below Minor	2000	Equal 8th	January 2010	3.37m Feb 2007
Black River AL	5.14m on the 30/01/2010 at 19:20	Minor	2000	6th	February 2009	6.86m Feb 2008
Blewater AL	6.10m on the 30/01/2010 at 19:10	Minor	2000	5th	February 2009	7.10m Feb 2008
Haughton River						
Mount Piccaninny AL/TM	2.97m on the 28/01/2010 at 03:00	Below Minor	1993	77th	February 2009	10.51m Feb 2008
	3.83m on the 29/01/2010 at 19:20	Minor	1993	44th	February 2009	10.51m Feb 2008
	6.51m on the 30/01/2010 at 22:50	Major	1993	15th	February 2008	10.51m Feb 2008

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Haughton River con't						
Major Creek AL/TM	8.03m on the 28/01/2010 at 07:42	Moderate	2001	35th	February 2009	11.32m Feb 2008
	7.68m on the 29/01/2010 at 23:20	Minor	2001	38th	January 2010	11.32m Feb 2008
	8.78m on the 31/01/2010 at 03:15	Moderate	2001	26th	February 2009	11.32m Feb 2008
Powerline AL/TM	5.05m on the 28/01/2010 at 08:10	Minor	1993	67th	February 2009	12.12m Feb 2008
	5.80m on the 30/01/2010 at 00:30	Minor	1993	51st	February 2009	12.12m Feb 2008
	9.00m on the 31/01/2010 at 03:00	Major	1993	17th	February 2009	12.12m Feb 2008
Giru AL/TM	2.29m on the 28/01/2010 at 13:00	Moderate	1981	42nd	February 2009	3.03m Feb 2008
	2.54m on the 30/01/2010 at 01:20	Major	1981	29th	February 2009	3.03m Feb 2008
	2.99m on the 31/01/2010 at 01:00	Major	1981	3rd	February 2008	3.03m Feb 2008
Pioneer River						
Whiteford's AL/TM	7.30m on the 31/01/2010 at 04:30	Moderate	1973	16th	February 2008	11.25m Mar 1988
Finch Hatton AL/TM	3.80m on the 31/01/2010 at 01:00	Minor	2000	4th	February 2009	4.80m Feb 2009
Gargett AL/TM	7.45m on the 31/01/2010 at 03:00	Minor	1968	Equal 13th	January 2008	8.60m Jan 2008
Mirani Weir AL	11.06m on the 31/01/2010 at 05:30	Major	1978	14th	February 2008	15.52m Apr 1989
Dumbleton Rocks AL/TM	19.41m on the 31/01/2010 at 08:50	Minor	1988	3rd	February 2008	19.58m Feb 2008
Hospital Bridge AL	8.55m on the 31/01/2010 at 09:00	Minor	1918	6th	February 2008	11.84m Jan 1918/70
Mackay AL	7.05m on the 31/01/2010 at 11:40	Minor	1884	25th	January 1991	9.14m Feb 1958
Connors, Isaac, Mackenzie and Fitzroy Rivers						
Mount Bridget TM	12.66m on the 26/01/2010 at 08:00	Moderate	1967	25th	February 2008	20.18m Mar 1988
	15.97m on the 31/01/2010 at 18:00	Major	1967	7th	February 2008	20.18m Mar 1988
Cardowan	13.00m on the 26/01/2010 at 12:00	Moderate	1953	26th	February 2008	19.10m Mar 1988
	13.40m on the 01/02/2010 at 06:00	Moderate	1953	25th	February 2008	19.10m Mar 1988
Funnel Creek TM	8.64m on the 27/01/2010 at 01:50	Moderate	1968	33rd	February 2008	14.59m Dec 1990
	10.81m on the 01/02/2010 at 02:00	Major	1968	11th	January 2008	14.59m Dec 1990
Pink Lagoon TM	11.78m on the 27/01/2010 at 14:00	Moderate	1967	52nd	February 2008	16.43m Mar 1988
	13.77m on the 02/02/2010 at 03:30	Moderate	1967	18th	February 2008	16.43m Mar 1988

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Connors, Isaac, Mackenzie and Fitzroy Rivers con't						
Yatton TM	12.18m on the 29/01/2010 at 13:00	Moderate	1963	48th	February 2009	19.62m Mar 1988
	15.68m on the 03/02/2010 at 06:00	Moderate	1963	16th	February 2008	19.62m Mar 1988
May Downs Road Bridge	8.52m on the 03/02/2010 at 15:00	Moderate	2003	1st	New Record	New Record
Tartrus Man/TM	11.81m on the 04/02/2010 at 22:10	Minor	1941	38th	February 2008	18.19m Apr 1958
Coolmaringa TM	15.05m on the 05/02/2010 at 22:00	Minor	1973	24th	February 2008	22.38m Jan 1991
Riverslea TM	12.96m on the 07/02/2010 at 13:30	Below Minor	1918	64th	February 2008	31.48m Jan 1918
Comet River						
Rolleston	4.78m on the 03/02/2010 at 09:00	Major	1958	Equal 16th	January 2008	5.87m 19th Feb 2010
	5.25m on the 08/02/2010 at 06:00	Major	1958	6th	April 1990	5.87m 19th Feb 2010
The Lake TM	13.45m on the 05/02/2010 at 03:10	Major	1972	6th	January 2008	14.37m 20th Feb 2010
	13.21m on the 09/02/2010 at 01:50	Major	1972	10th	February 2010	14.37m 20th Feb 2010
Springsure Creek Junction	9.97m on the 07/02/2010 at 11:00	N/A	2007	4th	January 2008	10.92m 21st Feb 2010
	9.89m on the 11/02/2010 at 11:00	N/A	2007	6th	February 2010	10.92m 21st Feb 2010
Comet Weir Man/TM	7.42m on the 09/02/2010 at 23:00	Minor	1922	26th	January 2008	13.19m Feb 1954
	7.31m on the 12/02/2010 at 18:00	Minor	1922	29th	February 2010	13.19m Feb 1954
Dawson River						
Utopia Downs TM	7.20m on the 05/02/2010 at 05:00	Minor	1970	27th	January 2008	12.82m Apr 1989
Tarana Crossing	10.47m on the 06/02/2010 at 17:00	Moderate	1983	8th	March 1997	12.09m May 1983
Taroom Man/TM	6.15m on the 07/02/2010 at 18:00	Major	1890	Equal 149th	December 2005	14.78m Mar 1890
The Glebe	2.10m on the 09/02/2010 at 15:00	Minor	1906	Equal 37th	August 1998	8.69m Feb 1956
Glebe Weir HW TM	1.68m on the 10/02/2010 at 00:00	Minor	1983	15th	September 1998	6.15m May 1983
Glebe Weir TW TM	9.57m on the 10/02/2010 at 01:10	Minor	1983	13th	September 1998	15.19m May 1983
Gyranda Weir TM	1.93m on the 10/02/2010 at 13:30	Minor	1988	6th	September 1998	3.94m 7th Mar 2010
Isla Delusion Crossing TM	9.29m on the 10/02/2010 at 23:40	Moderate	1993	6th	September 1998	10.57m 7th Mar 2010
Moura	9.65m on the 13/02/2010 at 05:30	Minor	1956	20th	September 1998	12.90m Feb 1956

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Baffle Creek						
Mimdale TM	14.78m on the 03/02/2010 at 07:00	Major	1970	10th	February 2008	20.12m Feb 1971
Essendean Bridge	8.90m on the 03/02/2010 at 20:30	N/A	2006	2nd	February 2008	11.37m Feb 2008
SEQ Rivers						
Mooloolah AL/TM	5.45m on the 07/02/2010 at 16:00	Moderate	1972	Equal 15th	February 1999	5.83m Apr 1989
Palmview AL	4.19m on the 07/02/2010 at 07:16	Minor	2007	5th	May 2009	4.84m May 2009
Burpengary (Rowley Road) AL	16.80m on the 07/02/2010 at 10:15	Minor	1972	11th	May 2009	20.30m Feb 1972
Burpengary (Dale St) AL	8.34m on the 07/02/2010 at 13:05	Below Minor	1972	11th	May 2009	11.15m Feb 1972
Wamuran AL	28.52m on the 07/02/2010 at 07:00	Below Minor	1972	6th	May 2009	30.61m Feb 1972
Upper Caboolture AL/TM	9.89m on the 07/02/2010 at 08:45	Minor	1967	Equal 15th	May 2009	11.76m Dec 1991
Caboolture WTP AL	7.49m on the 07/02/2010 at 11:40	Minor	1972	7th	April 2009	9.91m Feb 1972
Tenthill AL/TM	4.75m on the 07/02/2010 at 02:00	Minor	1971	16th	February 2001	9.25m May 1996
Peachester AL/TM	6.98m on the 07/02/2010 at 20:10	Minor	1954	39th	April 2009	9.75m Jul 1954
Woodford AL	4.98m on the 07/02/2010 at 15:55	Below Minor	1890	83rd	May 2009	11.73m Feb 1893
Slacks Creek (Reserve Park) AL	7.30m on the 07/02/2010 at 04:00	Below Minor	2001	15th	June 2009	10.90m Mar 2001
Marsden (First Avenue) AL	9.90m on the 07/02/2010 at 07:50	Minor	2004	1st	New Record	New Record
Slacks Creek (Loganlea Road) AL	3.82m on the 07/02/2010 at 12:40	Moderate	2001	5th	May 2009	10.50m Nov 2004
Benobble AL/TM	6.09m on the 07/02/2010 at 04:30	Major	1973	5th	January 2008	8.09m Jan 2008
Bromfleet AL/TM	14.19m on the 07/02/2010 at 09:00	Moderate	1928	17th	January 2008	16.36 Jan 1974
Canungra Army AL/TM	6.75m on the 07/02/2010 at 03:50	Moderate	1963	5th	January 2008	8.60m Jan 2008
Clagiraba Road AL	2.17m on the 07/02/2010 at 02:13	Moderate	2004	3rd	January 2008	2.98m Jan 2008
Oxenford Weir AL	5.12m on the 07/02/2010 at 06:30	Moderate	2004	1st	New Record	New Record
Coomera Shores AL	1.40m on the 07/02/2010 at 07:30	Minor	2000	1st	New Record	New Record
Little Nerang Dam AL	1.62m on the 07/02/2010 at 00:40	Minor	1996	5th	February 2008	3.30m Jan 2008
Mudgeeraba AL	3.36m on the 07/02/2010 at 10:05	Minor	1996	6th	January 2008	4.42m Jan 2008

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Condamine/Balonne						
Surat TM	8.39m on the 08/02/2010 at 08:10	Moderate	2004	2nd	Highest at time	12.02m Mar 2010
Tabers TM	5.49m on the 04/02/2010 at 22:20	Minor	1970	10th	February 2002	7.83m Mar 1997
Tindarra TM	7.32m on the 05/02/2010 at 07:20	Minor	2000	2nd	Highest at time	7.97m Mar 2010
Roma	7.00m on the 05/02/2010 at 16:40	Major	1982	5th	March 1997	8.10m Mar 2010
Garrabarra	7.60m on the 07/02/2010 at 00:30	Moderate	1950	5th	April 1990	10.50m Mar 2010
Karoola Park	6.40m on the 09/02/2010 at 09:00	Minor	1950	Equal 14th	December 2007	8.85m Mar 2010
Weribone TM	10.62m on the 09/02/2010 at 14:00	Major	1969	23rd	September 1998	13.71m Mar 2010
Warroo	8.50m on the 10/02/2010 at 12:00	Below Minor	1890	43rd	January 2004	16.61m 1890
Springfield	5.65m on the 08/02/2010 at 21:00	Below Minor	1950	34th	January 2008	10.92m Mar 2010
Woodlands	5.10m on the 09/02/2010 at 18:00	Minor	1950	37th	January 2008	7.62m July 1950
Old Cashmere TM	4.62m on the 11/02/2010 at 21:10	Below Minor	1969	34th	December 2007	9.72m Apr 1990
St George	7.15m on the 12/02/2010 at 09:00	Major	1968	30th	January 2008	13.39m Mar 2010
St George TM	6.97m on the 12/02/2010 at 08:00	Major	1972	25th	January 2008	12.94m Mar 2010
Whyenbah	6.70m on the 13/02/2010 at 09:00	Moderate	1950	47th	January 2008	8.18m Aug 1950
Warrego River						
Biddenham Manual/TM	2.10m on the 04/02/2010 at 21:00	Minor	1955	51st	January 2008	7.20m Apr 1990
The 27 Mile Garden Manual/TM	2.29m on the 01/02/2010 at 17:00	Minor	1956	57th	December 2009	6.98m Apr 1990
Charleville Manual/TM	2.76m on the 02/02/2010 at 09:00	Below Minor	1910	143rd	January 2010	8.54m Apr 1990
Warilda	5.50m on the 05/02/2010 at 06:00	Major	1990	10th	January 2008	6.45m Jan 2008
Binnowie Manual/TM	5.56m on the 05/02/2010 at 14:00	Moderate	1997	7th	January 2008	8.80m Feb 1997
Wyandra Manual/TM	6.31m on the 07/02/2010 at 19:00	Minor	1967	18th	January 2008	10.24m Apr 1990
Wallen	6.55m on the 09/02/2010 at 06:15	Moderate	1990	11th	January 2008	10.36m Apr 1990
Wallen TM	7.02m on the 10/02/2010 at 02:40	Moderate	2007	4th	January 2008	10.30m 7th Mar 2010
Cunnamulla Bridge	7.75m on the 10/02/2010 at 19:00	Moderate	1890	42nd	January 2008	11.07m 1890
Cunnamulla Weir TM	7.43m on the 11/02/2010 at 06:30	Moderate	1992	10th	January 2008	8.75m 8th Mar 2010

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Paroo River						
Quilpeta	3.65m on the 10/02/2010 at 09:00	Moderate	1968	Equal 6th	January 2007	6.00m+ Mar 2010
Eulo	3.40m on the 05/02/2010 at 06:00	Moderate	1890	Equal 160th	January 2010	6.27m 5th Mar 2010
	4.55m on the 14/02/2010 at 06:30	Major	1890	Equal 36th	January 2008	6.27m 5th Mar 2010
Carpet Springs	1.90m on the 11/02/2010 at 18:00	Minor	1974	6th	January 2007	3.00m 2nd Mar 2010
	2.05m on the 16/02/2010 at 09:00	Moderate	1974	4th	January 2004	3.00m 2nd Mar 2010
Caiwarro TM	2.89m on the 08/02/2010 at 05:00	Moderate	1967	55th	January 2008	4.99m 8th Mar 2010
	3.93m on the 18/02/2010 at 04:00	Major	1967	20th	December 2007	4.99m 8th Mar 2010
Hungerford	1.65m on the 10/02/2010 at 15:30	Moderate	1974	57th	January 2010	2.92m Apr 1990
	2.05m on the 20/02/2010 at 06:30	Major	1974	Equal 21st	January 2008	2.92m Apr 1990
Bulloo River						
Quilpie Man/TM	5.52m on the 06/02/2010 at 04:00	Major	1950	45th	January 2008	7.85m Apr 1963
	5.79m on the 11/02/2010 at 18:00	Major	1950	35th	January 2008	7.85m Apr 1963
South Comongin	4.20m on the 07/02/2010 at 06:00	Moderate	1959	33rd	January 2008	5.60m Dec 1975
	4.40m on the 12/02/2010 at 16:00	Moderate	1959	26th	January 2008	5.60m Dec 1975
Autumnvale TM	6.69m on the 17/02/2010 at 07:00	Moderate	1968	16th	January 2004	8.02m Jan 1974
Thargomindah	5.45m on the 15/02/2010 at 12:00	Moderate	1949	21st	January 2008	6.78m Jan 1974
Thomson and Barcoo Rivers and Cooper Creek						
Bowen Downs TM	4.56m on the 05/02/2010 at 09:00	N/A	1999	2nd	February 2009	4.84m Feb 2009
Muttaburra	4.75m on the 03/02/2010 at 09:00	Minor	1951	Equal 43rd	February 2009	8.48m Mar 1955
Camoola Park	4.15m on the 03/02/2010 at 06:00	Moderate	1954	27th	February 2009	7.42m Feb 2000
Longreach TM	4.77m on the 05/02/2010 at 05:00	Moderate	1971	23rd	January 2010	6.94m Feb 2000
Darr TM	3.43m on the 01/02/2010 at 11:00	N/A	1971	40th	February 2009	6.10m Feb 1997
Stonehenge (East)	3.01m on the 12/02/2010 at 05:00	Moderate	1968	46th	January 2004	6.88m Jan 1974
Stonehenge TM (West)	4.53m on the 11/02/2010 at 14:00	Moderate	1968	37th	January 2010	8.20m Jan 1974
Jundah	4.55m on the 13/02/2010 at 08:00	Moderate	1944	59th	January 2010	8.46m June 1955
Tambo	3.75m on the 09/02/2010 at 14:00	Minor	1983	14th	January 2010	5.75m May 1983

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Thomson and Barcoo Rivers and Cooper Creek con't						
Gillespie	5.00m on the 04/02/2010 at 10:00	Minor	1963	26th	January 2010	8.00m Apr 1990
	5.40m on the 10/02/2010 at 06:00	Minor	1963	Equal 19th	February 2010	8.00m Apr 1990
Duneira	1.90m on the 03/02/2010 at 09:00	Below Minor	1990	21st	January 2010	3.90m Apr 1990
	2.40m on the 10/02/2010 at 07:00	Minor	1990	10th	January 2008	3.90m Apr 1990
Blackall TM	4.03m on the 03/02/2010 at 23:00	Minor	1970	Equal 48th	January 2010	8.24m Apr 1990
	4.67m on the 10/02/2010 at 18:00	Minor	1970	19th	January 2010	8.24m Apr 1990
Barcaldine Weir TM	1.32m on the 01/02/2010 at 17:00	Below Minor	1970	15th	January 2010	4.21m Apr 1990
Coolagh	5.60m on the 02/02/2010 at 17:00	Moderate	1963	24th	January 2010	8.99m Apr 1963/90
	6.00m on the 05/02/2010 at 08:30	Major	1963	Equal 15th	January 2010	8.99m Apr 1963/90
	4.85m on the 13/02/2010 at 07:30	Minor	1963	34th	February 2010	8.99m Apr 1963/90
Isisford	6.65m on the 03/02/2010 at 18:30	Major	1968	12th	January 2010	9.20m Apr 1990
	5.56m on the 10/02/2010 at 12:30	Moderate	1968	17th	February 2010	9.20m Apr 1990
	4.90m on the 14/02/2010 at 18:00	Minor	1968	21st	February 2010	9.20m Apr 1990
Oma	6.20m on the 04/02/2010 at 06:00	Major	1990	6th	January 2010	8.02m Apr 1990
	5.55m on the 10/02/2010 at 18:00	Moderate	1990	8th	February 2010	8.02m Apr 1990
	4.55m on the 15/02/2010 at 06:00	Minor	1990	13th	February 2010	8.02m Apr 1990
Wahroonga	4.70m on the 05/02/2010 at 04:00	Moderate	1990	8th	January 2010	7.21m Apr 1990
	4.15m on the 11/02/2010 at 17:00	Moderate	1990	9th	February 2010	7.21m Apr 1990
	3.50m on the 16/02/2010 at 15:00	Minor	1990	13th	February 2010	7.21m Apr 1990
Glenlock	5.40m on the 07/02/2010 at 06:00	Moderate	1989	Equal 8th	January 2010	7.86m Apr 1990
	5.30m on the 10/02/2010 at 05:30	Moderate	1989	10th	February 2010	7.86m Apr 1990
	4.95m on the 13/02/2010 at 05:30	Minor	1989	12th	February 2010	7.86m Apr 1990
	4.45m on the 18/02/2010 at 15:00	Minor	1989	Equal 17th	February 2010	7.86m Apr 1990
Retreat TM	7.38m on the 09/02/2010 at 12:00	Major	2006	7th	January 2010	11.05m Jan 2008
	7.49m on the 11/02/2010 at 06:00	Major	2006	6th	January 2010	11.05m Jan 2008
	6.26m on the 14/02/2010 at 06:00	Major	2006	10th	February 2010	11.05m Jan 2008
	4.58m on the 20/02/2010 at 00:00	Moderate	2006	15th	February 2010	11.05m Jan 2008
Windorah	5.52m on the 16/02/2010 at 15:00	Major	1971	33rd	January 2010	8.48m Feb 1974

Gauging Station	Jan-Feb 2010 Peaks	Flood Classification	Start of Record	Ranking	Highest Since	Highest on Record
Thomson and Barcoo Rivers and Cooper Creek con't						
Durham Downs	3.60m on the 05/03/2010 at 06:00	Major	1949	6th	March 2000	4.40m Feb 1974
Noccundra Hotel	4.10m on the 05/02/2010 at 09:00	Major	1984	1st	New Record	New Record
Nappa Merrie TM	3.80m on the 03/02/2010 at 16:30	Minor	2004	Equal 32nd	February 2004	10.13m Feb 1974
	5.23m on the 14/02/2010 at 11:20	Minor	2004	19th	February 2004	10.13m Feb 1974
	5.46m on the 19/02/2010 at 06:00	Minor	2004	17th	February 2004	10.13m Feb 1974
	8.33m on the 13/03/2010 at 12:00	Moderate	2004	5th	February 2004	10.13m Feb 1974
Diamantina River						
Diamantina Lakes	5.03 on the 18/02/2010 at 03:00	Moderate	1967	35th	January 2010	7.71m Jan 1974
Gulf Rivers						
Einisleigh TM	7.47m on the 30/01/2010 at 22:00	Below Minor	1968	51st	February 2009	17.53m Jan 1974
Eveleigh	4.30m on the 30/01/2010 at 17:45	Minor	2002	5th	February 2009	7.55m Jan 2009
Rockfields TM	6.48m on the 30/01/2010 at 07:00	Minor	1967	44th	February 2009	12.75m Jan 1974
Georgetown	2.50m on the 29/01/2010 at 19:30	Below Minor	1956	5th	January 2009	7.50m 1956
Yappar River	2.90m on the 01/02/2010 at 19:00	Moderate	1974	7th	February 2009	7.05m 1974
Glenore Weir	11.64m on the 04/02/2010 at 23:10	Minor	1974	16th	February 2009	18.28m 1974
Normanton	3.58m on the 04/02/2010 at 07:30	Minor	1992	7th	February 2009	8.80m 1974
Hughenden	3.10m on the 31/01/2010 at 09:00	Moderate	1946	8th	February 2002	4.70m Feb 1976
Richmond TM	7.63m on the 31/01/2010 at 20:00	Moderate	1972	20th	February 2009	8.76m Jan 1984
Etta Plains	5.38m on the 01/02/2010 at 23:00	N/A	1974	6th	February 2009	11.30 Jan 1974
	8.40m on the 07/02/2010 at 23:00	N/A	1974	5th	February 2009	11.30 Jan 1974
Canobie TM	7.14m on the 01/02/2010 at 02:00	N/A	1974	17th	April 2006	11.10 Feb 1974
Walkers Bend TM	8.77m on the 02/02/2010 at 14:30	Major	1982	29th	February 2009	15.67m Feb 1974
	9.34m on the 03/03/2010 at 06:00	Major	1982	26th	February 2009	15.67m Feb 1974
Escott Lodge	10.60m on the 01/02/2010 at 06:00	Major	1971	5th	March 2001	11.20m Mar 1971
Burketown	5.45m on the 02/02/2010 at 07:00	Minor	1998	7th	February 2009	6.70m Mar 1998
Kowanyama Airport	3.42m on the 30/01/2010 at 15:00	Moderate	1999	24 th	February 2009	4.40m Feb 2008

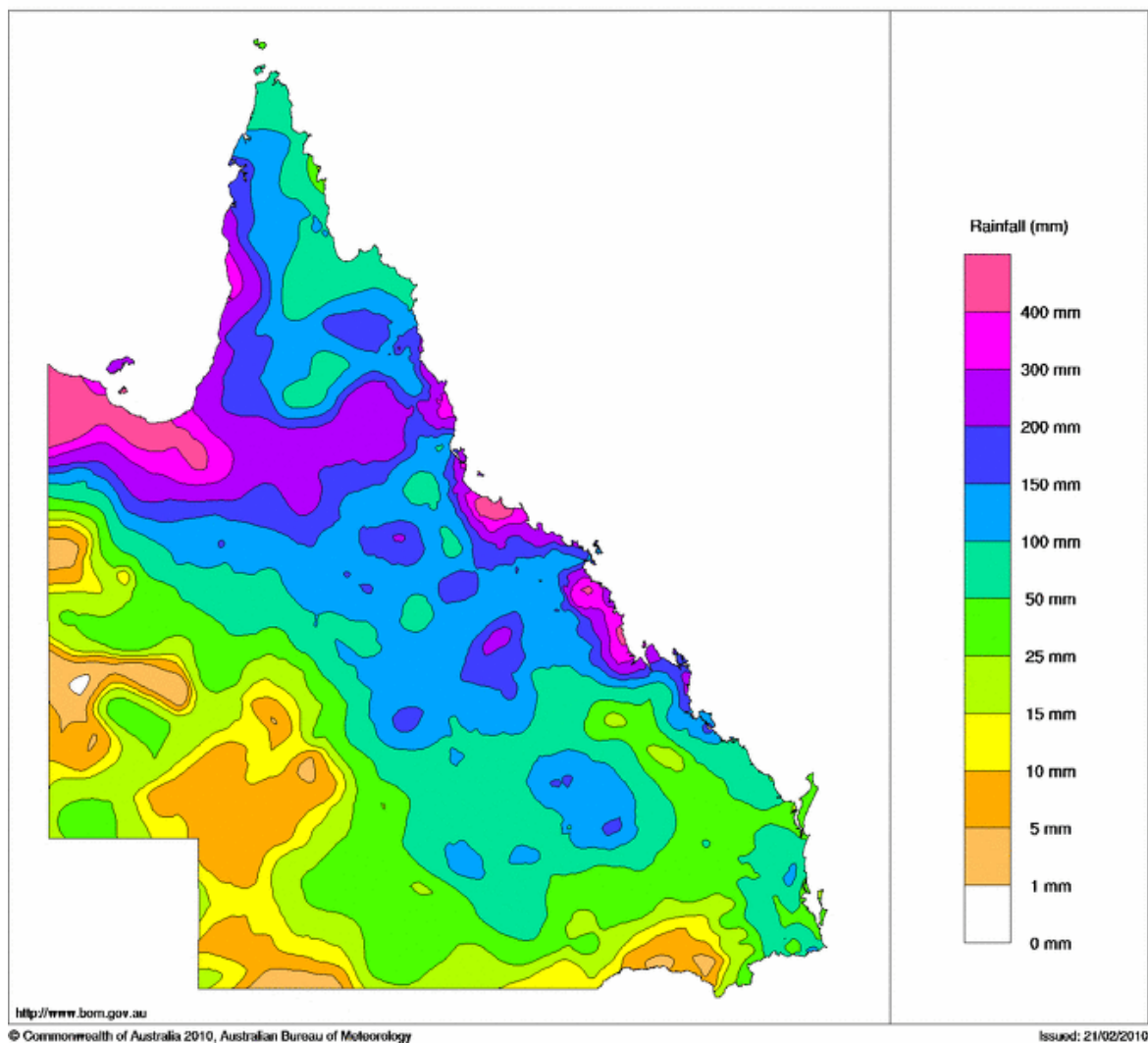
3.2 Rainfall Maps

The heaviest rainfall for the week ending the 1st of February occurred over the Gulf Country related with ex-TC Olga, and along the Central Coast between Townsville and Mackay associated with the monsoon trough crossing the east coast. See Figure 3.2.1.

Heaviest rainfall for the week ending the 8th of February occurred over the Capricornia District and Southeast Queensland as shown in Figure 3.2.2. The Capricornia district rainfall occurred between the 1st and 3rd of February as ex-TC Olga moved through the central interior. The Southeast Qld rainfall occurred between the 6th and 8th of February as an upper trough interacted with ex-TC Olga and steered the system in an easterly direction across the southern border areas.

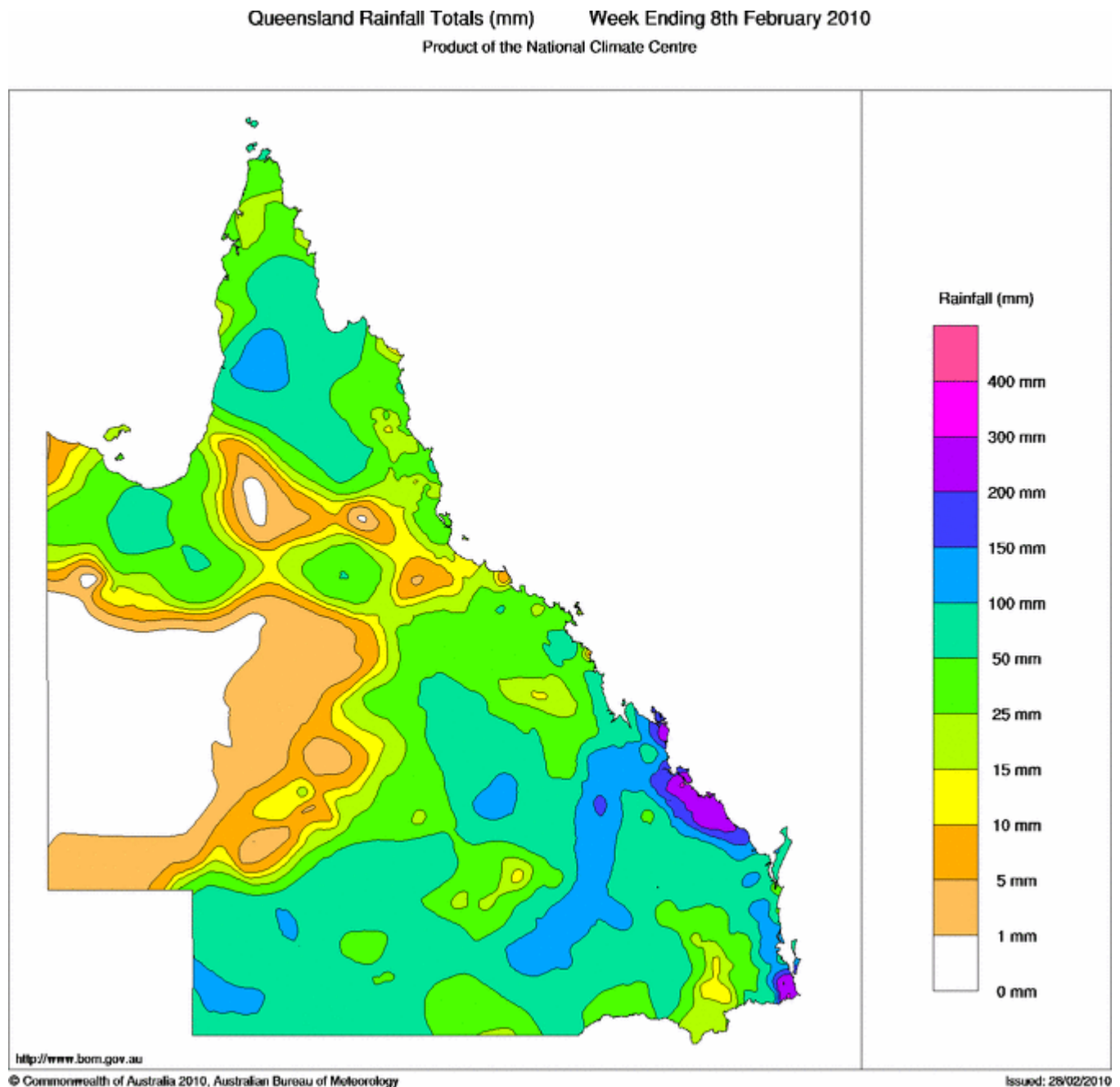
Figure 3.2.1 Rainfall map of Queensland for the week ending the 1st of February 2010.

Queensland Rainfall Totals (mm) Week Ending 1st February 2010
 Product of the National Climate Centre



The above map shows the rainfall associated with Tropical Cyclone Olga as the weakened system wove a path across northern Qld and then redeveloped into a tropical cyclone in the southern Gulf of Carpentaria and crossed the coast near Karumba.

Figure 3.2.2 Rainfall map of Queensland for the week ending the 8th February 2010.



The above map shows rainfall associated with Ex-Tropical Cyclone Olga as the system tracked south, then southwest through the state, before a deep trough steered the system east across the south of the state. Olga dragged the monsoon trough southward to the Capricornia coast, contributing to heavy rainfall in this region.

The following Figures 3.2.3 to 3.2.5 show rainfall totals associated with TC Olga across the Queensland Central Coast, North Queensland, and Queensland Capricornia Coast.

Figure 3.2.3 Rainfall map for the Central Coast of Qld between 24th Jan and 1st Feb 2010.

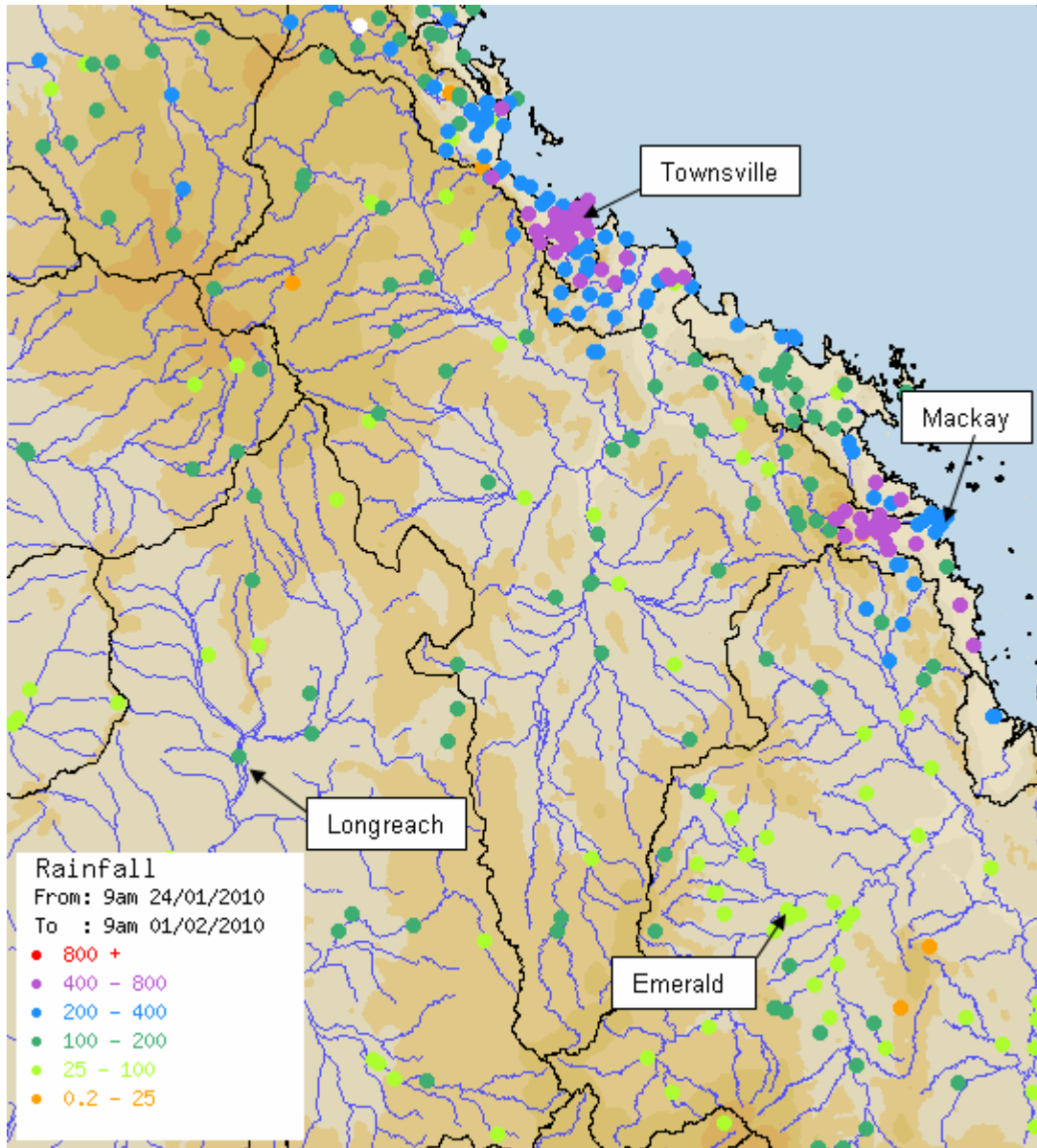


Figure 3.2.4 Rainfall map for North Qld between 24th Jan and 1st of Feb 2010.

