

Flood summary for the Burnett River at Bundaberg

- The town of Bundaberg is on the Burnett River in the Burnett catchment
- The flood heights at Bundaberg are measured on a manual gauge owned by the Bureau of Meteorology (Bureau station number: 039170).
- A detailed map of the flood warning network is available on the Bureau website at http://www.bom.gov.au/hydro/flood/qld/brochures/river_maps.shtml

Location map

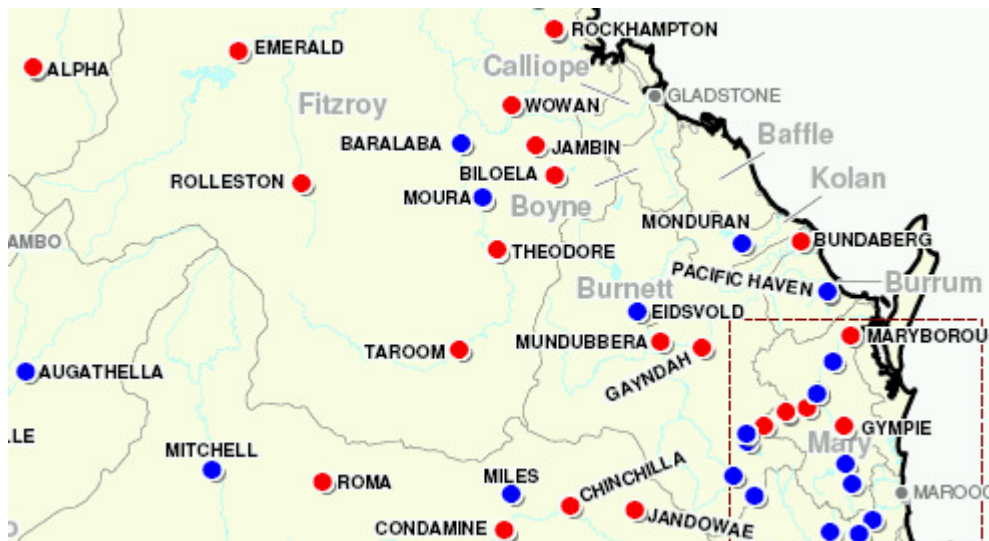


Figure 1. Map showing location of Bundaberg.

Note: Red dots are reported flood inundated towns or cities and blue dots are flood affected towns or cities.

Flood effects and severity

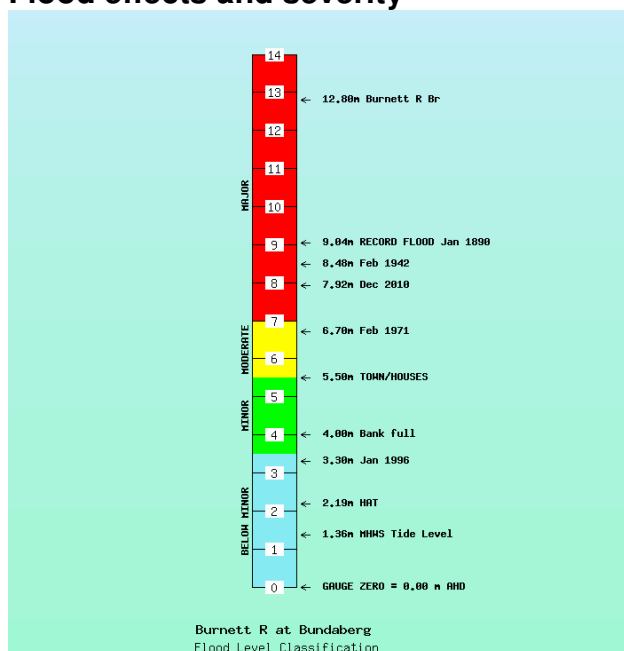


Figure 2. Flood level classifications and flood effects for Bundaberg.

- **Peaked at 7.92 metres on 30/12/2010**
- Minor: 3.5 metres
Moderate: 5.5 metres
Major: 7.0 metres.
- Gauge zero is 0.0 metres AHD.
- Houses begin to be effected at 5.50 metres.
- Estimated 300 houses and 120 businesses inundated (ABC News).
- A moderate flood peak of 5.76 metres occurred on 13/01/2011.
- Above major flood level (7 metres) from 29/12/2010 to 31/12/2010.
- Remained above minor flood level (3.5 metres) from 25/12/2010 to 02/01/2011 and again from 10/01/2011 to 15/01/2011.

Rainfall summary

- Over 600mm recorded throughout most of Burnett catchment during December 2010 to January 2011
- Heavy rainfall of over 100mm throughout most of Burnett catchment between 9am on 26/12/2010 and 9am on 29/12/2010. The southern part of the Burnett catchment recorded over 300mm between 9am on 07/01/2011 and 9am on 13/01/2011.

