



FLOOD WARNING SYSTEM for the TULLY-MURRAY RIVERS

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for the Tully-Murray Rivers. 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.



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(Last updated September 2009)

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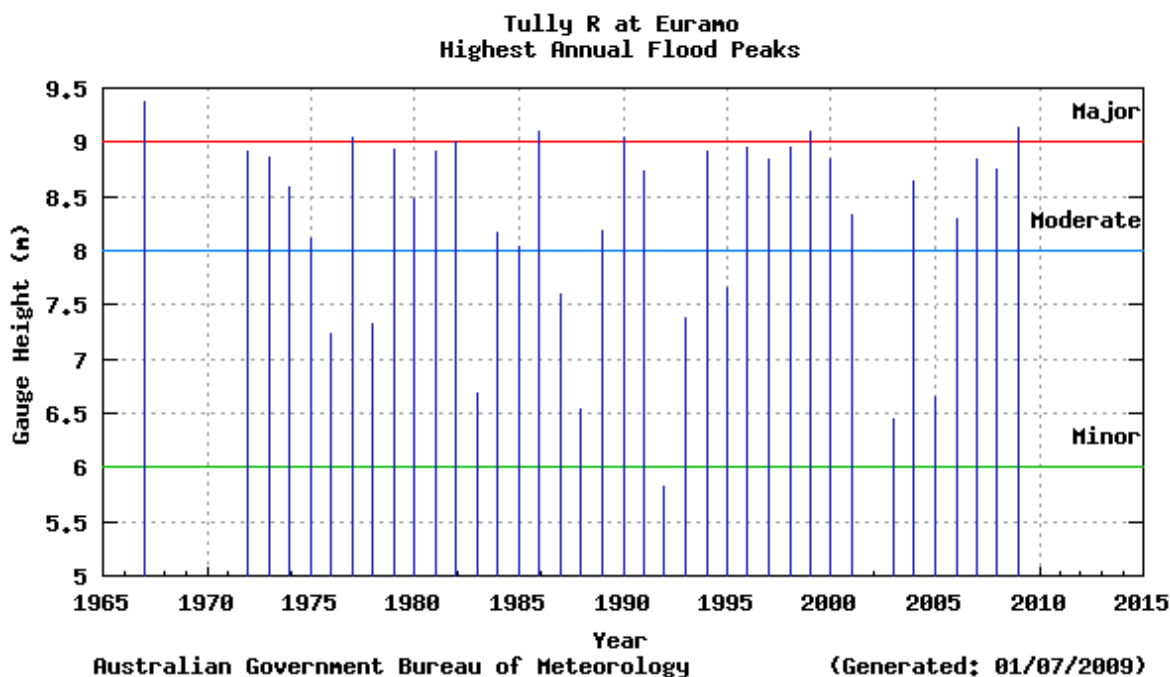
Tully River at Kareeya

Flood Risk

The Tully River catchment covers an area of 1475 square kilometres at Euramo. The Tully River is a relatively short stream, rising in high rainfall areas of the coastal ranges and flowing across the coastal plain. Floods in the Tully and the adjacent Murray River inundate cane lands and the larger floods isolate farm houses. An important impact of Tully River floods is the cutting of the Bruce Highway at Euramo.

Previous Flooding

The Tully River station at Euramo has a well documented history of flooding with records dating back to 1972. The figure below shows the significant flood peaks which have occurred at Euramo since records began. The 1967 peak was obtained by surveying a flood mark and has been included in the figure.



Flood Forecasting

The Bureau of Meteorology operates a flood warning system for the Tully-Murray Rivers based on a rainfall and river height observations network shown on the map. The network consists of a number of volunteer rainfall and river height observers who forward observations by telephone when the initial flood height has been exceeded at their station, as well as a number of automatic telephone telemetry stations which are operated by the Bureau of Meteorology and the Department of Environment and Resource Management.

The Bureau's Flood Warning Centre issues Flood Warnings and River Height Bulletins for the Tully and Murray Rivers during flood events. Quantitative flood forecasts are issued when moderate flood levels are likely to be exceeded at Euramo. The objective is to provide 6 to 9 hour advanced warning of the river height. These warnings are updated up to 6 times per day throughout the flood event.

Local Information

The Cassowary Coast and Tablelands Regional Councils are able to provide further information on flooding in your area of the Tully and Murray River catchments.

Tully and Murray River ALERT System

The Tully and Murray River ALERT system was installed in August 2001 by the (former) Cardwell Shire Council, with the assistance of the Bureau. It was funded through the Regional Flood Mitigation Program. The system consists of a network of rainfall and river height field stations which report via VHF radio to base station computers in the Council office at Cardwell and in the Flood Warning Centre in Brisbane.