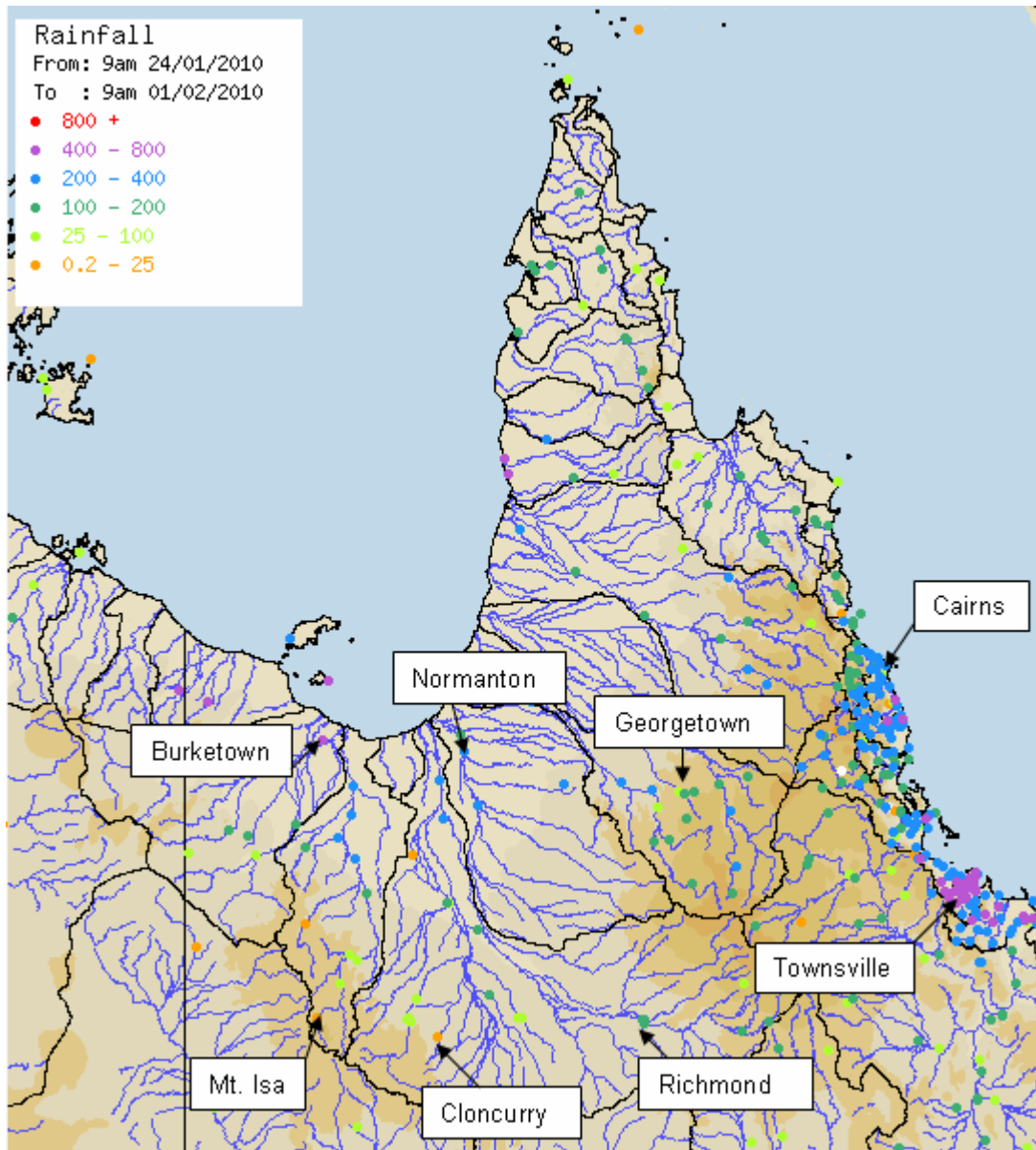
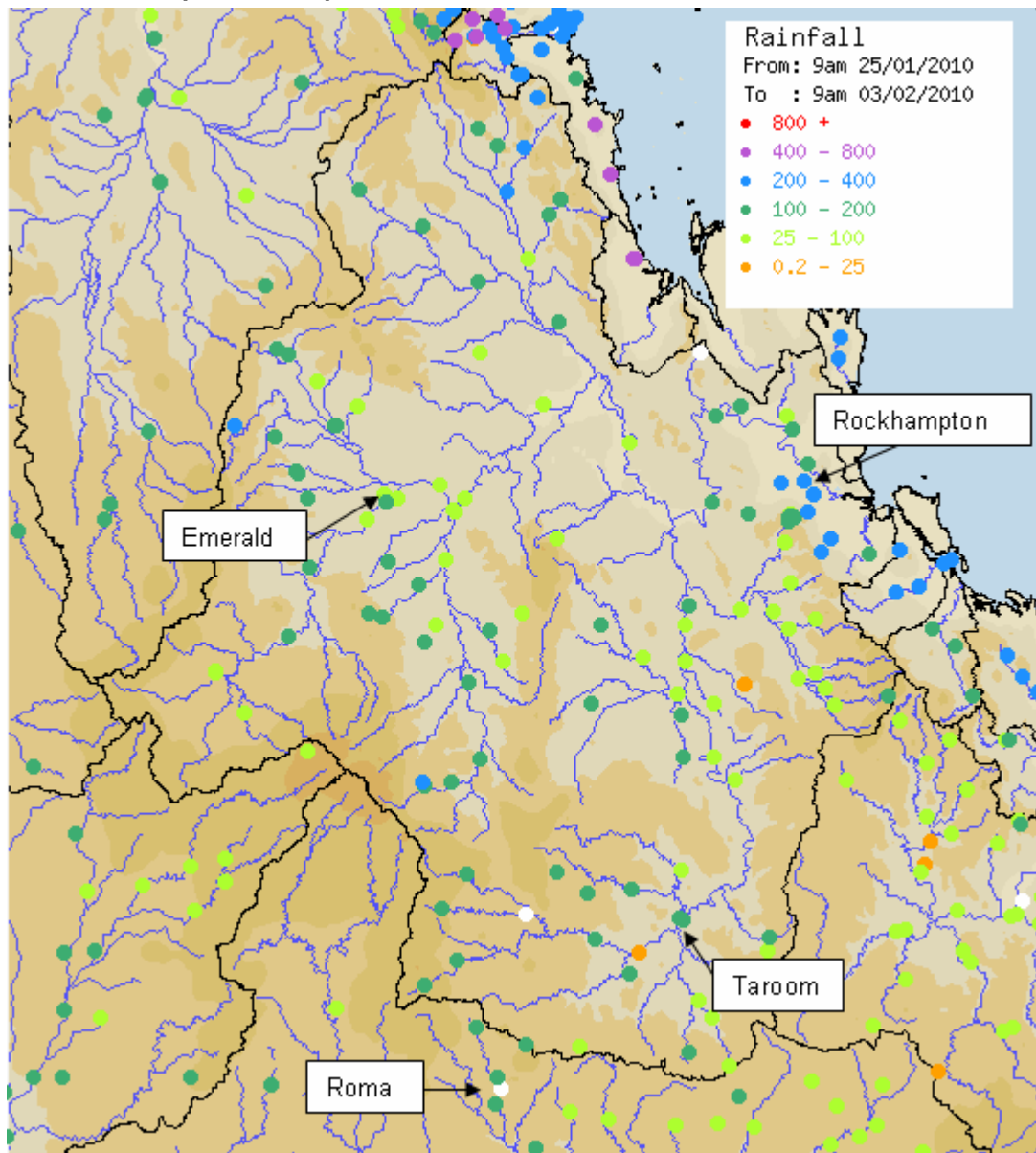


Figure 3.2.5 Rainfall map for the Capricornia Coast between 25th Jan and 3rd of Feb 2010.



3.3 Rainfall Intensity

The most intense rainfall associated with TC Olga was recorded during the 24 hours to 9am on Sunday 7th February at the base of Mount Tamborine, along the middle reaches of the Albert River and in the Coomera River catchment.

The hourly hyetographs for Alert stations at Clagiraba Road, Mount Tamborine and Canungra Army Base on the Coomera River, and Bromfleet and Benobble in the Albert River catchment for the 24-hour period to 9am on the 7th of February are shown in Figures 3.3.2 to 3.3.4. It is clear from these diagrams that the heaviest rainfall over the region occurred between midnight and 6am on the 7th of February.

Intensity Frequency Duration data, for stations recording the most intense rainfall, are shown in Figures 3.3.5 to 3.3.7. Stations included are, Clagiraba Road, Mt Tamborine and Canungra Army Alert stations on the Coomera River, Benobble Alert on Canungra Creek and Bromfleet Alert on the Albert River. The most statistically significant short duration rainfall occurred at Clagiraba Road Alert and Mt Tamborine Alert on the Coomera River and Bromfleet Alert on the Albert River, where the observed totals for the 3 hour to 24 hour durations in the 72 hour period to 9am on the 8th of February were assessed as being greater than 1% AEP (100 year Average Recurrence Interval (ARI)) intensity.

Note: A flood frequency analysis would be required to assess the probability of flood levels reached at each location. The frequency analysis in this report is for rainfall only.

Figure 3.3.1 Record Rainfall totals recorded in the 24 hours to 9am on the 7th Feb 2010.

Location	District	New Record	Previous Record	Years of Record	Annual Extreme	Stn No	Lat Long	% of average total monthly rainfall
Canungra Finch Road	QLD 40	305.0 mm 7th Also new annual extreme	274.3 mm 18 Feb 1956	92	274.3 mm 18 Feb 1956	40042	28S 153.2E	185 % of 164.7 mm average total Feb rainfall
Mt Tamborine Fern St	QLD 40	364.4 mm 7th	306.1 mm 06 Feb 1931	105	563.2 mm 27 Jan 1974	40197	28S 153.2E	166 % of 219.8 mm average total Feb rainfall
Maclean Bridge	QLD 40	128.8 mm 7th	102.0 mm 02 Feb 1990	27	161.6 mm 16 Jan 2004	40542	27.8S 153E	128 % of 100.7 mm average total Feb rainfall

Figure 3.3.2. Hourly Hyetographs for Clagiraba Rd AI and Mt Tamborine AI - Coomera River.

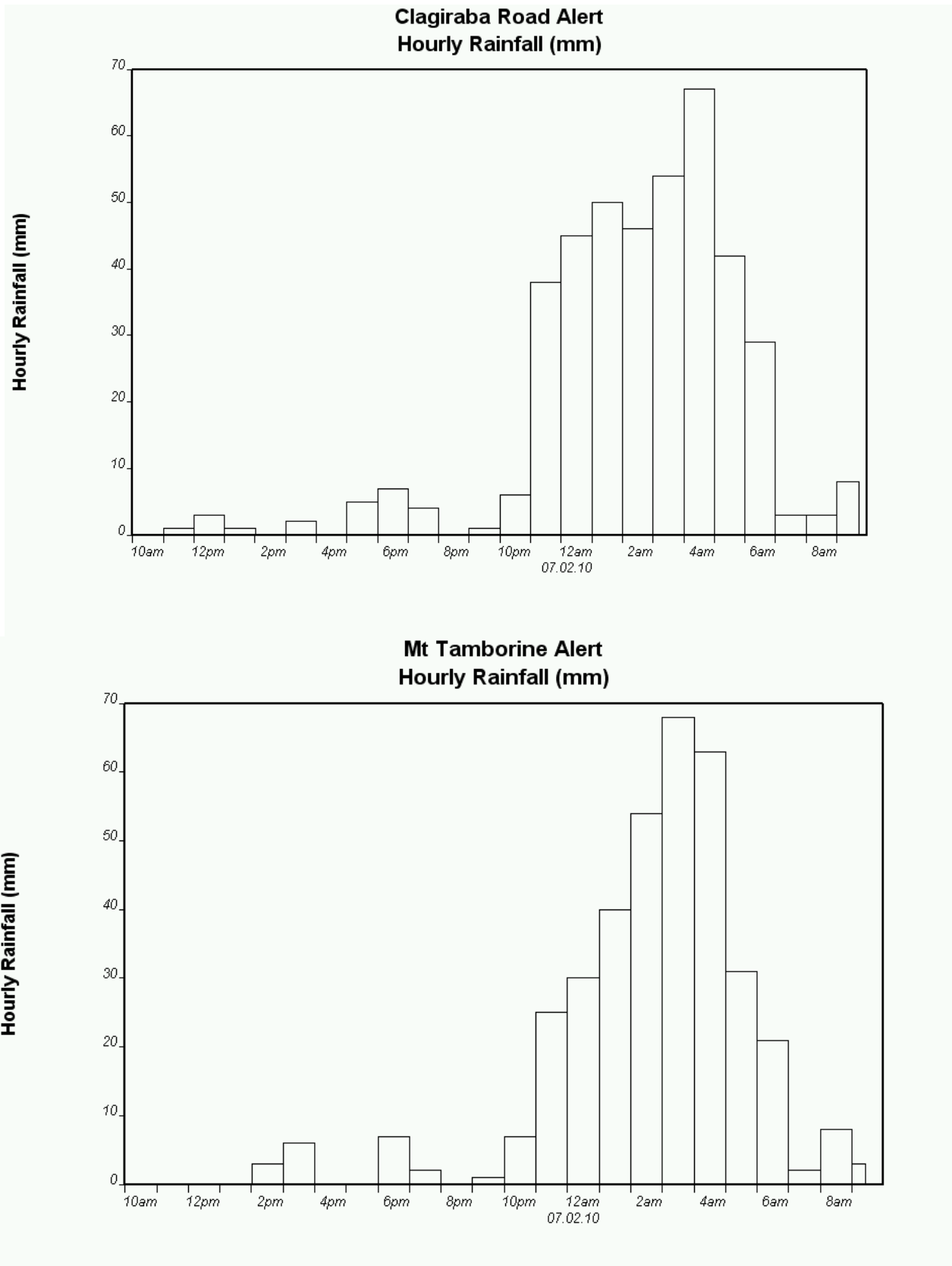


Figure 3.3.2. (con't) Hourly Hyetograph for Canungra Army AI - Coomera River.

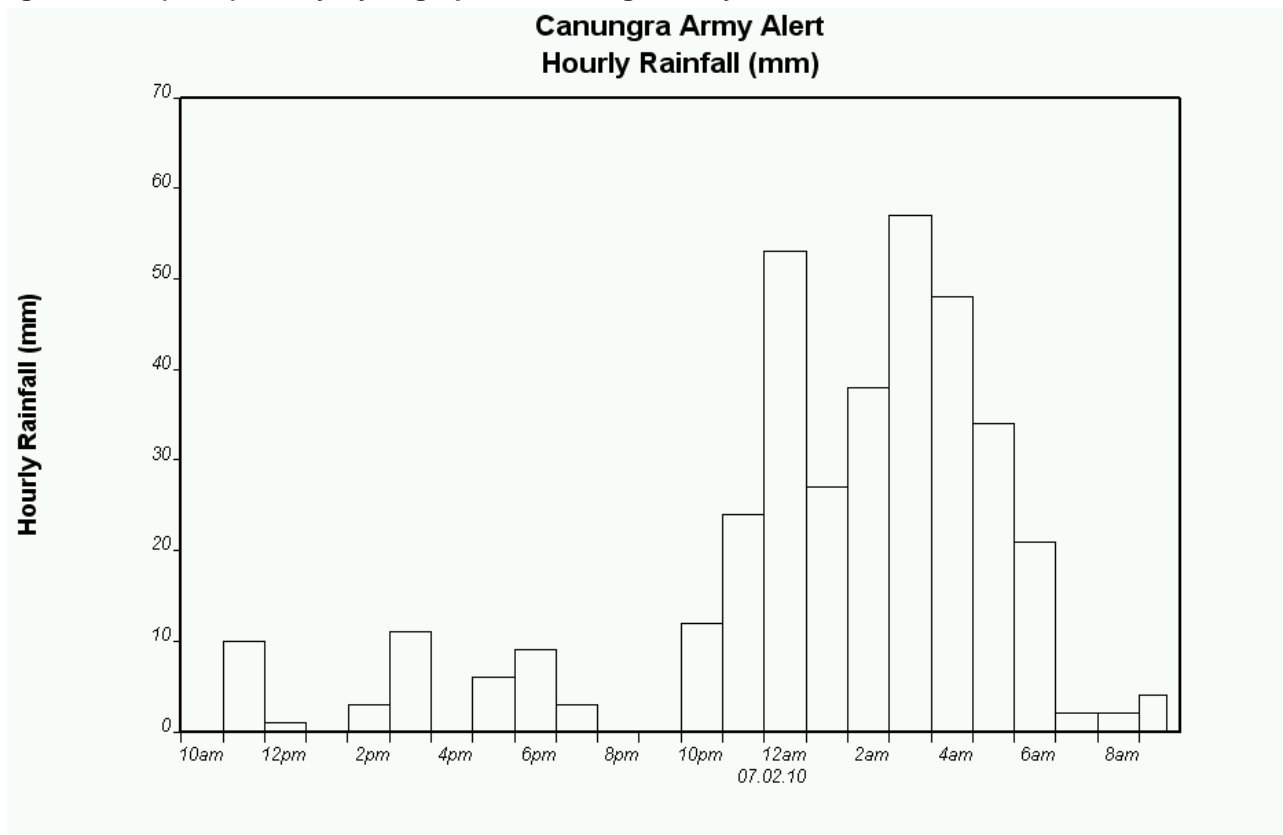


Figure 3.3.3. Hourly Hyetographs for Benobble AI and Bromfleet AI - Albert River.

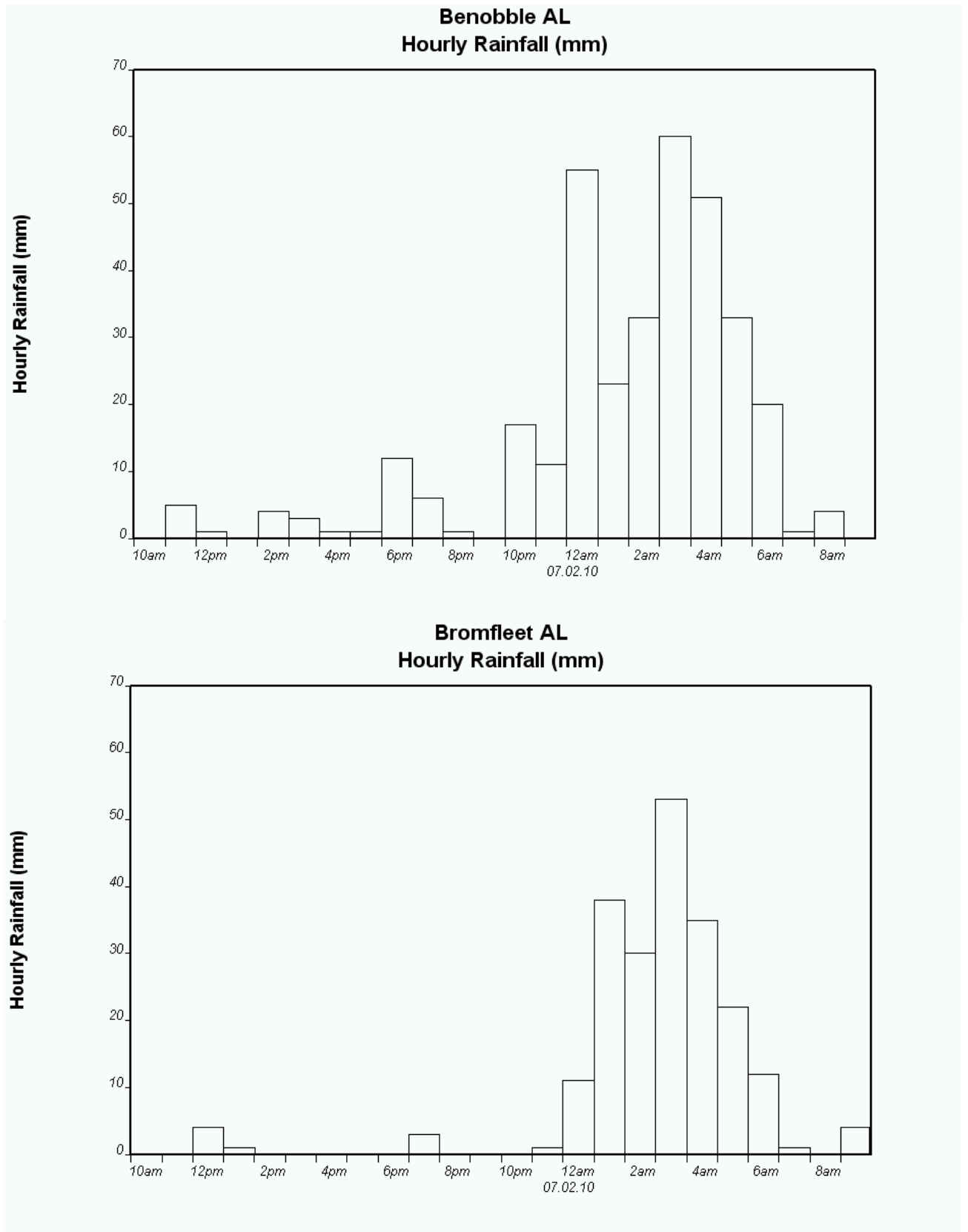
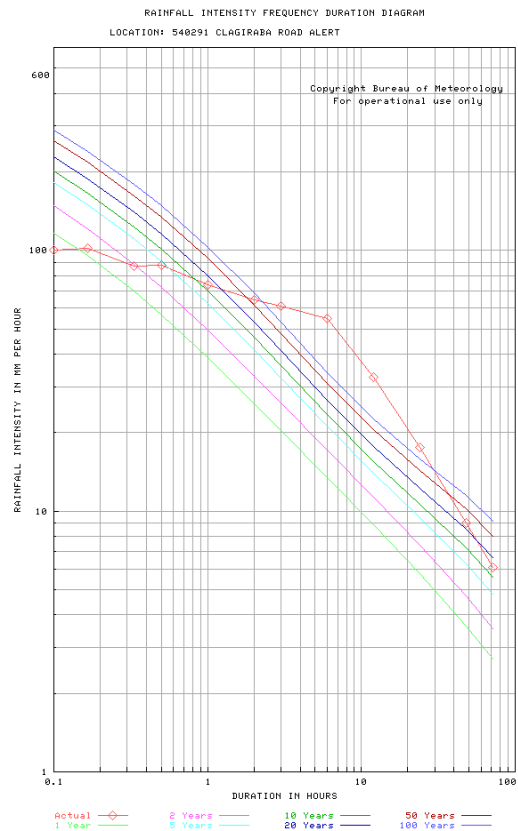


Figure 3.3.4. Rainfall IFD Analysis - Coomera River.

RAINFALL INTENSITY FREQUENCY DURATION ANALYSIS		
LOCATION: 540291 CLAGIRABA ROAD ALERT		
Analysis of the rainfall for the 72 hours to Mon Feb 8 09:00:00 2010		
Rain (mm)	Period Ending	ARI (years)
8	5 mins ending at 03:00:00 07/02/2010	<1
10	6 mins ending at 23:16:00 06/02/2010	<1
17	10 mins ending 23:20:00 06/02/2010	1-2
29	20 mins ending at 23:25:00 06/02/2010	2
44	30 mins ending at 23:25:00 06/02/2010	2-5
74	60 mins ending at 23:30:00 06/02/2010	10-20
129	2 hours ending at 04:15:00 07/02/2010	50-100
184	3 hours ending at 04:30:00 07/02/2010	>100
329	6 hours ending 04:35:00 07/02/2010	>100
390	12 hours ending at 08:45:00 07/02/2010	>100
420	24 hours ending at 13:15:00 07/02/2010	>100
432	48 hours ending at 08:00:00 08/02/2010	20-50
437	72 hours ending at 09:00:00 08/02/2010	10-20



RAINFALL INTENSITY FREQUENCY DURATION ANALYSIS		
LOCATION: 040335 MT TAMBORINE ALERT		
Analysis of the rainfall for the 72 hours to Mon Feb 8 09:00:00 2010		
Rain (mm)	Period Ending	ARI (years)
10	5 mins ending at 02:10:00 07/02/2010	1
11	6 mins ending at 02:11:00 07/02/2010	1
17	10 mins ending 02:10:00 07/02/2010	1-2
28	20 mins ending at 02:10:00 07/02/2010	1-2
39	30 mins ending at 02:35:00 07/02/2010	2-5
73	60 mins ending at 02:35:00 07/02/2010	10-20
132	2 hours ending at 03:20:00 07/02/2010	50-100
188	3 hours ending at 04:20:00 07/02/2010	>100
296	6 hours ending 04:40:00 07/02/2010	>100
352	12 hours ending at 08:25:00 07/02/2010	>100
378	24 hours ending at 13:25:00 07/02/2010	>100
395	48 hours ending at 08:00:00 08/02/2010	20-50
395	72 hours ending at 09:00:00 08/02/2010	10-20

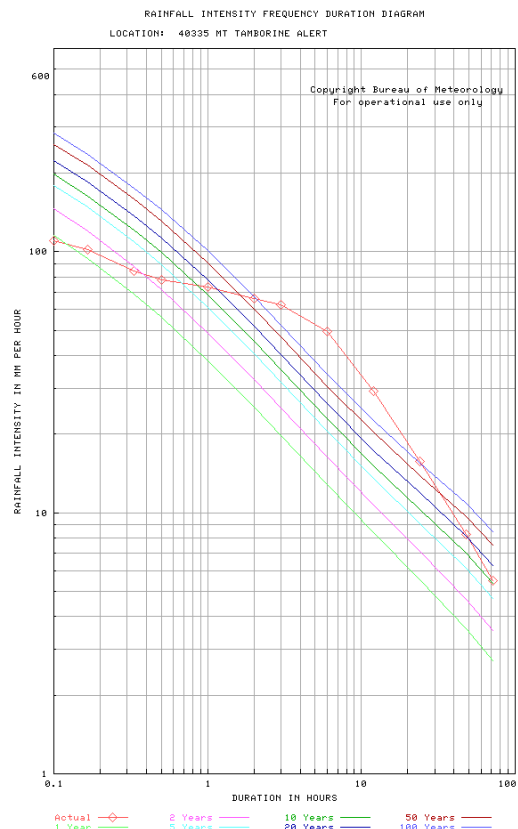


Figure 3.3.4. (con't) Rainfall IFD Analysis - Coomera River.

RAINFALL INTENSITY FREQUENCY DURATION ANALYSIS		
LOCATION: 540290 CANUNGRA ARMY ALERT		
Analysis of the rainfall for the 72 hours to Mon Feb 8 09:00:00 2010		
Rain (mm)	Period Ending	ARI (years)
7	5 mins ending at 23:20:00 06/02/2010	<1
8	6 mins ending at 23:21:00 06/02/2010	<1
14	10 mins ending 23:25:00 06/02/2010	<1
27	20 mins ending at 23:35:00 06/02/2010	1-2
39	30 mins ending at 23:35:00 06/02/2010	2-5
64	60 mins ending at 03:35:00 07/02/2010	5-10
111	2 hours ending at 03:40:00 07/02/2010	20-50
154	3 hours ending at 03:40:00 07/02/2010	50-100
264	6 hours ending 04:45:00 07/02/2010	>100
321	12 hours ending at 08:40:00 07/02/2010	>100
368	24 hours ending at 10:30:00 07/02/2010	50-100
386	48 hours ending at 08:10:00 08/02/2010	20-50
386	72 hours ending at 09:00:00 08/02/2010	10-20

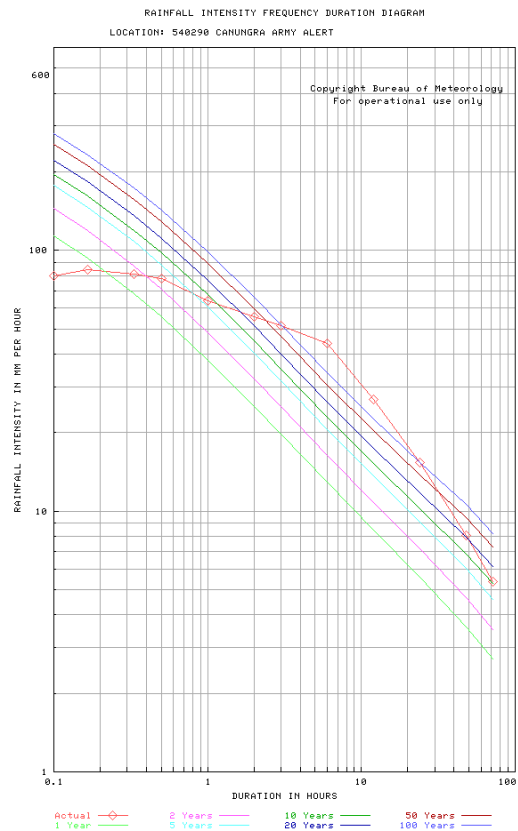
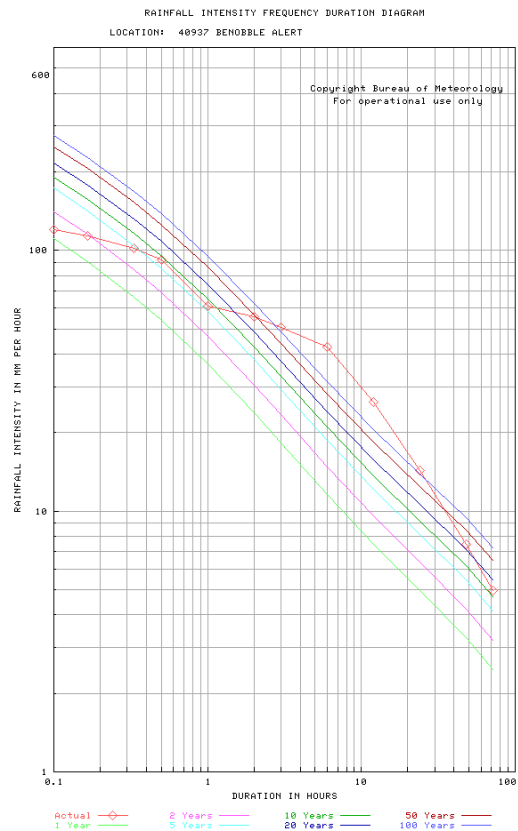
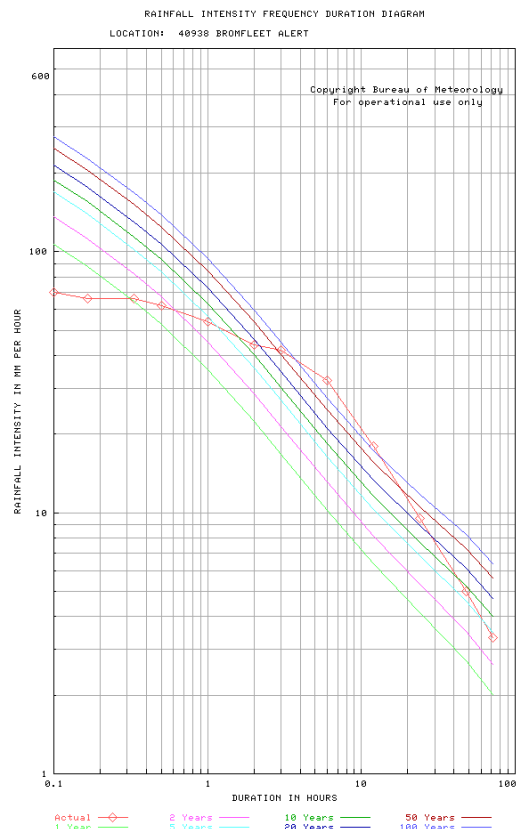


Figure 3.3.5. Rainfall IFD Analysis - Albert River.

RAINFALL INTENSITY FREQUENCY DURATION ANALYSIS		
LOCATION: 040937 BENOBBLE ALERT		
Analysis of the rainfall for the 72 hours to Mon Feb 8 09:00:00 2010		
Rain (mm)	Period Ending	ARI (years)
11	5 mins ending at 23:25:00 06/02/2010	1-2
12	6 mins ending at 23:26:00 06/02/2010	1-2
19	10 mins ending 23:25:00 06/02/2010	2
34	20 mins ending at 23:30:00 06/02/2010	5
46	30 mins ending at 23:30:00 06/02/2010	5-10
61	60 mins ending at 03:20:00 07/02/2010	5-10
111	2 hours ending at 04:05:00 07/02/2010	20-50
152	3 hours ending at 04:30:00 07/02/2010	>100
256	6 hours ending 04:55:00 07/02/2010	>100
314	12 hours ending at 05:40:00 07/02/2010	>100
344	24 hours ending at 10:30:00 07/02/2010	>100
358	48 hours ending at 08:35:00 08/02/2010	20-50
358	72 hours ending at 09:00:00 08/02/2010	10-20



RAINFALL INTENSITY FREQUENCY DURATION ANALYSIS		
LOCATION: 040938 BROMFLEET ALERT		
Analysis of the rainfall for the 72 hours to Mon Feb 8 09:00:00 2010		
Rain (mm)	Period Ending	ARI (years)
6	5 mins ending at 00:40:00 07/02/2010	<1
7	6 mins ending at 00:41:00 07/02/2010	<1
11	10 mins ending 02:40:00 07/02/2010	<1
22	20 mins ending at 02:40:00 07/02/2010	1-2
31	30 mins ending at 02:50:00 07/02/2010	1-2
54	60 mins ending at 02:55:00 07/02/2010	2-5
88	2 hours ending at 03:55:00 07/02/2010	10-20
126	3 hours ending at 03:20:00 07/02/2010	50-100
193	6 hours ending 05:25:00 07/02/2010	>100
215	12 hours ending at 10:55:00 07/02/2010	>100
228	24 hours ending at 20:35:00 07/02/2010	20-50
240	48 hours ending at 07:45:00 08/02/2010	5-10
240	72 hours ending at 09:00:00 08/02/2010	2-5



3.4 Rainfall Totals

Significant rainfall totals across Queensland associated with TC Olga are provided below in Tables 3.4.1 to 3.4.8. The highest 24 hour rainfall of 415mm was recorded on the 7th of February at Clagiraba Road Alert on the Coomera River in southeast Queensland (Refer to Table 3.4.8). There were also 24-hour rainfall totals of above 300mm recorded in the Pioneer River catchment to 9am on the 31st of January.

The abbreviations used in the following tables include:

- AL - ALERT Radio Telemetry
- TM - Telephone Telemetry
- AWS - Automatic Weather Station
- SYN - Bureau Synoptic Station

Note: * signifies automatic station, N/A signifies missing data. Multiple day totals are shaded.

Refer to the complete list of [maps of the relevant river catchments and flood warning stations](#) for the rainfall locations used in Tables 3.4.1 to 3.4.8.

Table 3.4.1 Significant rainfall totals - Central Coast Region

Rainfall totals recorded from the 24th of January to the 1st of February as TC Olga tracked a path across northern Queensland.

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Carmila TM *	6	72	124	2	0	0	9	102	270	585
Mt Christian TM *	7	102	117	0	0	0	0	129	219	574
Pioneer										
Septimus TM *	3	102	68	10	0	0	0	242	8	433
Greenmount AL *	9	69	76	30	0	0	0	163	4	351
Ridgeland AL *	11	123	78	27	5	0	2	301	7	554
Teemburra Dam Hw TM *	5		81	12	0	0	0	278	5	381
Teemburra Dam AL *	5	88	81	12	0	1	1	314	5	507
Whiteford's TM *	2	147	88	36	1	0	1	220	10	505
Whiteford's AL *	2	148	86	37	0	0	1	225	10	509
Hannaville AL *	4	106	46	25	0	0	0	184	23	388
Sarich's AL *	2	140	82	38	0	0	0	227	5	494
Clarke Range AL *	57	187	52	53	13	0	3	144	14	523
Clarke Range2 AL *	57	194	57	56	14	0	3	147	15	543
Dalrymple Heights	17	213	70	70	5	0	0	197	18	590
Eungella AL *	16	202	69	67	4	0	4	187	19	568
Finch Hatton AL *	7	98	66	32	0	0	5	335	3	546
Gargett AL *	6	76	61	12	0	0	1	305	3	464
Dow's Creek AL *	18	88	67	12	0	0	0	338	13	536
Mirani Weir TM *	6	97	69	7	1	0	0	274	6	460
Mirani Weir AL *	7	109	77	7	1	0	1	312	7	521
Mirani	7	92	80	11	0		1	198	27	416
Dumbleton Rocks AL *	12	62	99	30	0	0	0	143	6	352
Hospital Bridge AL *	6	70	107	16	0	0	0	118	2	319
Mackay AWS *	4	30	96	15	0	0	0	93	2	240

Mackay Airport AWS *	4	55	89	15	2	0	0	96	3	264
Mackay AL *	4	42	96	12	0	0	0	93	2	249
Rowallan Park AL *	7	82	121	13	0	0	0	165	4	392
Gooseponds AL *	6	42	103	23	0	0	0	119	4	297
Bakers Creek AL *	8	60	125	10	0	0	0	103	3	309
Homebush TM *	3	179	119	19	0	0	1	195	13	529
Forbes Road TM *		46	113	11	9	1	5	186	17	388
Mt Roy TM *	12	76	101	14	1	0	1	161	11	377
Mt Jukes	26	166	110	16	2		4	257	22	603
Stafford Crossing TM *	13	86	116	38	11	0	6	107	12	389
Calen TM *	3	95	110	6	2	0	3	230	17	466
Maximum Rainfall	57	213	125	70	14	1	6	338	27	603
Numerical Average	11	102	84	23	2	0	1	196	9	425

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Proserpine										
Hecate	21	55	21	14	13		24	59	5	212
Proserpine AWS *	19	43	16	8	13	0	27	51	0	177
Lower Gregory TM *	5	44	30	4	10	0	36	49	4	182
Maximum Rainfall	21	55	30	14	13	0	36	59	5	212
Numerical Average	15	47	22	9	12	0	29	53	3	190

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Don										
Upper Don AL *	6	33	3	6	4	0	18	45	0	115
Emu Creek AL *	6	34	4	6	15	0	28	75	1	169
Ida Creek AL *	6	7	9	4	18	0	28	58	3	133
Moss Vale AL *	4	4	11	4	10	0	22	72	1	128
Mt Dangar AL *	1	5	22	6	16	0	30	54	8	142
Reeves AL *	2	7	31	9	34	1	36	71	1	192
Bowen Pump Station AL *	1	2	17	44	60	6	45	37	0	212
Bowen SYN	3	5	18	51	75	7	29	37	0	225
Koonandah TM *	1	2	33	43	59	6	55	49	0	248
Guthalungra TM *	1	3	23	44	90	6	53	84	0	304
Maximum Rainfall	6	34	33	51	90	7	55	84	8	304
Numerical Average	3	10	17	22	38	3	34	58	1	187

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Burdekin										
Glen Harding	3	10	18	18	84	20				153
Lucky Springs		3	6	2	18	20	28	28		104
Greenvale Township		2	11	2	17	29	31	22		114
Blue Range TM *	0	4	26	1	32	2	11	13	0	89
Gregory Springs		2	8	4	4	12	33	49		112
Mt Fullstop TM *	0	5	68	0	43	3	28	11	0	158
Mt Bradley TM *		0	17	6	19	3	8	11	0	64

Laroonna TM *		30	21	3	18	13	1	7		93
Paluma AL *	3	130	79	38	44	69	84	130		577
Paluma	5	142					315	140		602
Hillgrove		15	23	4	38	17		23		120
Toomba		14	20	30	25	4	24	26		143
Keelbottom TM *	0	65	30	35	36	20	42	42	0	270
Charters Towers SYN	0		23	4	25	0	11	37	0	100
Sellheim AL *	0	5	15	9	32	0	45	34	0	140
Ravenswood AL *	0	9	26	6	7	0	31	141	0	220
Ravenswood		9	33	8	8	0	31	126		216
Belyando Crossing TM *	0	3	1	21	0	0	0	98	2	125
Eaglefield TM *	0	2	1	0	0	0	0	180	3	186
Bowen Development Rd TM *	0	2	0	1	0	0	0	70	0	73
St Anns TM *	0	10	24	0	4	0	1	70	2	111
St Anns AL *	0	12	27	0	5	0	2	79	3	128
Scartwater AL *	0	8	1	1	14	0	3	66	2	95
Pentland TM *	0	0	11	17	30	0	15	27	0	100
Balfes Creek		26	10	20	25	3		31		115
Taemas AL *	0	0	2	0	12	0	22	58	0	94
Taemas TM *	0	0	2	0	11	0	21	55	1	90
Burdekin Dam		9	8	7	14		18	76	2	134
Burdekin Dam AL *	0	2	3	3	8	0	10	104	0	130
Blenheim AL *	0	22	18	0	0	0	0	33	45	118
Old Racecourse TM *	5	57	27	10	0	0	3	77	11	190
Eungella Dam AL *	5	63	23	3	0	0	1	63	14	172
Urannah TM *	0	47	17	0	0	0	1	43	34	142
Sutherland AL *	1	37	9	2	1	0	4	44	21	119
The Stonewall AL *	0	12	6	2	0	0	1	37	35	93
Jacks Creek AL *	0	11	0	0	0	0	2	29	28	70
Weetalaba AL *	0	25	1	0	0	0	0	45	39	110
Collinsville SYN	1	6	3	5	0	0	10	47	14	87
Myuna AL *	0	2	16	14	3	0	6	66	9	116
Dalbeg AL *	0	4	13	21	7	0	44	89	1	179
Upper Bogie AL *	4	16	16	3	8	0	26	100	0	173
Mt Pleasant AL *	0	8	15	8	13	0	23	144	0	211
Eton Vale AL *	0	3	38	24	11	0	20	86	0	182
Strathbogie AL *	1	6	21	17	17	0	23	91	0	176
Millaroo AL *	0	19	13	18	2	2	28	62	0	144
Clare		5	30	23	48	6	57	91		260
Clare AL *	1	19	25	24	64	13	58	88	0	292
Inkerman Bridge AL *	3	11	20	20	112	37	152	71	0	426
Rita Island AL *	11	16	13	26	105	29	202	73	0	475
Groper Creek AL *	9	12	3	23	58	16	153	56	0	330
Ayr AWS *	7	20	27	30	135	30	134	81	0	464
Alva Beach AWS *	5	19	5	23	53	11	92	70	0	278
Maximum Rainfall	11	142	79	38	135	69	202	180	45	602
Numerical Average	2	19	17	11	24	7	38	65	7	182

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Haughton										
Mingela AL *	0	16	13	14	21	2	72	101	0	239
Upper Reid AL *	0	54	14	22	85	13	47	124	0	359
Cameron Hill AL *	0	15	17	12	52	9	98	22	0	225
Four Mile AL *	0	19	37	20	23	2	120	113	0	334
Mt Piccaninny TM *	0	22	36	29	73	18	85	72	0	335
Mt Piccaninny AL *	0	21	34	28	70	18	83	74	0	328
Donnington Airpark AL *	1	23	30	36	152	7	55	55	0	359
Upper Major Creek AL *	6	65	48	85	175	21	73	97	0	570
Major Creek AL *	2	24	40	42	108	15	111	166	0	508
Major Creek TM *	0	23	36	38	98	13	103	144	0	455
Powerline TM *				36	90	7		85	0	218
Powerline AL *	3	20	32	33	83	9	74	82	0	336
Giru North	5	21	62	46	81	21	136	80		452
Giru AL *	3	19	53	32	68	12	131	74	0	392
Upper Barrattas AL *	0	29	18	35	29	6	45	98	0	260
Maximum Rainfall	6	65	62	85	175	21	136	166	0	570
Numerical Average	1	27	34	34	81	12	88	92	0	358

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Ross/Bohle										
Cungulla AL *	2	21	40	81	60	23	81	62	0	370
Alligator Creek AL *	0	24	19	33	88	63	71	89	0	387
Stuart AL *	0	55	39	46	127	92	89	91	0	539
Stuart Creek AL *	0	38	36	41	130	80	80	90	0	495
Calcium AL *	0	45	26	56	146	17	79	94	0	463
Nettlefield AL *	0	23	50	14	70	20	52	147	0	376
Woodlands AL *	0	18	49	30	61	49	90	83	0	380
Brabons AL *	0	41	80	26	94	48	93	153	0	535
Mcdonalds AL *	1	11	25	31	106	34	59	47	0	314
Cormacks AL *	0	14	34	30	65	38	64	78	0	323
Gleasons Mill AL *	0	47	48	42	99	59	68	71	0	434
Ross River Dam AL *	0	48	33	45	88	58	67	82	0	421
The Pinnacles AL *	0	49	80	26	120	55	63	79	0	472
Black Weir (Riverway) AL *	0	80	74	42	131	47	71	102	0	547
Kirwan AL *	0	77	73	45	113	42	71	102	0	523
Aplin Weir AL *	0	51	27	43	116	46	90	87	0	460
Mysterton AL *	1	57	33	49	109	55	87	92	0	483
Castle Hill AL *	2	64	41	54	95	62	70	80	0	468
Louisa Creek AL *	1	66	59	50	102	52	78	93	0	501
Cluden AL *	0	39	32	50	119	77	85	92	0	494
North Ward AL *	2	77	53	56	84	65	64	94	0	495
Pallarenda AL *	3	55	50	59	88	59	61	78	0	453
South Townsville AL *	1	59	29	56	97	60	70	83	0	455
Mt Margaret AL *	0	65	63	73	113	40	53	102	0	509

Deeragun AL *	0	75	63	49	103	53	50	91	0	484
Little Bohle River AL *	0	68	64	56	144	42	63	92	0	529
Bohle River AL *	0	86	69	41	138	39	56	90	0	519
Bohle River TM *		74	70	44	142	41	58	92	0	521
Mt Bohle AL *	0	72	62	39	95	47	46	85	0	446
Townsville Airport AL *		16	48	44	87	55	84	86	0	420
Townsville AWS *	2	70	44	42	81	51	78	78	0	446
Bushland Beach AL *	4	73	34	44	80	49	39	80	0	403
Nelly Bay AL *	2	29	27	80	52	44	51	115	0	400
Nelly Bay			19	107	66	51	59	138	0	440
Picnic Bay AL *	3	35	39	88	78	46	47	129	0	465
Maximum Rainfall	5	86	80	107	146	92	93	153	0	547
Numerical Average	1	52	48	51	101	51	69	94	0	459

Station Name	24 hour rainfall to 9am on									Total (mm)
	Jan								Feb	
	24	25	26	27	28	29	30	31	1	
Black R to Crystal Ck										
Upper Black River AL *	0	84	84	60	81	38	61	161	0	569
Black River AL *	0	58	63	57	90	42	50	75	0	435
Black River TM *	0	56	50	61	86	44	50	49	0	396
Upper Bluewater AL *	0	71	33	50	77	53	67	159	0	510
Toolakea AL *	3	47	12	43	46	95	36	60	0	342
Toomulla AL *	2	47	11	16	53	85	27	43	0	284
Bluewater AL *	2	49	25	38	75	92	41	66	0	388
Bluewater TM *	2	44	20	39	66	91	43	63	0	368
Woolshed AWS *	0	67	103	74	124	36	53	183	0	640
Paradise Lagoon AL *	1	71	27	41	26	51	45	47	0	309
Rollingstone	3	70	10	48	38	50		36		255
Mutarnee	1	72	28	40	37	56	47	46		327
Maximum Rainfall	3	84	103	74	124	95	67	183	0	640
Numerical Average	1	63	44	49	71	64	49	90	0	420

Table 3.4.2 Significant rainfall totals - Cape York Peninsula and the Gulf Country

Totals recorded from the 24th of January to the 1st of February as TC Olga tracked across land, re-intensified in the Gulf and again made landfall in the southern Gulf of Carpentaria.

