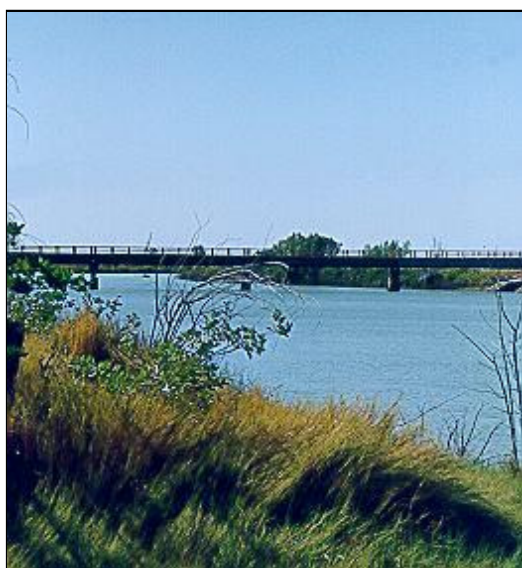




FLOOD WARNING SYSTEM for the NORMAN RIVER

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



Contained in this document is information about:

(Last updated September 2009)

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Norman River at Normanton

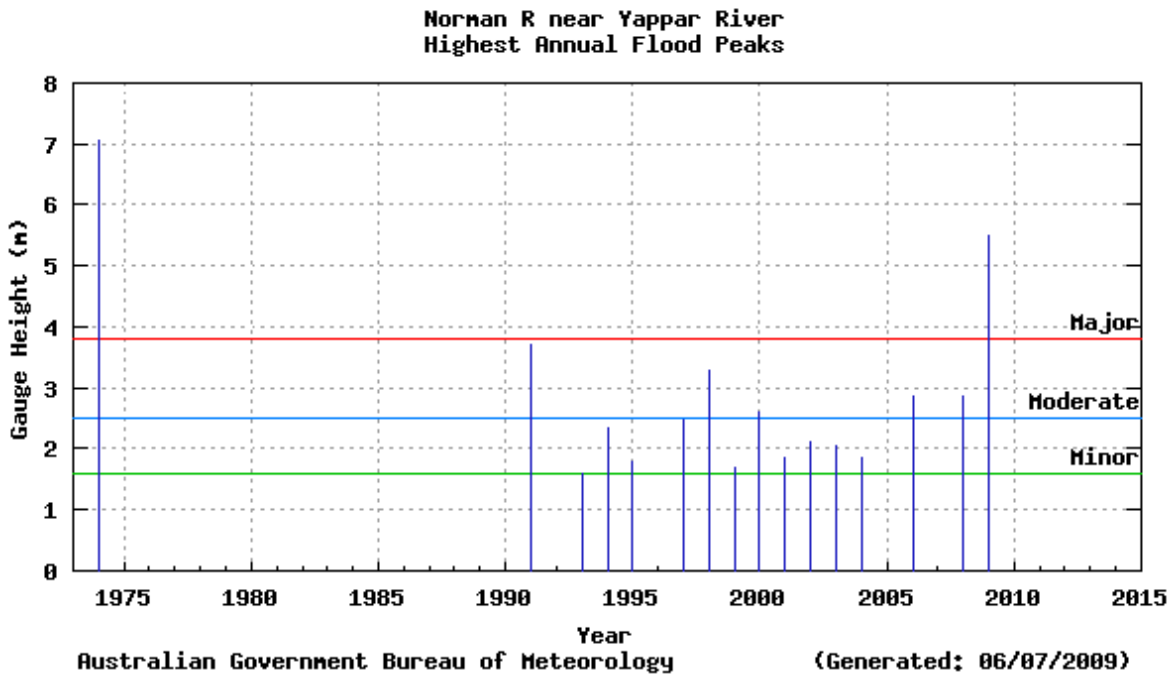
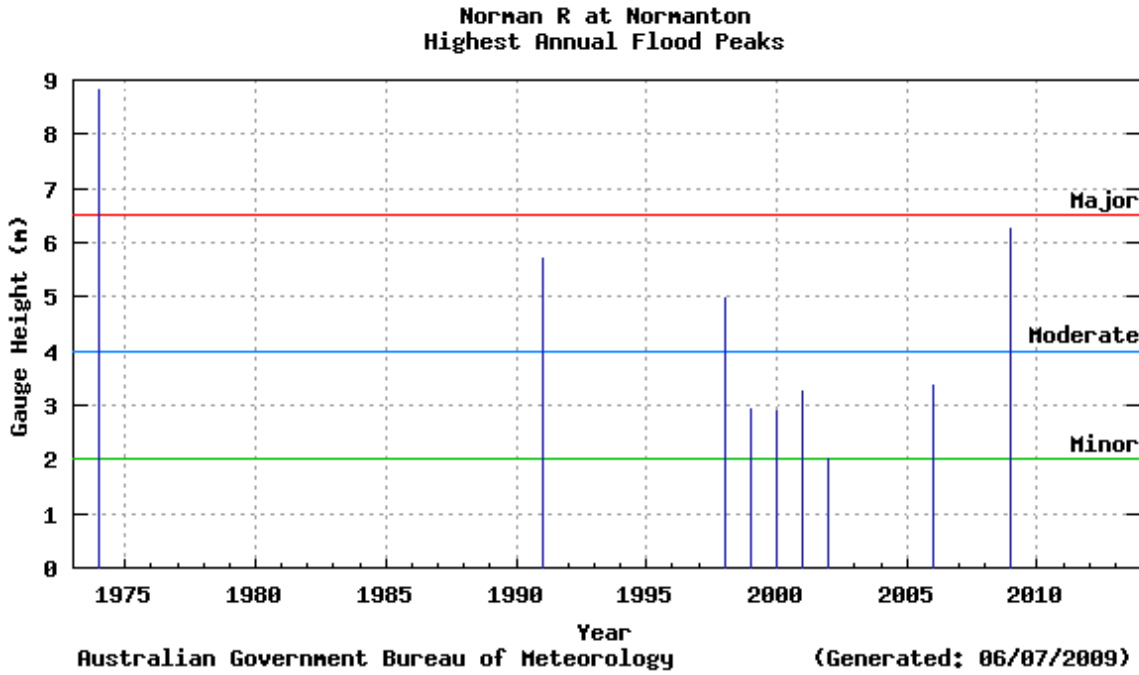
Flood Risk

