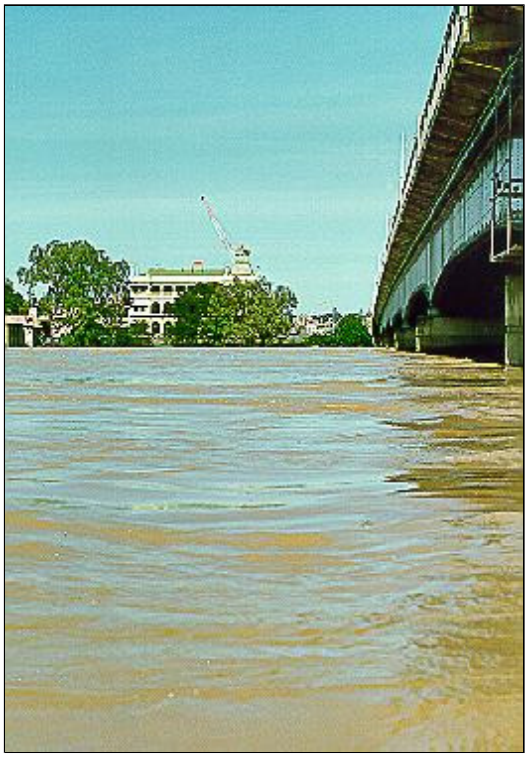
FLOOD WARNING SYSTEM for the FITZROY RIVER

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for the Fitzroy River. It includes reference information which will be useful for understanding Flood Warnings and River Height Bulletins issued by the Bureau's Flood Warning Centre during periods of high rainfall and flooding.



March 1988 - Fitzroy River in flood at Rockhampton Photo: Ace Studio

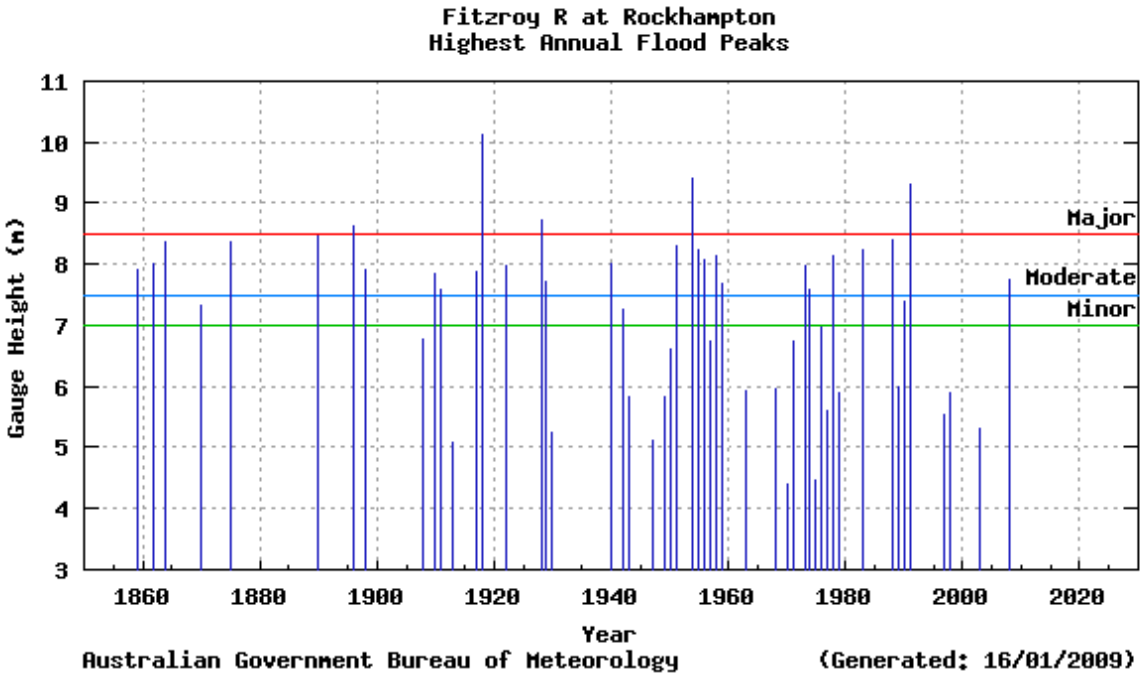
Contained in this document is information about:
(Last updated March 2009)