The Tully River monitoring network has nine field stations - two which measure river height and rainfall, and seven which measure only rainfall; the Murray River monitoring network has three field stations - two which measure river height and rainfall, and one which measure only rainfall. These field stations send reports for every 1 millimetre of rainfall and every 50 millimetre change in water level.

The base station computer collects the data and has software that displays it in graphical and tabular form. The data is transmitted to the Bureau's Flood Warning Centre in Brisbane where it is used in hydrologic models to produce river height predictions during times of heavy rain and flooding.

Flood Warnings and Bulletins

The Bureau of Meteorology issues Flood Warnings and River Height Bulletins for the Tully and Murray Rivers, 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 Tully-Murray River basin - it contains the flood gauge heights of the more significant recent floods.

River height station	- 1967	Feb 1986	Mar 1996	Jan 1998	Feb 2004	Mar 2006	Feb 2007	Mar 2008	Feb 2009
Kareeya	-	-	-	-	-	-	-	-	-
Bolinda Estate	-	-	4.97	5.18	2.50	5.50	5.10	3.20	6.10
Euramo	9.37	9.09	8.95	8.95	8.25	8.59	8.85	8.64	9.04
Upper Murray	-	-	8.02	10.0	8.61	9.36	9.32	5.67	9.57
Murray Flats	-	-	-	-	7.93	8.08	8.18	7.89	8.71

All heights are in metres on flood gauges.

Historical flood heights for all river stations in the Tully-Murray Rivers floodwarning network, as shown on the map, are available from the Bureau of Meteorology upon request.

TULLY RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

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

Average catchment rainfall in excess of 200mm in 24 hours may result in stream rises and the possibility of moderate to major flooding developing in the lower reaches of the Tully River around Euramo and extending downstream to the Tully River and Murray Flats delta area.

Average catchment rainfall in excess of 300mm in 24 hours is likely to result in significant stream rises with major flooding causing closure of the Bruce Highway near Euramo and along the Murray flats.

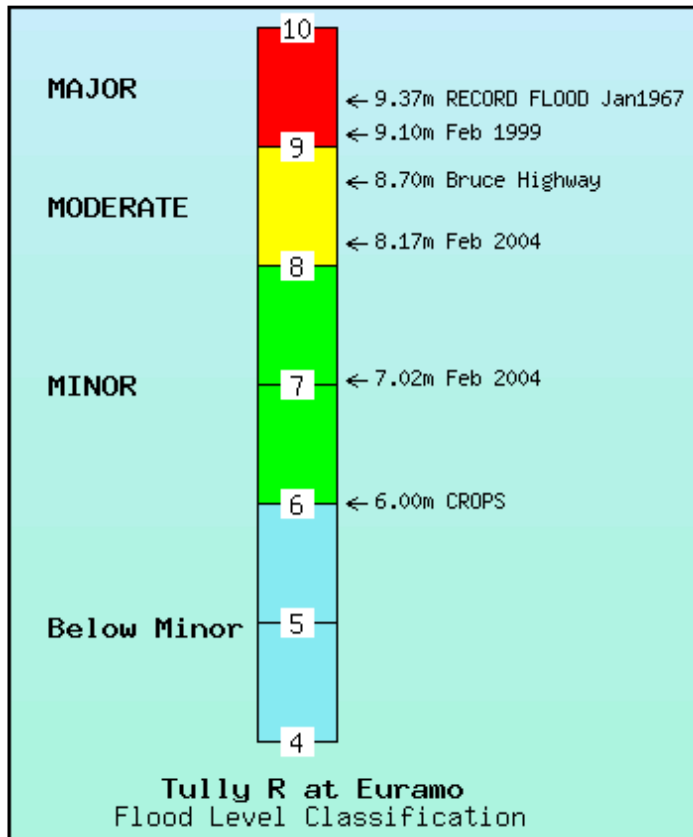
Flood Classifications

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 Tully and Murray River catchment.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Kareeya	2.0	-	2.5	-	3.0	-	4.0
Bolinda Estate	-	-	3.0	-	5.0	-	7.0
Euramo	5.0	8.7 (H)	6.0	6.0	8.0	8.5	9.0
Upper Murray	-	-	6.0	-	8.0	-	9.0
Murray Flats	-	8.5 (B)	7.0	-	7.5	-	8.0

All heights are in metres on flood gauges.
(B) = Bridge (H) = Highway

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 Tully & Murray River flood warning network

Click here to view map as: [PNG](#) [PDF](#) (321K bytes)

For further information, contact:

The Regional Director, Bureau of Meteorology, GPO Box 413, Brisbane Q 4001

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