FLOOD WARNING SYSTEM for the CONDAMINE-BALONNE RIVER BELOW COTSWOLD

This brochure describes the flood warning system operated by the Australian Government, Bureau of Meteorology for mainstream flooding along the Condamine - Balonne River catchment downstream of Cotswold. 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.

Surat during the January 1996 flood
Source: Wimera Pty Ltd

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

The Flood Risk

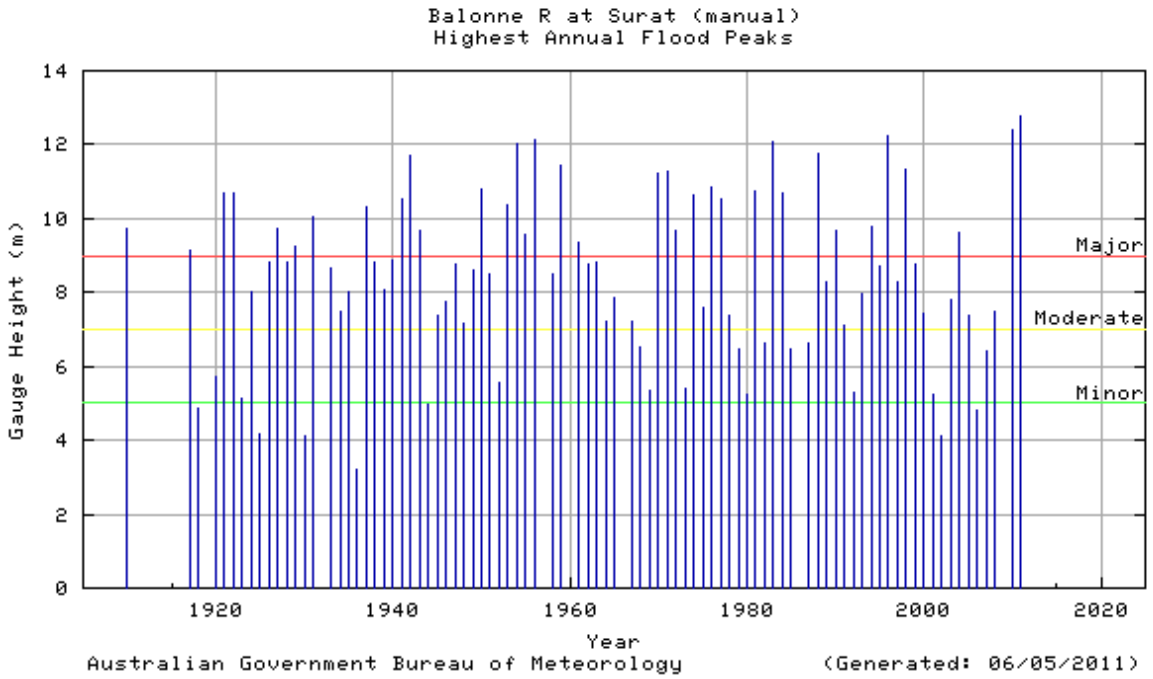
The Condamine-Balonne river system is one of the major tributaries of the Murray-Darling river system and is one of the most important river systems in Queensland in terms of agriculture. The headwaters of the Condamine-Balonne River rise in the Border Ranges upstream of Killarney and flow for approximately 1200 kilometres through Queensland before entering New South Wales.