Station Name	24 hour rainfall to 9am on January					Total (mm)
	26	27	28	29	30	
Nicholson/Gregory						
Westmoreland		134	62	151	152	499
Wollogorang	6	129	148	168	60	511
Kingfisher Camp	3	101	129	79	62	374
Lawn Hill Gorge	25	23	11	44	28	131
Riversleigh TM *	4	17	2	26	26	75
Gregory Downs TM *	7	36	20	52	62	177
Century Mine AWS *	4	27	6	44	36	118
Burketown AWS *	18	75	72	116	178	459
Maximum Rainfall	25	134	148	168	178	511
Numerical Average	10	68	56	85	76	293

Station Name	24 hour rainfall to 9am on January					Total (mm)
	26	27	28	29	30	
Leichhardt						
Nardoo	7	56	3	42	113	221
Augustus Downs	40	91	3	45	140	319
The 16m Waterhole TM *	3	34	7	31	63	138
Floraville TM *	44	28	5	61	157	295
Maximum Rainfall	44	91	7	61	157	319
Numerical Average	23	52	5	45	118	243

Station Name	24 hour rainfall to 9am on January						Total (mm)
	26	27	28	29	30	31	
Flinders							
Strathtay	2	13	10	3		85	112
Glendower TM *	0	11	2	0	14	92	119
Hughenden AWS *	0	1	0	26	10	92	129
Richmond	0	17	0	2	27	89	135
Richmond TM *	0	11	0	1	22	89	123
Richmond AWS *	0	8	0	1	25	84	119
Cloncurry	7	6	3	1	26	28	72
Cloncurry AWS *	4	6	2	4	30	27	73
Cloncurry TM *	5	6	3	2	23	31	70
Fort Constantine		4	22		44	27	97
Julia Creek AWS *	1	0	0	1	63	32	98
Julia Creek TM *	1	0	0	1	63	31	96
Etta Plains TM *	11	4	33	17	78	26	169
Canobie	35	19	9	17	67	22	169
Canobie TM *	37	12	6	22	1	19	97
Wondoola	73	2		81	177	10	343
Walkers Bend TM *	25	0	1	96	223	4	349
Maximum Rainfall	73	19	33	96	223	92	349
Numerical Average	12	7	6	17	56	46	138

Station Name	24 hour rainfall to 9am on January						Total (mm)
	25	26	27	28	29	30	
Norman							
Yappar River		28			130	135	293
Croydon SYN	10	54	0	0	121	64	249
Glenore Weir TM *	39	13	2	1	61	130	246
Normanton AWS *	92				65		157
Maximum Rainfall	92	54	2	1	130	135	293
Numerical Average	47	32	2	1	94	110	236

Station Name	24 hour rainfall to 9am on January					Total (mm)
	26	27	28	29	30	
Gilbert						
Gilberton	61	11	31	38	20	161
Rockfields TM *	25	7	3	163	33	231
Spanner Waterhole TM *	39	4	31	51	31	156
Einasleigh TM *	10	42	34	61	31	178
Mt Surprise TM *	9	6	60	23	65	163

Forsayth	9	17	36	56	47	165
Prestwood	58	10	2	77	37	184
Routh River TM *	11	7	9	41	30	98
Roseglen TM *	10	2	1	48	58	119
Georgetown Airport *	7	1	0	57		65
Miranda Downs	32	3	5	70	54	164
Maximum Rainfall	61	42	60	163	65	231
Numerical Average	25	10	19	62	41	153

Station Name	24 hour rainfall to 9am on									Total (mm)	
	Jan										Feb
	24	25	26	27	28	29	30	31	1		
Western Cape Rivers											
Nullinga TM *	20	53	9	24	10	26	28	18	4	192	
Chillagoe	18	25	22		83	50	67	34	6	305	
Rookwood TM *				12	45	74	55	28	0	214	
Palmerville AWS *	75	43	1	10	21	29	82	21	16	298	
Wrotham Park	22	44		5	11	13	27	22	0	144	
Ok Bridge TM *			2	5	32	33	83	8		163	
Palmer River TM *	84	70	7	22	0	42	10	7	3	245	
Koolatah TM *	1	25	21	0	2	12	36	23	3	123	
Kowanyama Airport	0	54	73	20	25	32	71	0	11	287	
Strathmay	7	40	2	2	13	4	14	5	18	104	
Southwell		98	7		36	19	28	36	44	268	
Pompuraaw	1	40	93	47	70	47		20	62	380	
Telegraph Crossing TM *	2	24			7	32	35	12		112	
Archer River	2	26	38	14	7	27		8	15	137	
Coen Racecourse TM *	10	17	7	5	13	6	14	40	17	129	
Coen AWS *	2	57		3	6	0	26	11	8	115	
Aurukun	3		64	23	24	20	55	5	5	200	
Weipa AWS *	0	0	37	48	7	17	45	27	6	187	
Scherger AWS *	5	2	32	29	16	15	18	8	21	146	
Moreton	0	10	62	7	12	12	11	6	6	127	
Batavia Downs		18	33	9	11	12	15	11	5	114	
Dulhunty TM *	1	14	46	24	11	7	11	13		127	
Maximum Rainfall	84	98	93	48	83	74	83	40	62	380	
Numerical Average	14	35	31	16	21	24	37	17	13	187	

Station Name	24 hour rainfall to 9am on									Total (mm)	
	Jan										Feb
	24	25	26	27	28	29	30	31	1		
Eastern Cape Rivers											
Laura River TM *	9	35	11	2	2	31	23	31	13	157	
Laura	58	32			13	26		36		165	
Battle Camp TM *	64	50	11	30	5	13	3	6	9	191	
Kalpower Crossing TM *	50	38	21	1	2	9	16	29	7	173	
Hann River TM *	32	28	0	19	9	14	38	25	11	176	
Musgrave SYN	8	6	2	1	14	30	19	8	3	91	
Lotus	9	13	5	8	35	4		19	2	95	
Stewart River TM *	30	1	1	7	1	43	13	6	24	126	
Lockhart River AWS *	3	7	10	4	4	8	3	1	1	42	
Garraway Creek TM *	1	8	19	2	12	7	3	2	3	57	

Maximum Rainfall	64	50	21	30	35	43	38	36	24	191
Numerical Average	26	22	9	8	10	19	15	16	8	127

Table 3.4.3 Significant rainfall totals - Mackenzie River catchment.

Rainfall totals recorded from the 25th to the 27th of January following Ex-Tropical Cyclone Olga making landfall on the North Tropical Queensland Coast.

Station Name	24 hour rainfall to 9am on Jan			Total
	25	26	27	
Mackenzie				
Sarina	79	141	16	236
Mt Bridget TM *	43	120	0	163
Doraville	92	60	37	189
Blue Mountain	93	58	25	176
Funnel Creek TM *	40	69	5	114
Braeside TM *	38	30	2	70
Nebo TM *	27	22	2	51
Cockenzie TM *	13	43	2	58
Pink Lagoon TM *	0	22	0	22
St Lawrence SYN	10	81	1	91
St Lawrence AWS *	10	78	1	89
Yatton TM *	0	7	0	7
Coolmaringa TM *	0	0	0	0
Maximum Rainfall	93	141	37	236
Numerical Average	34	56	7	97

Table 3.4.4 Significant rainfall totals - Queensland Capricornia Coast Region.

Rainfall totals recorded from the 1st to the 3rd of February as Ex-Tropical Cyclone Olga moved through inland Queensland following its coastal crossing in the Gulf of Carpentaria.

Station Name	24 hours to 9am on February			Total
	1	2	3	
Baffle Creek				
Miriam Vale TM *	52	133	40	225
Makowata	39	146	46	231
Mimdale TM *	71	119	58	248
Rosedale	80	115	61	256
Seventeen Seventy	77	83	11	171
Maximum Rainfall	80	146	61	256
Numerical Average	64	119	43	226

Station Name	24 hours to 9am on February			Total
	1	2	3	
Boyne				
Milton TM *	37	57	8	102

Marlua TM *	70	74	19	163
Gladstone Radar AWS *	110	116	34	260
Gladstone AWS *	143	138	45	326
Maximum Rainfall	143	138	45	326
Numerical Average	90	96	27	213

Station Name	24 hours to 9am on February			Total
	1	2	3	
Calliope				
Hazeldean	81	162	9	252
Castlehope TM *	115	140	18	273
Mount Larcom	0	209	37	246
Maximum Rainfall	115	209	37	273
Numerical Average	65	170	21	257

Station Name	24 hours to 9am on February			Total
	1	2	3	
Dawson				
Westgrove TM *	87	7	1	95
Boxvale TM *	69	21	1	91
Bendoba TM *	70	30	0	100
Injune SYN	74	33	0	107
Injune TM *	74	32	0	106
Utopia Downs TM *	115	30	0	145
Pine Hills TM *	54	32	0	86
Peekadoo TM *	98	16	1	115
Giligulgul TM *	41	33	3	77
Windamere TM *	66	25	0	91
Bungaban TM *	54	32	0	86
The Sandstone	115	48	1	164
Taroom SYN	88	16	0	104
Taroom TM *	90	15	0	105
Broadmere TM *	101	18	0	119
La Palma TM *	70	9	0	79
Cockatoo Ck TM *	39	24	1	64
Woodleigh TM *	53	15	2	70
Blackboy Creek TM *	47	50	8	105
Redcliffe TM *	53	29	7	89
Brigalow SYN	69	36	3	108
Roundstone Creek TM *	70	35	4	109
Bindaree TM *	38	14	11	63
Baralaba SYN	36	45	10	91
Beckers TM *	37	58	6	101
Blue Hills TM *	21	70	13	104
Thangool SYN	18	40	3	61
Folding Hills TM *	18	31	1	50
Red Hill TM *	32	40	1	73
Besch's Hill TM *	118	158	15	291
Kingsborough TM *	12	41	0	53

Craiglands TM *	14	68	1	83
Goovigen TM *	11	24	0	35
Upper Dee TM *	194	144	9	347
Mundic Gully TM *	51	49	8	108
Number 7 Dam TM *	41	72	9	122
Dairy Ck TM *	79	65	19	163
Kenbula TM *	60	51	10	121
Wura TM *	18	73	2	93
Rannes TM *	13	19	0	32
Maximum Rainfall	194	158	19	347
Numerical Average	60	41	4	105

Station Name	24 hours to 9am on February			Total
	1	2	3	
Mackenzie				
Rewan	162	31	24	217
Rewan TM *	127	24	18	169
Wyseby	136	18	10	164
Lake Brown TM *	170	5	4	179
Rolleston SYN	108	20	2	130
Katrina Downs TM *	43	13	2	58
Red Rock TM *	6	61	1	68
Orion	76	18	5	99
Helen Downs TM *	45	4	1	50
Springsure SYN	82	9	26	117
Roddas Lookout AL *	84	7	31	122
Springsure TM *	71	7	24	102
Cowley TM *	83	4	6	93
Springsure Creek Junction TM *	21	1	5	27
Glenora Road TM *	99	2	20	121
Blackdown Tableland TM *	1	15	29	45
Comet Weir TM *	15	0	1	16
Comet	16	0	1	18
Mantuan Downs	57	10	13	80
Mantuan Downs TM *	46	11	15	72
Raymond TM *	46	7	18	71
Bogantungan TM *	81	17	57	155
Craigmore TM *	41	4	29	74
Emerald AWS *	37	3	13	53
Emerald AL *	36	4	14	54
Emerald TM *	34	0	13	47
Emerald Radar AL *	23	3	16	42
Clermont TM *	33	2	12	47
Clermont SYN	24	2	17	43
Florence Vale AL *	25	16	14	55
Valeria AL *	17	4	62	83
Valeria TM *	17	4	64	85
Rubyvale AL *	16	7	61	84
Duckponds TM *	15	2	0	17
Riley's Crossing TM *	13	2	0	15
Middlemount TM *	23	3	2	28

Bingegang Weir Hw TM *	13	1	1	15
Moranbah SYN	25	0	0	25
Deverill TM *	28	0	3	31
Sarina	25	0	6	31
Funnel Creek TM *	33	0	0	33
Braeside TM *	34	0	1	35
Cockenzie TM *	63	0	3	66
Pink Lagoon TM *	28	0	11	39
St Lawrence SYN	202	5	50	257
St Lawrence AWS *	196	6	51	253
Yatton TM *	37	1	18	56
Coolmaringa TM *	22	3	2	27
Maximum Rainfall	202	61	64	257
Numerical Average	55	7	16	79

Station Name	24 hours to 9am on February			Total
	1	2	3	
Fitzroy				
Riverslea TM *	27	123	2	152
Melrose	38	77	9	124
Westwood TM *	40	57	1	98
Marlborough TM *	0	0	0	0
The Gap TM *	49	55	7	111
Yaamba	69	7	11	87
Hedlow Airfield TM *	126	6	27	159
Samuel Hill AWS *	162	9	57	228
South Yaamba TM *	63	29	8	100
Stanwell TM *	81	137	1	219
Glenlands	129	80	20	229
Rockhampton AWS *	68	23	13	104
Rockley	120	140	7	267
Raglan Ck TM *	99	81	6	186
Byfield	177	13	92	282
Pacific Heights	242	5	34	281
Yeppoon AWS *	162	6	25	193
Maximum Rainfall	242	140	92	282
Numerical Average	66	22	19	107

Table 3.4.5 Significant rainfall totals - Balonne and Maranoa River catchments.

Rainfall totals recorded from the 1st to the 6th of February as Ex-Tropical Cyclone Olga tracked a path across southern Queensland.

Station Name	24 hour rainfall to 9am on February						Total (mm)
	1	2	3	4	5	6	
Balonne							
Barakula	31	33	5	1	1		71
Possum Park	38	45	5	1	2	21	112
Miles AWS *	37	34	12	1	0	14	98
Drillham	35	33	7		5	28	108

Dulacca	52	26	4	6	4	44	135
Pine Hill Crossing	33	34	14			23	104
Warkon	38	36	4	6	3	2	89
Yuleba Forestry TM *	56	59	3	11	1	4	134
Wallumbilla	46	39	7	13	2		107
Surat SYN	35	24	5	16	2	22	104
Springdale TM *	86	35	3	5	19	4	152
Tabers TM *	60	51	1	3	60	36	211
Mooga Hills TM *	80	60	0	20	61	25	246
Roma AWS *	58	67	5	6	34	6	176
Garrabarra	46	61	7	14	4	36	168
Karoola Park	38	35	13	5	9	4	105
Weribone TM *	26	25	11	9	19	11	101
Warroo	26	26	21	5	21	63	162
Maximum Rainfall	86	67	21	20	61	63	246
Numerical Average	46	40	7	8	15	21	132

Station Name	24 hour rainfall to 9am on February						Total (mm)
	1	2	3	4	5	6	
Maranoa							
Mitchell SYN	59	27	7	0	3	0	96
Mitchell TM *	57	23	5	0	3	0	88
Springfield	37	33	10		18		98
Woodlands	28	14	15	26		14	97
Old Cashmere TM *	2	26	26	9	3	6	72
Maximum Rainfall	59	33	26	26	18	14	98
Numerical Average	37	25	13	9	7	5	90

Station Name	24 hour rainfall to 9am on February						Total (mm)
	1	2	3	4	5	6	
Wallam/Mungallala Creeks							
Kenilworth	43	21	19		7		90
Cardiff TM *	25	22	13	1	4	0	65
Rosehill	36	10	17	3	33	11	110
Bollon	28	20	12	1	11	5	77
Mungallala	71	18	9		14		112
Glenorie	49	19	6		3		77
South Plains	21	2	13	4	11	1	52
Mulga Downs	11	2	2		13	4	32
Roseleigh Crossing TM *	21	1	2	2	14	19	59
Maximum Rainfall	71	22	19	4	33	19	112
Numerical Average	34	13	10	2	12	7	75

Table 3.4.6 Significant rainfall totals - Warrego, Paroo and Bulloo River catchments.

Rainfall totals recorded from the 1st to the 4th of February as Ex-Tropical Cyclone Olga tracked a path across southern Queensland.

Station Name	24 hour rainfall to 9am on February				Total (mm)
	1	2	3	4	
Warrego					
Augathella	77	8	14		99
Augathella TM *	73	7	13	0	93
Drensmaine TM *	41	16	20	0	77
Drensmaine	65	20	24		109
Biddenham TM *	66	10	19	0	95
The 27 Mile Garden TM *	100	1	13	0	114
Dunvegan TM *	49	2	8	1	59
Raceview TM *	106	1	14	0	121
Charleville AWS *	114	3	9	0	126
Bayswater	65	37	64		166
Warilda	77	36	15	0	128
Toliness	69	48	55		172
Binnowie TM *	124	14	11	0	149
Morven	67	3	14		84
Bakers Bend TM *	82	16	7	0	105
Dillalah	8	12	7		27
Wyandra TM *	56	16	12	1	85
Wallen	43	46	14	1	104
Cunnamulla SYN	19	18	19	1	57
Rocky	15	14	16	1	46
Maximum Rainfall	124	48	64	1	172
Numerical Average	66	16	18	0	101

Station Name	24 hour rainfall to 9am on February				Total (mm)
	1	2	3	4	
Paroo					
Eulo	10	5	37	34	86
Hungerford	2	8	13	59	82
Maximum Rainfall	10	8	37	59	86
Numerical Average	6	7	25	47	84

Station Name	24 hour rainfall to 9am on February				Total (mm)
	1	2	3	4	
Bulloo					
Listowel Downs	25	14			39
Quilpie TM *	26	28	29	1	84
Quilpie SYN	33	35	29	1	98
South Comongin	29	3	45/2	2	34
Thargomindah AWS *	4	39	29	5	76
Maximum Rainfall	33	39	29	5	98
Numerical Average	23	24	29	2	66

Table 3.4.7 Significant rainfall totals - Barcoo River catchments.

Rainfall totals recorded from the 1st to the 3rd of February as Ex-Tropical Cyclone Olga tracked a path through inland Queensland.

Station Name	24 hour rainfall to 9am on February			Total (mm)
	1	2	3	
Thomson/Barcoo/Cooper				
Tambo TM *	42	8	20	70
Tambo SYN	51	9	23	83
Gillespie	58	1	8	67
Duneira	58	9	15	82
Blackall TM *	56	7	25	88
Blackall AWS *	53	9	25	87
Glencoe	17	23	25	65
Lochnagar	49	20		69
Barcaldine SYN	31	25	5	61
Barcaldine Weir TM *	30	13	0	43
Isisford	35	20	1	56
Maximum Rainfall	58	25	25	88
Numerical Average	44	13	15	70

Table 3.4.8 Significant rainfall totals - Southeast Queensland.

Rainfall totals recorded from the 7th to the 8th of February associated with Ex-Tropical Cyclone Olga as it tracked eastwards across southern inland Queensland.

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Nerang			
Numinbah AL *	220	31	251
Upper Springbrook AL *	240	48	288
Springbrook	268	43	311
Lower Springbrook AL *	282	55	337
Mt Nimmel AL *	210	30	240
Bonogin AL *	170	28	198
Little Nerang Dam AL *	222	25	247
Numinbah Valley TM *	204	27	231
Numinbah Valley AL *	237	30	267
Tallai AL *	225	19	244
Nerang	280	44	324
Carrara AL *	220	38	258
Molendinar AL *	236	34	270
Neranwood AL *	223	30	253
Mudgeeraba AL *	186	34	220
Evandale AL *	172	48	220
Biggera Ck Dam AL *	142	57	199
Loder Ck Dam AL *	160	41	201
Loder Creek AL *	138	37	175
Southport	183	38	221

Air Sea Rescue AL *	97	45	142
Gold Coast Seaway AWS *	94	55	149
Burleigh Waters AL *	179	27	206
Miami		202	202
Tallebudgera Ck Rd AL *	134	17	151
Coplicks Bridge AL *	140	18	158
Oyster Creek AL *	114	19	133
Tomewin AL *	189	25	214
Coolangatta AWS *	123	27	150
Murwillumbah SYN	198	21	219
Maximum Rainfall	282	57	337
Numerical Average	189	34	223

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Coomera			
Binna Burra AL *	245	47	292
Tyungun AL *	222	19	241
Canungra Army AL *	366	20	386
Mt Tamborine	364	25	389
Mt Tamborine AL *	372	23	395
Clagiraba Road AL *	415	18	433
Wongawallan AL *	289	32	321
Oxenford	279	40	319
Oxenford Weir AL *	265	39	304
Coomera	241	33	274
Monterey Keys AL *	241	40	281
Coomera Shores AL *	244	37	281
Maximum Rainfall	415	47	433
Numerical Average	295	31	326

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Pimpama			
Luscombe AL *	192	27	219
Hotham Creek AL *	213	24	237
Kerkin Road AL *	182	16	198
Steiglitz Wharf AL *	130	23	153
Maximum Rainfall	213	27	237
Numerical Average	179	23	202

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Logan-Albert			
Ward Road TM *	43	15	58
Darlington AL *	72	29	101
Darlington	73	22	95
O'reillys AL *	162	43	205
Lumeah AL *	158	14	172

Benobble AL *	343	15	358
Bromfleet AL *	215	25	240
Canungra	305	16	321
Forest Home TM *	33	10	43
Maroon Dam AL *	47	11	58
Maroon Dam	45	13	58
Palen Creek AL *	61	12	73
Rathdowney AL *	36	12	48
Rathdowney TM *	31	11	42
Dieckmans Bridge AL *	43	17	60
Dieckmans Bridge TM *	42	16	58
Foxley AL *	43	18	61
Rudds Lane AL *	46	9	55
Knapps Peak AL *	38	14	52
Kooralbyn AL *	26	11	37
Round Mountain TM *	40	13	53
Round Mountain AL *	46	14	60
Beaudesert	117	10	127
Beaudesert AL *	143	17	160
Wilson's Peak AL *	62	8	70
Wilson's Peak AL-P *	55	9	64
Croftby AL *	55	15	70
Mt Alford AL *	39	12	51
Mt Sugarloaf AL *	27	19	46
Boonah AL *	31	10	41
The Overflow TM *	85	20	105
The Overflow AL *	89	20	109
Romani AL *	65	18	83
Yarrahappini TM *	103	27	130
Yarrahappini AL *	118	29	147
Maclean Bridge	129	13	142
Maclean Bridge AL *	150	14	164
Waterford AL *	148	10	158
Stretton(Gowan Rd) AL *	119	1	120
Underwood(Millers Rd) AL *	98	1	99
Slacks Creek(Reserve Pk) AL *	104	3	107
Logan City SYN	128	18	146
Hillcrest(Wine Glass) AL *	157	4	161
Marsden (First Ave) AL *	144	5	149
Bega Road Quarry AL *	140	5	145
Slacks Ck(Loganlea Rd) AL *	142	6	148
Carbrook AL *	89	19	108
Carbrook(Riedel Road) AL *	69	13	82
Priestdale AL *	83	9	92
Burbank AL *	66	2	68
Mt Cotton West AL *	106	11	117
Rochedale South AL *	89	3	92
Leslie Harrison Dam AL *	44	3	47
Dunwich AL *	45	46	91
Maximum Rainfall	343	46	358
Numerical Average	96	14	110

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Pine/Caboolture			
Mt Glorious	93	29	122
Mt Glorious AL-P *	52	28	80
Mt Nebo	130	29	159
Highvale	111		111
Cedar Ck Rd AL *	112	16	128
Samford AL *	98	18	116
Samford Village AL *	98	18	116
Clear Mountain AL *	107	16	123
Drapers Crossing AL *	102	14	116
Normanby Way AL *	114	12	126
Kluvers Lookout AL *	63	17	80
Laceys Creek AL *	96	11	107
Baxters Creek AL *	84	13	97
Dayboro AL *	84	22	106
North Pine Dam AL *	90	12	102
Mt Samson Rd AL *	65	25	90
North Pine Dam AL-B *	90	12	102
Narangba	86	30	116
Browns Creek AL *	86	23	109
Lake Kurwongbah AL *	84	16	100
Youngs Crossing AL *	101	18	119
Strathpine	116	18	134
Petrie AL *	105	21	126
Lawnton AL *	139	25	164
John Bray Park AL *	131	18	149
Murrumba Downs AL *	110	14	124
Lipscombe Rd AL *	90	38	128
Redcliffe AWS *	66	9.8	76
Mt Mee AL-P *	108	18	126
Mt Mee AL-B *	108	18	126
Moorina AL *	140	29	169
Burpengary(Rowley Rd) AL *	108	22	130
Burpengary (Dale St) AL *	106	27	133
Deception Bay AL *	60	23	83
Round Mt Reservoir AL *	98	30	128
Wamuran AL *	175	20	195
Upper Caboolture TM *	129	43	172
Upper Caboolture AL *	98	37	135
Caboolture WTP AL *	104	29	133
Morayfield AL *	93	37	130
Bribie Island AL *	59	70	129
Beerburum AWS *	72	40	112
Maximum Rainfall	175	70	195
Numerical Average	99	24	122

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Mooloolah			
Ewen Maddock Dam AL *	98	138	236
Jordan St AL *	30	121	151
Sippy Downs AL *	21	84	105
Sugarbag Rd AL *	3	62	65
Palmview AL *	22	93	115
Meridan Way AL *	11	100	111
Parrearra Weir U/S AL *	11	54	65
Tanawha AL *	40	74	114
Bundilla AL *	15	35	50
Mountain Creek AL *	34	44	78
Golden Beach AL *	17	28	45
Landsborough AL *	110	83	193
Hume Lane AL *	122	43	165
Old Gympie Road AL *	129	32	161
Beerwah AL *	101	27	128
Maximum Rainfall	129	138	236
Numerical Average	51	68	119

Station Name	24 hr rainfall to 9am on February		Total
	7	8	
Mary			
Maleny AL *	75	106	181
Maleny	71	104	175
Baroon Boat Ramp AL *	48	102	150
Baroon Dam Tw AL *	57	107	164
Obi Lookout AL *	35	79	114
West Bellthorpe AL *	47	26	73
Harper Creek AL *	55	47	102
Grigor Road AL *	25	40	65
Bellbird Creek AL *	19	63	82
Kenilworth	19	45	64
Kenilworth H/s AL *	20	43	63
Moy Pocket AL *	47	50	97
Moy Pocket TM *	45	48	93
Jimna AWS *	32	54	86
Jimna AL *	29	51	80
Imbil	7	85	92
Oakwood TM *	20	43	63
Kandanga TM *	4	85	89
Zachariah TM *	3	69	72
Cooroy	25	45	70
Cooroy AL *	19	53	72
Pomona AL *	2	78	80
Lake Macdonald Dam AL *	15	30	45
Cooran TM *	13	129	142
Cooran AL *	15	139	154

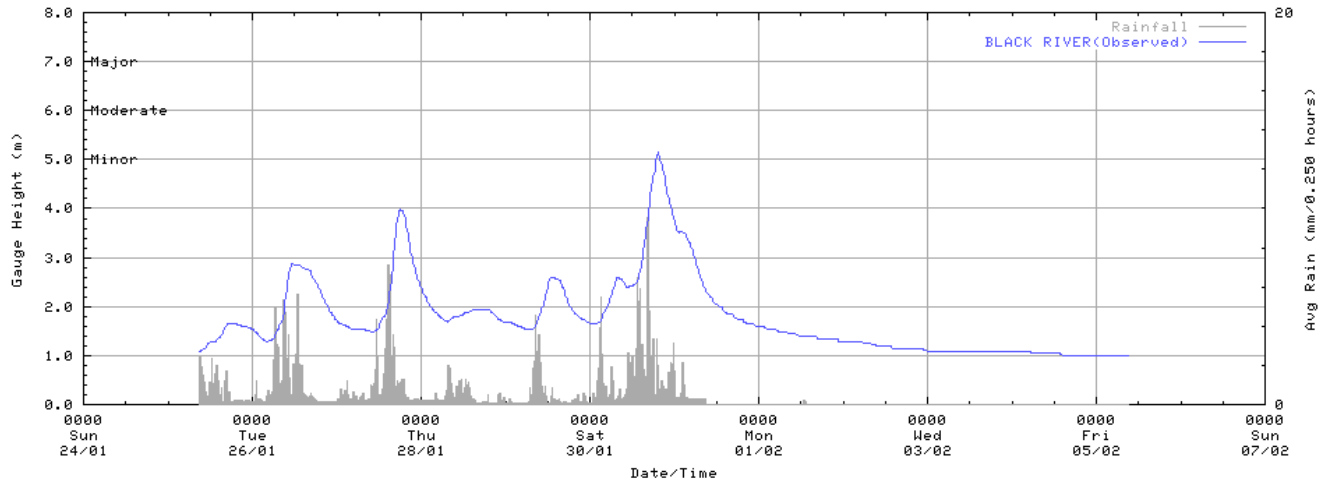
Cedar Pocket Dam AL *	2	51	53
Gympie AL *	0	42	42
Fishermans Pocket TM *	8	39	47
Miva	18	38	56
Marodian TM *	24	56	80
Home Park TM *	32	39	71
Maximum Rainfall	32	139	154
Numerical Average	27	64	91

3.5 Flood hydrographs associated with TC Olga.

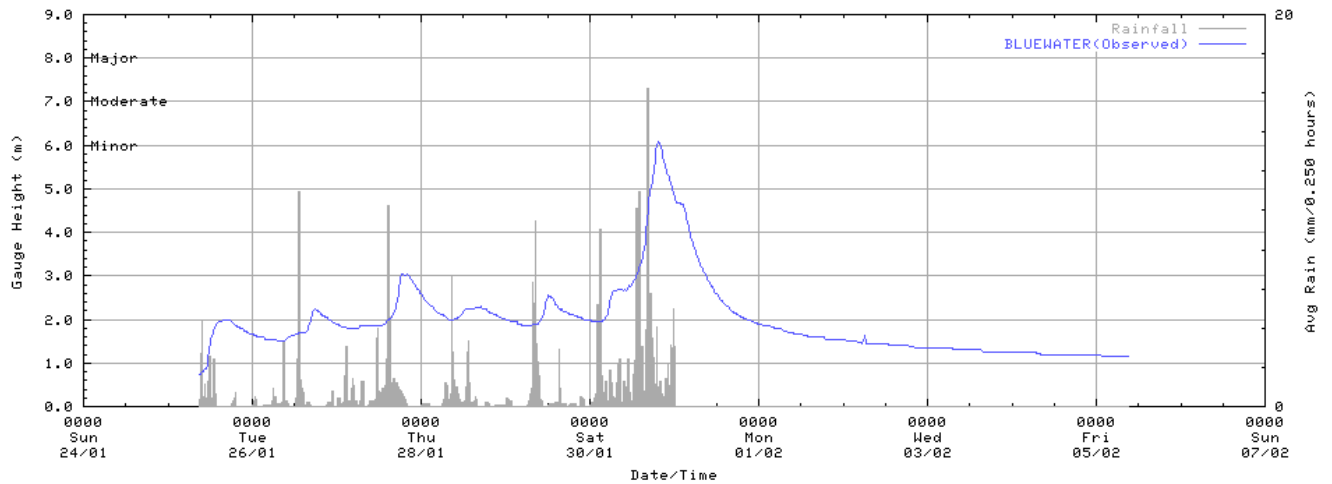
Figures 3.5.1 through to 3.5.12 shows a series of recorded hydrographs at selected locations during the movement of TC Olga.

Figure 3.5.1 Flood hydrographs - Townsville Area.

