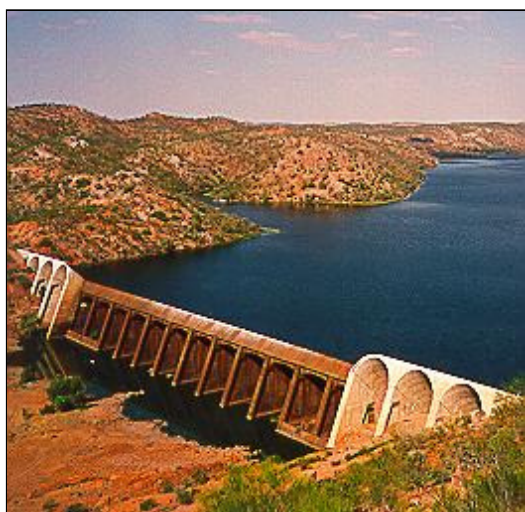




FLOOD WARNING SYSTEM for the LEICHHARDT RIVER

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for the Leichhardt 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.



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(Last updated September 2009)

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Julius Dam on the Leichhardt River

Flood Risk

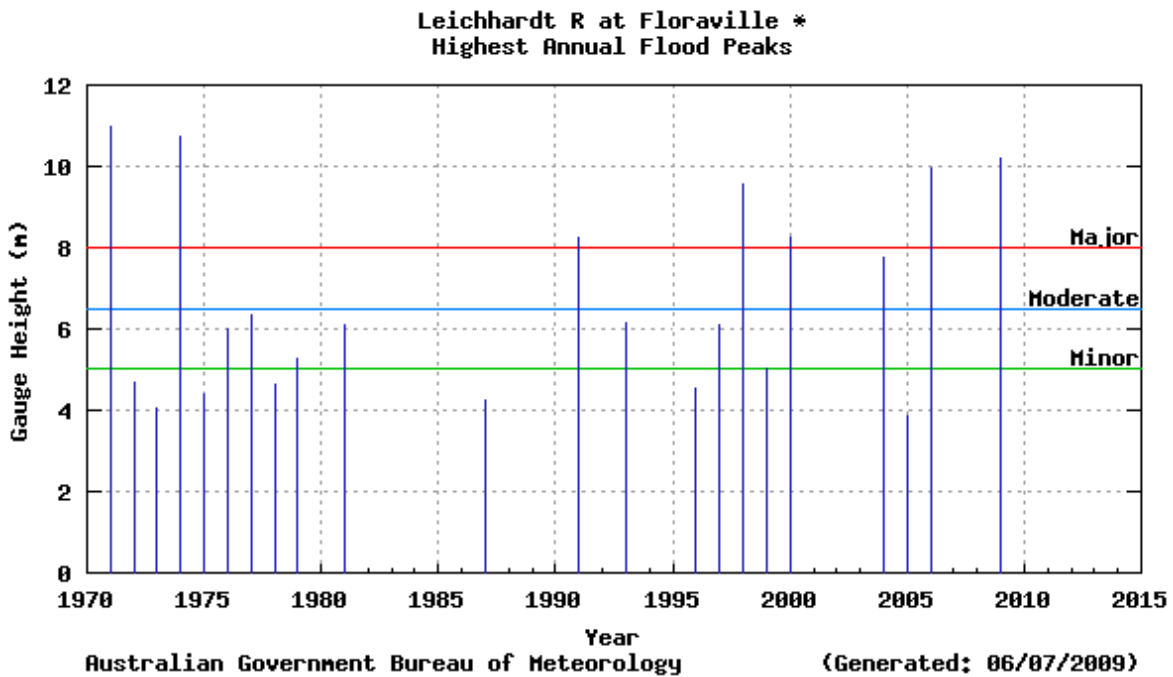
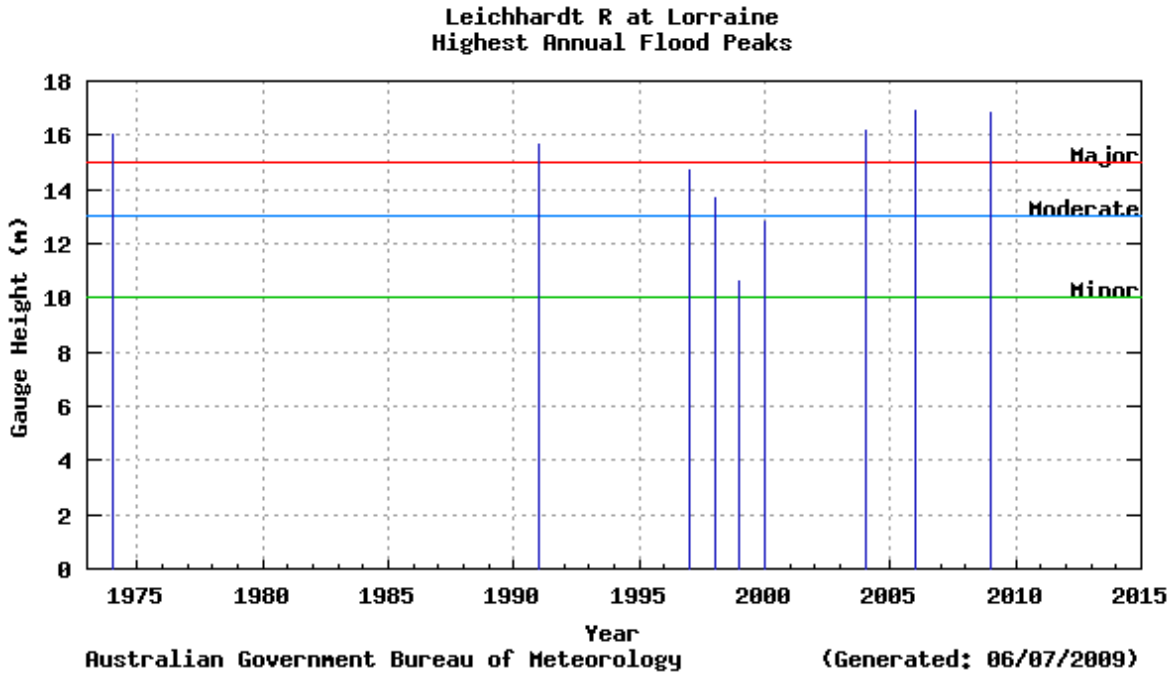
The Leichhardt River catchment is located in north west Queensland and covers an area of approximately 33,000 square kilometres. The river rises in the Selwyn Ranges, 40 kilometres southeast of Mount Isa. It flows in a northerly direction, through the city of Mount Isa and Lake Moondarra, before passing through Julius Dam. It is joined by its major tributary, Gunpowder Creek, 15 kilometres downstream of Kamileroi. Another major tributary, Fiery Creek, joins the river 70 kilometres downstream of Lorraine. The Alexandra River enters the river from the east, just below Floraville, before the Leichhardt River finally passes through a vast coastal plain and enters the Gulf of Carpentaria 30 kilometres northeast of Burketown.

