



## FLOOD WARNING SYSTEM for the BRISBANE RIVER ABOVE WIVENHOE DAM

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for the upper Brisbane River above Wivenhoe Dam. 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.



*Laidley Creek, near Glenore Grove  
Photo courtesy of Wimera Pty Ltd*

Contained in this document is information about:  
(Last updated May 2011)

- [Flood Risk](#)
- [Previous Flooding](#)
- [Flood Forecasting](#)
- [Local Information](#)
- [Brisbane River ALERT System](#)
- [Flood Warnings and Bulletins](#)
- [Interpreting Flood Warnings and River Height Bulletins](#)
- [Flood Classifications](#)
- [Catchment Map](#)

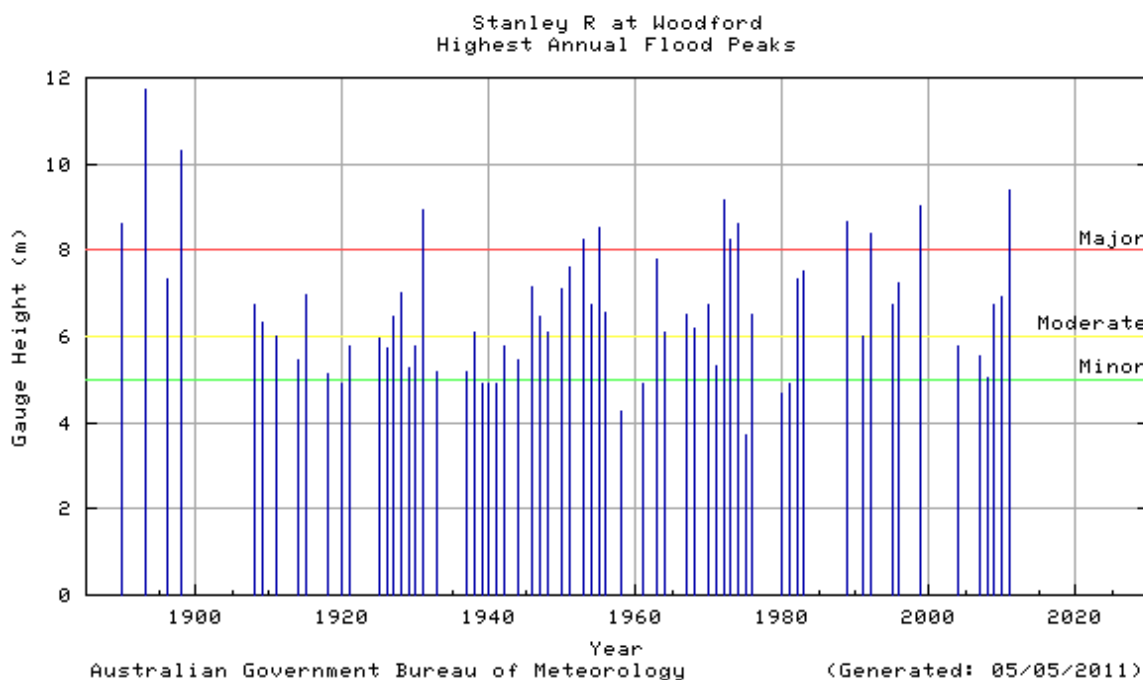
### Flood Risk

The upper Brisbane River catchment above Wivenhoe Dam drains an area of approximately 7,000 square kilometres. The Brisbane River rises in the Brisbane Range which is located some 40 kilometres east of Kingaroy. Major tributaries of the upper Brisbane River include Cooyar, Emu and Cressbrook Creeks which all enter the river from the east and travel in a southeast direction eventually passing through into Wivenhoe Dam. Its major tributary, the Stanley River, rises in the Conondale Ranges southeast of Maleny and travels in a southwest direction through one of the heaviest rainfall areas in Australia and into Somerset Dam and then eventually into Wivenhoe Dam.

Heavy rains in the upper reaches of the Brisbane River, particularly the Stanley River catchment, may result in significant local flooding of low lying areas, however, both the Somerset and Wivenhoe Dam's have significantly reduced the frequency of flooding in the lower Brisbane River catchment to Brisbane City, where major flooding can still occur from local area run-off.