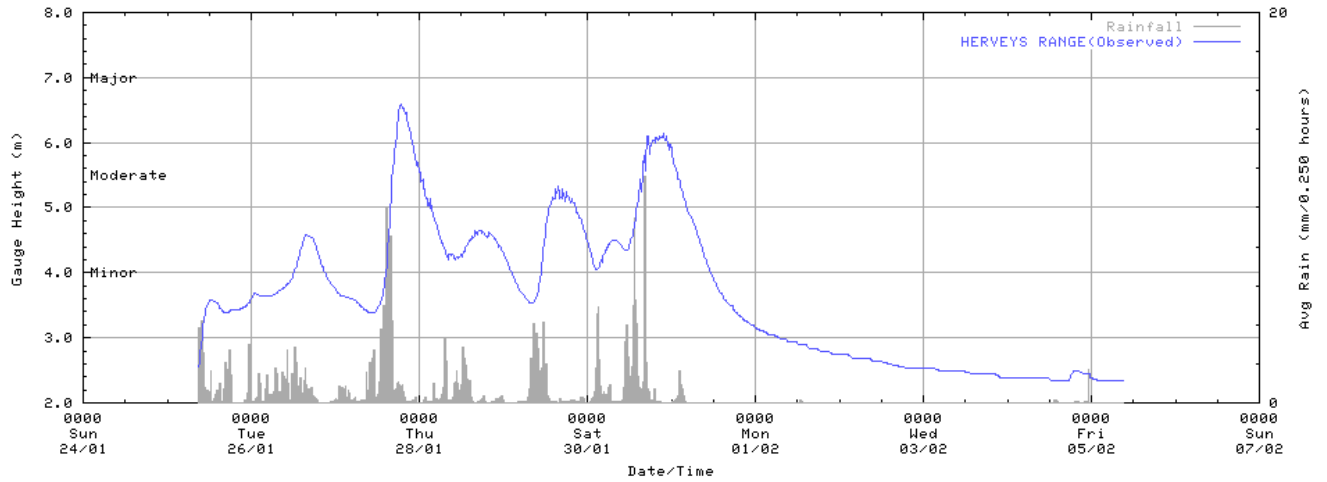
Black River at Black River



Bluewater Creek at Bluewater



Bohle River at Hervey Range Road



Bohle River at Mount Bohle

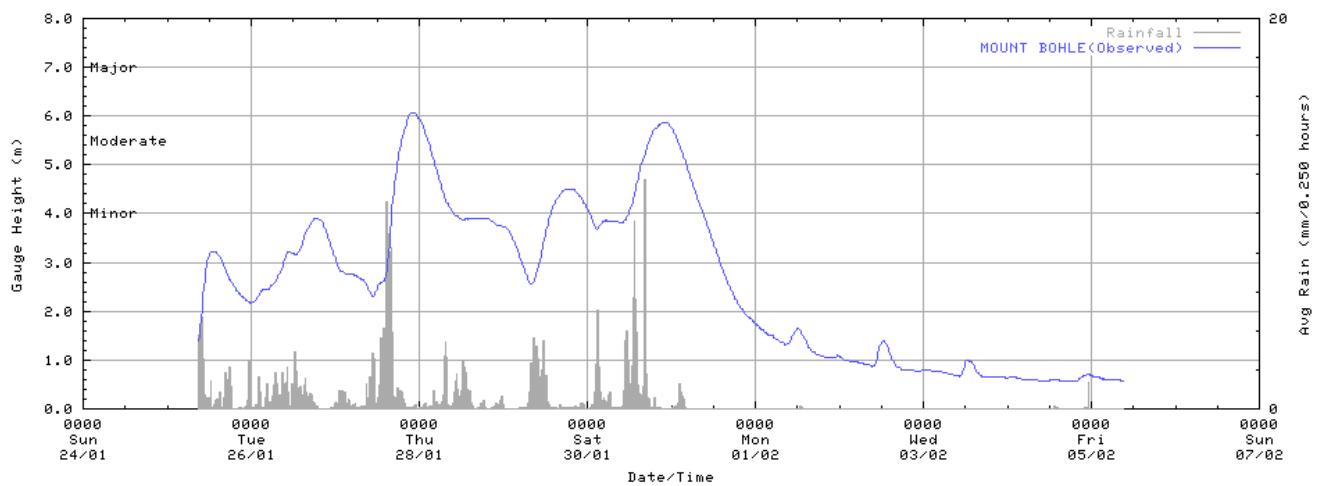
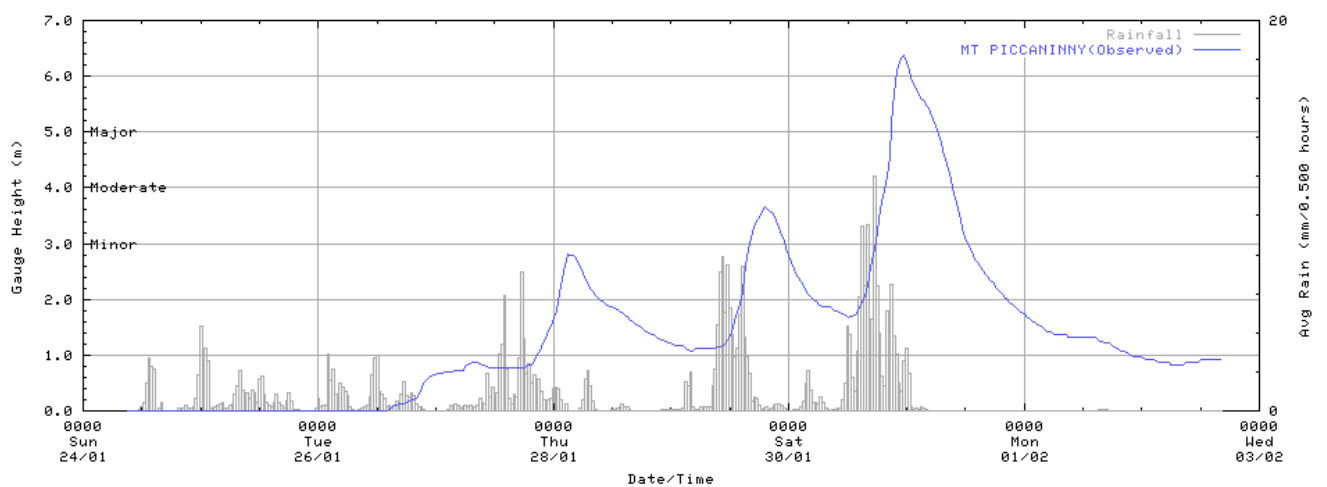
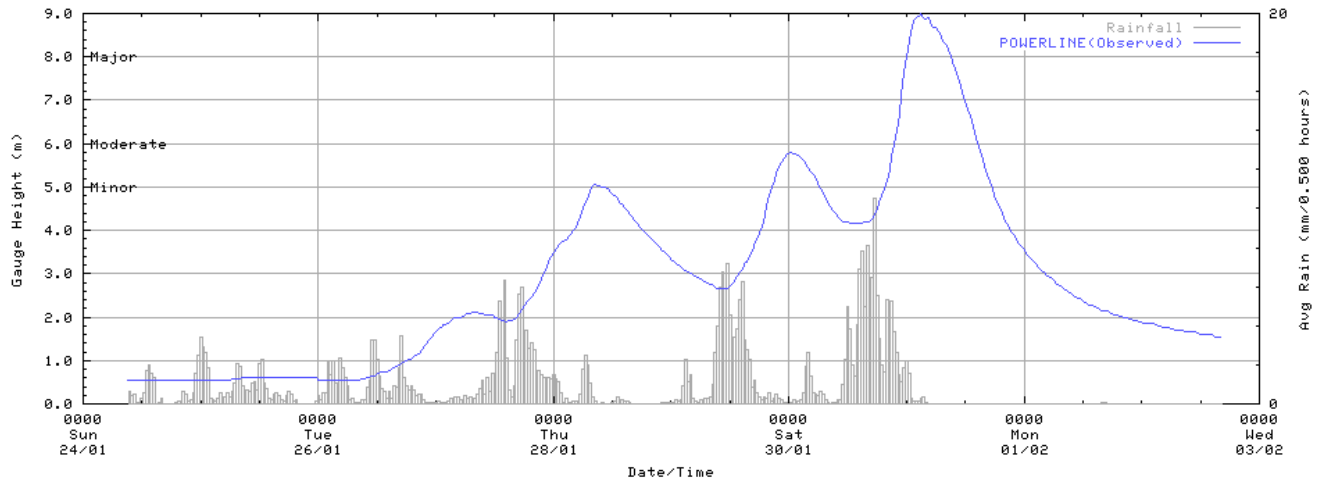


Figure 3.5.2 Flood hydrographs - Haughton River.

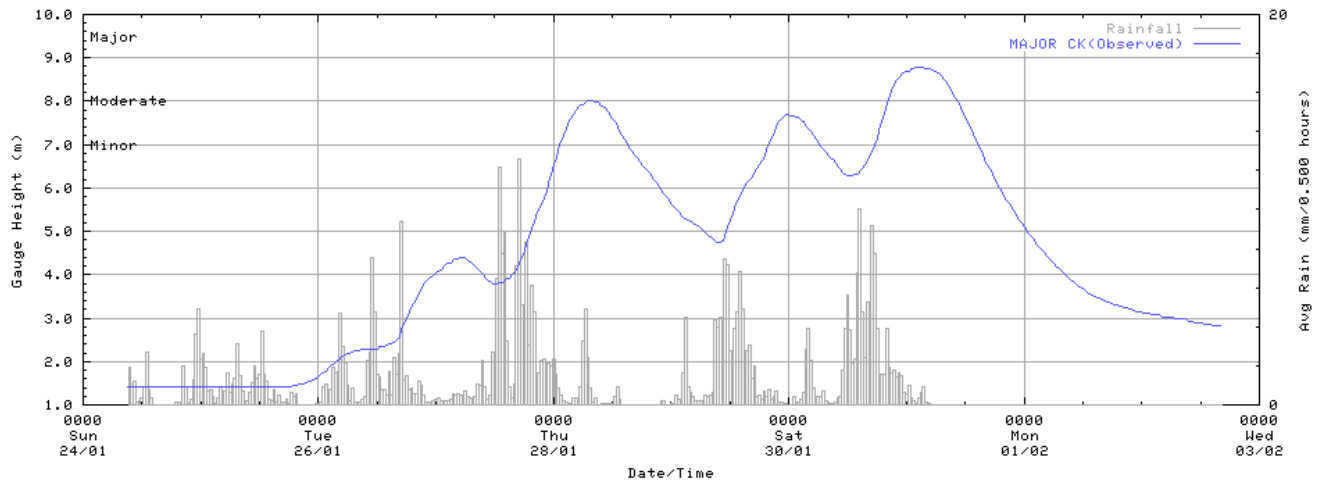
Haughton River at Mount Piccaninny



Haughton River at Powerline



Major Creek at Major Creek



Haughton River at Giru

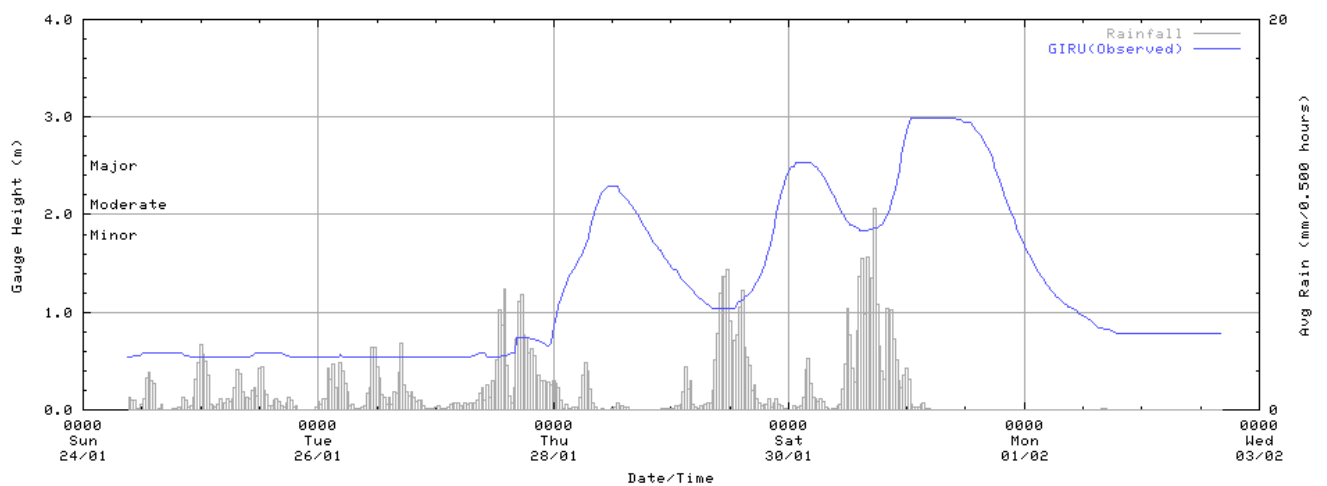
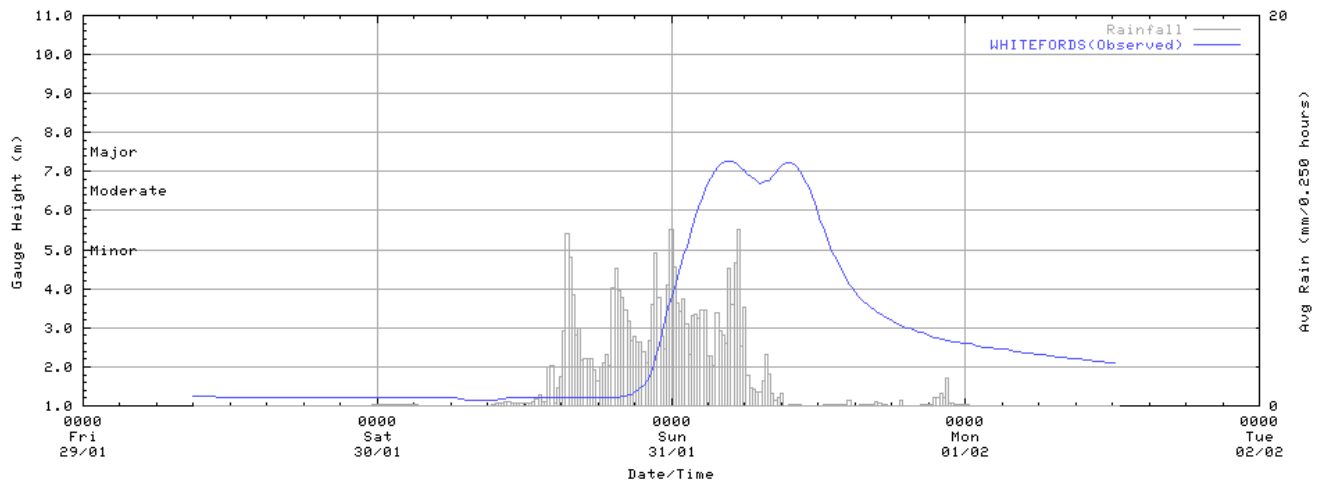
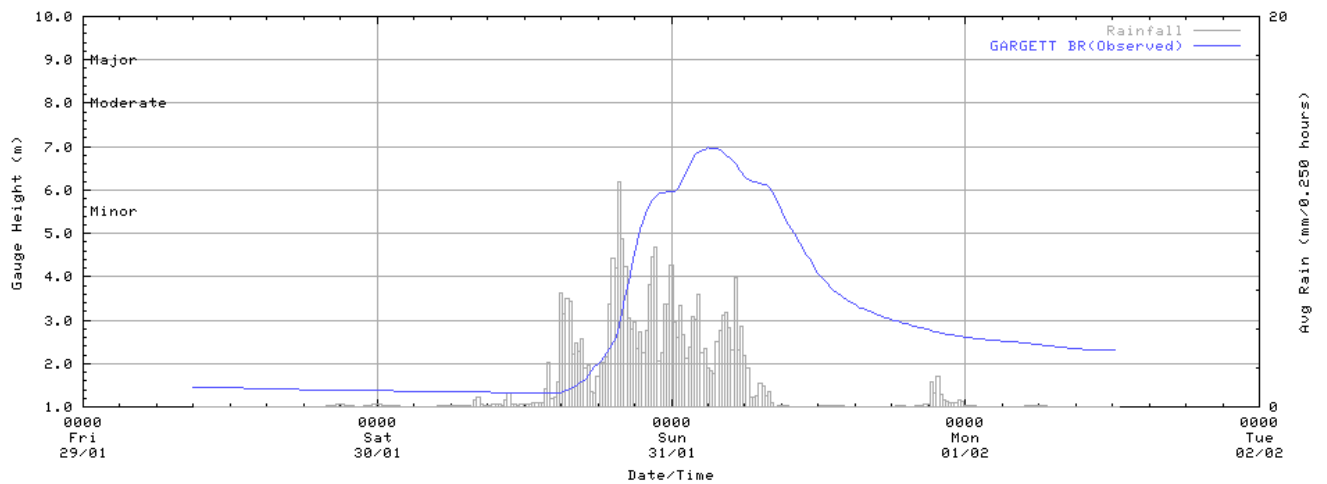


Figure 3.5.3 Flood hydrographs - Pioneer River.

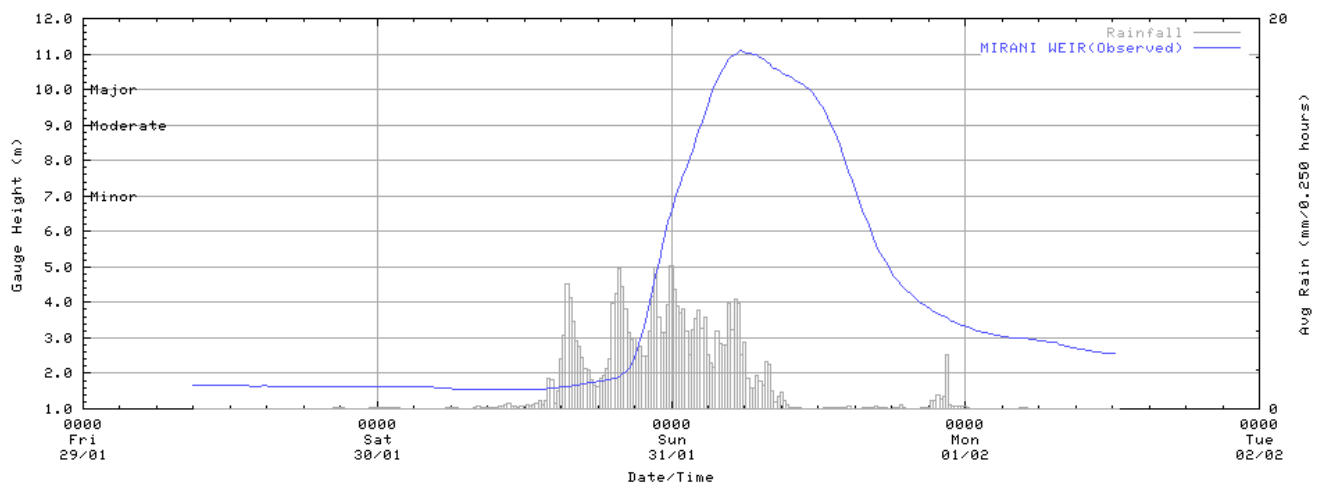
Blacks Creek at Whiteford's Alert



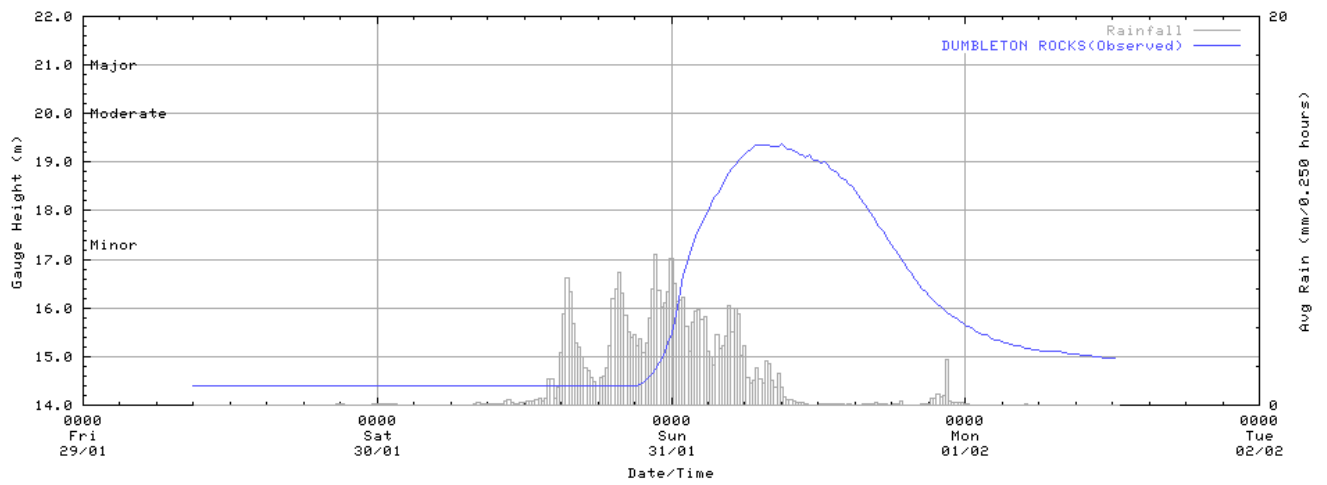
Cattle Creek at Gargett



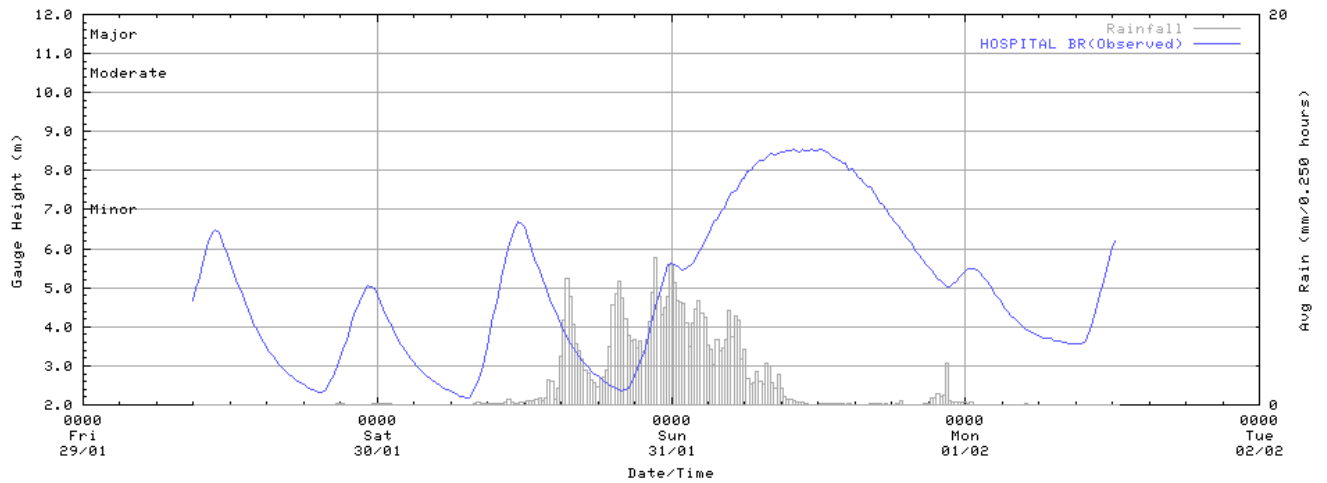
Pioneer River at Mirani Weir



Pioneer River at Dumbleton Rocks



Pioneer River at Hospital Bridge



Pioneer River at Mackay

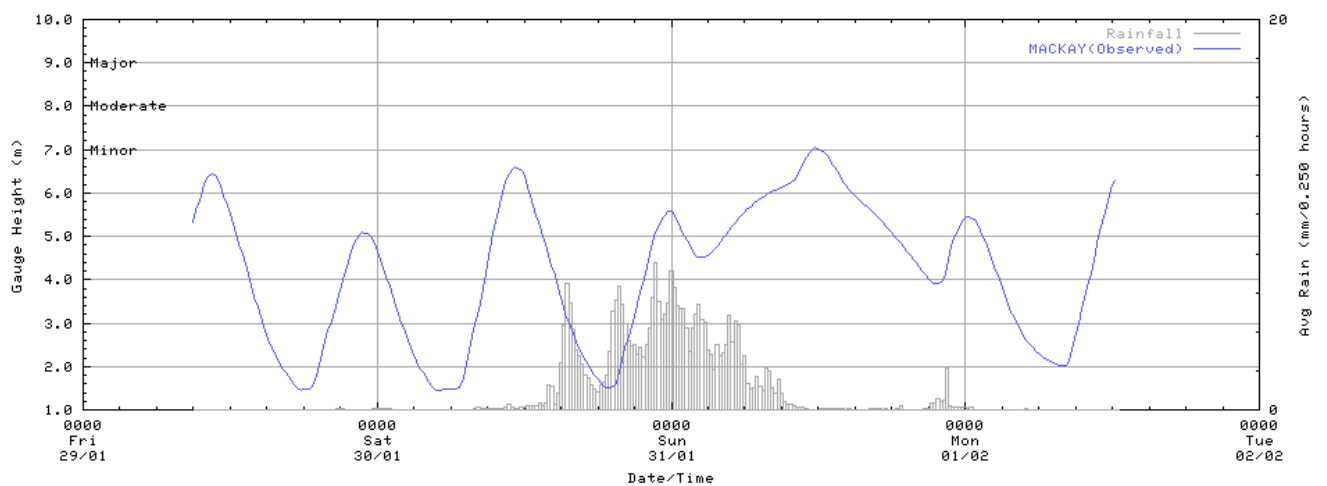
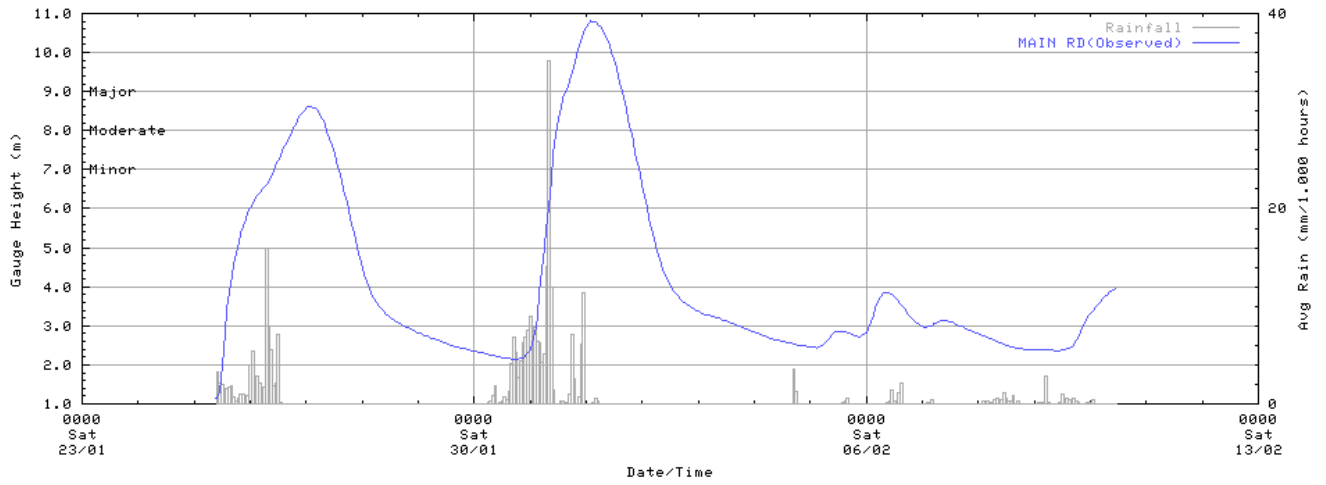
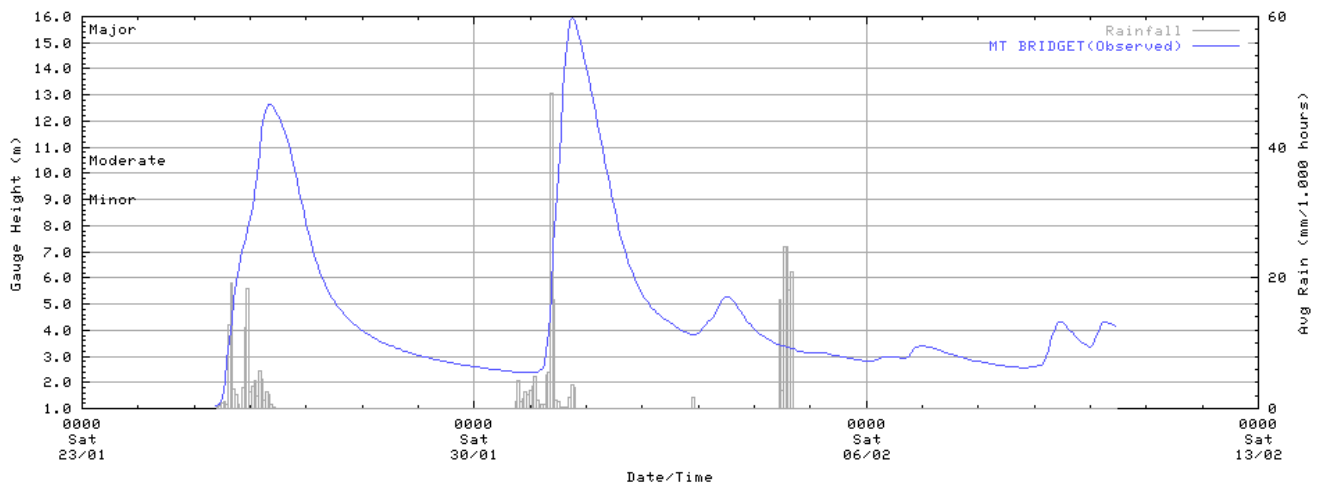


Figure 3.5.4 Flood hydrographs - Fitzroy River catchment.

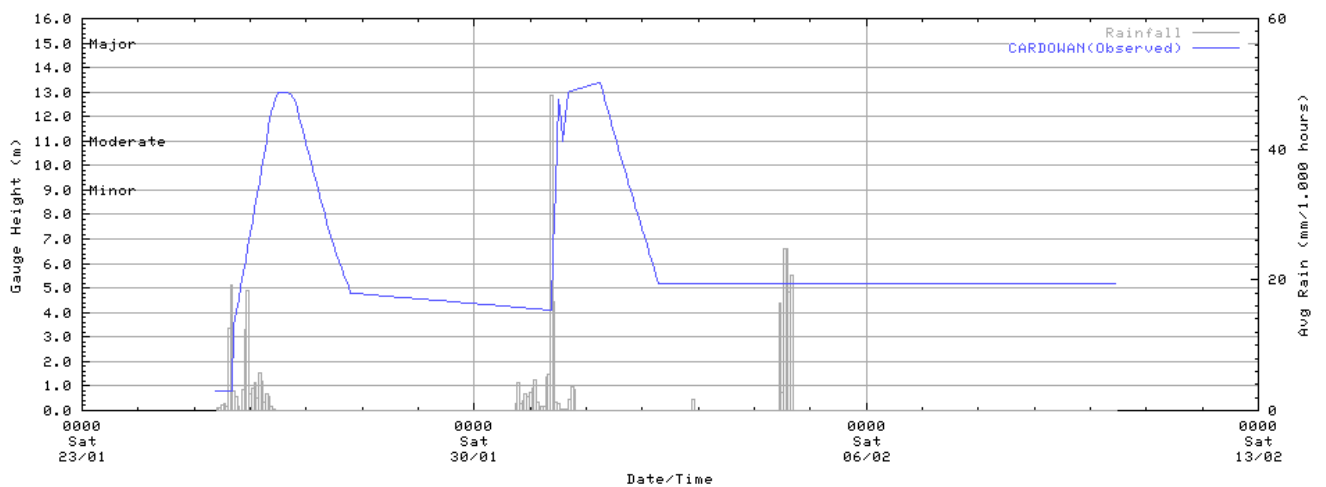
Funnel Creek at Main Road



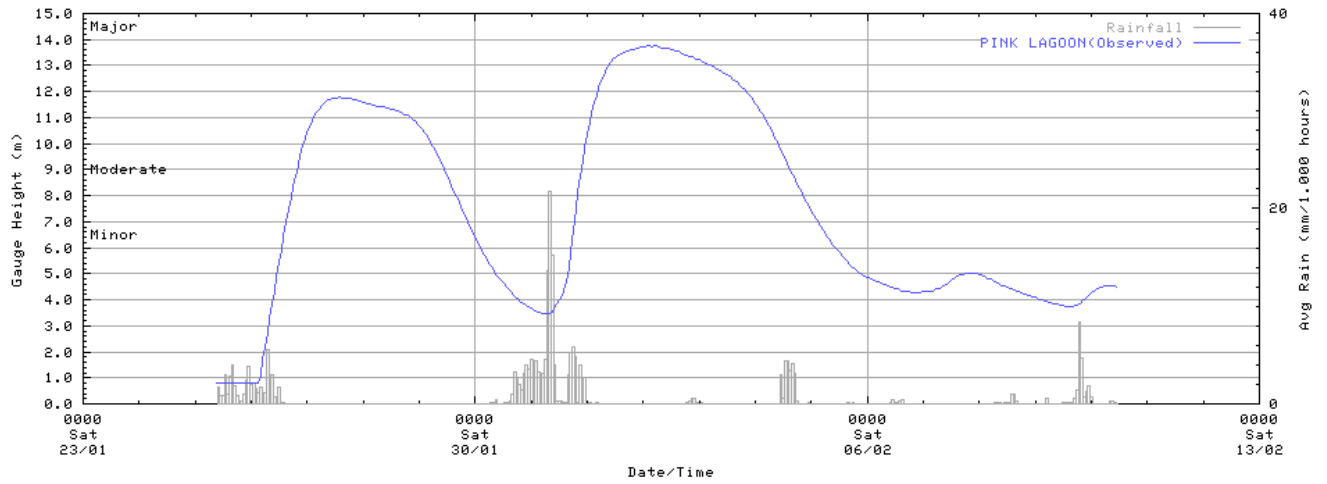
Connors River at Mount Bridget



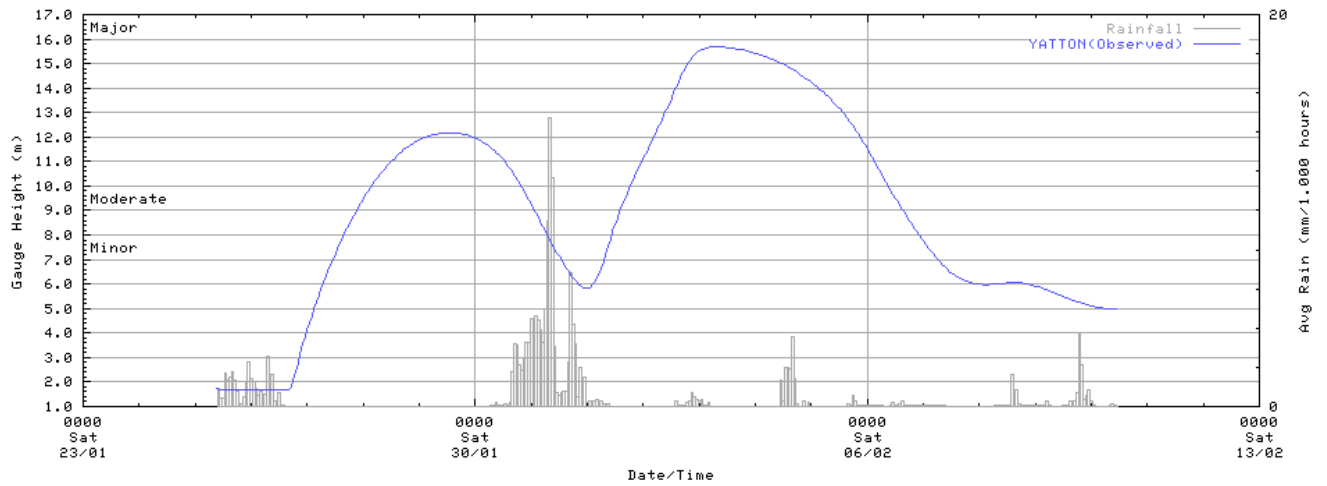
Connors River at Cardowan



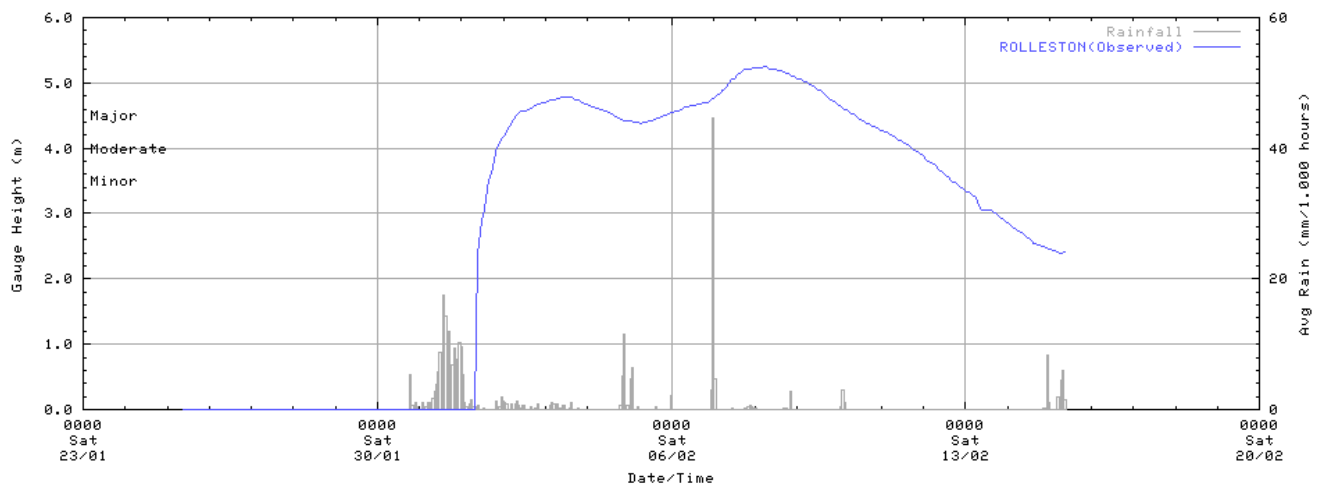
Connors River at Pink Lagoon



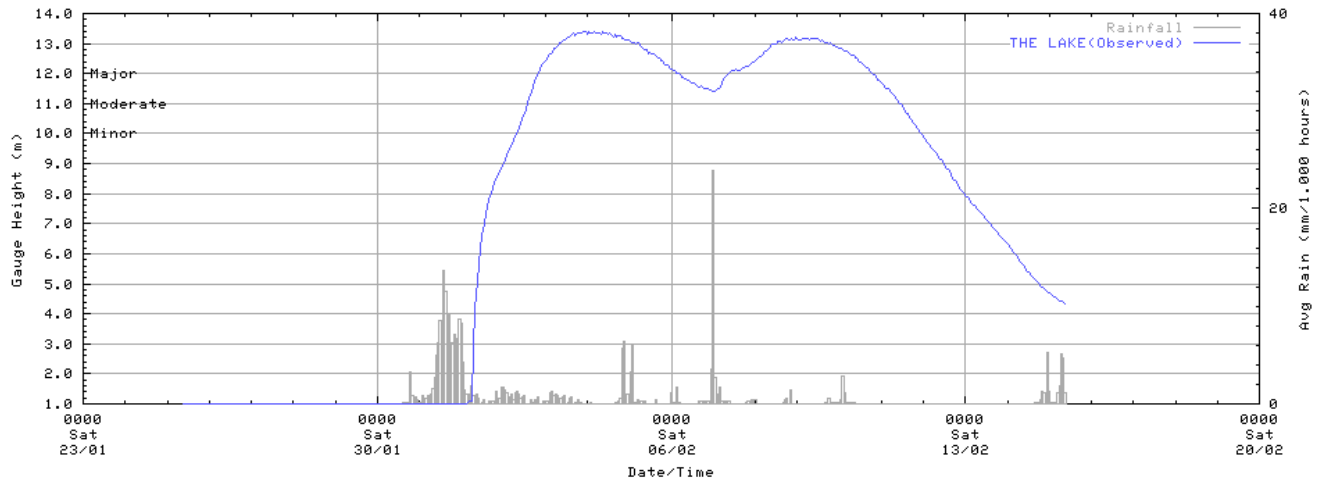
Isaac River at Yatton



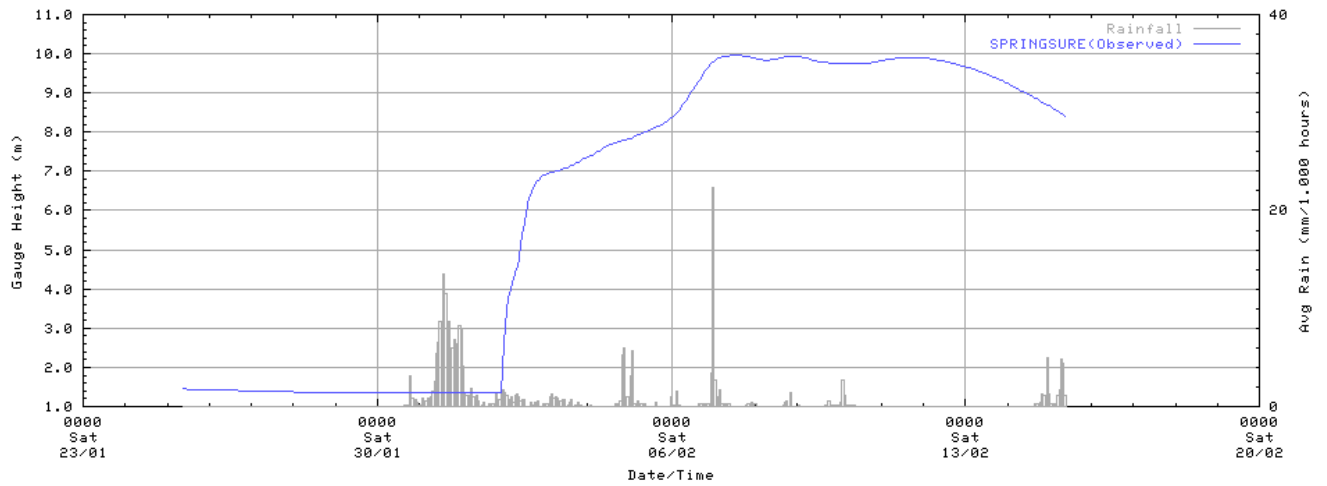
Comet River at Rolleston



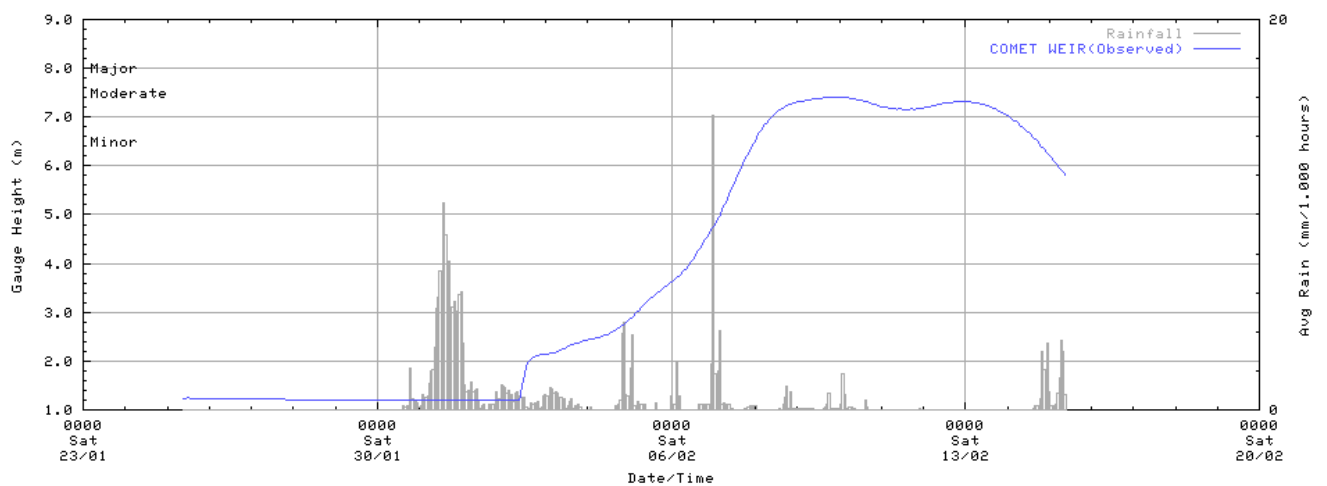
Comet River at The Lake



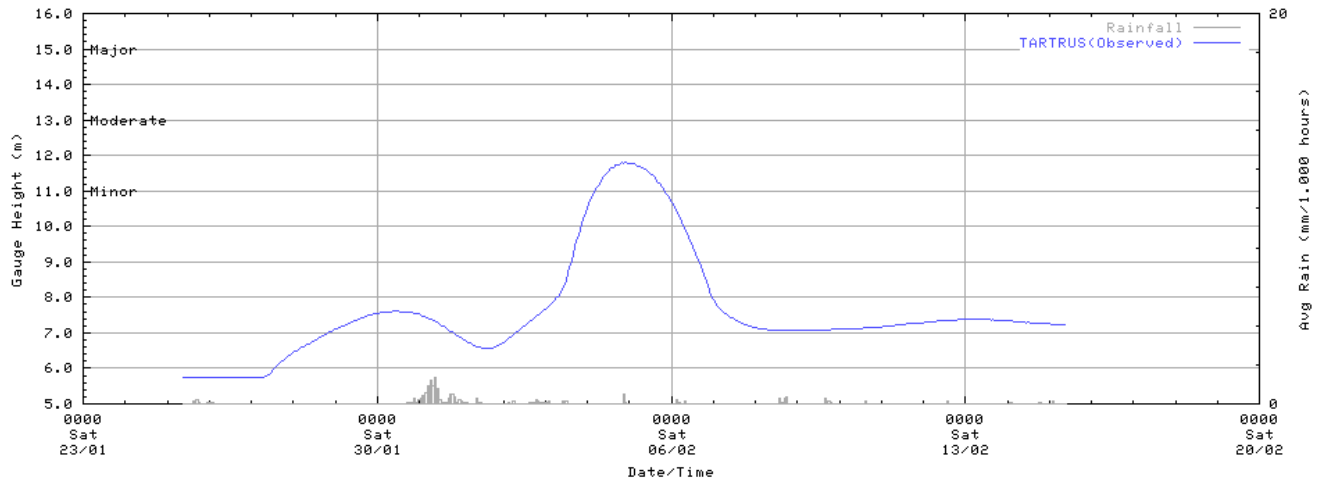
Comet River at the Springsure Creek Junction