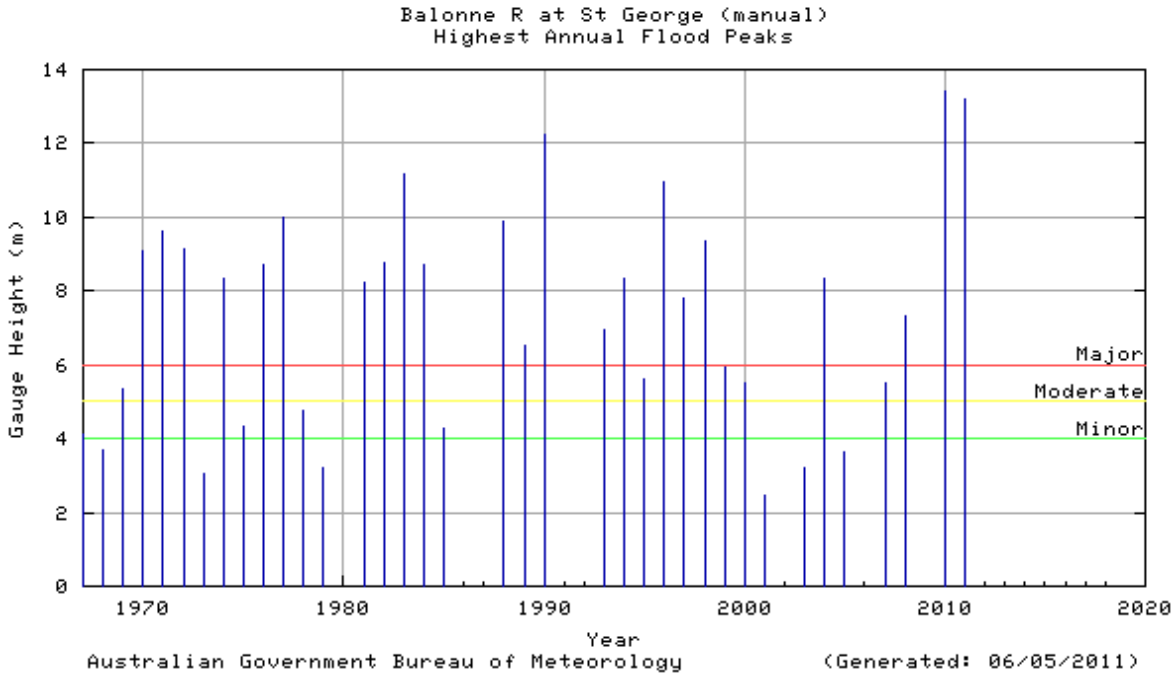
Major floods do not necessarily develop in the headwater areas of the catchment but can result from heavy rainfall in any of the large tributaries which enter the main Balonne River. In 1990, the Maranoa River experienced a major flood which extended to the NSW border. However, there was no significant flooding in the main Balonne system. Under these circumstances flood forecast lead times may be short.

The most significant effects of flooding along the Balonne River are the widespread inundation of agricultural land, the isolation of rural homes and properties and the loss and damages suffered in these areas. Damage to fencing, pumping equipment, machinery and loss of stock through drowning result in significant losses during major floods.

Previous Flooding

Records of large floods along the Balonne River extend back as far as 1890 at St. George with extensive records at several other locations on the main stream. Major floods occur regularly, on average every 2 years. Major flood events were recorded in 1942, 1950, 1956, 1975, 1976, 1983 (twice), 1988 and 1996. The record major floods in March 2010 and January 2011 produced widespread inundation and traffic disruption. Major floods generally only occur in the first half of the year although records indicate that they may also occur in late spring.





Flood Forecasting

The Bureau of Meteorology operates a flood warning system for the Condamine - Balonne River catchment downstream of Cotswold based on a rainfall and river height observations network shown on the map. The flood warning network consists of a number of volunteer rainfall and river height observers, as well as automatic telephone telemetry station's located throughout the catchment, which are operated by the Department of Environment and Resource Management.

The Bureau's Flood Warning Centre issues Flood Warnings and River Height Bulletins for the Condamine - Balonne River catchment downstream of Cotswold during flood events. Quantitative forecasts are issued whenever river heights are expected to reach minor flood levels at Surat, St George, Dirranbandi and Hebel on the main river and Roma on Bungil Creek.

Local Information

Local Council's throughout the Condamine - Balonne River catchment downstream of Cotswold are able to provide further details of flooding in your area.

Flood Warnings and Bulletins

The Bureau of Meteorology issues Flood Warnings and River Height Bulletins for the Condamine - Balonne River downstream of Cotswold 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/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.

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 Condamine - Balonne River catchment downstream of Cotswold - it contains the flood gauge heights of the more significant recent floods.

River height station	Feb 1942	Jan/Feb 1956	May 1983	Apr 1988	Apr 1990	Jan 1996	Mar 2010	Early Jan 2011	Late Jan 2011
Cotswold TM	-	-	16.13	15.44	5.91	14.74	12.34	17.82	16.99
Warkon	11.59	11.70	11.67	11.63	8.74	11.88	11.62	12.03	11.79
Surat	11.68*	12.12*	12.09*	11.74	9.69	12.25	12.40	12.75	12.40
Weribone TM	-	-	12.99	12.41	12.14	13.11	13.71	13.50	13.15
Warroo	14.10	14.36	14.17	12.60	11.75	13.70	14.37	15.06	14.50
Mitchell	-	7.00	4.66	-	8.08	-	7.50	-	-
Old Cashmere TM	-	-	7.47	-	9.72	-	8.86	-	-
St George	9.14*	10.80*	11.17	9.90	12.24	10.98	13.39	13.20	12.49
Whyenbah	-	7.82	7.97	7.81	8.06	8.00	8.05	8.14	8.05
Dirranbandi	5.08	5.16	5.14	5.10	5.20	5.12	5.28	5.34	5.27
Hebel	-	-	2.30	2.10	2.18	2.25	2.34	2.37	2.32

All heights are in metres on flood gauges.
[*] These readings were taken at old flood gauges which cannot be related to the current gauge heights.