Floods normally develop in the headwaters of the Leichhardt River and its major tributaries, however, general heavy rainfall situations can develop from monsoonal and cyclonic influences which can result in widespread flooding, particularly in the lower reaches below Lorraine.

The record major flood of January 1974 and to a lesser extent, the flood of February 1991 and January and February 2009, caused widespread traffic disruption and inundation of properties throughout the lower reaches.

Previous Flooding

Previous flood information for the Leichhardt River is rather limited. However, peak heights are available for Lorraine from 1974 onwards.



Flood Forecasting

The Bureau of Meteorology operates a flood warning system for the Leichhardt River 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 automatic telephone telemetry stations at Doughboy Creek, Julius Dam, Miranda Creek, Gunpowder, The 16 Mile Waterhole (Fiery Creek) and Floraville, which are operated by the Queensland Department of Environment and Resource Management.

The Bureau's Flood Warning Centre issues Flood Warnings and River Height Bulletins for the Gulf Rivers, including the Leichhardt River, during flood events. Qualitative flood forecasts are issued when moderate flood levels are likely to be exceeded.

Local Information

The Mount Isa City Council in the upper reaches and Burke and Carpentaria Shire Council in the lower reaches of the Leichhardt River may be able to provide further information on flooding in your area of the Leichhardt River catchment.