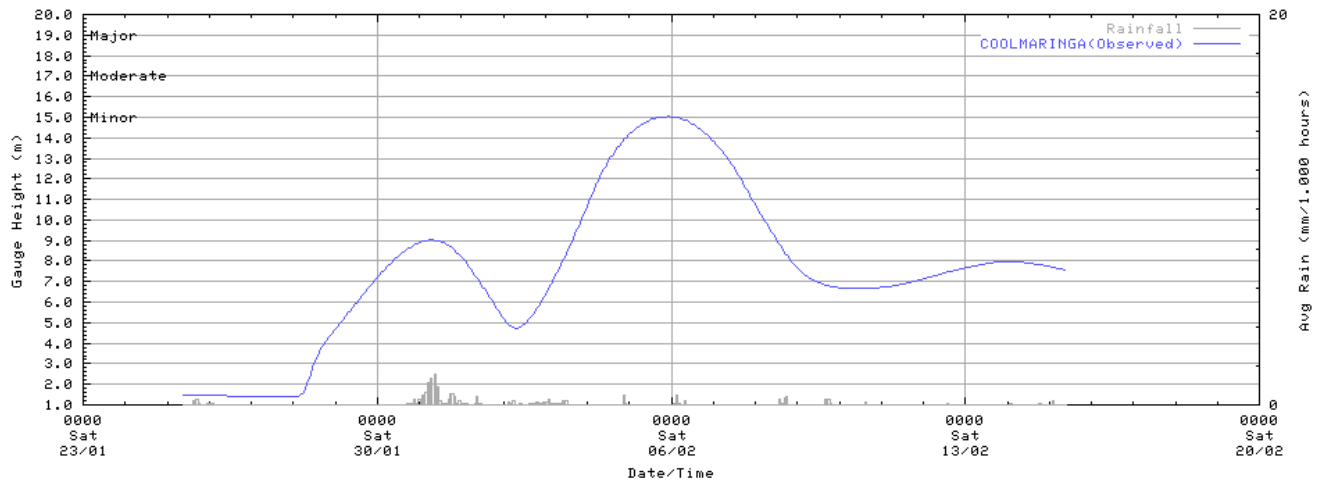
Comet River at Comet Weir



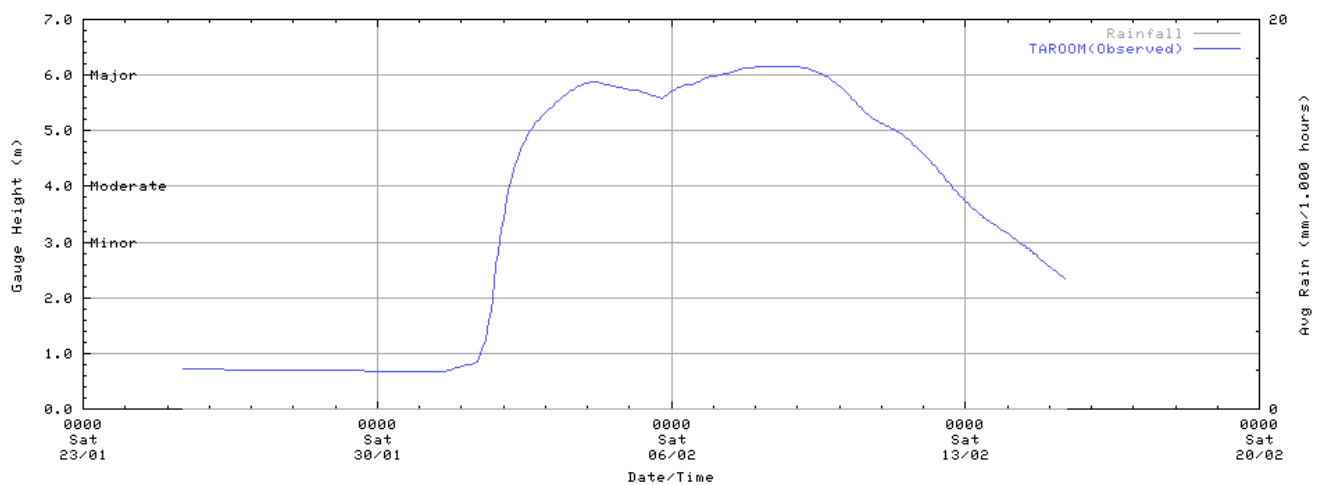
Mackenzie River at Tartrus



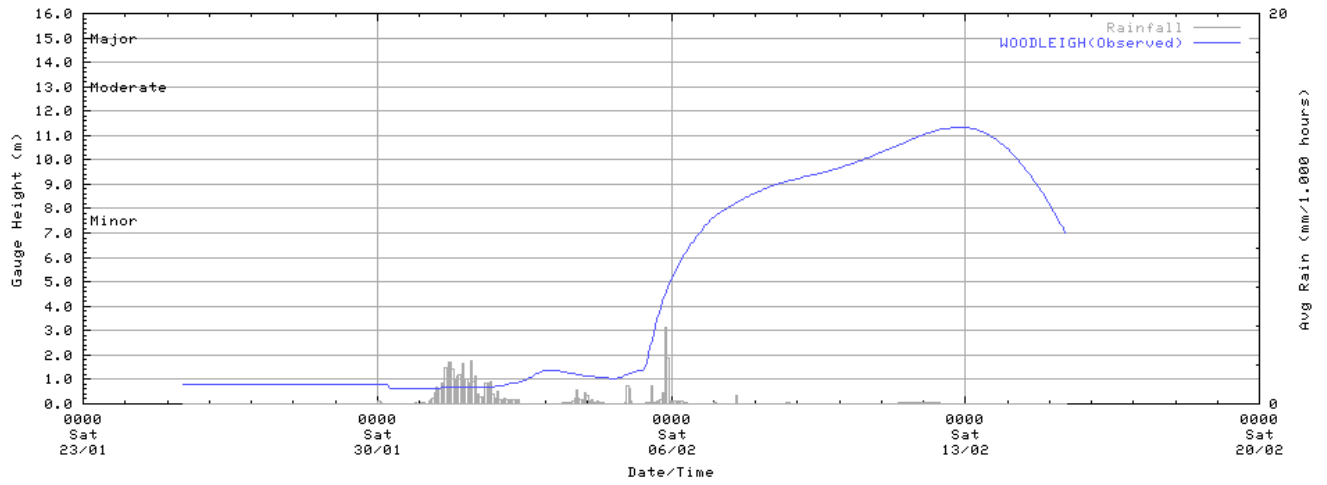
Mackenzie River at Coolmaringa



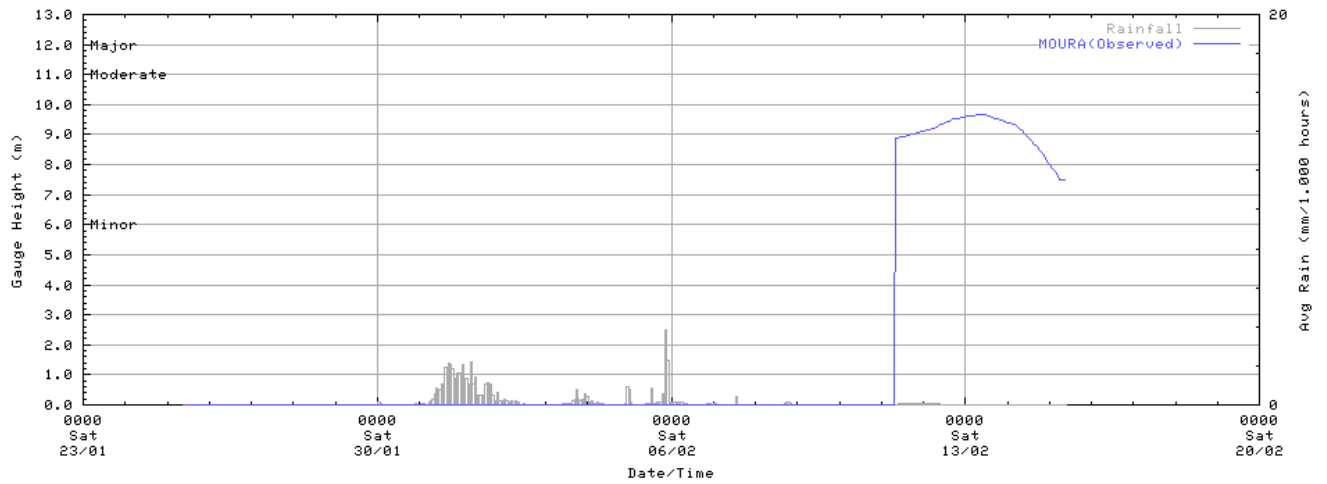
Dawson River at Taroom



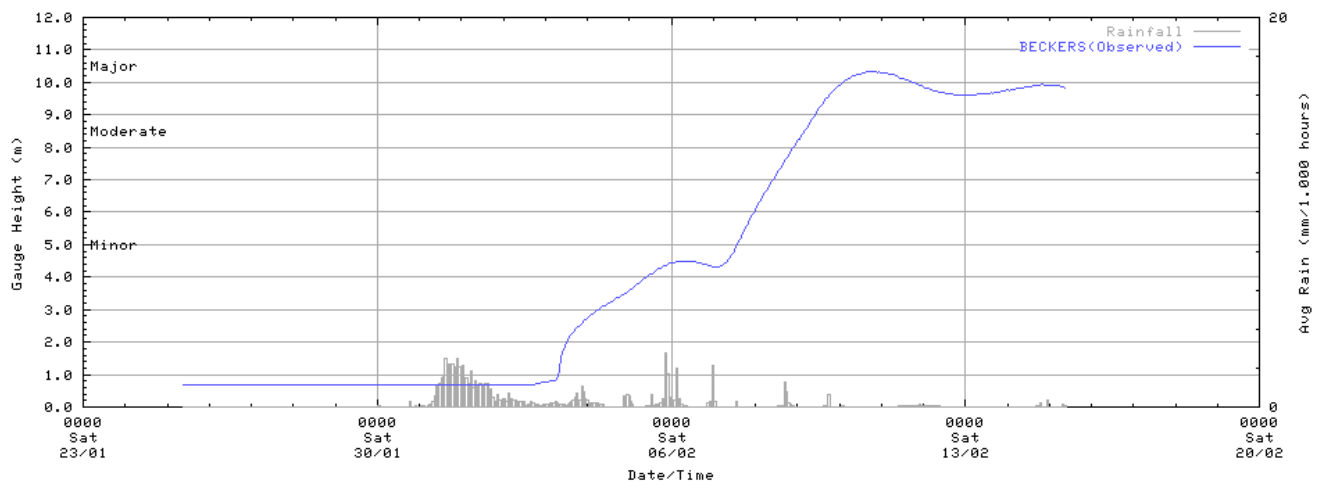
Dawson River at Woodleigh



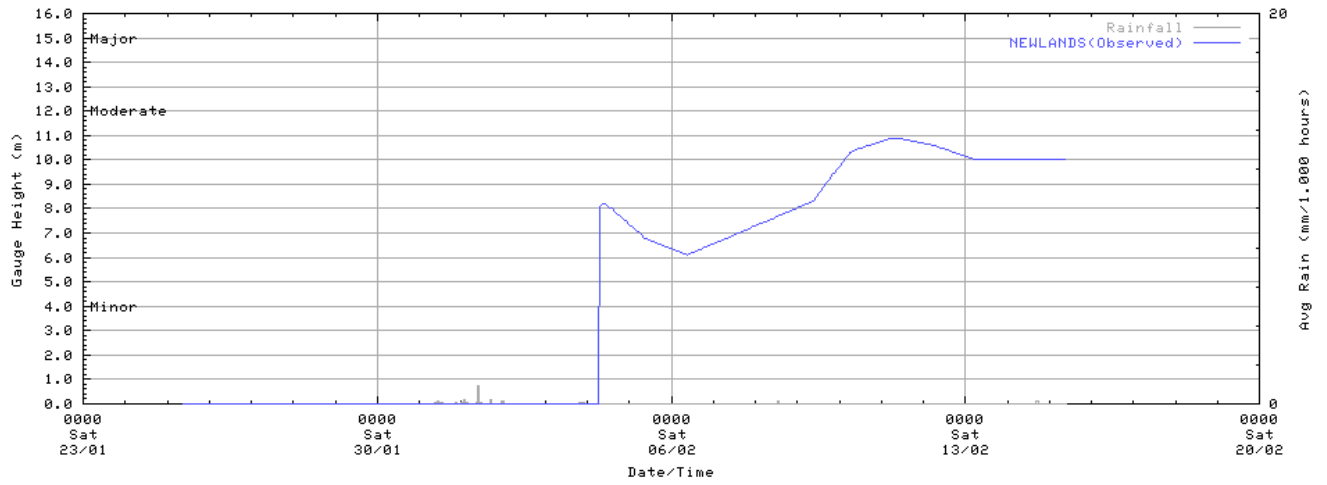
Dawson River at Moura



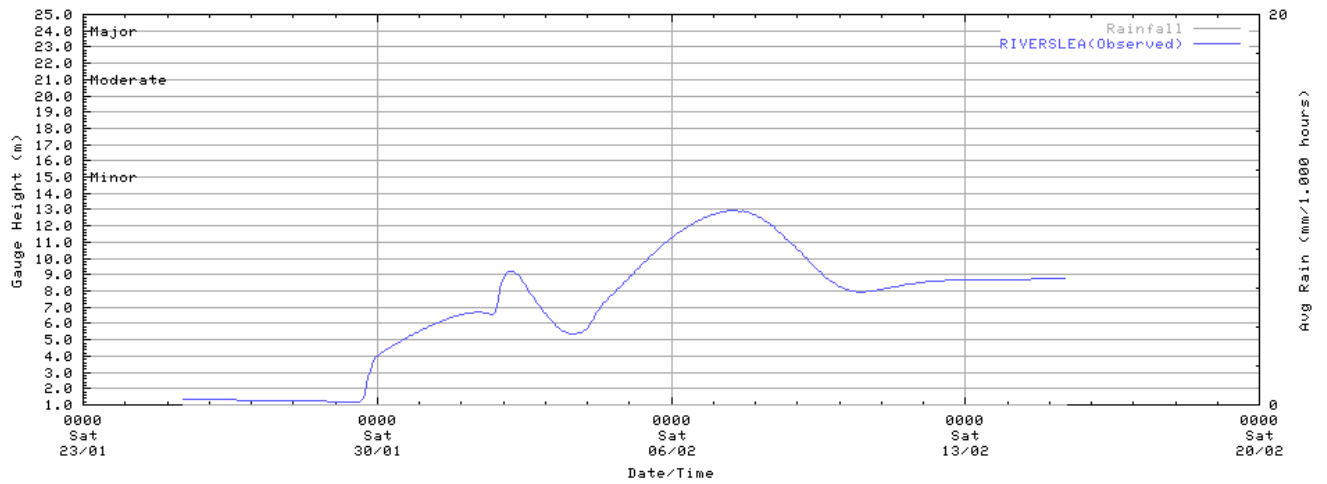
Dawson River at Beckers



Dawson River at Newlands



Fitzroy River at Riverslea



Fitzroy River at Yaamba

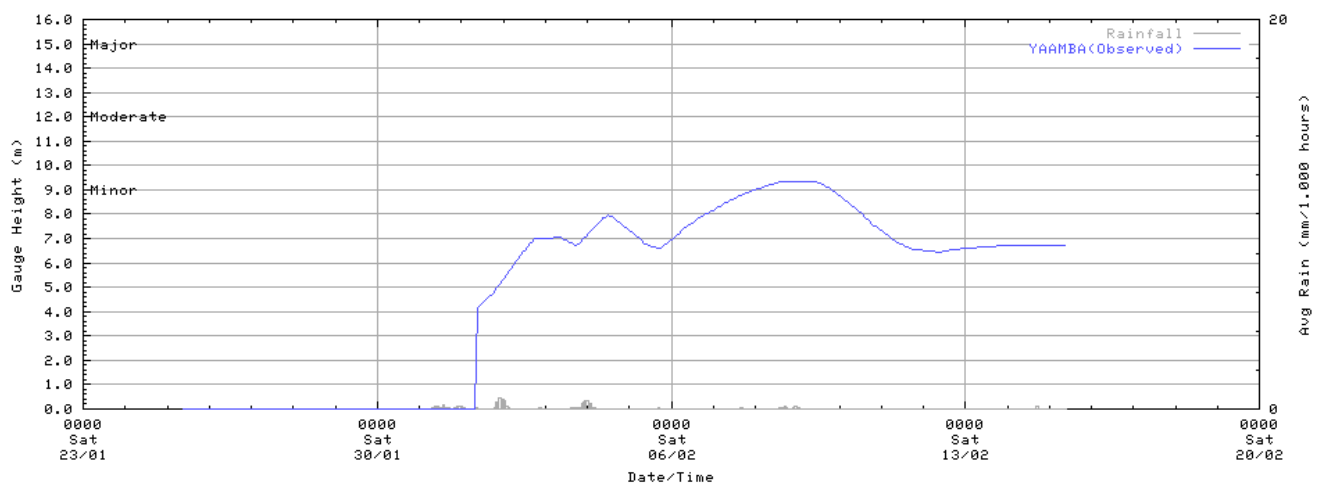
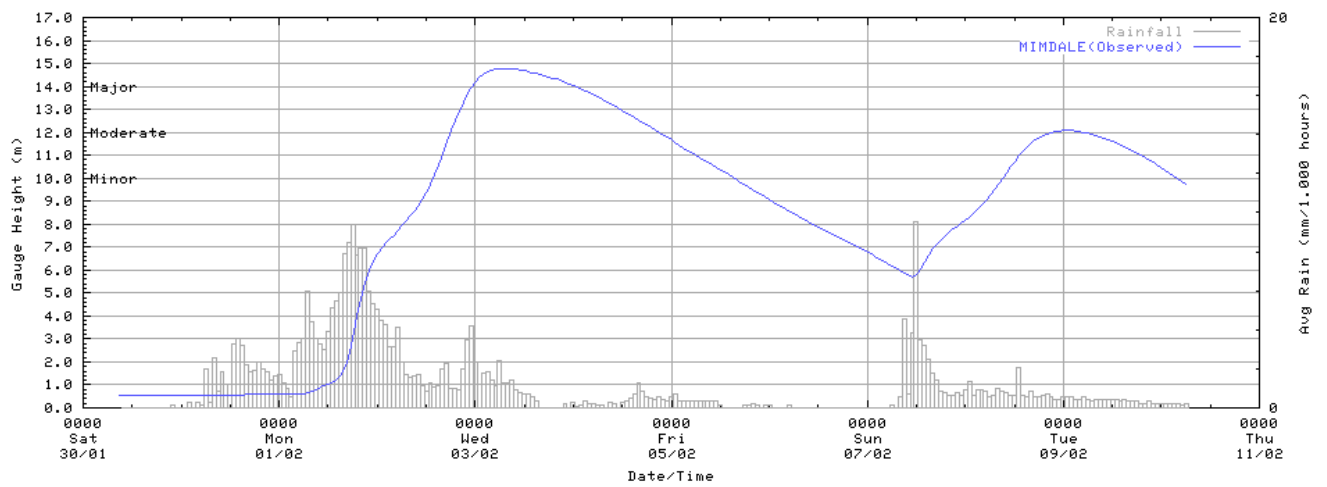


Figure 3.5.5 Flood hydrographs - Baffle Creek.

Baffle Creek at Mimdale



Baffle Creek at Essendean Bridge

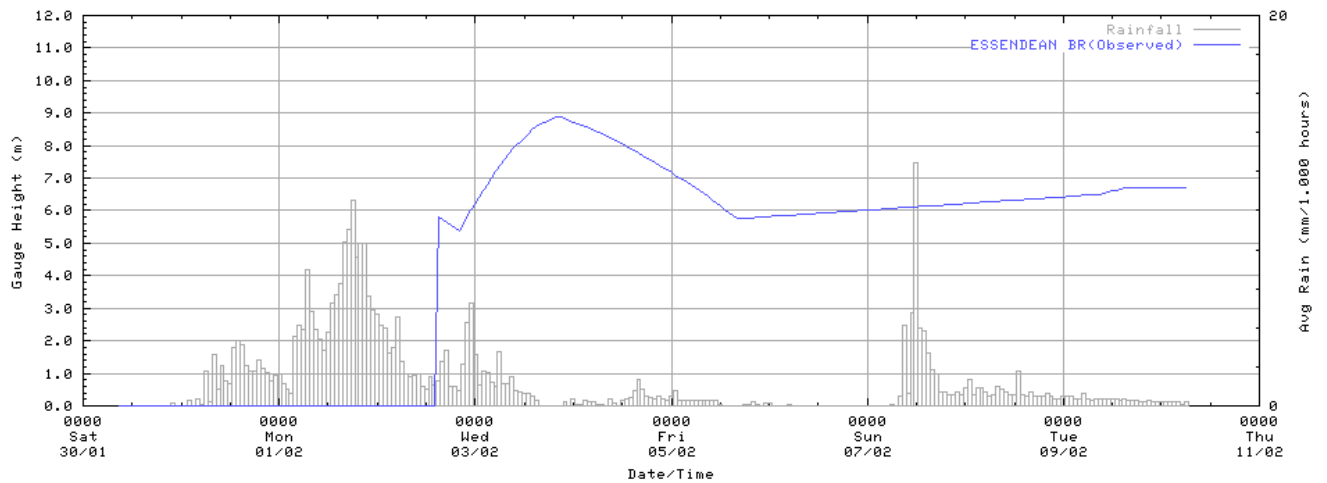
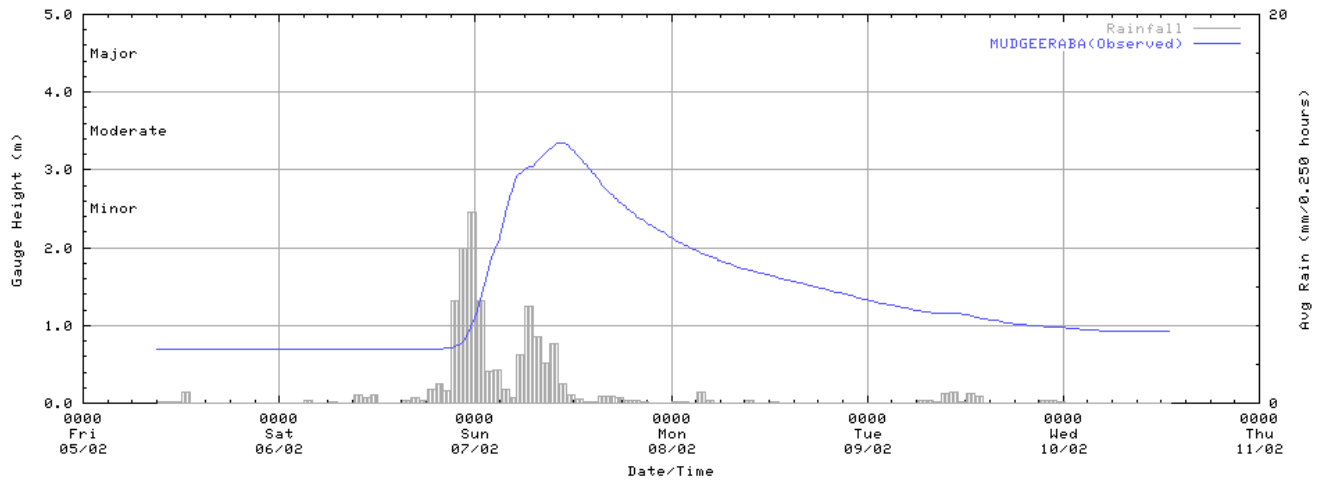
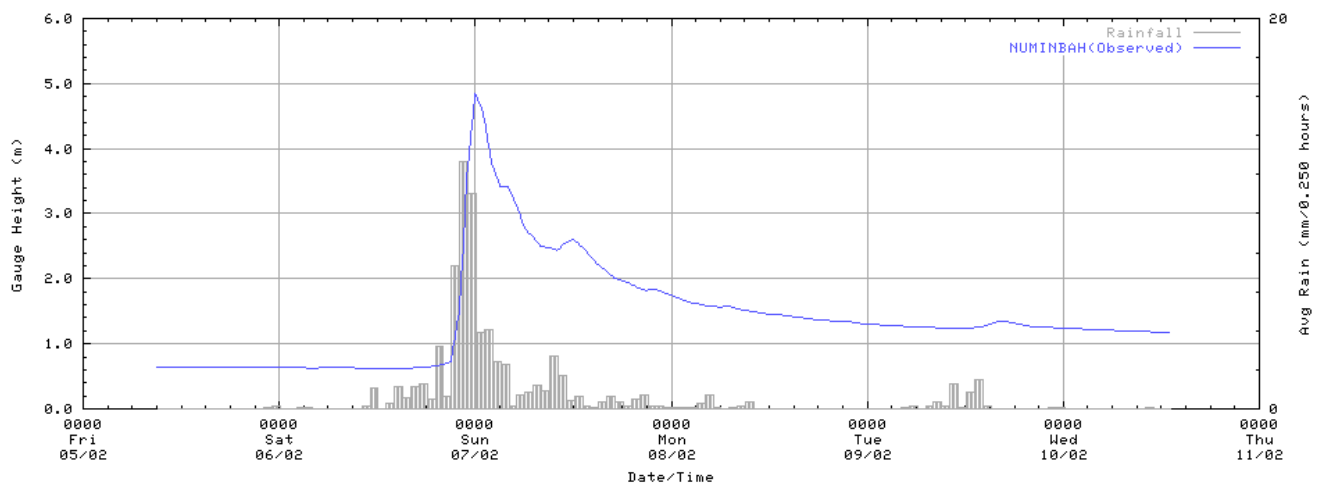


Figure 3.5.6 Flood hydrographs - South East Queensland Coastal Rivers and Streams.