Flood Risk

Due to its immense size and fan-like shape, the Fitzroy River catchment is capable of producing severe flooding following heavy rainfall events. Its major tributaries, the Dawson, Mackenzie and Connors Rivers rise in the eastern coastal ranges and in the Great Dividing Range and join together about 100 kilometres west of Rockhampton. Major floods can result from either the Dawson or the Connors-Mackenzie Rivers. Significant flooding in the Rockhampton area can also occur from heavy rain in the local area below Riverslea.

Previous Flooding

The Fitzroy River at Rockhampton has a long and well documented history of flooding with flood records dating back to 1859. The highest recorded flood occurred in January 1918 and reached 10.11 metres on the Rockhampton gauge. The most recent flood for the Fitzroy River was in 2008 and reached 7.50 metres on the Rockhampton gauge. This flood event also provided Emerald with its second largest flood on record registering 15.36 metres on the Emerald gauge. The figure below shows the significant flood peaks which have occurred at Rockhampton during the last 150 years.



Flood Forecasting

The Bureau of Meteorology operates a flood warning system for the Fitzroy River and its tributaries based on a rainfall and river height observations network shown on the map. In consultation with the Rockhampton City Council, the Bureau issues predictions of flood heights for the Fitzroy River at Rockhampton whenever it is expected to exceed 7 metres on the city gauge. The objective is to provide at least 60 hours warning of flood heights above 7 metres. These forecasts are updated at least once each day. When possible, river height predictions are also given for Taroom, Theodore, Moura, and Baralaba on the Dawson River and for Tartrus on the Mackenzie River.

The Bureau's Flood Warning Centre issues Flood Warnings, which include the river height predictions, and River Height Bulletins for the Fitzroy River catchment regularly during flood events.

Local Information

The Local Government is able to provide further information on flooding in your area of the Fitzroy River catchment.

In addition, the Rockhampton City Council provides a local information service on flooding in the Rockhampton area. It has data and information on past flooding from which estimates of areas and depths of expected inundation are given. This enables flood threatened residents to take appropriate action before the floodwaters reach their property.

Flood Warnings and Bulletins

The Bureau of Meteorology issues Flood Warnings and River Height Bulletins for the Fitzroy River catchment regularly during floods. They are sent to radio stations for broadcast, and to local Councils, emergency services and a large number of other agencies involved in managing flood response activities. Flood Warnings and River Height Bulletins are available via :

Radio
Radio stations, particularly the local ABC, and local commercial stations, broadcast Flood Warnings and River Height Bulletins soon after issue.

Local response organisations
These include the Councils, Police, and State Emergency Services in the local area.

Internet/World Wide Web
Flood Warnings, River Height Bulletins and other weather related data is available on the Bureau's Web page at http://www.bom.gov.au . The Queensland Flood Warning Centre website is http://www.bom.gov.au/hydro/flood/qld

Telephone Weather
Flood Warnings are available through a recorded voice retrieval system, along with a wide range of other weather related and climate information.

Main Directory	Phone	1900 955 360
Flood Warnings	Phone	1300 659 219

Telephone Weather Services Call Charges:
1900 numbers: 77c per minute incl. GST; 1300 numbers: Low call cost - around 27.5c incl. GST.
(More from international, satellite, mobile or public phones)

Interpreting Flood Warnings and River Height Bulletins

Flood Warnings and River Height Bulletins contain observed river heights for a selection of the river height monitoring locations. The time at which the river reading has been taken is given together with its tendency (e.g. rising, falling, steady or at its peak). The Flood Warnings may also contain predictions in the form of minor, moderate or major flooding for a period in the future. River Height Bulletins also give the height above or below the road bridge or causeway for each river station located near a road crossing.