## Previous Flooding

Flood records for most river height recording stations in the upper reaches of the Brisbane River are quite extensive with records for Woodford dating back to the 1890's. The record major flood of 1893 in Brisbane was a result of extremely heavy rainfall falling in the upper reaches of the Stanley River around Peachester. This event occurred well before the completion of the Somerset Dam in 1959. Wivenhoe Dam was completed in 1984. The largest flood since 1893 was recorded in January 2011 which produced large scale inundation of residential and agricultural areas throughout the Brisbane Valley.



## Flood Forecasting

The Bureau of Meteorology, in association with the South East Queensland Water Corporation (SEQWater) and the Brisbane City Council (BCC) operate a flood warning system for the upper Brisbane River catchment above Wivenhoe Dam using data from the rainfall and river height network shown on the map. The network consists of manual rainfall and river height observers as well as automated telemetry equipment.

The flood warning system has been upgraded in recent years by the SEQWater, in association with the Bureau and the BCC, with the installation of many ALERT flood warning stations. These provide early warning of heavy rainfalls and river rises throughout the catchment and enable more accurate and timely response to impending river and creek flooding throughout the upper reaches of the Brisbane Valley.

In consultation with the SEQWater, the Bureau issues Flood Warnings for the upper Brisbane River catchment above Wivenhoe Dam. The SEQWater's role is to operate the dams during flood events. It provides the Bureau with detailed information regarding actual and projected releases from Somerset and Wivenhoe Dams which is used in the flood forecasting models.

## Local Information

The Toowoomba Regional Council and the Somerset Regional Council are provided with regular River Height Bulletins and Flood Warnings when the upper Brisbane River catchment above Wivenhoe Dam is in flood.

## Brisbane River ALERT System

The upper Brisbane River ALERT flood warning system above Wivenhoe Dam was completed in the mid 1990's by the South East Queensland Water Corporation (SEQWater) with the assistance of the Bureau and Brisbane and Ipswich City Councils. The system comprises a comprehensive network of rainfall and river height field stations located throughout the catchment. They report via VHF radio to base station computers located in both SEQWater and the Brisbane City Council offices and the Bureau of Meteorology in Brisbane. The field stations send reports for every 1 millimetre of rainfall and every 50 millimetre change in river height.

The base station computers located in the both the SEQWater and Brisbane City Council offices collect the data and have software that displays it in graphical and tabular form. The data is also received by the Bureau's Flood Warning Centre where it is used in hydrologic models to produce river height predictions.

## Flood Warnings and Bulletins

In consultation with the SEQWater and the Brisbane City Council, the Bureau's Flood Warning Centre issues Flood Warnings and River Height Bulletins for the upper Brisbane River catchment above Wivenhoe Dam regularly during floods. They are sent to radio stations for broadcast, and to the 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 or as part of their news services.

### 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/qld/flood> .

### Telephone Weather

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

<a href="#">Main Directory</a>	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 upper Brisbane River catchment above Wivenhoe Dam. It contains the flood gauge heights of the highest know floods recorded at selected river height locations, together with heights of recent floods.

For further information, please refer to similar brochures issued for the lower Brisbane River below Wivenhoe Dam to Brisbane City and for the Bremer river.

River Height Station	Mar 1955	Jan 1974	Jun 1983	Apr 1989	Feb 1999	Feb 2008	Oct 2010	Jan 2011
Cooyar Creek	-	-	-	-	6.06	-	-	10.22
Linville	12.24*	10.11*	10.20*	10.60*	11.50*	-	-	-
Devon Hills	-	-	-	9.44*	10.80	3.52	6.22	11.25
Boat Mountain	-	9.61	8.66	7.18	9.22	-	-	11.02
Glendale	-	-	-	-	-	-	3.27	8.23
Gregor Creek	-	14.45*	13.92	12.65	14.53	4.33	6.80	14.56
Rosentreters Br	-	-	-	-	4.64	3.32	3.33	6.80
Peachester	8.56*	8.47*	8.23*	8.92	8.85	5.68	7.70	9.04
Woodford	8.53*	8.60*	7.50*	8.65*	9.00*	5.05*	6.74	9.38
Mt Kilcoy Weir	7.62	-	-	-	-	4.74	6.85	7.26
Falls Road	-	-	-	-	-	-	4.84	8.84

All heights are in metres on flood gauges. [\*] Height has been observed from the manual station.