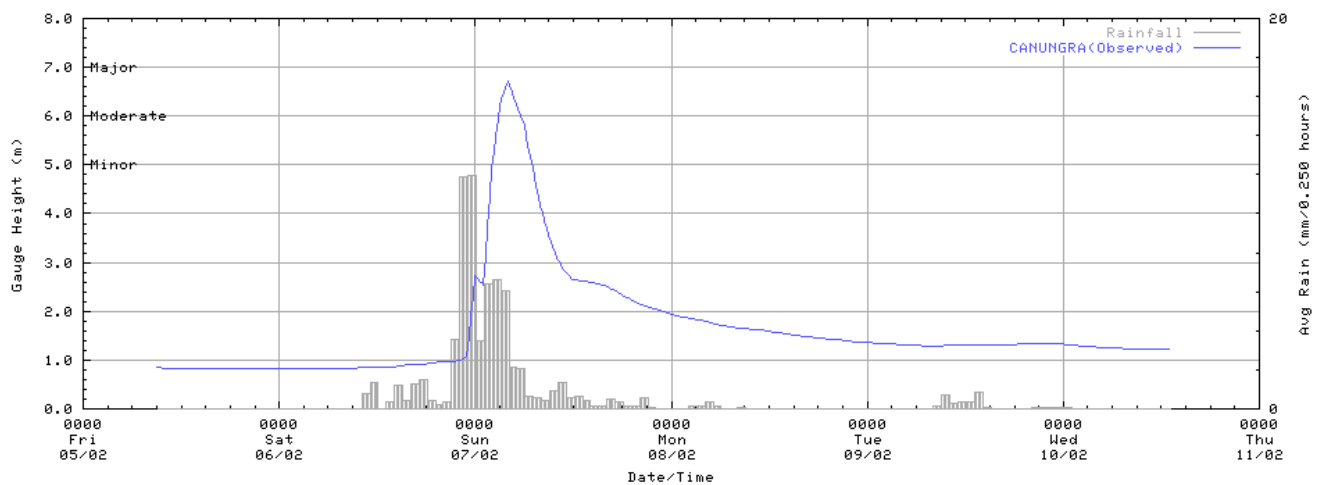
Mudgeeraba Creek at Mudgeeraba



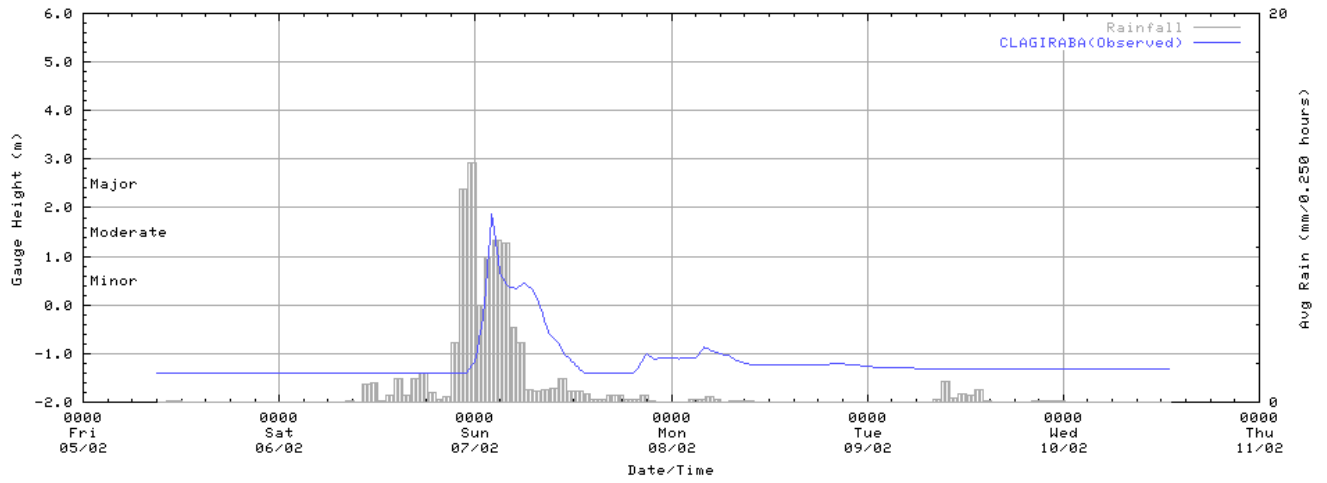
Nerang River at Numinbah



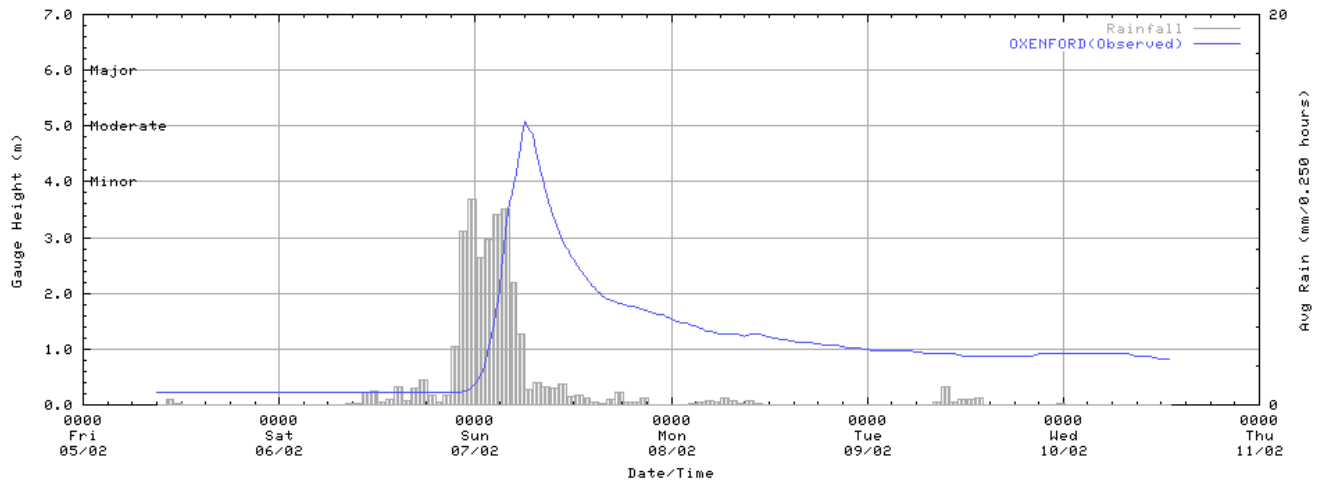
Coomera River at Canungra



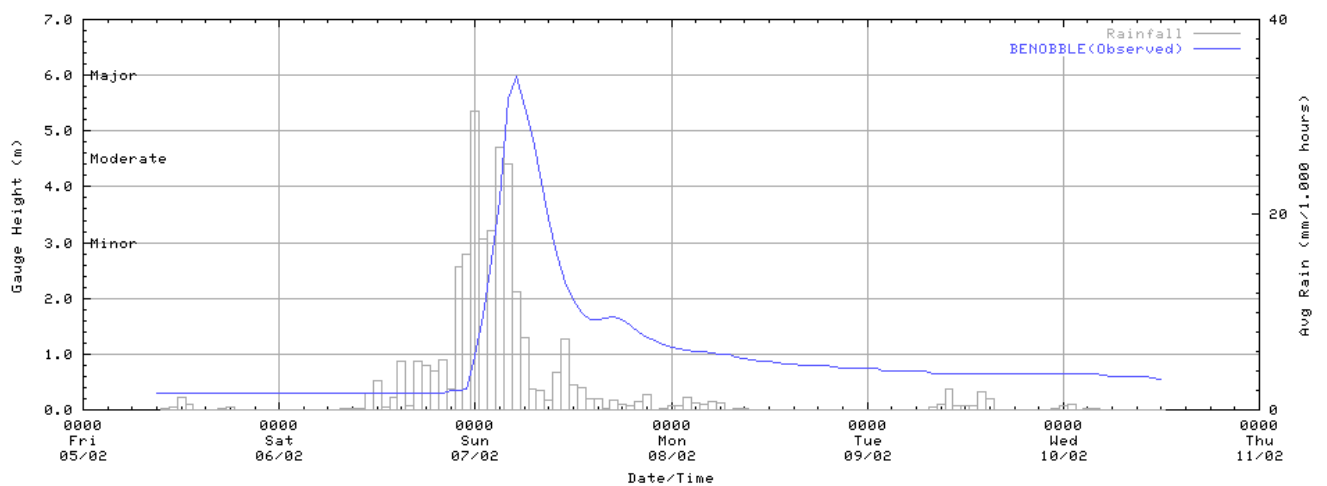
Coomera River at Clagiraba Road



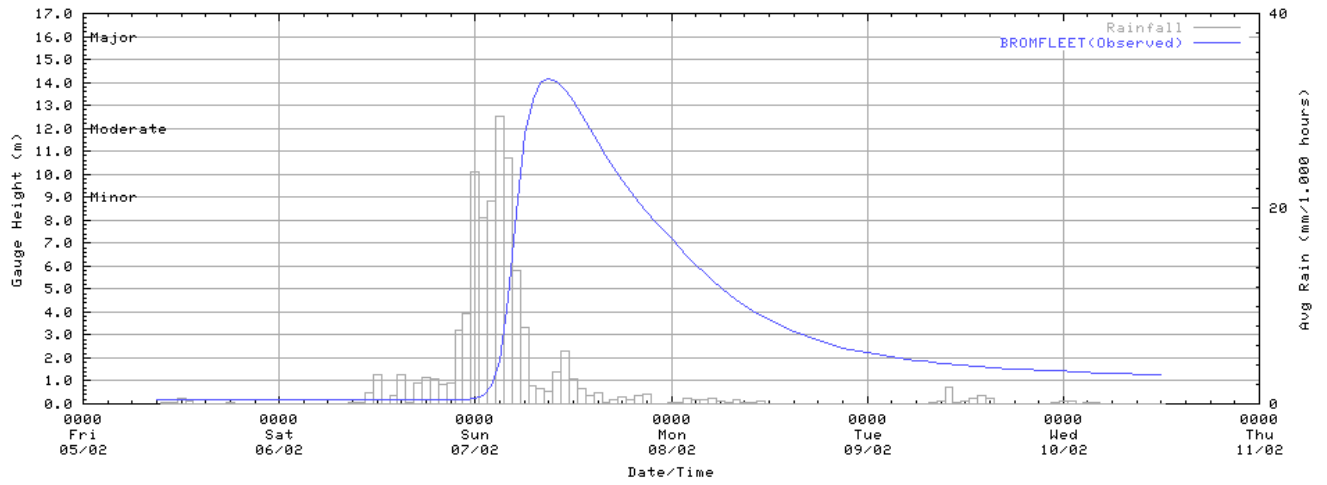
Coomera River at Oxenford Weir



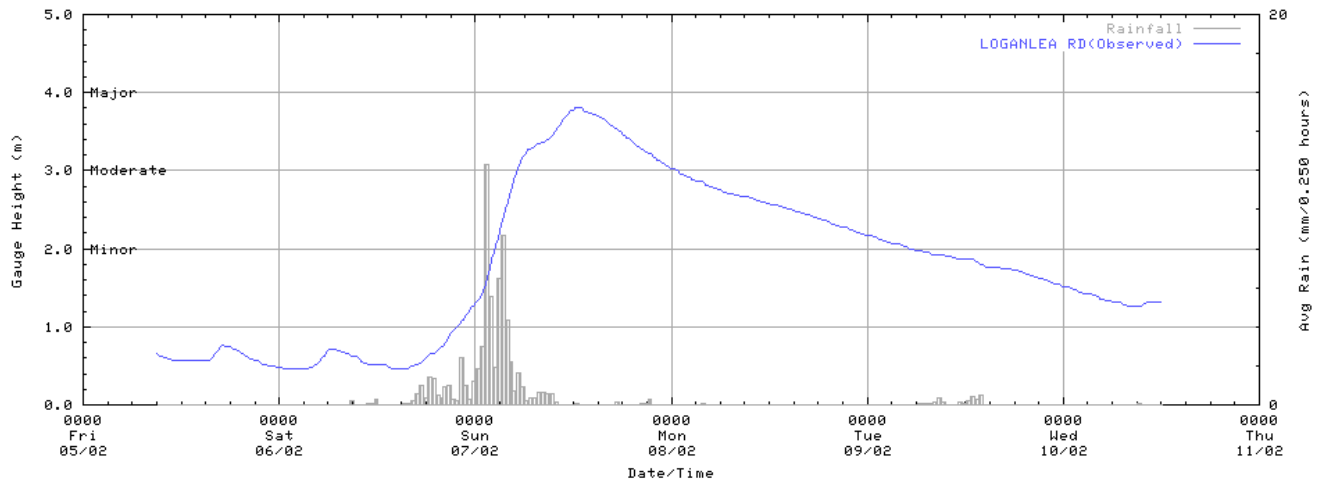
Albert River at Benobble



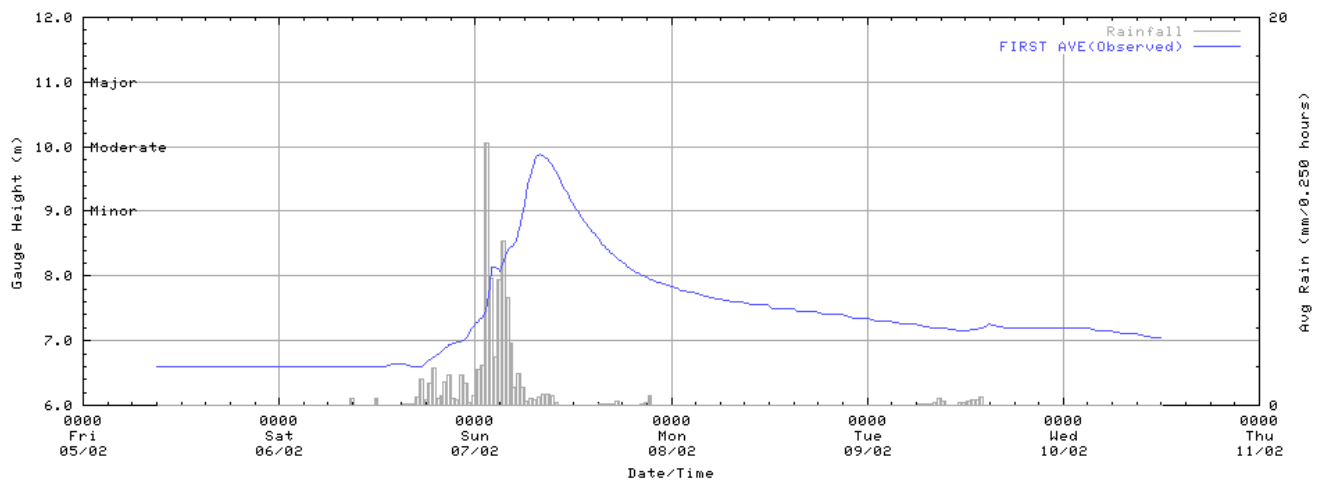
Albert River at Bromfleet



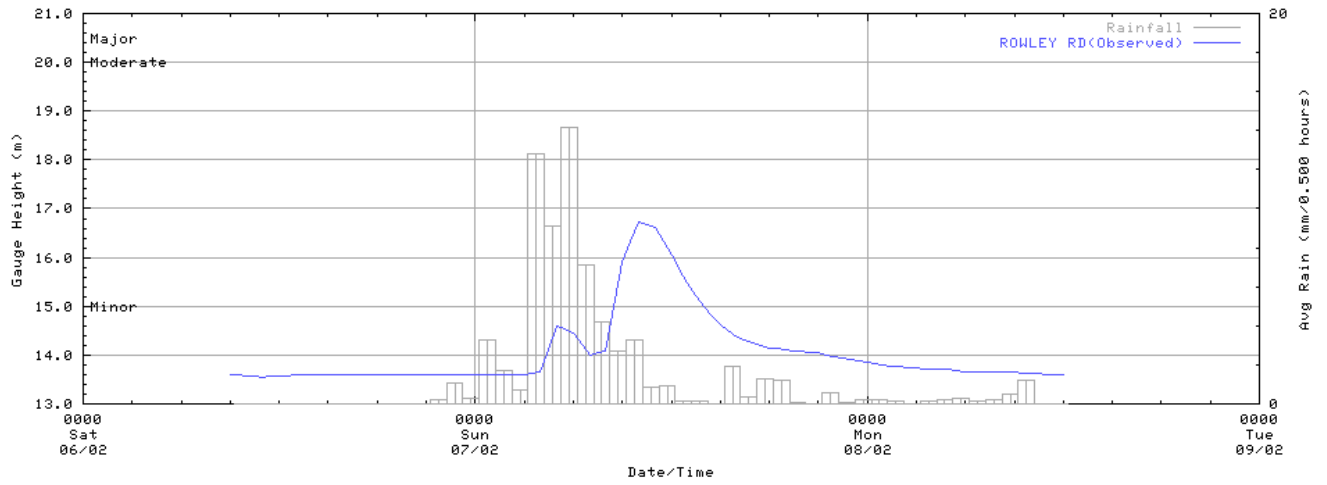
Slacks Creek at Loganlea Road



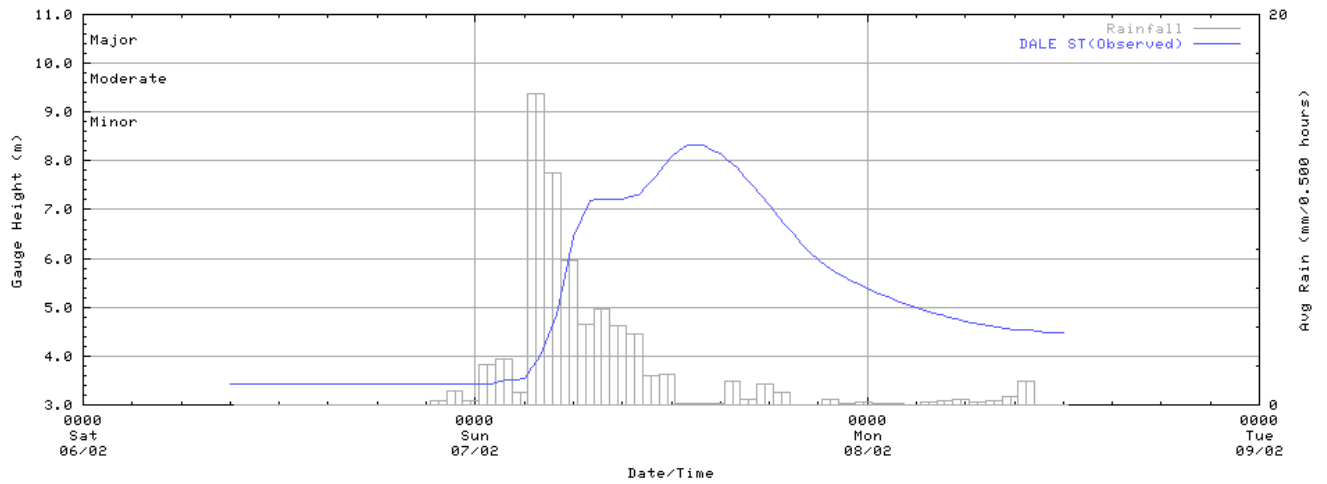
Scrubby Creek at First Avenue



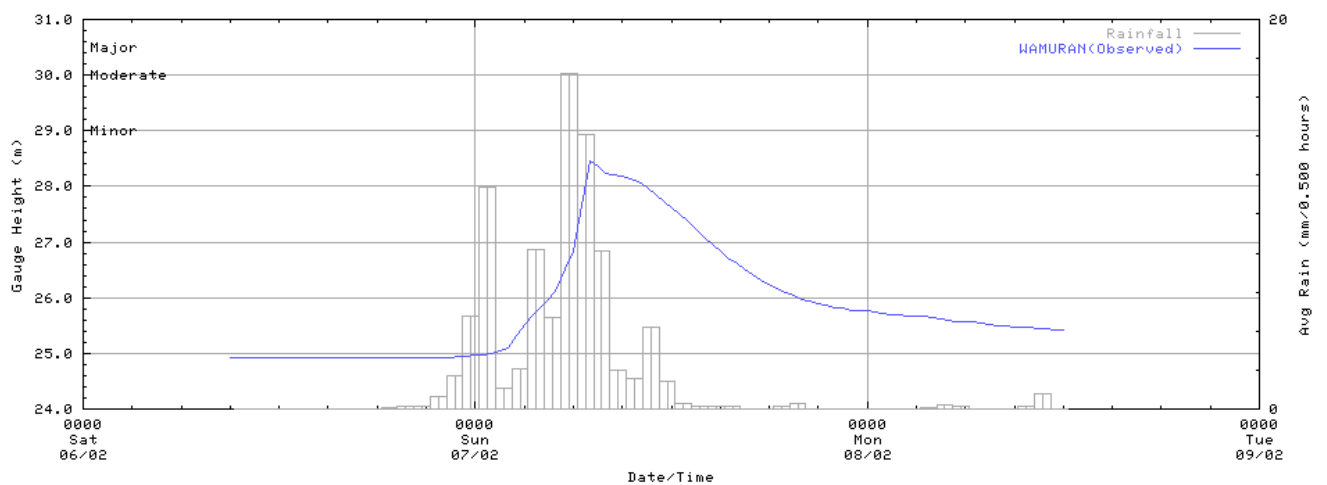
Burpengary Creek at Rowley Road



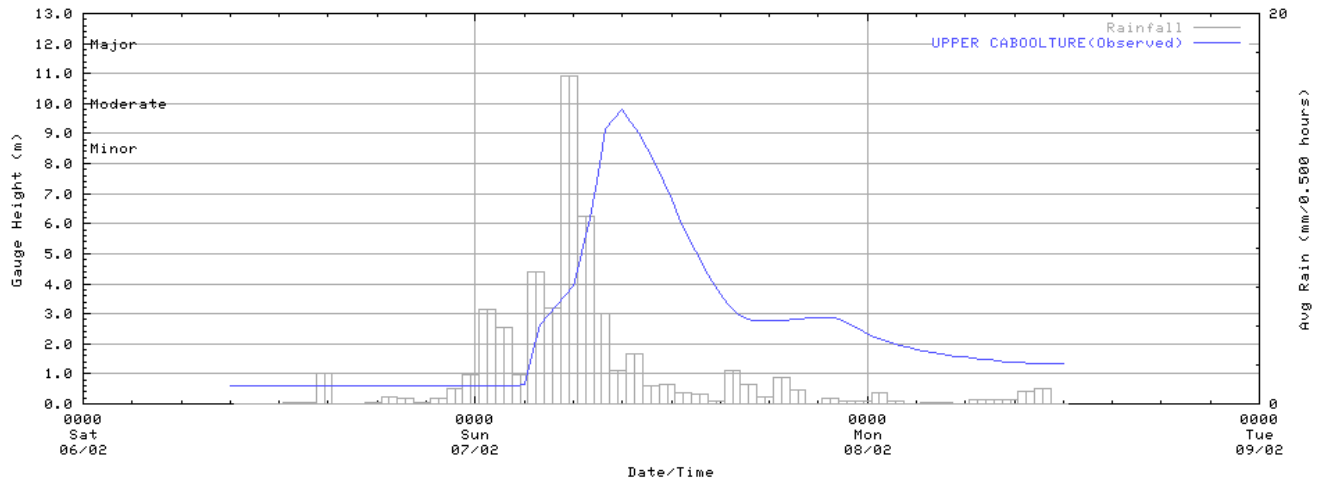
Burpengary Creek at Dale Street



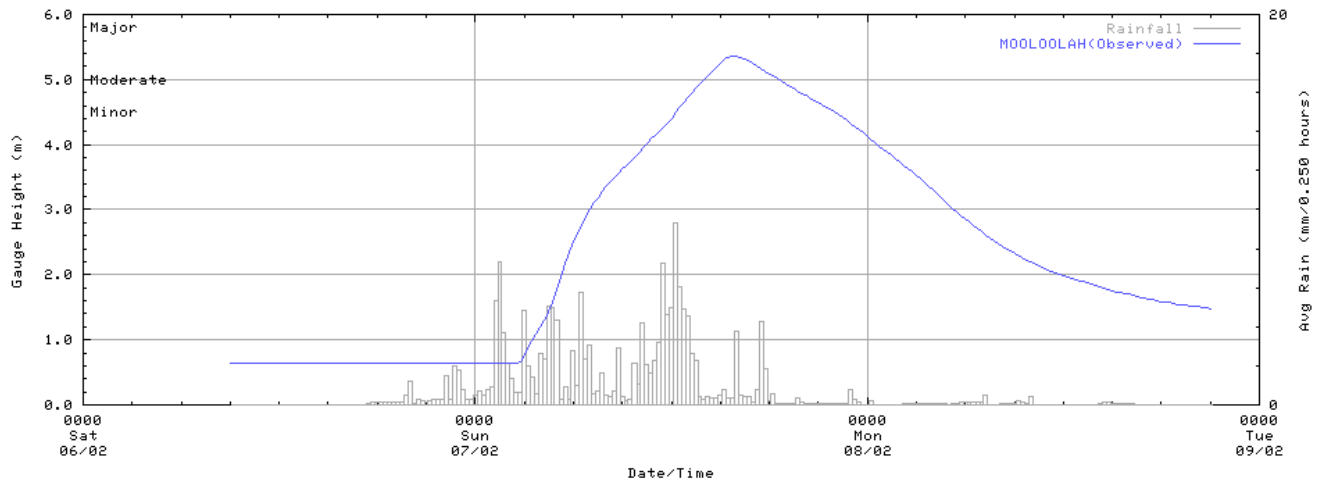
Waraba Creek at Wamuran



Caboolture River at Upper Caboolture



Mooloolah River at Mooloolah



Paynter Creek at Diddillabah

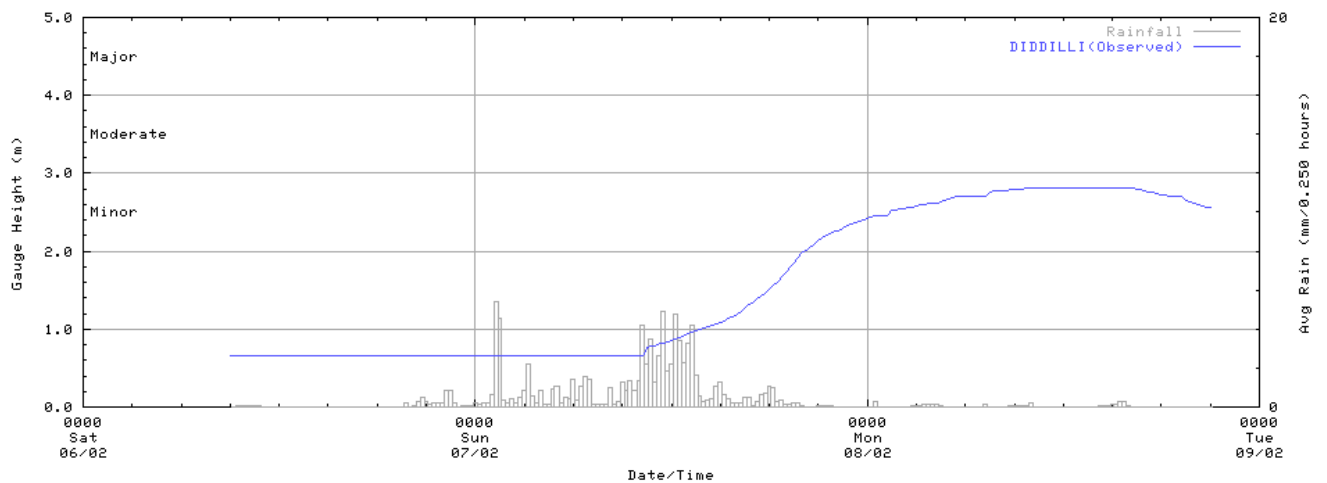
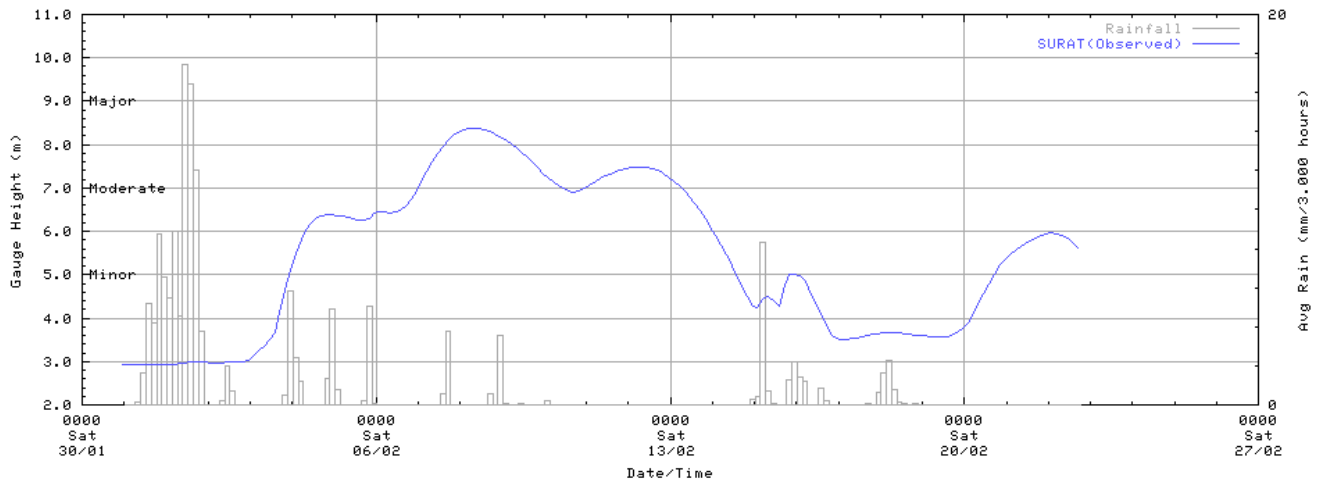
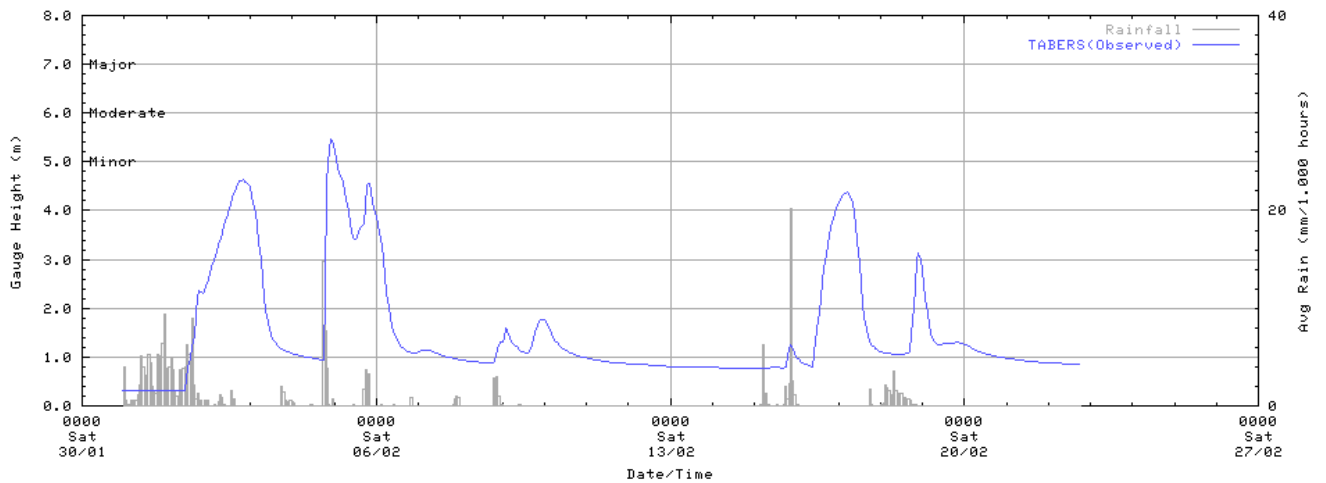


Figure 3.5.7 Flood hydrographs - Condamine and Balonne Rivers.

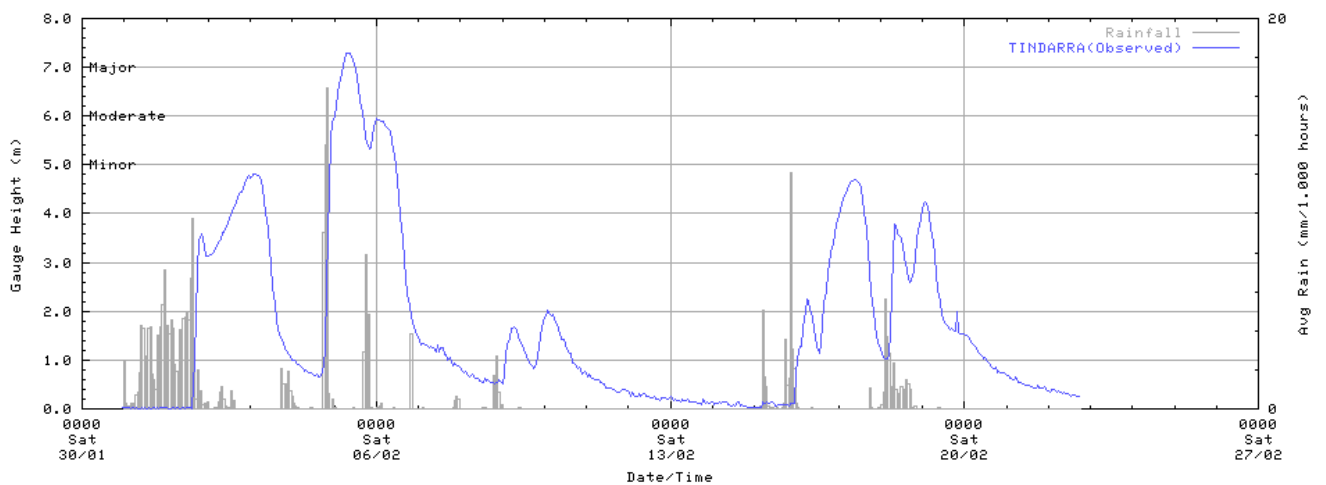
Balonne River at Surat



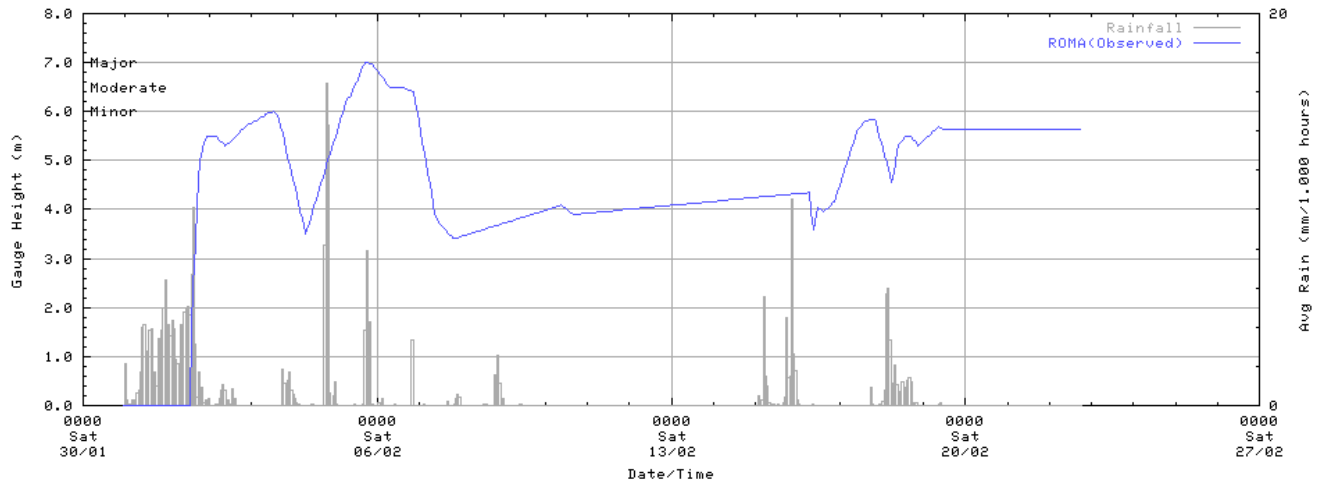
Bungil Creek at Tabers



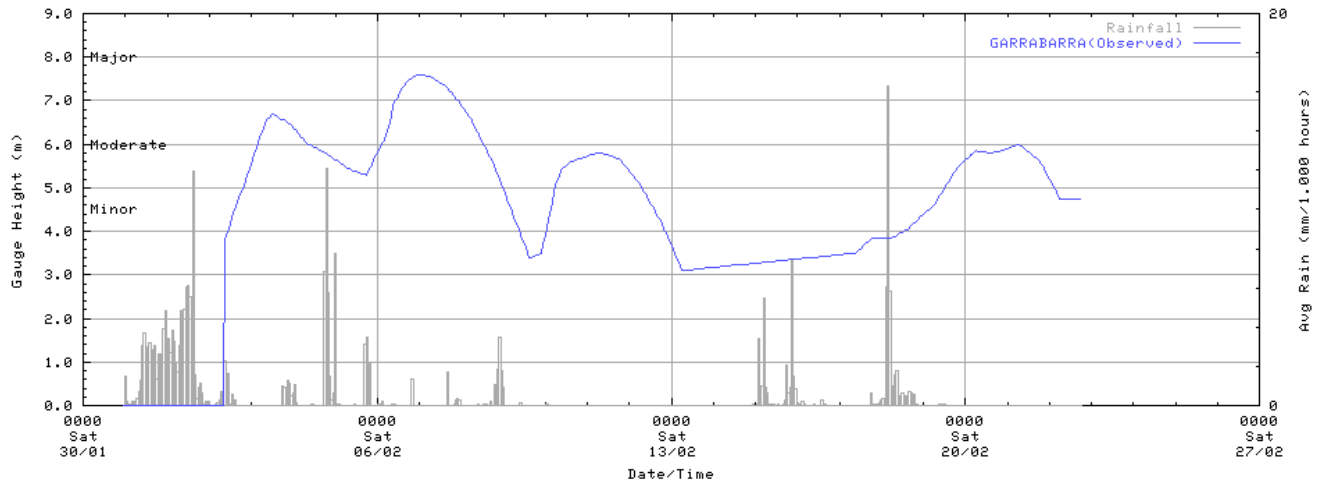
Bungil Creek at Tindarra



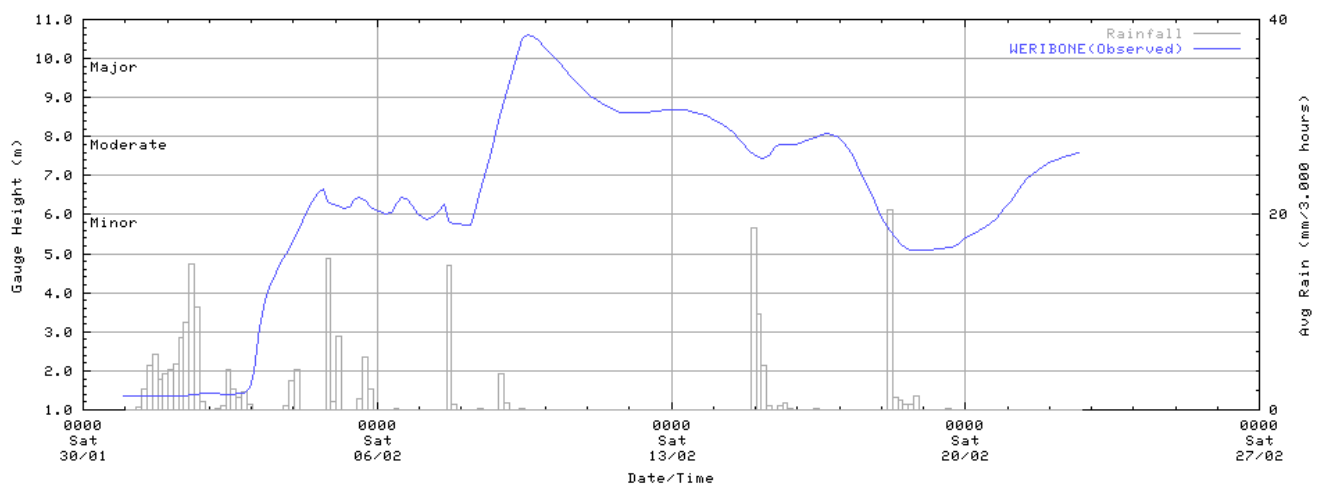
Bungil Creek at Roma



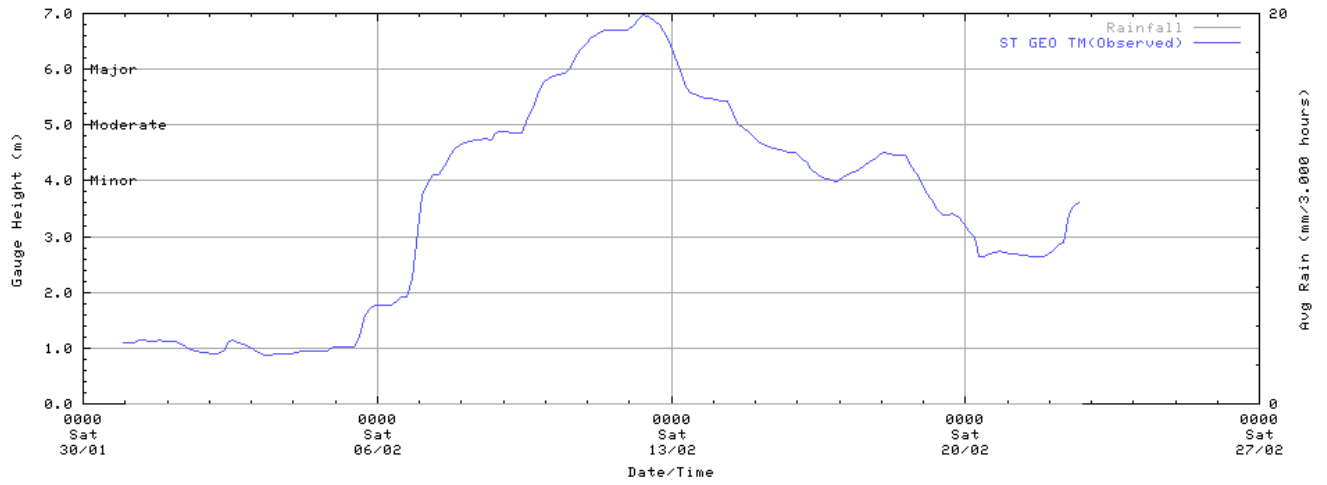
Bungil Creek at Garrabarra



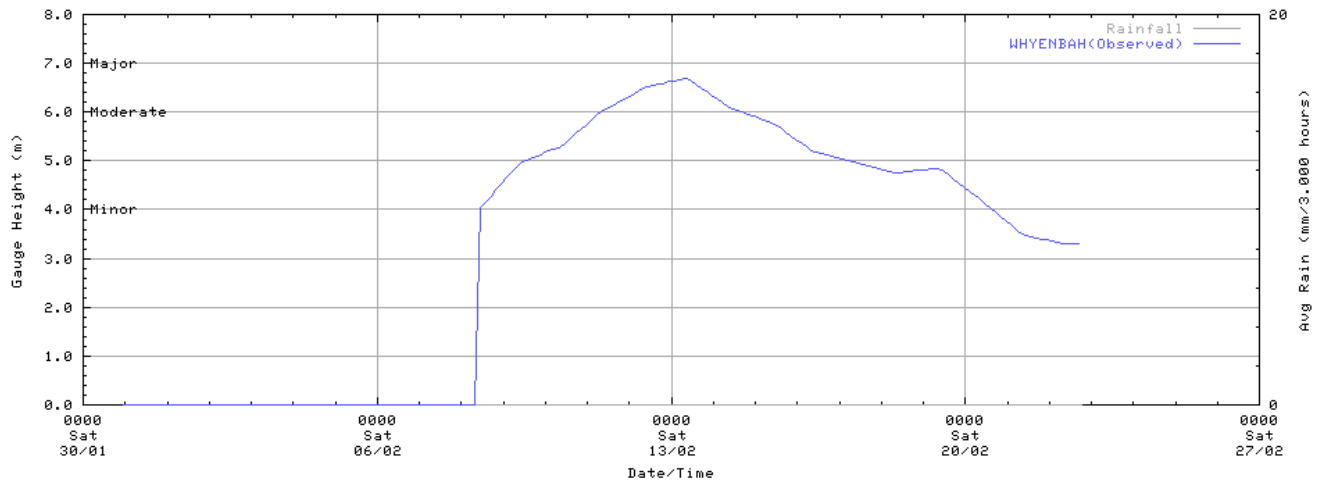
Balonne River at Weribone



Balonne River at St. George



Balonne River at Whyenbah



Narran River at Narran

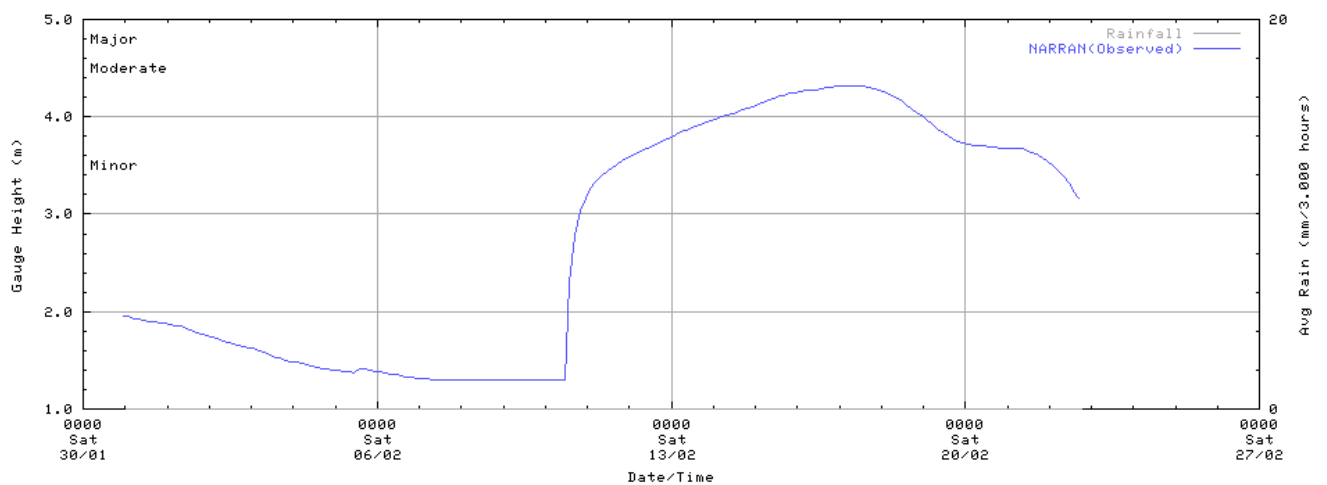
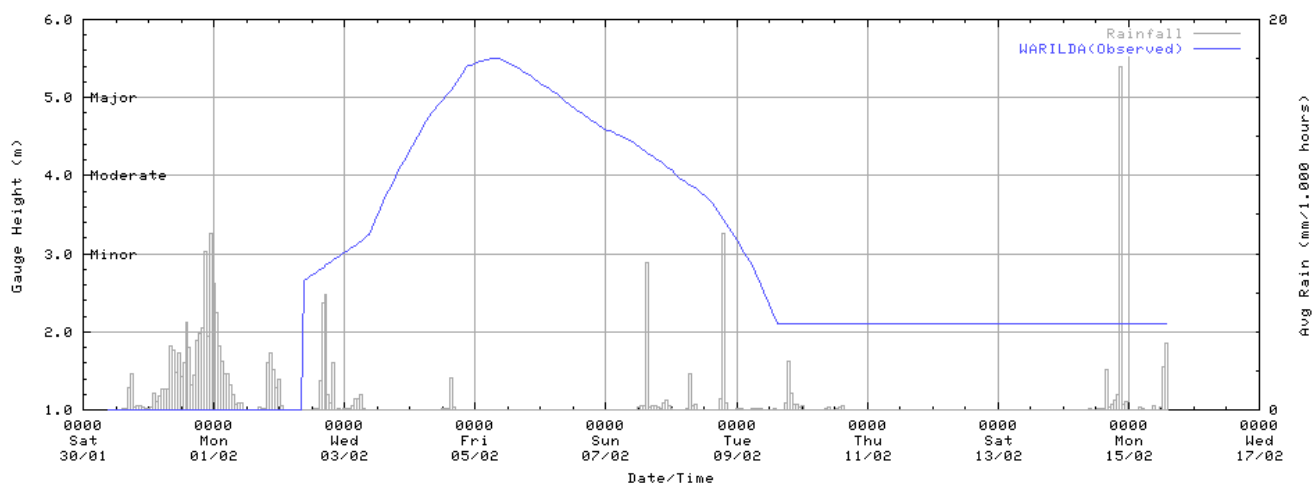
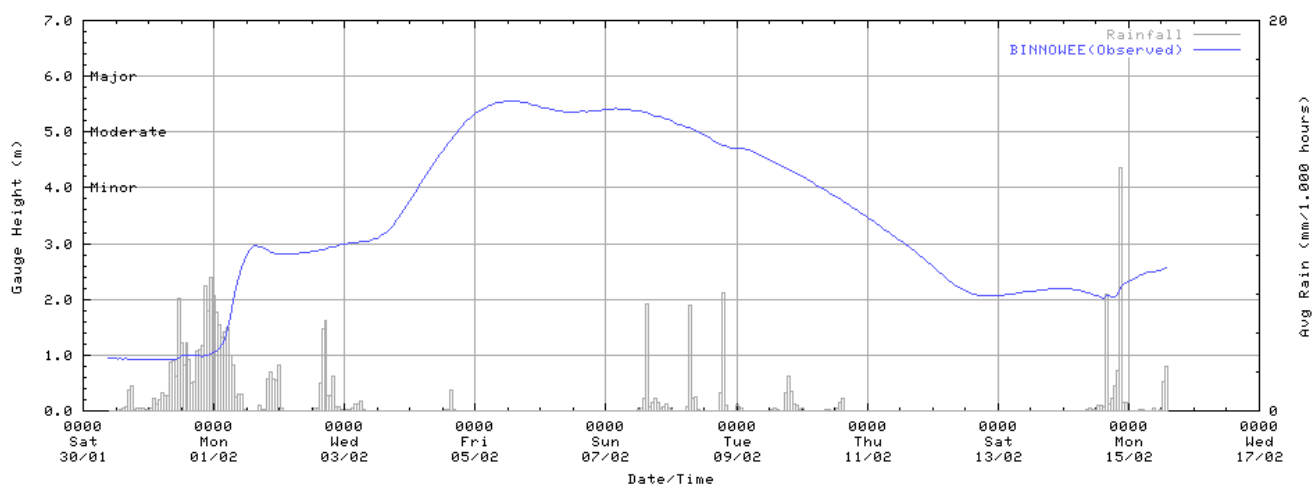


Figure 3.5.8 Flood hydrographs - Warrego River.