One of the simplest ways of understanding what the actual or predicted river height means is to compare the height given in the Warning or Bulletin with the height of previous floods at that location.

The table below summarises the flood history of the Fitzroy River catchment - it contains the flood gauge heights for the more significant recent floods.

River height station	Jan 1918	Feb 1954	Jan/Feb 1978	May 1983	Jan 1991	Jan 2008
Waitara	-	10.67	11.90	7.35	13.60	11.10
Cardowan	-	17.37	16.38	9.95	17.10	14.80
Connors Junction	-	-	15.98	13.75	17.30	-
Emerald	-	14.12	12.97	12.00	-	15.36
Yakcam	-	-	23.15	20.12	13.80	20.55
Bingegang	-	-	17.23	16.0	12.35	15.80
Tartrus	-	17.48	16.60	14.90	18.10	16.20
Taroom	6.71	8.15	4.08	7.46	6.24	6.07
Theodore	-	13.64	11.27	13.24	7.98	-
Moura	-	-	10.46	12.09	6.60	8.00
Karamea	-	10.26	8.10	9.98	9.12	-
Baralaba	-	15.52	2.68	4.60	9.45	-
Rannes	-	8.28	10.17	9.60	9.55	-
Newlands	-	18.16	16.28	14.63	15.29	9.05
Riverslea	31.48	28.60	23.15	22.89	27.97	21.93
Yaamba	17.32	16.59	14.75	14.97	16.65	14.25
Rockhampton	10.11	9.40	8.15	8.25	9.30	7.50

All heights are in metres on flood gauges.

Historical flood heights for all river stations in the Fitzroy River Floodwarning network, as shown on the map, are available from the Bureau of Meteorology upon request.

FITZROY RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

Major flooding requires a large scale rainfall situation over the vast Fitzroy River catchment. The following can be used as a rough guide to the likelihood of flooding in the catchment:

Average catchment rainfalls of in excess of 200mm in 48 hours may cause significant moderate to major flooding and traffic disabilities to develop, particularly in the middle to lower reaches of the Dawson River catchment downstream of Taroom, the Mackenzie River downstream of Tartrus and the Isaac River downstream of Connors Junction, and extending downstream to the Fitzroy River below Riverslea and finally Rockhampton.

Average catchment rainfalls of in excess of 300mm in 48 hours may cause significant major flooding and traffic disabilities to develop, particularly in the middle to lower reaches of the Dawson River catchment downstream of Taroom, the Mackenzie River downstream of Tartrus and the Isaac River downstream of Connors Junction, and extending downstream to the Fitzroy River below Riverslea and finally Rockhampton.