Historical flood heights for all river stations in the Condamine - Balonne River catchment downstream of Cotswold as shown on the map, are available from the Bureau of Meteorology upon request.

CONDAMINE - BALONNE RIVER CATCHMENT DOWNSTREAM OF COTSWOLD ASSESSMENT OF THE FLOOD POTENTIAL

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

Average catchment rainfalls in excess of 25mm, with isolated 50mm falls, in 24 hours may result in stream rises and the possibility of minor flooding and local traffic disabilities and extending downstream.

Average catchment rainfalls in excess of 50mm, with isolated 75 to 100mm falls, in 24 hours may result in significant stream rises with the possibility of moderate to major flooding developing with local traffic disabilities and extending downstream.

Flood Classifications

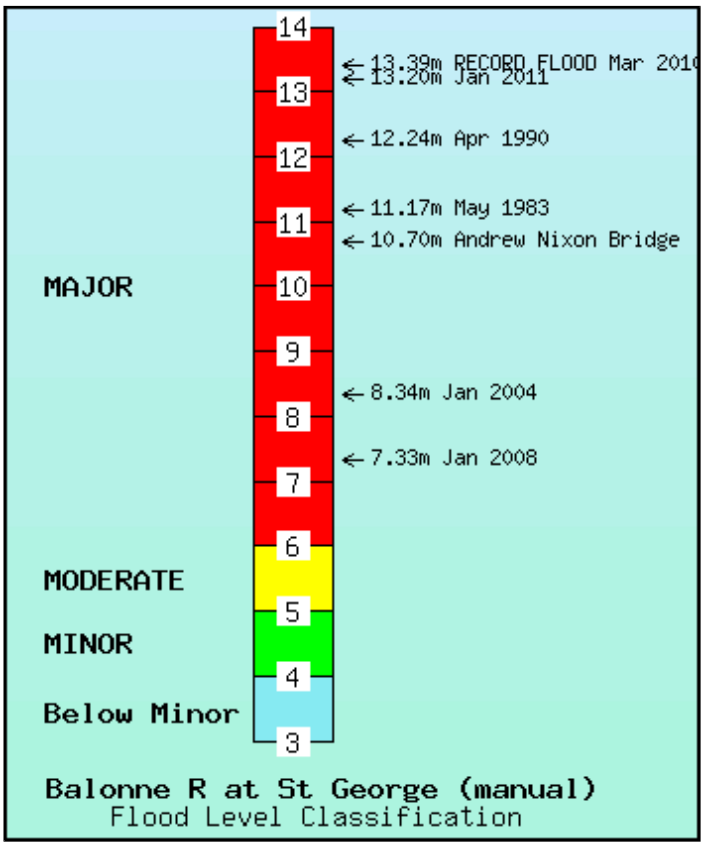
At each flood warning river height station, the severity of flooding is described as minor, moderate or major according to the effects caused in the local area or in nearby downstream areas. Terms used in Flood Warnings are based on the following definitions.

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 Condamine - Balonne River catchment downstream of Cotswold.

River Height Station	First Report Height	Crossing Height	Minor Flood Level	Crops & Grazing	Moderate Flood Level	Towns and Houses	Major Flood Level
Cotswold	-	4.29 (W)	7.0	-	10.0	-	11.0
Warkon	3.0	3.20 (B)	7.0	9.0	8.0	-	9.0
Surat	4.0	11.00 (B)	5.0	5.0	7.0	12.2	9.0
Weribone	-	-	5.8	-	7.8	-	9.8
Warroo	7.0	8.80 (B)	9.0	12.0	10.5	13.7	12.0
Currawong	2.0	-	2.0	7.0	5.0	7.0	7.0
Mitchell	1.0	7.96 (B)	2.0 (d/s)	5.0	3.0 (d/s)	7.6	5.0 (d/s)
Old Cashmere	-	-	4.8	-	5.5	-	6.8
St George	2.0	10.70 (B)	4.0	11.0	5.0 (d/s)	12.1	6.0 (d/s)
Whyenbah	3.0	5.30 (B)	4.0	-	6.0	-	7.0
Dirranbandi	3.0	5.20 (B)	4.0	4.0	4.3	-	4.8 (d/s)
Hebel	1.0	-	1.0	-	1.5	-	2.0

All heights are in metres on flood gauges.
(B) = Bridge (W) = Weir (d/s) = Down Stream

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 Condamine - Balonne River downstream of Cotswold flood warning network.

Click here to view map as: PNG PDF (512K bytes)

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