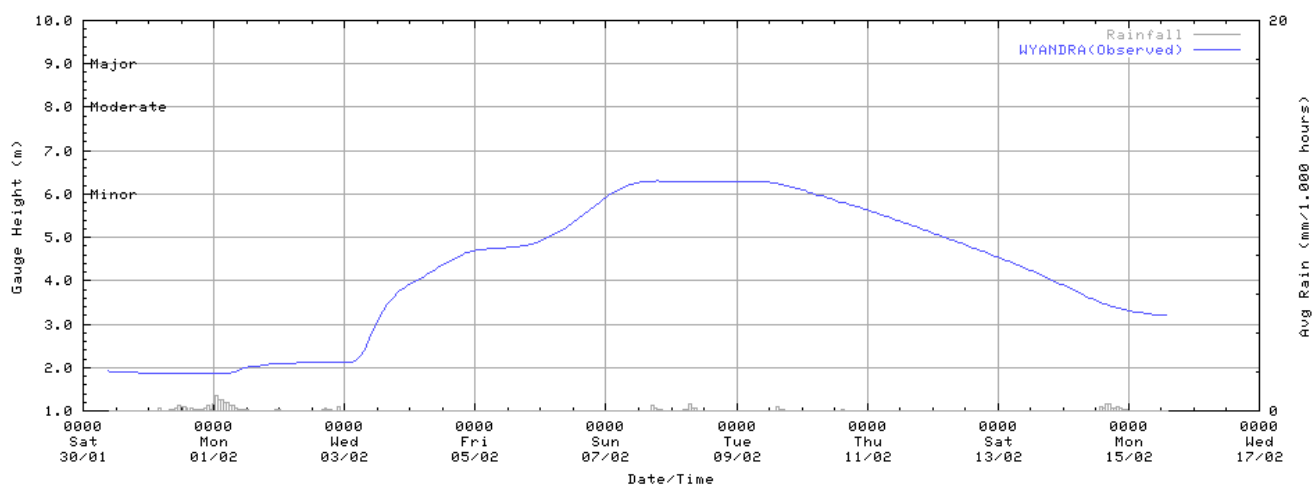
Langlo River at Warilda



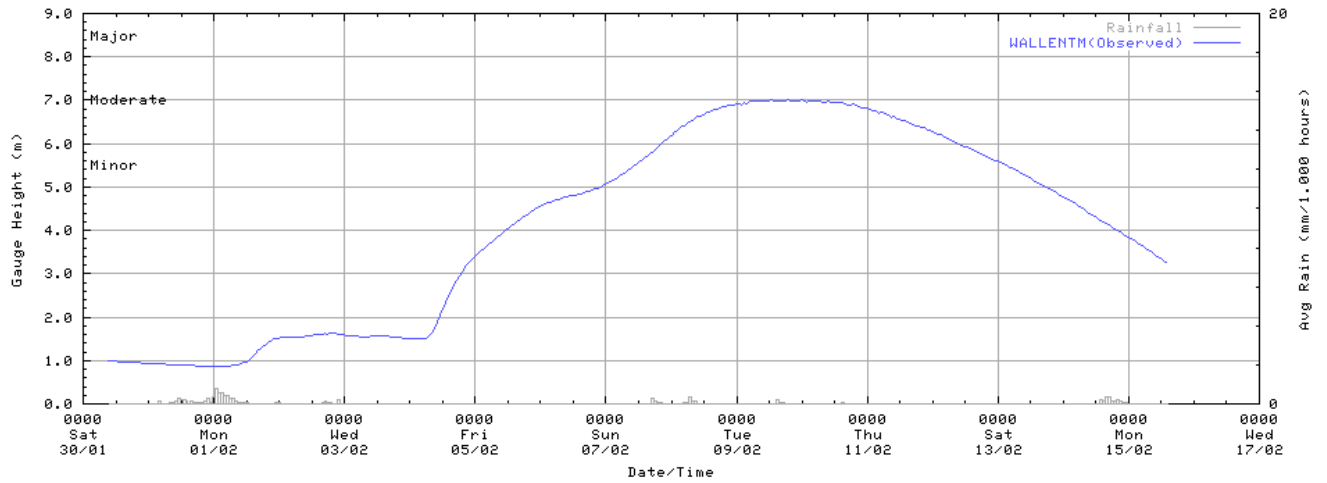
Ward River at Binnowiee



Warrego River at Wyandra



Warrego River at Wallen



Warrego River at Cunnamulla

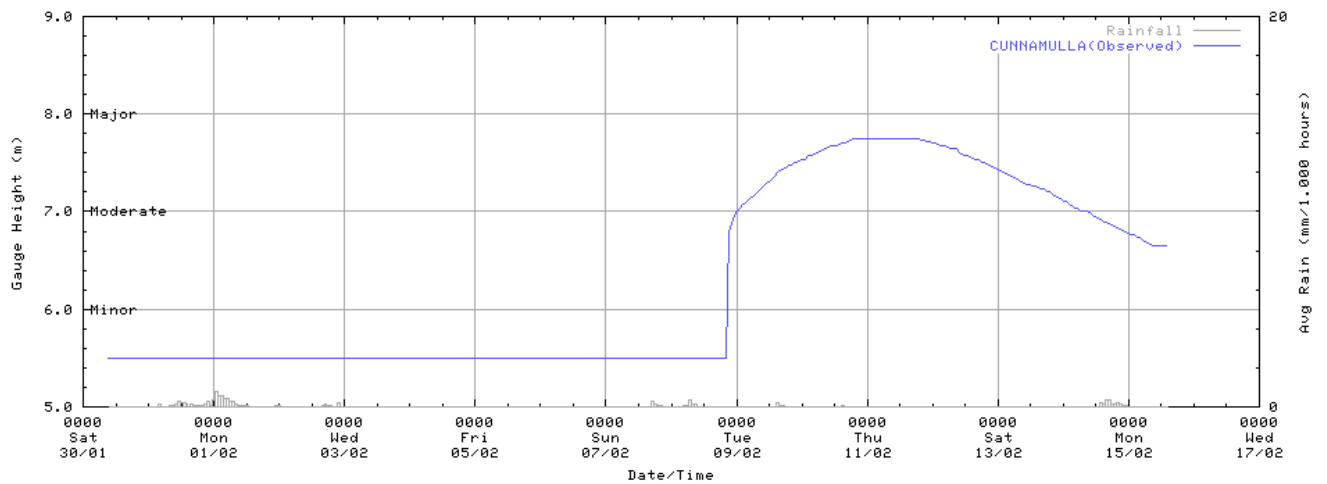
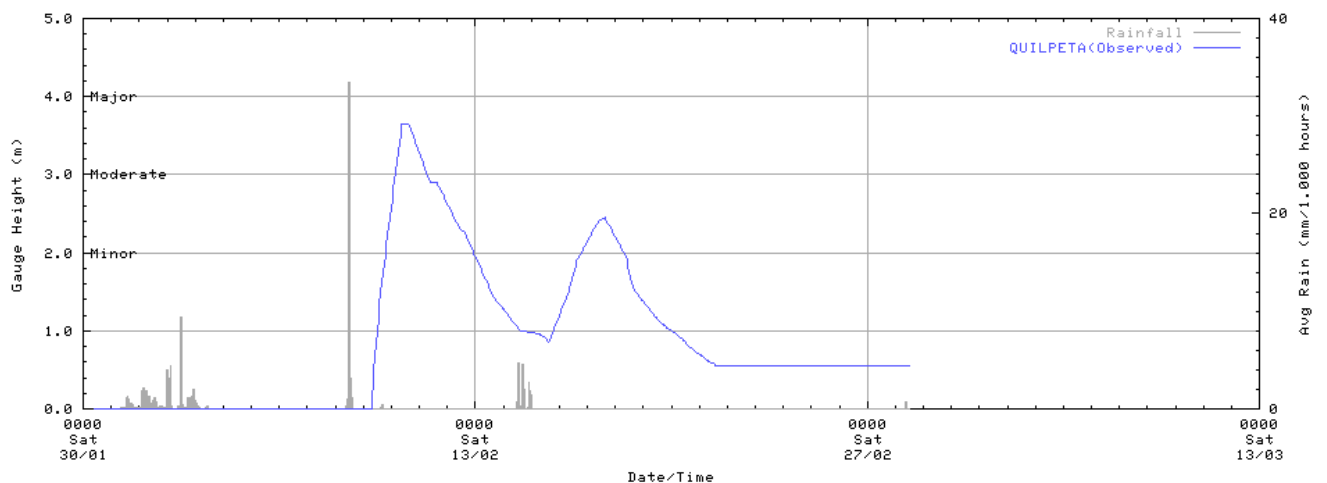
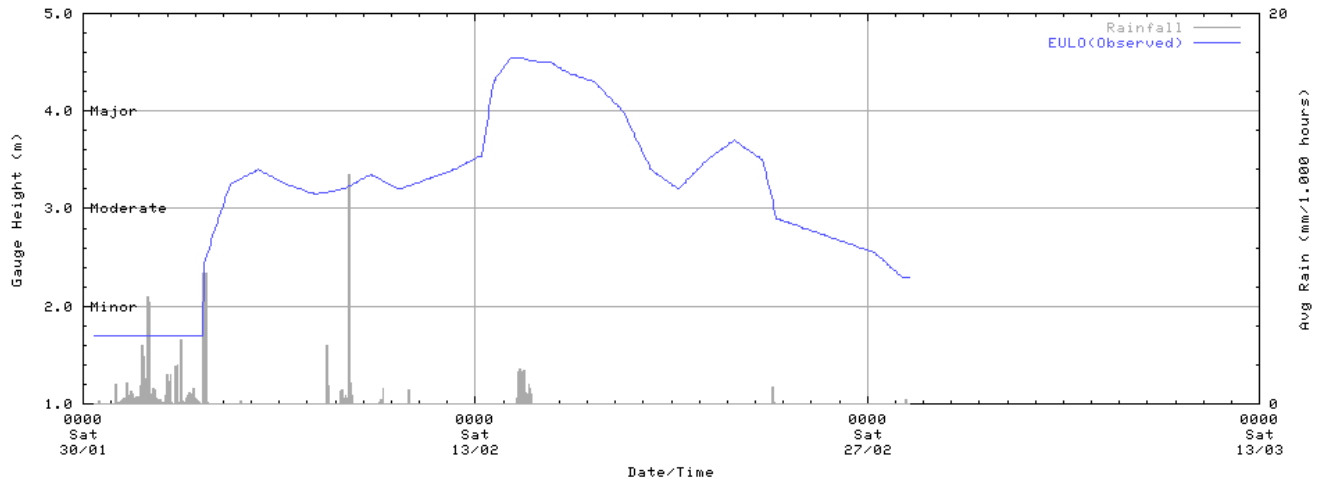


Figure 3.5.9 Flood hydrographs - Paroo River.

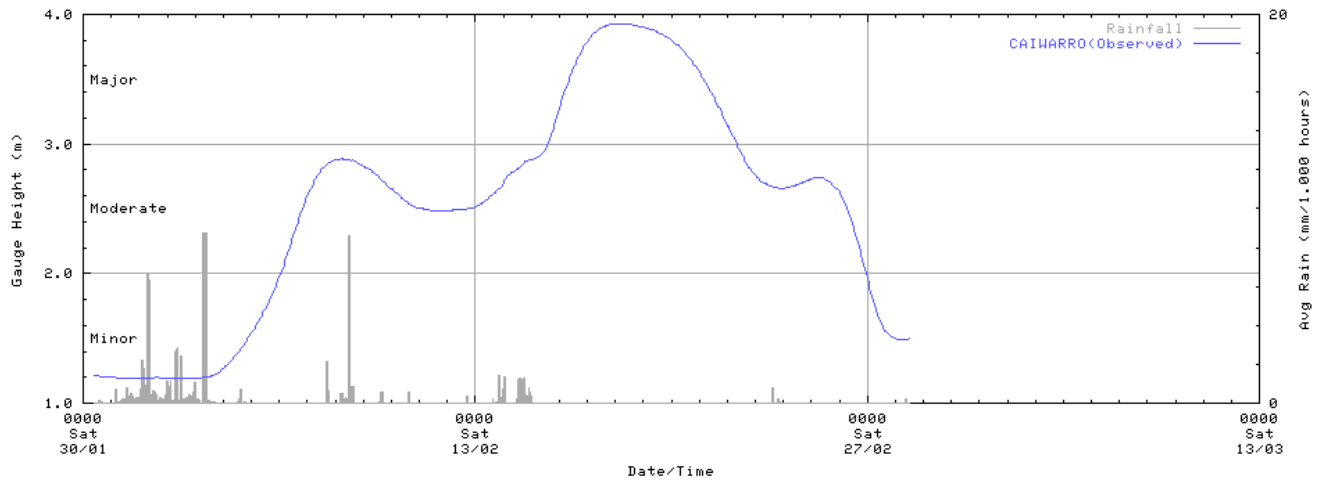
Beechal Creek at Quilpeta



Paroo River at Eulo



Paroo River at Caiwarro



Paroo River at Hungerford

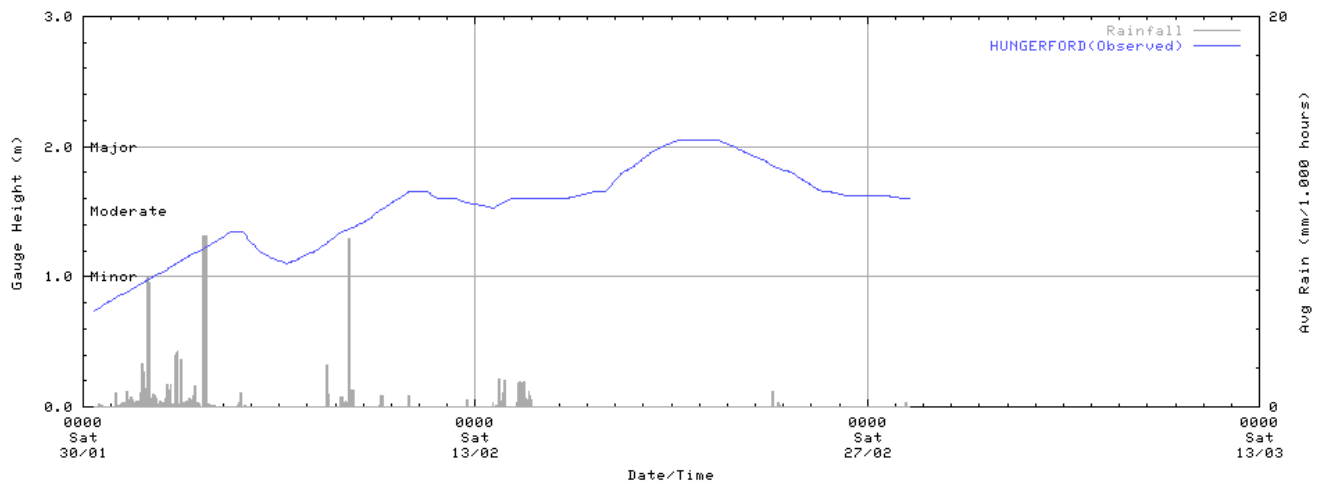
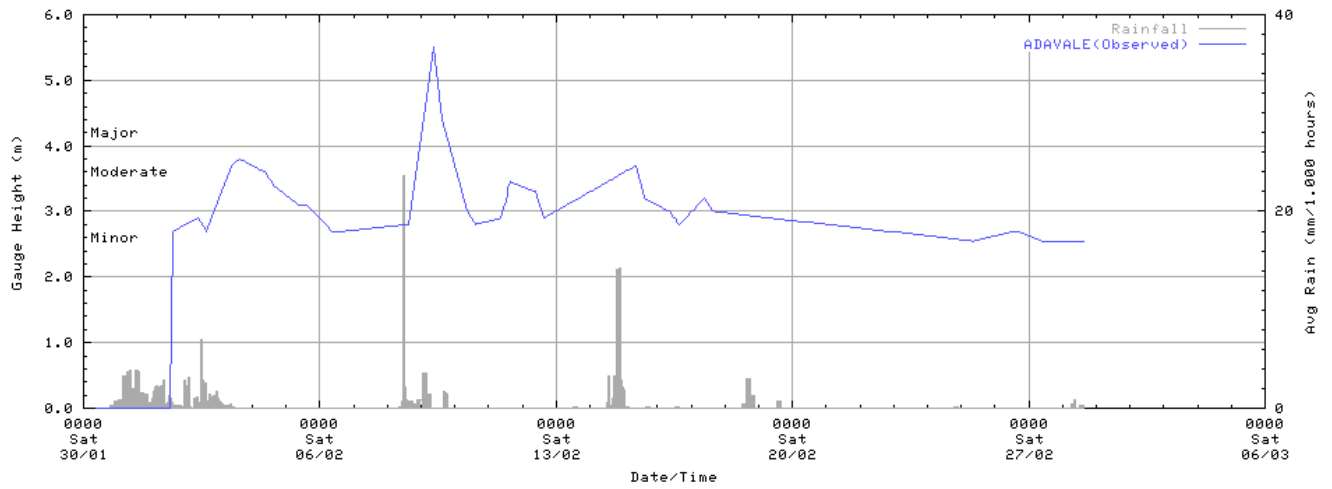
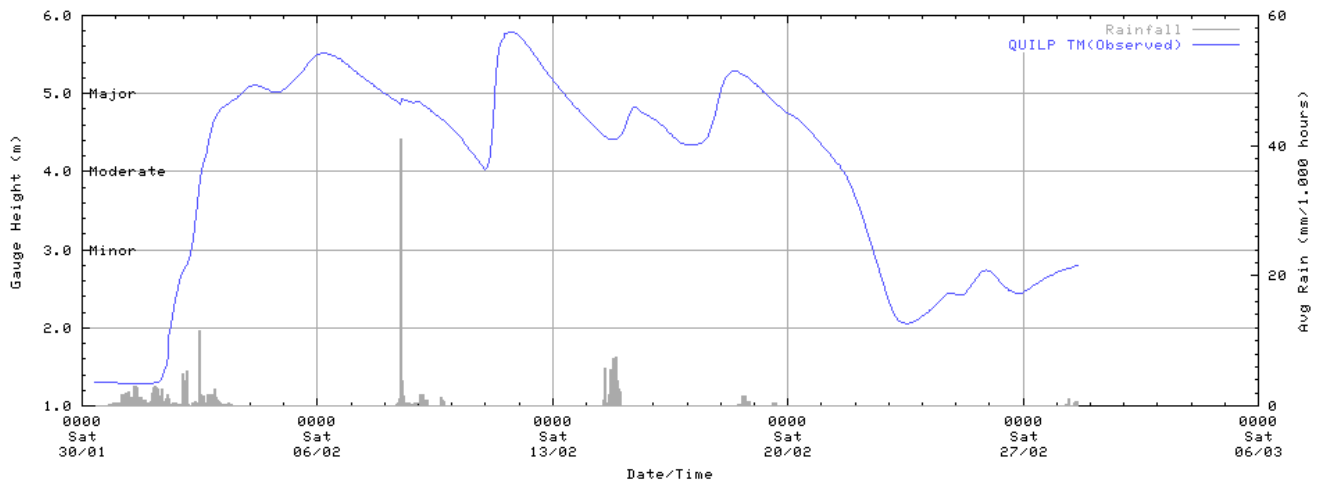


Figure 3.5.10 Flood hydrographs - Bulloo River.

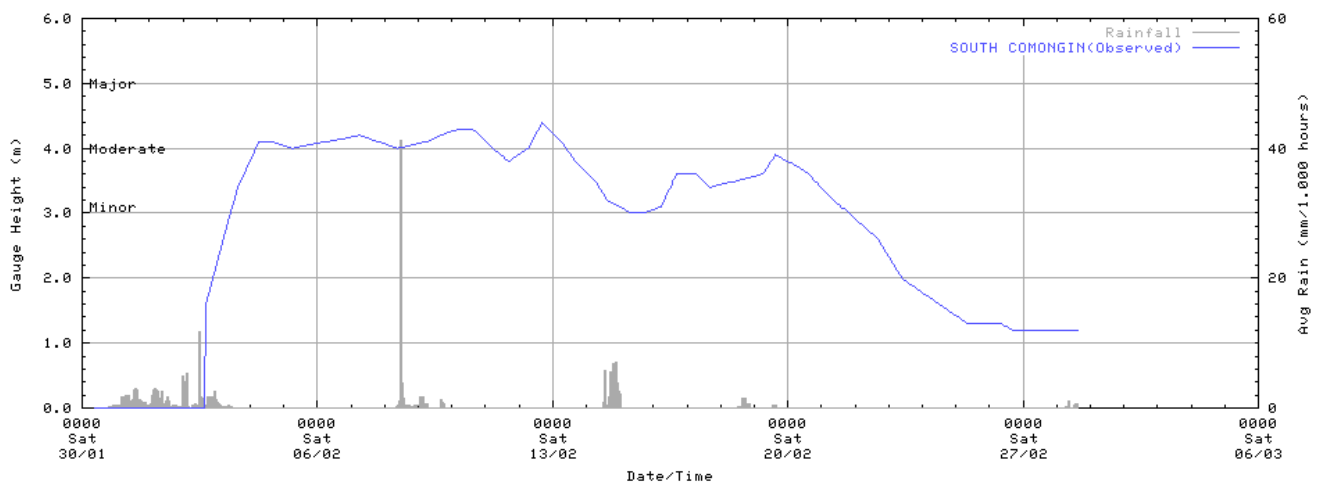
Blackwater Creek at Adavale



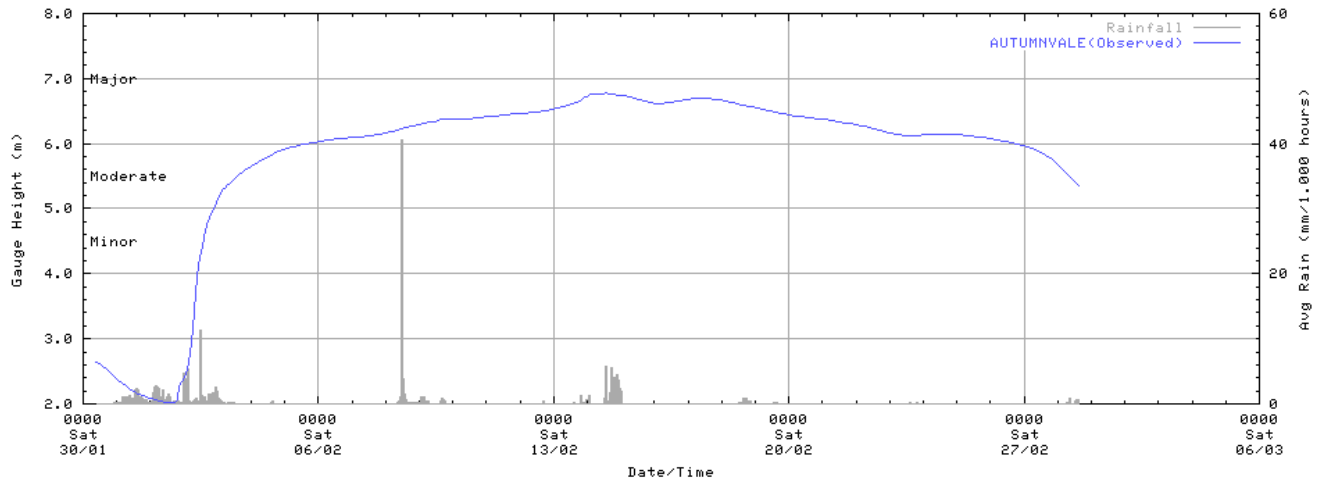
Bulloo River at Quilpie



Bulloo River at South Comongin



Bulloo River at Autumnvale



Bulloo River at Thargomindah

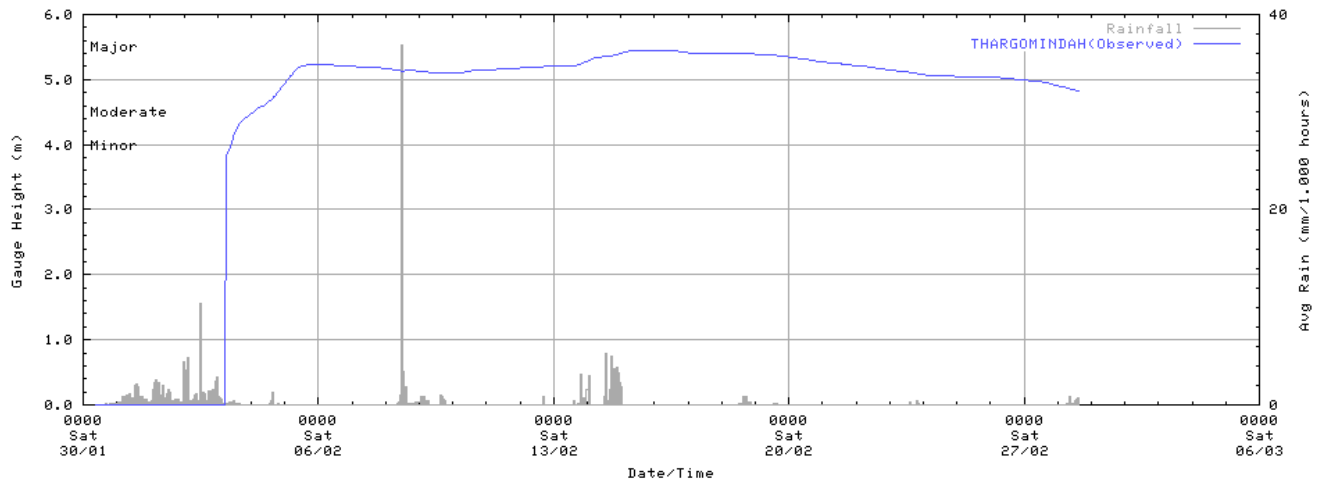
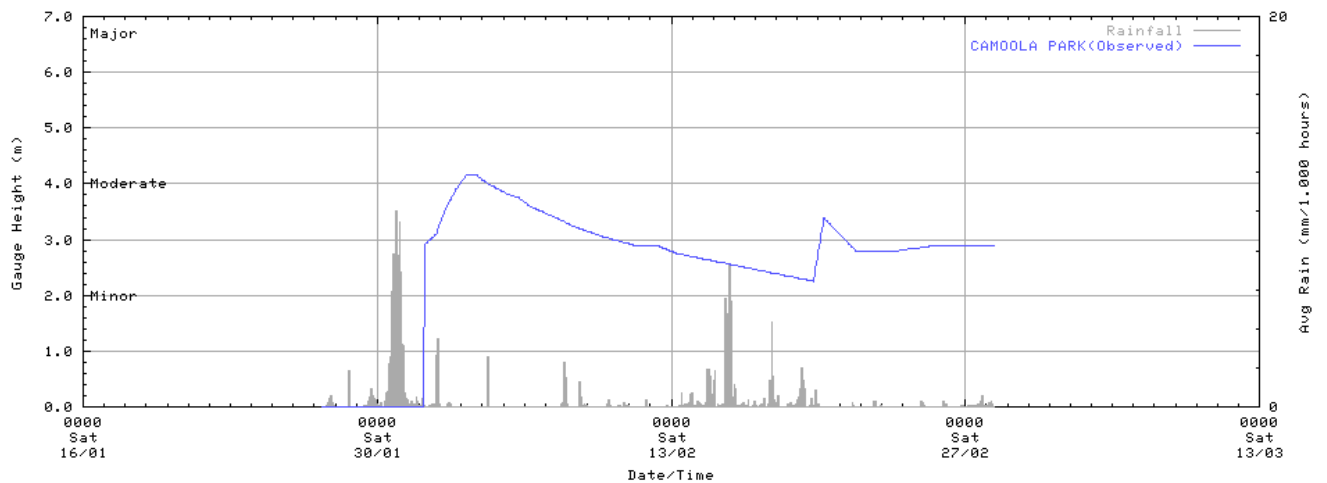
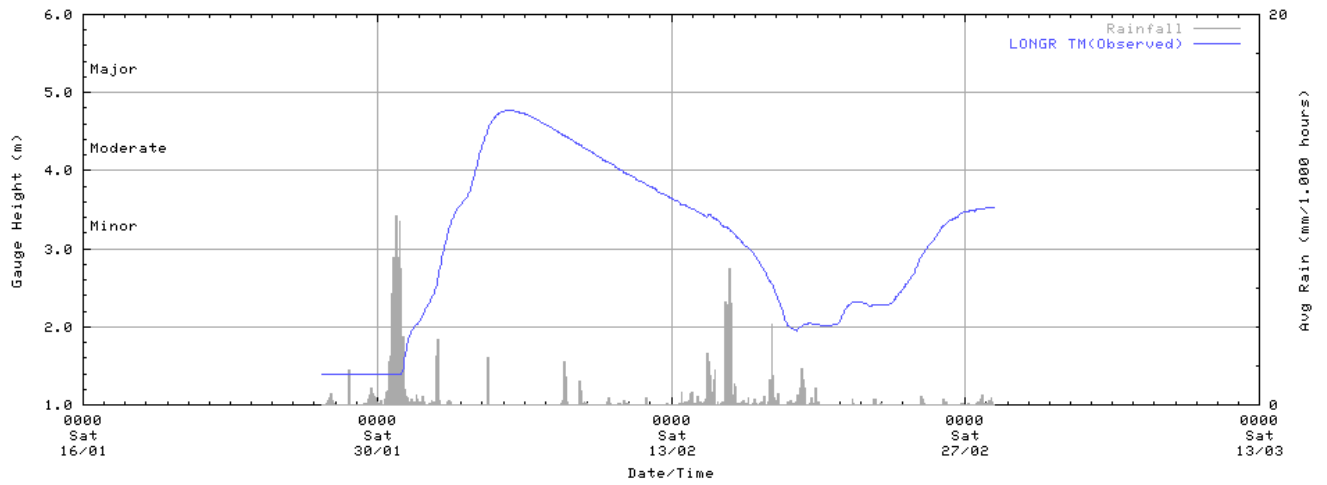


Figure 3.5.11 Flood hydrographs - Thomson and Barcoo Rivers and Cooper Creek.