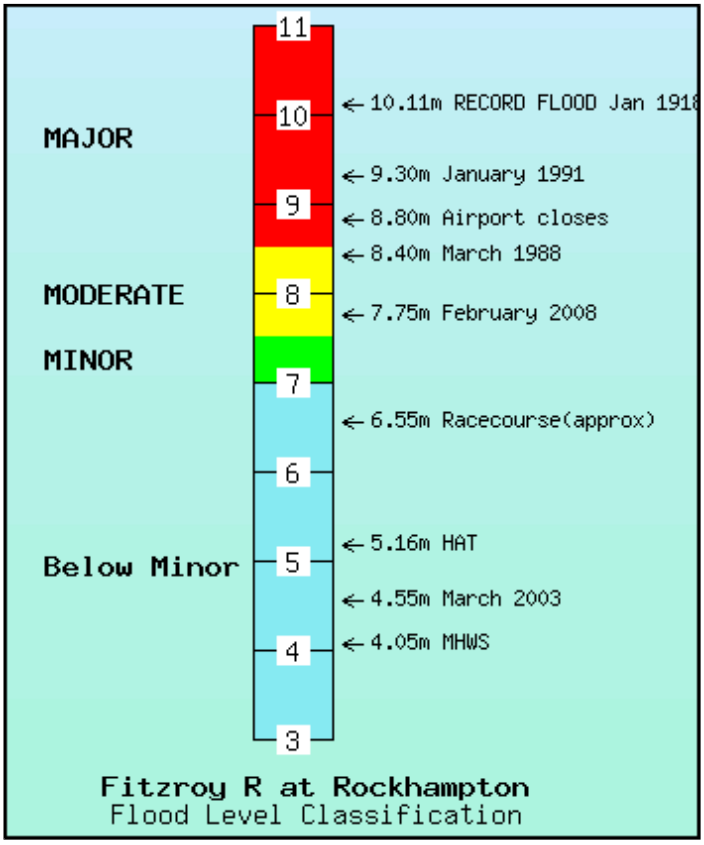
Flood Classifications

At each flood warning river height station, the severity of flooding is described as minor, moderate or major according to the effects caused in the local area or in nearby downstream areas. Terms used in Flood Warnings are based on the following definitions.

Major Flooding : This causes inundation of large areas, isolating towns and cities. Major disruptions occur to road and rail links. Evacuation of many houses and business premises may be required. In rural areas widespread flooding of farmland is likely.

Moderate Flooding : This causes the inundation of low lying areas requiring the removal of stock and/or the evacuation of some houses. Main traffic bridges may be closed by floodwaters.

Minor Flooding : This causes inconvenience such as closing of minor roads and the submergence of low level bridges and makes the removal of pumps located adjacent to the river necessary.



Each river height station has a pre-determined flood classification which details heights on gauges at which minor, moderate and major flooding commences. Other flood heights may also be defined which indicate at what height the local road crossing or town becomes affected by floodwaters.

The table below shows the flood classifications for selected river height stations in the Fitzroy River catchment.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Waitara	3.0	3.0 (B)	6.0	-	7.0 (d/s)	-	9.0
Cardowan	3.0	5.0 (B)	9.0	-	11.0 (d/s)	-	15.0 (d/s)
Connors Junction	4.0	3.5 (B)	7.0	10.0	9.0	-	15.0
Emerald	4.0	14.5 (A)	14.0	15.0	14.5	-	15.0
Yakcam	5.0	-	12.0	-	17.0	-	20.0
Bingegang	2.0	14.6 (B)	3.0	7.0	7.0	-	16.0
Tartrus	7.0	5.7 (W)	11.0	-	13.0	-	15.0
Taroom	2.0	6.8 (A)	3.0	3.0	4.6	7.6	6.0
Theodore	7.0	-	8.0	10.0	11.0	12.2	12.0
Moura	6.0	12.5 (B)	6.0	11.0	11.0	-	12.0
Karamea	2.0	-	7.0	8.0	8.0 (d/s)	-	9.0 (d/s)
Baralaba	3.0	4.4 (B)	4.0	-	7.5	-	9.0
Rannes	3.0	2.5 (C)	6.0	-	8.5 (d/s)	12.2	11.0 (d/s)
Newlands	4.0	4.0 (C)	4.0	-	12.0	-	15.0
Riverslea	-	3.0 (B)	15.0	15.0	21.0	24.4 (d/s)	24.0
Yaamba	3.0	18.5 (A)	9.0	-	12.0	-	15.0
Rockhampton	3.0	-	7.0	-	7.5	-	8.5

All heights are in metres on flood gauges.

(B) = Bridge (A) = Approaches (C) = Causeway (H) = Highway (W) = Weir (d/s) = Downstream

The above details are correct at the time of preparing this document. Up-to-date flood classifications and other details for all flood warning stations in the network are at:

http://www.bom.gov.au/hydro/flood/qld/networks/index.shtml

Catchment Map showing the Dawson-Mackenzie-Fitzroy flood warning network

Click here to view map as: PNG PDF (666K bytes)

For further information, contact:
The Regional Director, Bureau of Meteorology, GPO Box 413, Brisbane Q 4001