Historical flood heights for all river stations in the upper Brisbane River catchment above Wivenhoe Dam Floodwarning network, as shown on the map, are available from the Bureau of Meteorology upon request.

### UPPER BRISBANE RIVER CATCHMENT ABOVE WIVENHOE DAM - ASSESSMENT OF THE FLOOD POTENTIAL

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

#### Upper Brisbane River above Wivenhoe Dam:

Average catchment rainfalls in excess of 200mm in 48 hours, may result in stream rises and the possibility of minor flooding and local traffic disabilities throughout the upper Brisbane River catchment above Wivenhoe Dam.

Average catchment rainfalls in excess 300mm in 48 hours, may result in stream rises and the possibility of major flooding and local traffic disabilities throughout the upper Brisbane River catchment above Wivenhoe Dam.

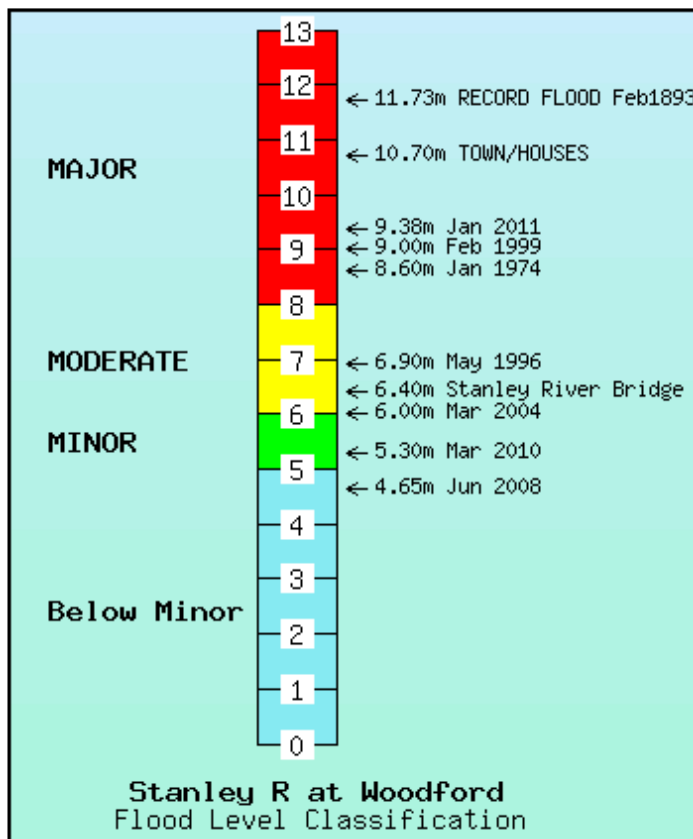
**Flood Classifications**

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 upper BrisbaneRiver catchment above Wivenhoe Dam.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Cooyar Creek	-	-	5.0	-	6.5	-	8.0
Linville	3.0	9.50 (B)	3.0	9.0	7.0 (d/s)	-	8.0 (d/s)
Devon Hills	-	-	2.0	-	6.0	-	7.0
Boat Mountain	-	-	4.5	-	6.0	-	7.5
Glendale	-	-	-	-	-	-	-
Gregor Creek	-	-	3.5	-	4.5	-	7.5
Rosentreter's Br	-	-	3.0	-	4.0	-	5.0

<a href="#">Peachester</a>	-	-	5.0	-	8.0	-	9.0
<a href="#">Woodford</a>	3.0	6.40 (B)	5.0	5.0	6.0	10.7	8.0
<a href="#">Mt Kilcoy Weir</a>	-	-	-	-	-	-	-
<a href="#">Falls Road</a>	-	-	-	-	-	-	-

All heights are in metres on flood gauges. (B) = Bridge (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 upper Brisbane River catchment flood warning network.**

Click here to view map as: [PNG](#) [PDF](#) (1.0M bytes)

***For further information, contact:***

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

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