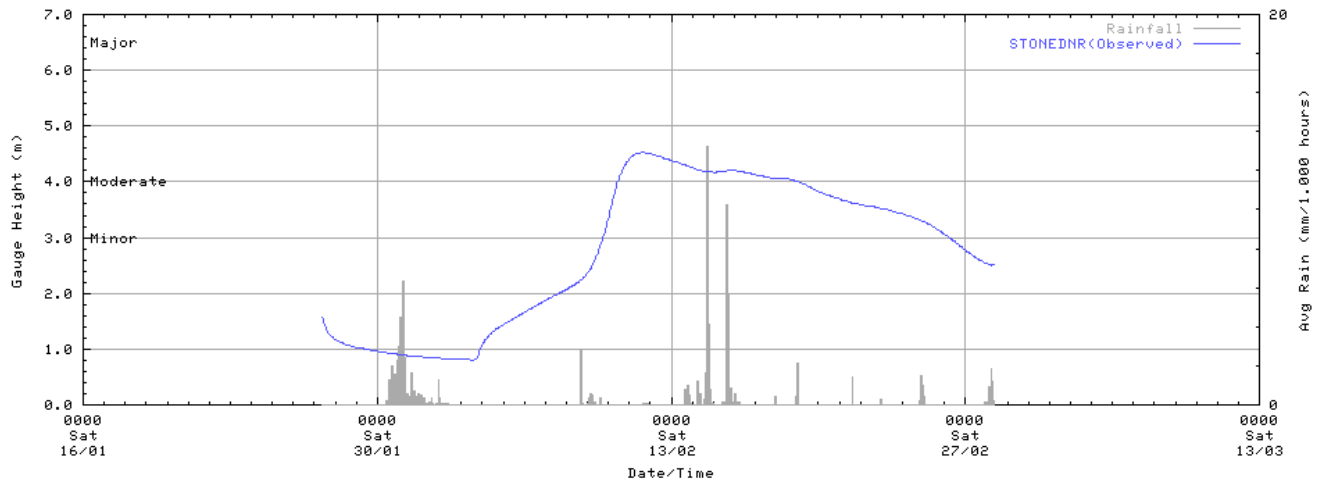
Thomson River at Camoola Park



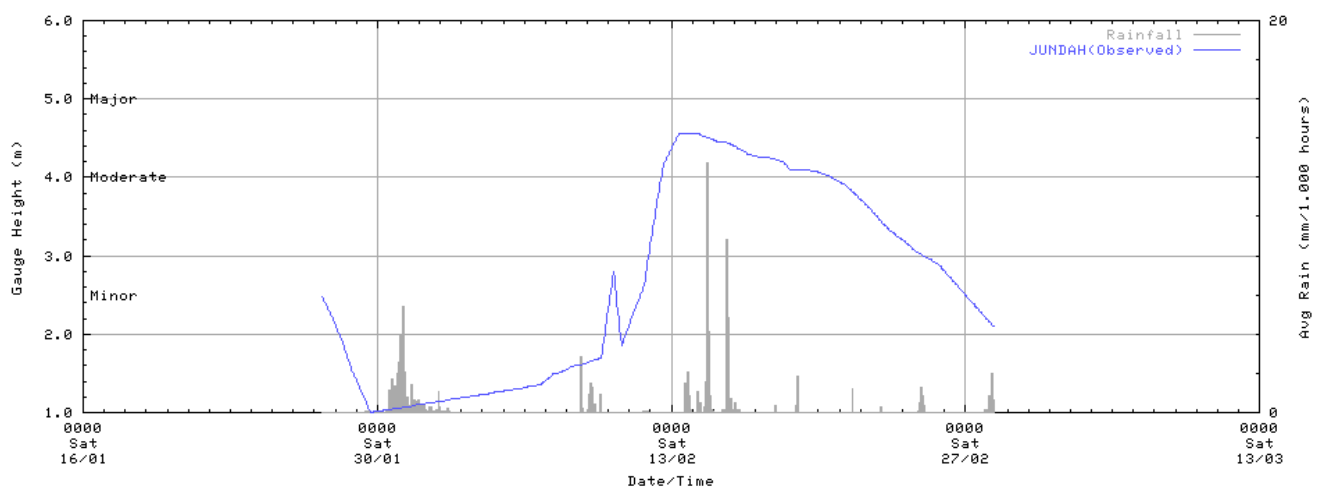
Thomson River at Longreach



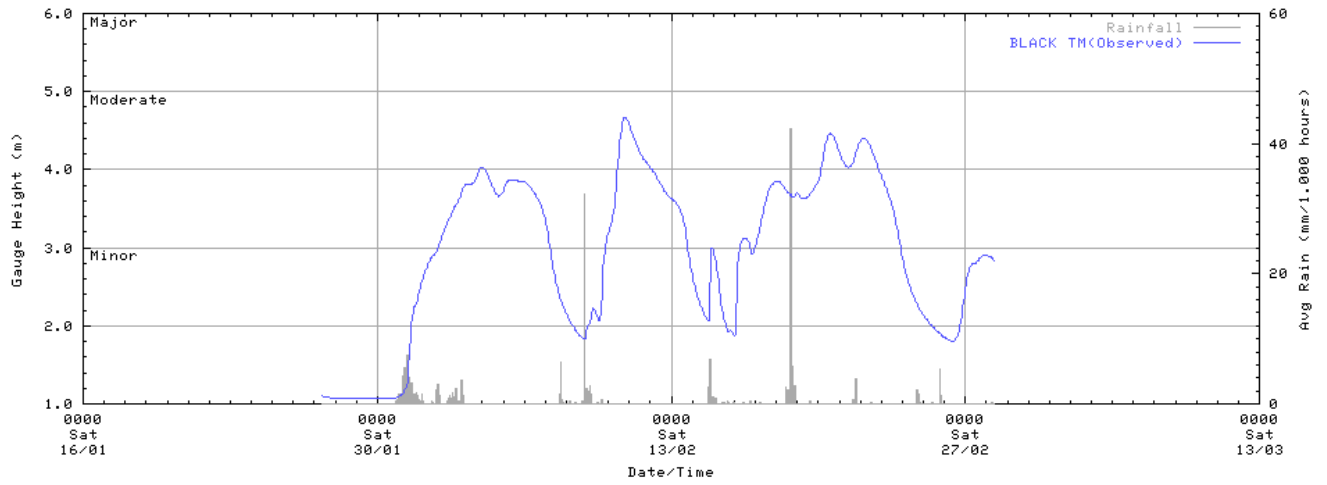
Thomson River at Stonehenge



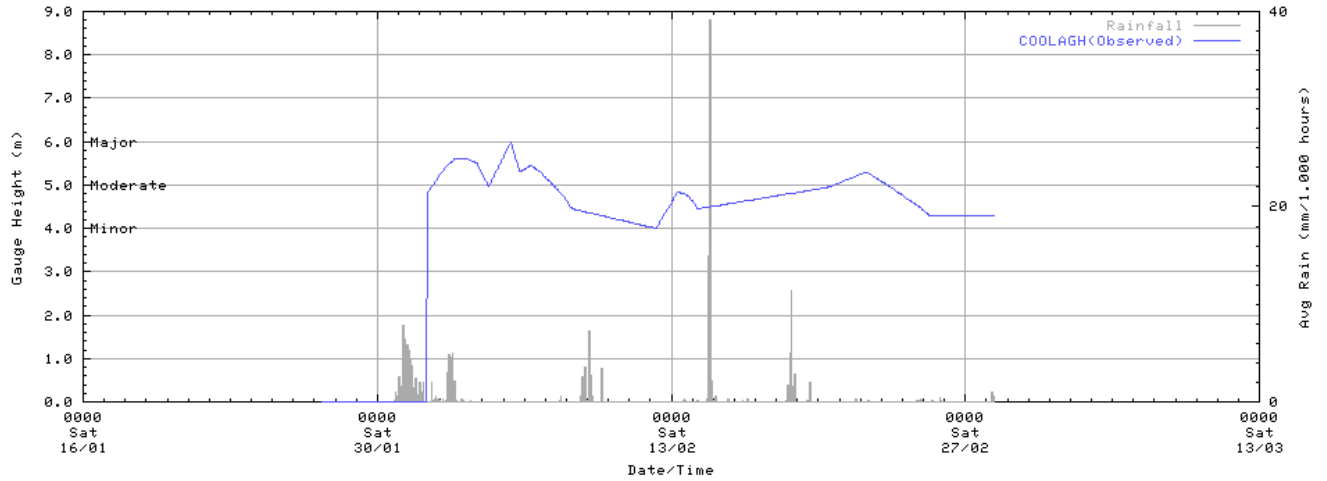
Thomson River at Jundah



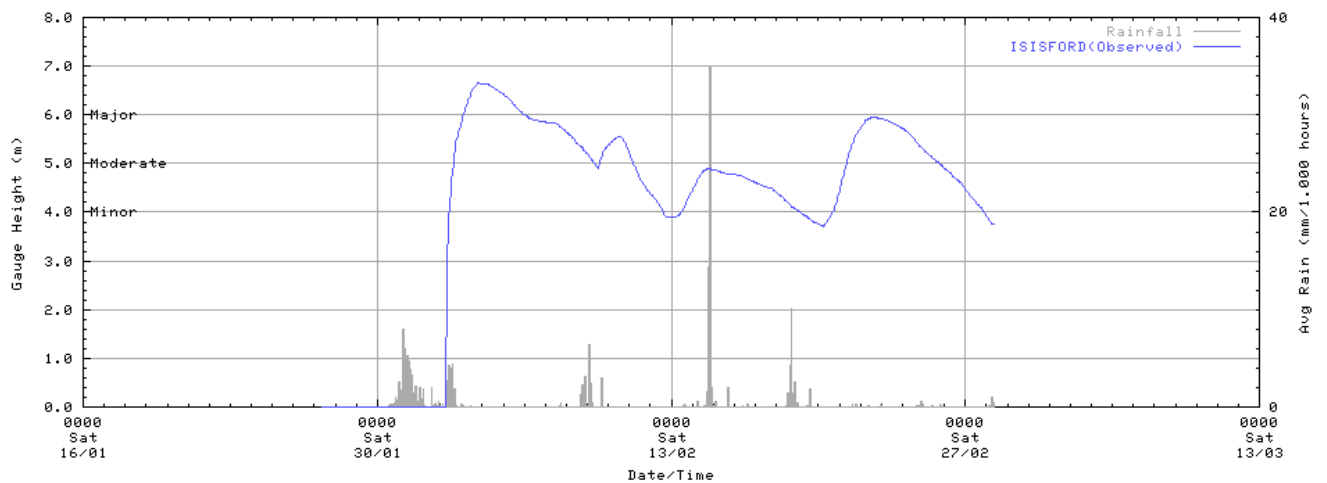
Barcoo River at Blackall



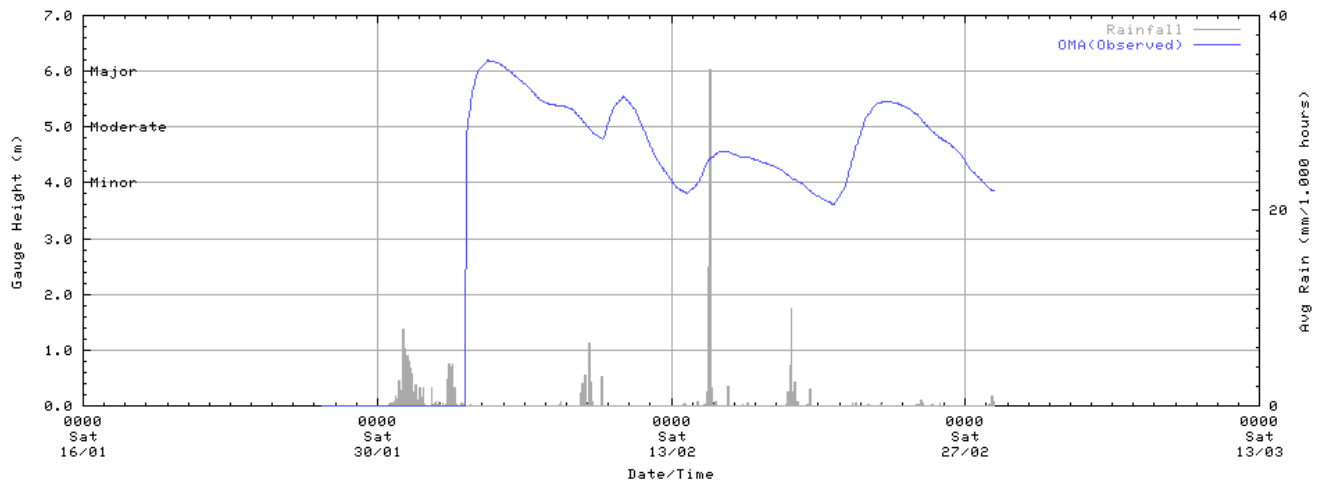
Barcoo River at Coolagh



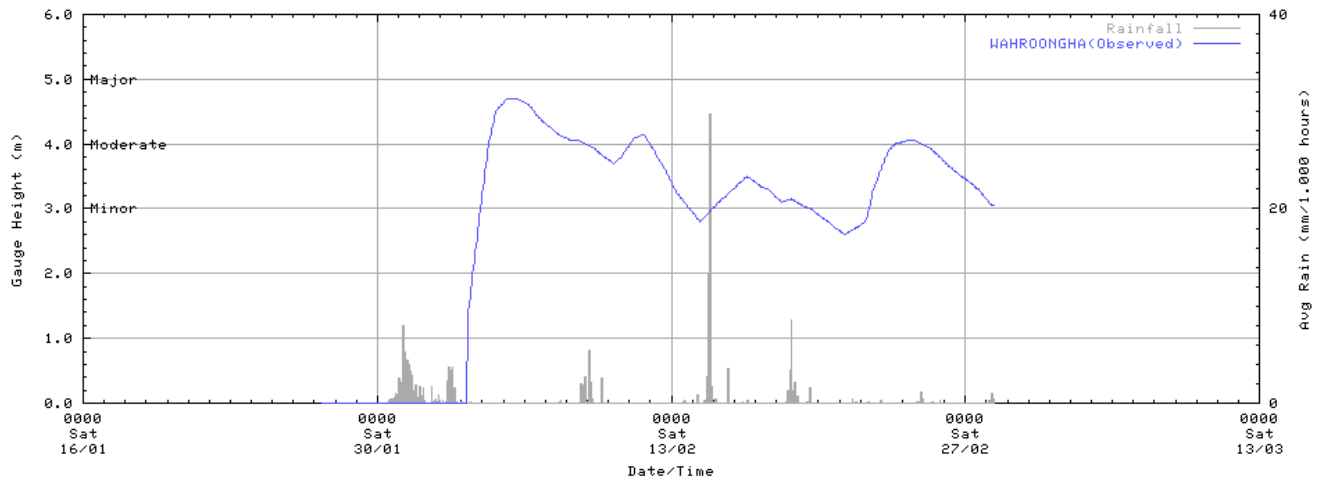
Barcoo River at Isisford



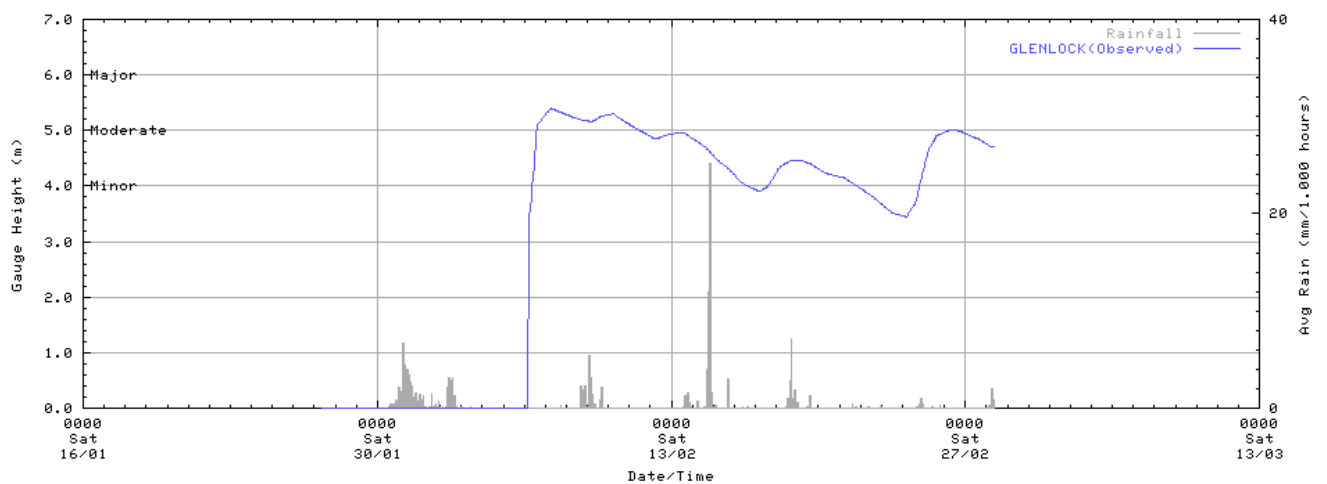
Barcoo River at Oma



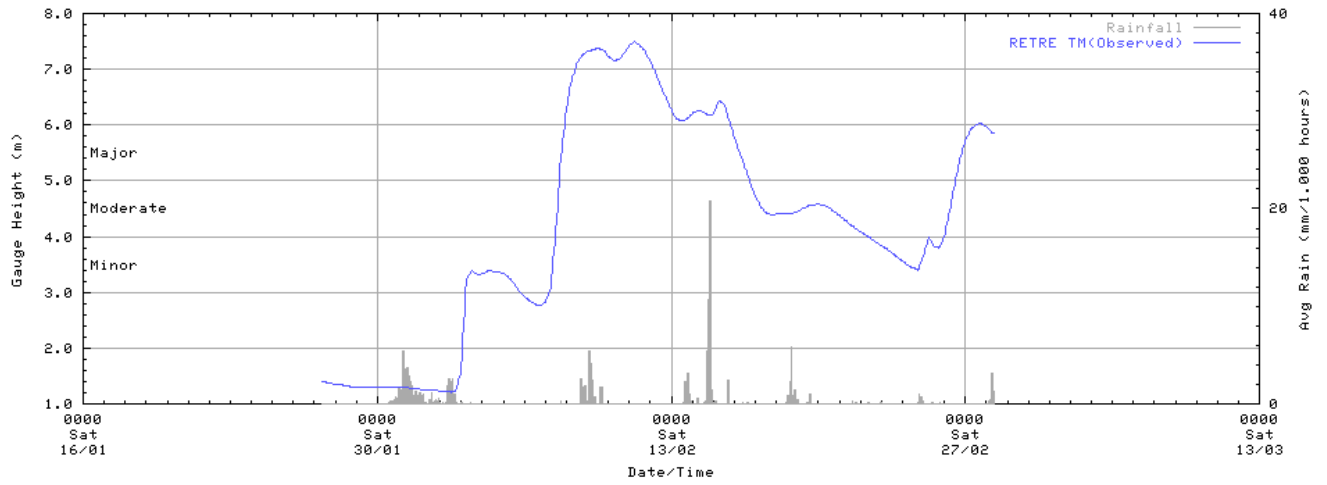
Barcoo River at Wahroongha



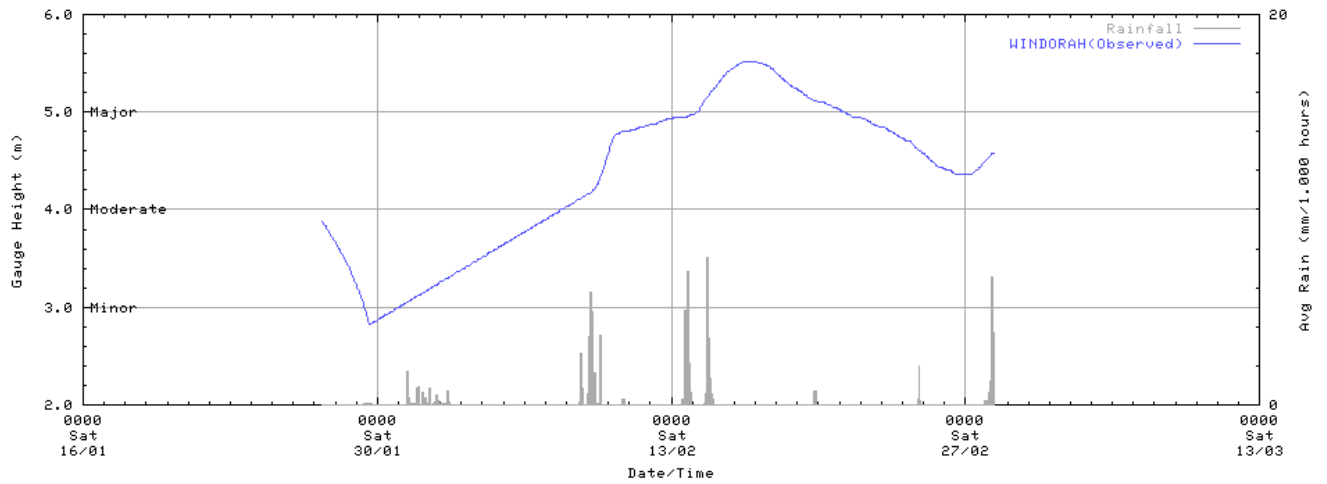
Barcoo River at Glenlock



Barcoo River at Retreat



Cooper Creek at Windorah



Cooper Creek at Nappa Merrie

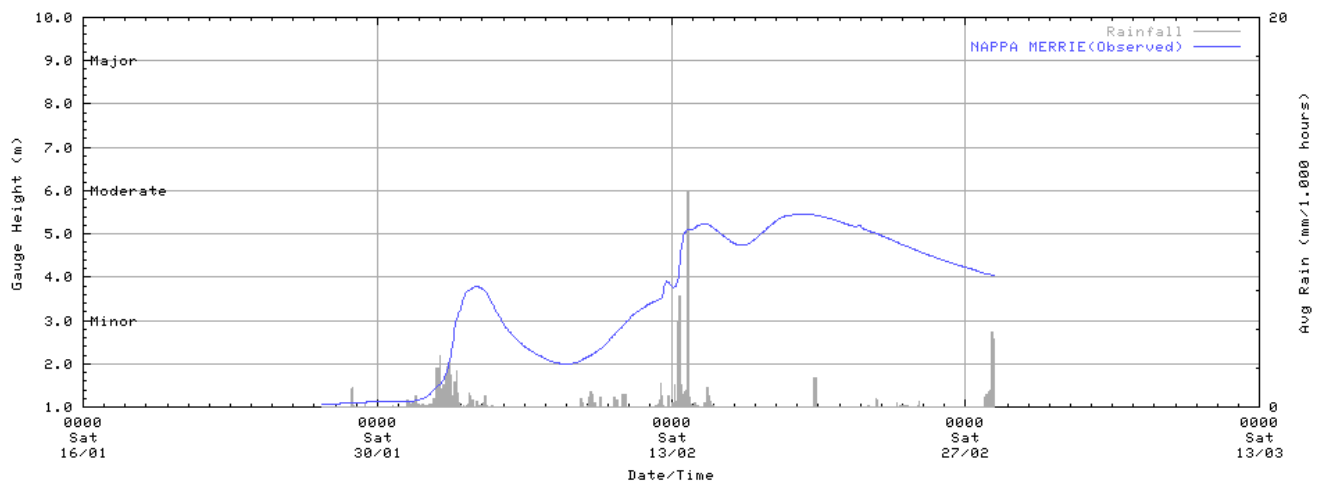
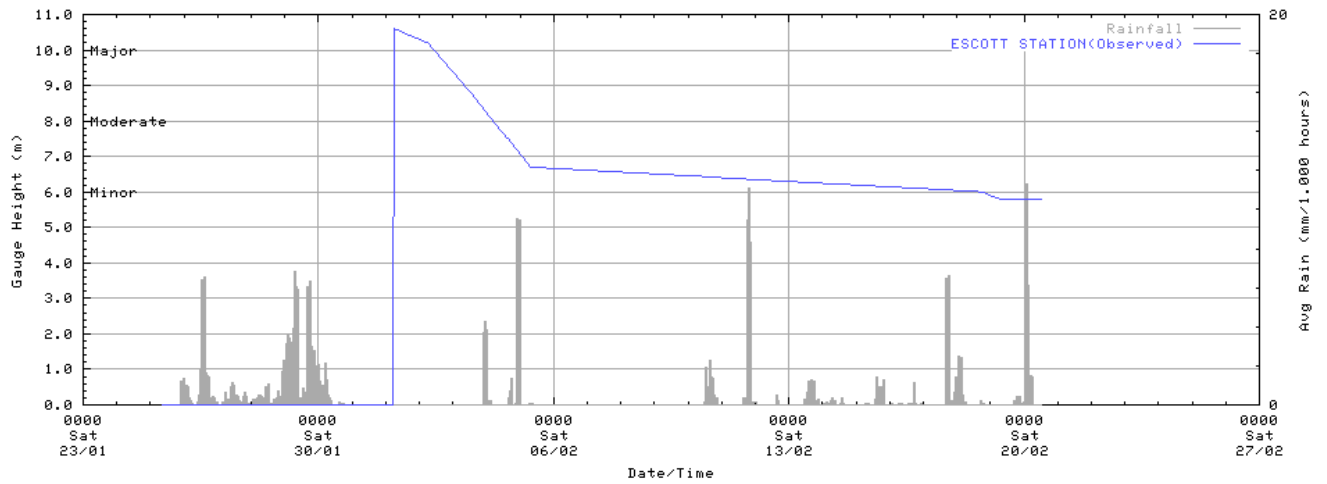
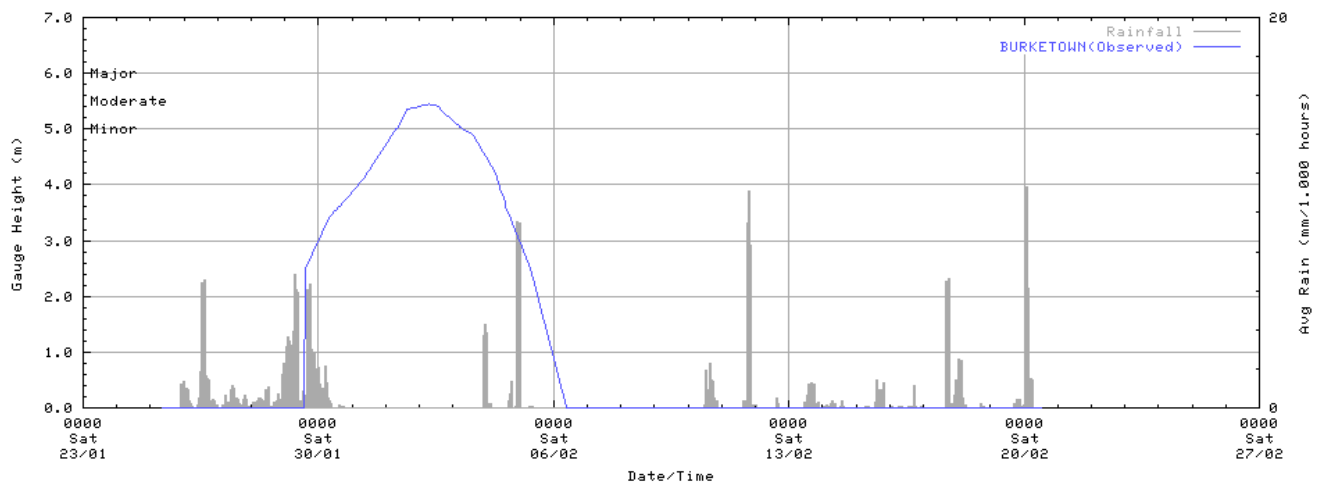


Figure 3.5.12 Flood hydrographs - Gulf Rivers.

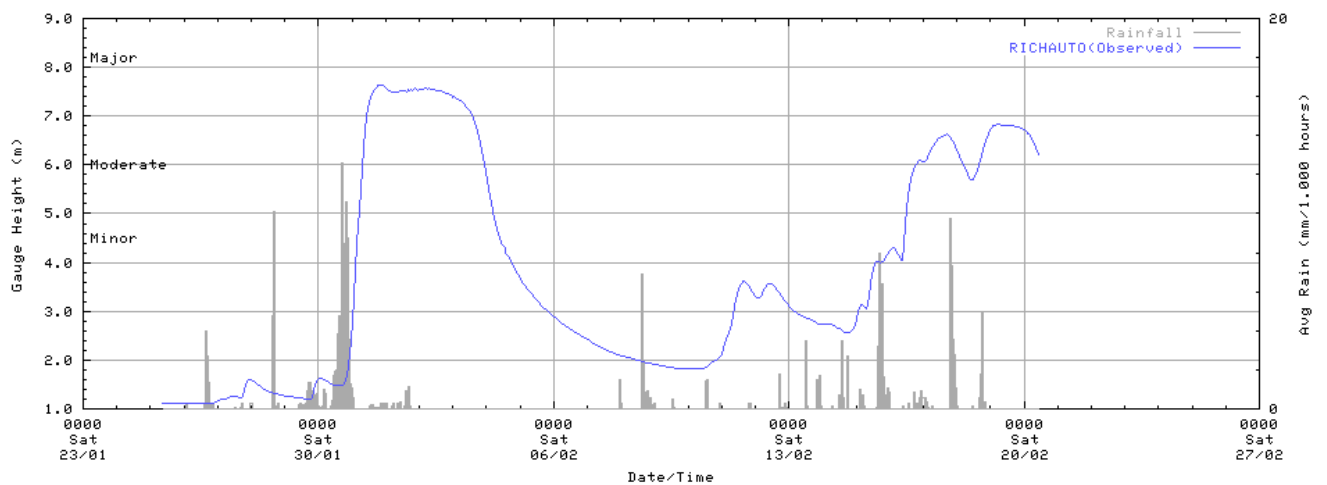
Nicholson River at Escott Station



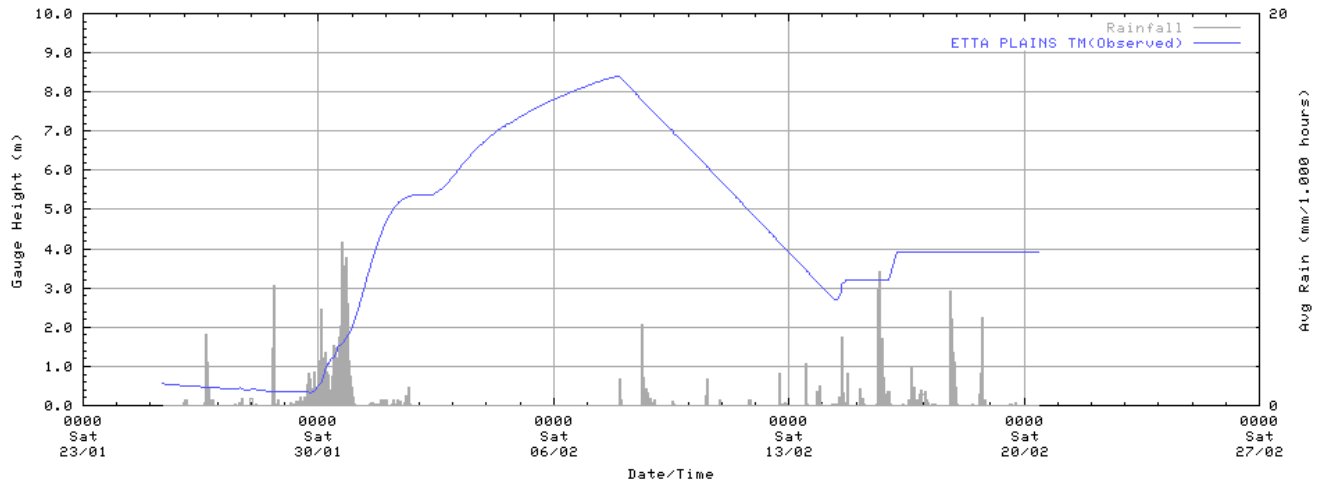
Albert River at Burketown



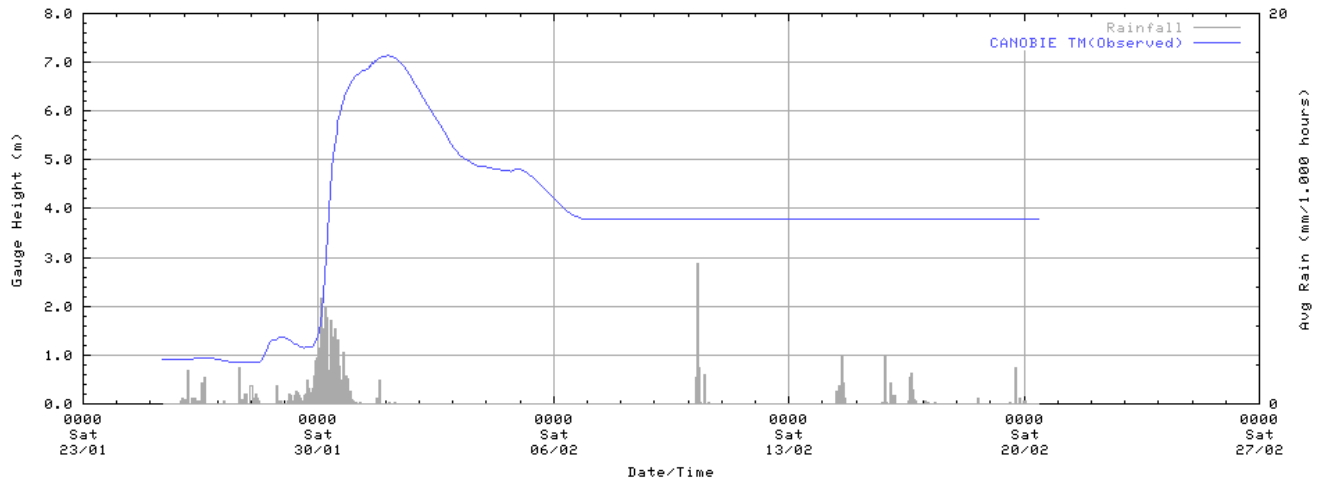
Flinders River at Richmond



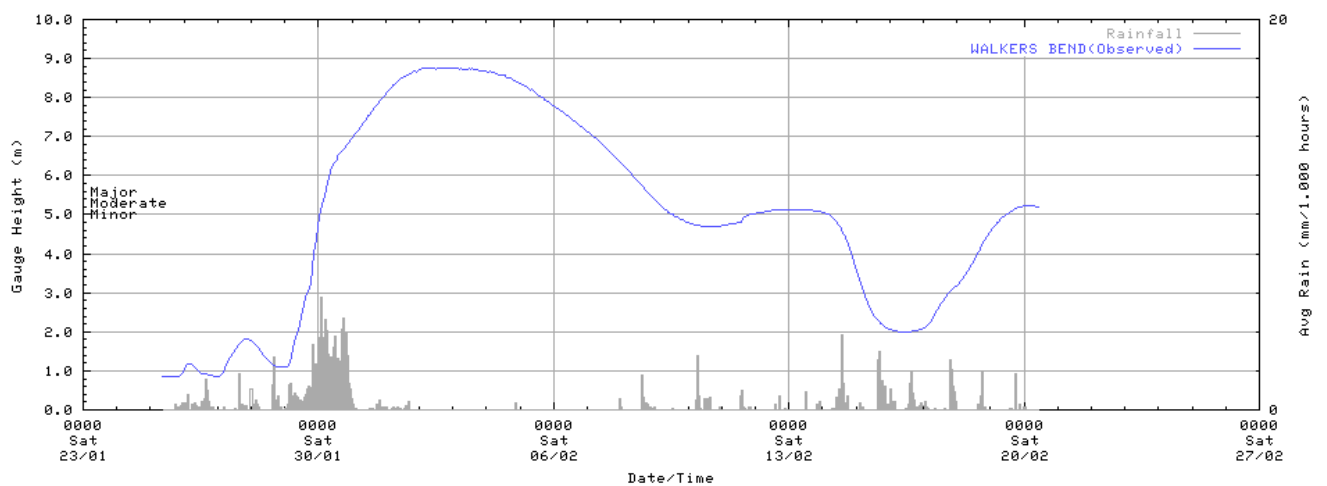
Flinders River at Etta Plains



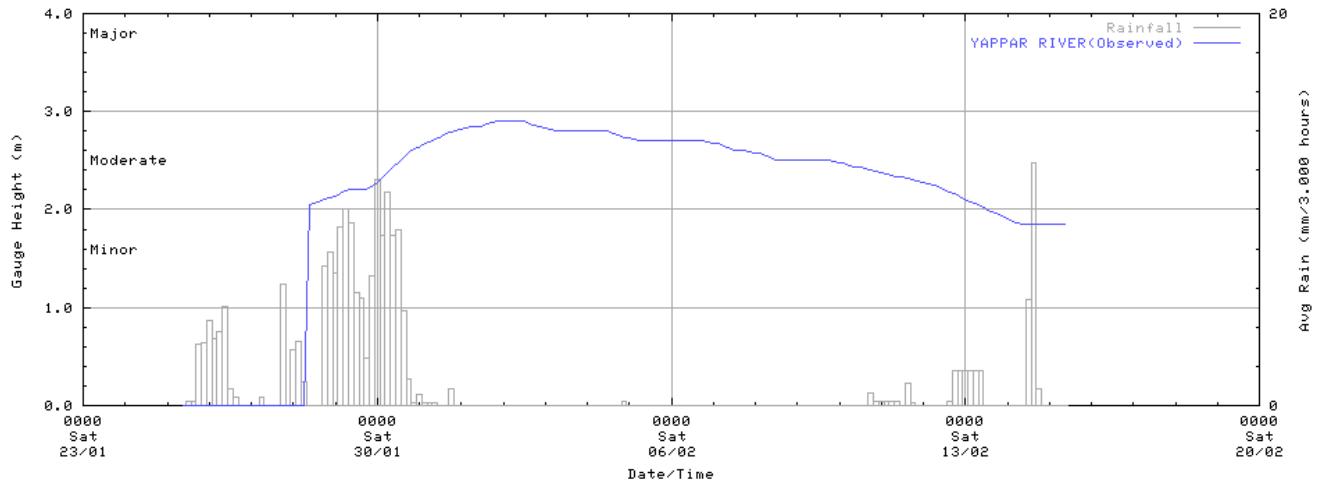
Cloncurry River at Canobie



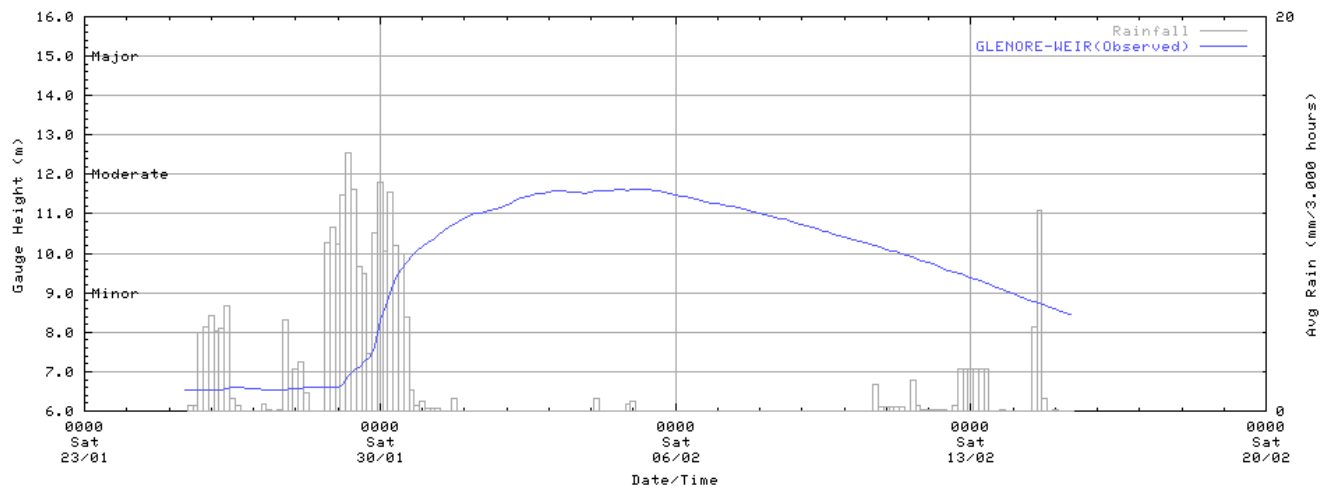
Flinders River at Walkers Bend



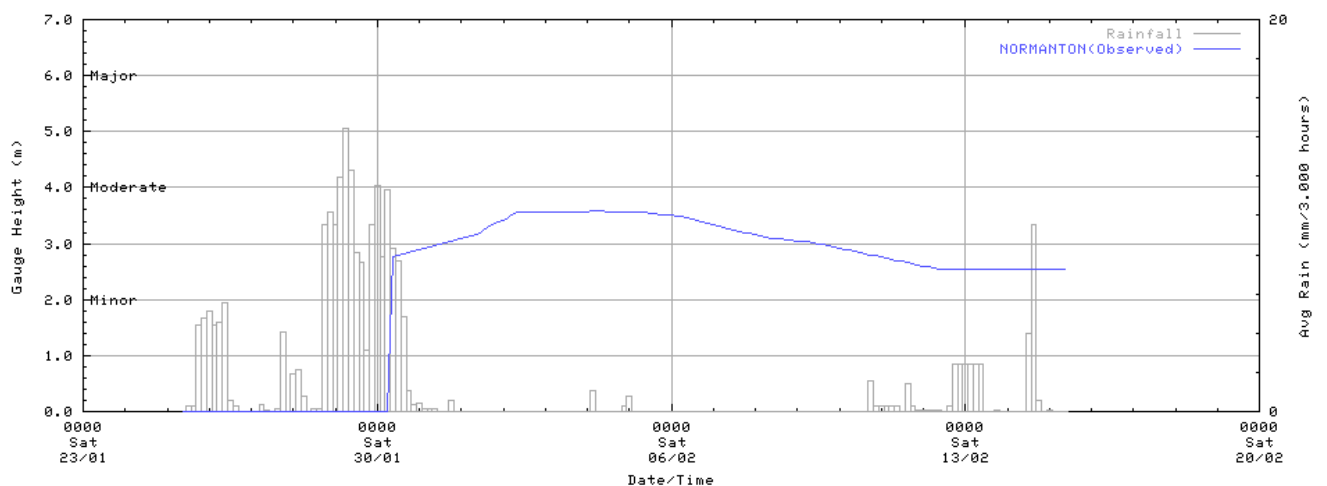
Norman River at the Yappar River Junction



Norman River at Glenore Weir



Norman River at Normanton



4. Warning Services

Olga remained in the Queensland region for more than two weeks causing river flooding across a wide area. Initially flood warnings were issued for Coastal Rivers and Streams about the North Tropical Coast as the system threatened to cross the coast. As Ex-Tropical Cyclone Olga made landfall and tracked across the Gulf Country, further heavy rain was recorded along the Central and Capricornia coasts and flood warnings were required for the Haughton, Connors and Lower Isaac Rivers.

Following re-intensification of Olga over the Gulf of Carpentaria and then landfall near Karumba, heavy rainfall occurred over the Norman and Flinders Rivers and flood warnings were issued for these catchments. Olga's track south over land caused further flood producing rainfall along the Central and Capricornia Coast and flood warnings were re-issued for the Haughton and Fitzroy River catchments along with warnings for the Pioneer and Don Rivers.

Ex-Tropical Cyclone Olga's further movement through the central and southern interior of Queensland caused flood producing rainfalls in its near vicinity and warnings were issued for the Thomson-Barcoo-Cooper, Condamine-Balonne, Warrego, Paroo and Bulloo River catchments. Finally, the tropical low which was once Olga, was steered eastwards, across the southern border of Queensland causing flood producing rain over the southeast corner of the state. Flood warnings were issued for the Albert River and Border Rivers catchments and for Coastal Streams from Gympie to the New South Wales – Queensland Border.

A total of 301 Flood Warnings were issued for this event of which 79 were Major Flood Warnings. These warnings contained a total of 132 river height predictions across 25 locations throughout the flood warning catchments. Note that Flood Warnings continued in several river basins following further heavy rainfall not associated with Tropical Cyclone Olga. A detailed summary of the Flood Warnings issued during Olga both as a tropical cyclone and tropical low is shown in Table 4.1 below.

Table 4.1 Flood Warnings and Predictions issued following rainfall associated with TC Olga.

River Basin	Number of Warnings	Number of Major Warnings	Number of Predictions	Prediction Location	First Warning	Last Warning
Qld Flood Summary	Continuous through January and February.					
Coastal Rivers Cooktown to Townsville	24				2:49pm Fri 22/01/2010	8:08am Fri 29/01/2010
Coastal Rivers Townsville to Mackay	27				3:34pm Sun 24/01/2010	3:08pm Sun 31/01/2010
Coastal Rivers Mackay to Bundaberg	16				7:36am Sun 31/01/2010	9:22pm Mon 01/02/2010
Coastal Streams Brisbane to NSW Border	7				12:28am Sun 07/02/2010	3:33pm Mon 08/02/2010
TOTAL	74					
GULF RIVERS	17	14	2	Walkers Bend	11:40am Fri 29/01/2010	11:05am Sun 14/02/2010
HAUGHTON	25	10	15	Giru	7:17pm Wed 27/01/2010	8:59pm Sun 31/01/2010
DON	5	0	3	Bowen Pump	9:46pm Sat	9:37am Sun

				Station	30/01/2010	31/01/2010
PIONEER	5	0	4	Mackay (Forgan Br)	2:04am Sun 31/01/2010	2:53pm Sun 31/01/2010
FITZROY	39	18	9 11 9 2 4 1 2 2	Pink Lagoon Tartus Yatton Taroom Moura Theodore Yaamba Rockhampton	6:52am Tues 26/01/2010	* 10:15am Mon 15/02/2010
CONDAMINE BALONNE BUNGIL CREEK	31	8	9 7 4 4	Roma St George Hastings Whyenbah	7:11pm Mon 01/02/2010	8:56am Mon 22/02/2010
WARREGO	11	1	3	Bakers Bend	11:21am Thurs 04/02/2010	* 10:37am Mon 15/02/2010
PAROO	47		7 17	Eulo Hungerford	10:55am Wed 03/02/2010	* 9:37am Sun 28/02/2010
BULLOO	18	8	4 1	Quilpie South Comongin	10:11am Tues 02/02/2010	* 9:53am Wed 17/02/2010
THOMPSON BARCOO COOPER	22	19	3 5 1	Longreach Windorah Jundah	10:11am Sun 31/01/2010	* 10:49am Sat 20/02/2010
ALBERT	5	0	3	Wolfdene	6:4am Sun 07/02/2010	6:49am Mon 08/02/2010
BORDER RIVERS	2	1	0		12:58pm Sun 07/02/2010	11:52pm Mon 08/02/2010
TOTALS	227	79	132			

* Further rainfall not associated with Tropical Cyclone Olga occurred, causing renewed rises and the continuation of warnings.

Appendix 1. DERM Usage Agreement

User Licence for Digital Data [Streamflow Data]

Permitted use:

- You may use the supplied data for your own purposes (including supply to consultants for a specific consultancy project for you but the consultants must return or destroy the supplied data when the project is finished). You must not sell or distribute the supplied data.
- You must display this copyright notice on any copies of the supplied data however altered, reformatted or redisplayed if you supply to a consultant or copy for back up purposes: "© The State of Queensland (Department of Environment and Resource Management) [year]".
- You may create and distribute hardcopy and digital products based on or containing the supplied data, provided all the following conditions are met:
 - You must display this acknowledgment on the product(s): "Based on or contains data provided by the State of Queensland (Department of Environment and Resource Management) [year]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.
 - You must include metadata with the product(s) you create that use or incorporate the supplied data and the metadata must incorporate as a minimum the metadata provided with this supplied data.

Obligations:

- You must not use the data for direct marketing or in breach of the privacy laws.
- If you wish to distribute the supplied data you must organise an additional different licence by contacting the Department (Email: marketing@derm.qld.gov.au).

Ownership:

The State of Queensland as represented by the department is the owner of the intellectual property rights in and to the supplied data or has the right to make this supplied data available under licence arrangements.

Disclaimer and indemnity:

You agree to accept all responsibility and risks associated with the use of the supplied data. The department makes no representations or warranties in relation to the supplied data, and, you agree that, to the extent permitted by law, all warranties relating to accuracy, reliability, completeness, currency or suitability for any particular purpose and all liability for any loss, damage or costs (including consequential damage) incurred in any way (including but not limited to that arising from negligence) in connection with any use of or reliance on the supplied data are excluded or limited. You agree to continually indemnify the State of Queensland and the department (and their officers and employees) against any loss, cost, expense, damage and liability of any kind (including consequential damage and liability in negligence) arising directly or indirectly from or related to any claim relating to your use of the supplied data or any product made from the supplied data.

Last updated: 16 March 2009