The Norman River catchment is located in north west Queensland and covers an area of approximately 49,000 square kilometres. The river rises in the Gregory Range (Great Dividing Range) 200 kilometres southeast of Croydon and flows in a northwesterly direction. It is joined by its major tributaries, the Clara and Yappar Rivers, near the river height and rainfall station of Yappar River. The river flows through the major town of Normanton, before finally entering the Gulf of Carpentaria through the major fishing port of Karumba. The only other town in the catchment is the old historic gold mining town of Croydon. Floods normally develop in the headwaters of the Norman, Clara and Yappar Rivers, however, general heavy rainfall situations can develop from monsoonal and cyclonic influences causing widespread flooding, particularly in the lower delta country around Normanton and Karumba.

The record major flood of January 1974 and the floods of February 1991 and early February 2009, caused widespread road closures, and the inundation of many properties throughout the catchment.

Previous Flooding

Historic flood information for the Norman River is limited. Heights are available, beginning with the 1974 flood and stretching to the flood heights recorded in 2009.



Flood Forecasting

The Bureau of Meteorology operates a flood warning system for the Norman 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 Glenore Weir and Karumba, 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 Norman River, during flood events.

Local Information

The Carpentaria Shire Council for the lower Norman River and the Croydon Shire Council for the upper Norman River may be able to provide further information on flooding in your area of the Norman River catchment.

Flood Warnings and Bulletins

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

River height station	Jan 1974	Jan 1991	Mar 1998	Mar 1999	Mar 2000	Dec 2000	Apr 2006	Feb 2009
Yappar River	7.05	3.70	3.3	1.70	2.6	-	2.85	5.50
Glenore Weir	18.28	14.03	13.14	10.04	10.74	11.35	11.39	15.28
Normanton	8.8	5.7	4.98	2.92	2.9	-	3.35	6.27
Karumba	-	-	-	-	-	-	-	-

All heights are in metres on flood gauges.

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

NORMAN RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

Major flooding requires a large scale rainfall situation over the Norman 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 Norman, Clara and Yappar Rivers.

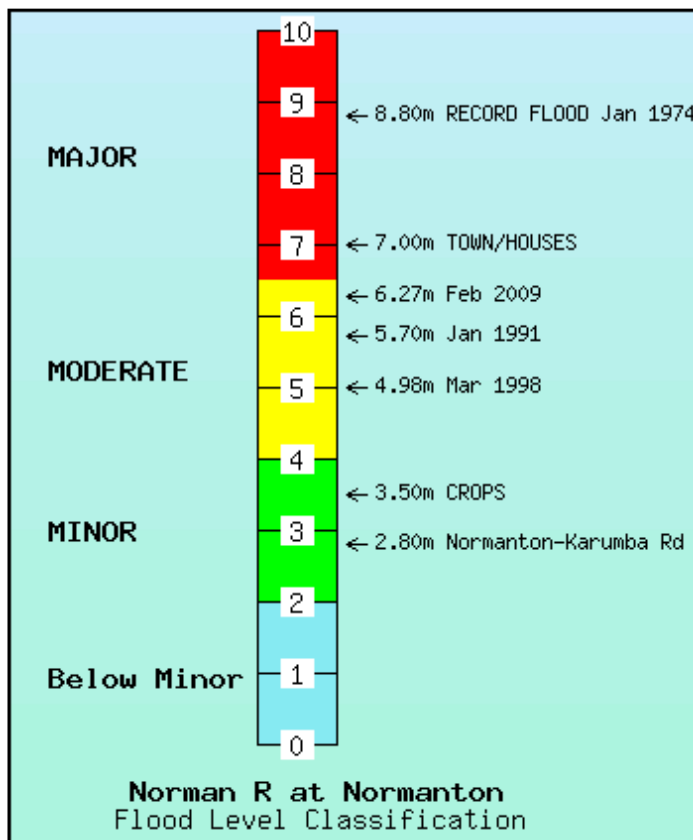
Flood Classifications

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 Norman River catchment.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Yappar River	1.6	0.0 (X)	1.6	2.0	2.5	3.8	3.8
Glenore Weir	-	9.64 (B)	9.0	-	12.0	-	15.0
Normanton	2.0	2.83 (A)	2.0	3.5	4.0	7.0	6.5
Karumba	-	-	-	-	-	-	-

All heights are in metres on flood gauges.
 (B) = Bridge (A) = Approaches (X) = Crossing

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 Norman 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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