Flood Warnings and Bulletins

The Bureau of Meteorology issues Flood Warnings and River Height Bulletins for the Gulf River catchments, including the Leichhardt River basin, 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 Leichhardt River basin - it contains the flood gauge heights of the more significant recent floods.

River height station	Jan 1974	Mar 1998	Dec 2000	Jan 2004	Mar 2006	Jan 2009	Feb 2009
Doughboy Creek	-	5.01	-	-	7.02	6.21	5.71
Julius Dam	-	1.13	-	-	-	3.14	2.35
Miranda Creek	-	-	-	-	-	-	-
Lorraine	16.06	13.7	12.8	16.2	16.9	16.80	16.50
Gunpowder	7.94	4.69	-	8.82	10.63	8.49	8.17
The 16 Mile Waterhole	5.34	5.12	2.35	4.70	-	5.51	4.00
Floraville	10.75	9.55	8.22	7.78	9.93	10.18	9.47

All heights are in metres on flood gauges.

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

LEICHHARDT RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

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

100mm in 24 hours in isolated areas, with lesser rains of 50mm over more extensive areas will cause stream rises and the possibility of minor flooding. If similar rainfalls have been recorded in the previous 2-3 days, then moderate to major flooding may develop.

100mm in 24 hours will cause isolated flooding in the immediate area of the heavy rain.

General 100mm or heavier falls in 24 hours over a wide area will most likely cause major flooding, particularly in the middle to lower reaches of the Leichhardt River downstream of Lorraine and Floraville.

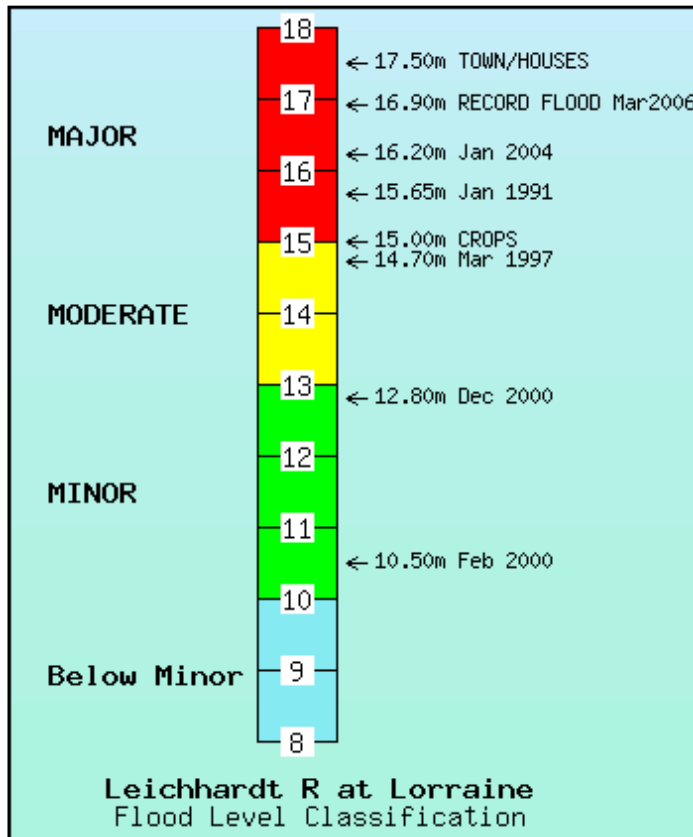
Flood Classifications

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 Leichhardt River catchment.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Doughboy Creek	-	-	6.0	-	8.0	-	10.0
Julius Dam	-	-	-	-	-	-	-
Miranda Creek	-	-	-	-	-	-	-
Lorraine	8.0	-	10.0	15.0	13.0	17.5	15.0
Gunpowder	-	-	5.5	-	6.5	-	7.5
The 16 Mile Waterhole	-	-	3.0	-	4.0	-	5.0
Floraville	-	1.5 (C)	5.0	-	6.5	-	8.0

All heights are in metres on flood gauges.

(B) = Bridge (A) = Approaches (C) = Causeway (X) = Crossing (d/s) = Downstream

The above details are current at the time of preparing this document, but are subject to review. 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 Leichhardt River flood warning network

Click here to view map as: [PNG](#) [PDF](#) (811K bytes)

For further information, contact:

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

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