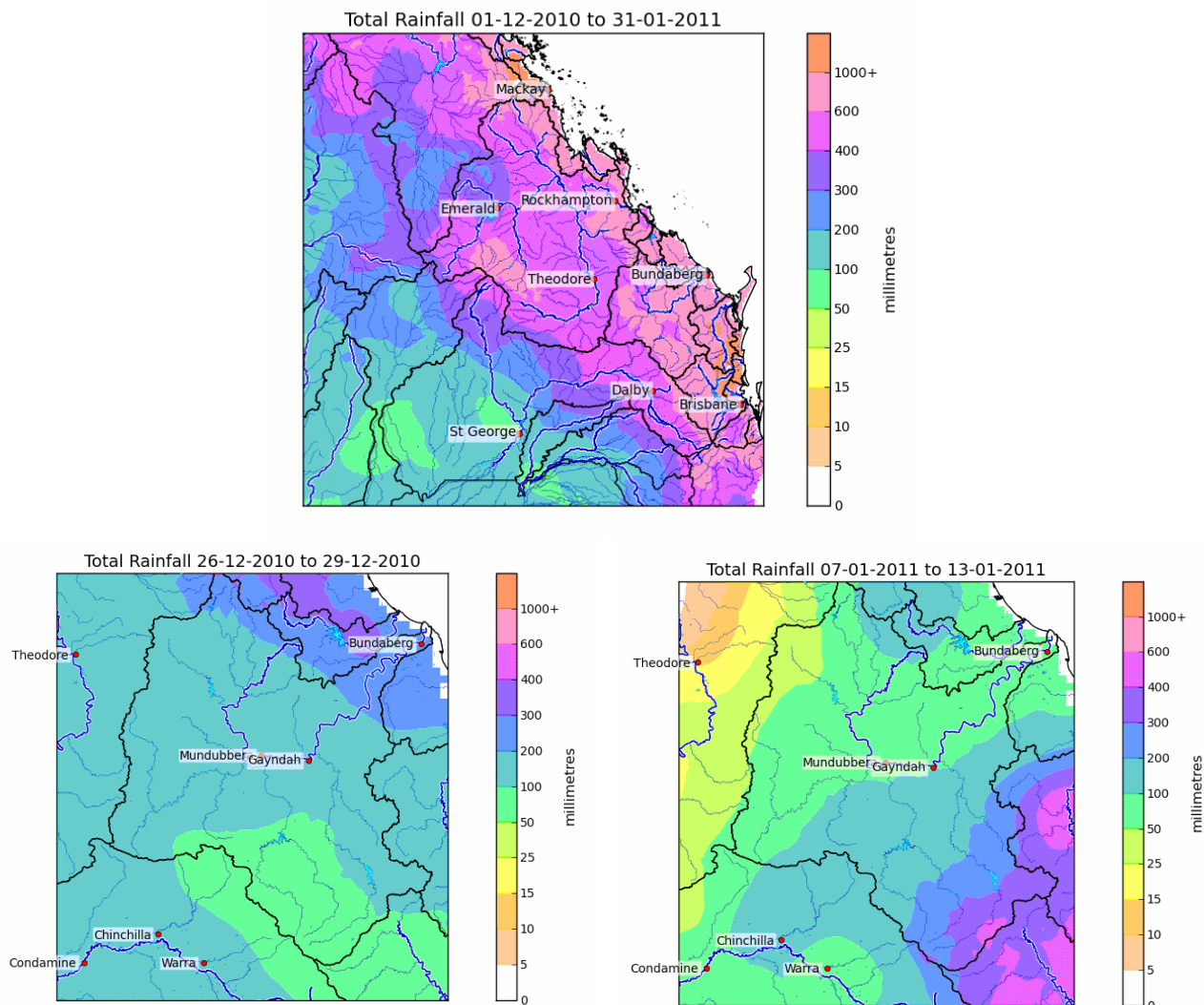


Figure 3. Rainfall map from 01/12/2010 to 31/01/2011 (top) and for the 72 hours to 9am on 29/12/2010 (bottom left) and for 9am on 07/01/2011 to 9am on 13/01/2011 (bottom right).

Rainfall Intensity

- Maximum rainfall intensities for two selected stations at Bungadoo TM in the Lower Burnett River catchment and Glenmore TM on Barker Creek in the Upper Burnett River catchment are shown in Table 1.
- The most significant rainfall intensities for December 2010 and January 2011 occurred in the 12 hour duration period ending on the 11/01/2011, with less than a 1% Annual Exceedence Probability (greater than 100 year Average Recurrence Interval).

Table 1. Recorded Maximum Rainfall Intensities for Bungadoo TM and Glenmore TM in the Burnett River catchment for December 2010 and January 2011.

Rainfall Duration	Bungadoo TM			GlenmoreTM		
	Rainfall (mm)	Period ending	ARI (years)	Rainfall (mm)	Period ending	ARI (years)
12hr				184	4:50 AM 11/01/2011	> 100
24hr	167	9:00 AM 28/12/2010	5-10	187	4:50 AM 11/01/2011	50-100
48hr	262	9:00 AM 28/12/2010	10-20	235	4:50 AM 11/01/2011	20-50
72hr	300	9:00 AM 28/12/2010	10-20	246	4:50 AM 11/01/2011	20-50

Flood event timeline

Table 1. Flood timeline for Bundaberg

Time/Date	Event Description	Gauge Height (metres)	Comment
10:35 PM 19/12/2010	First warning issued		
25/12/2010	First time it exceeded minor flood level	3.50	Remained above minor flood level for ~9 days
28/12/2010	First time it exceeded moderate flood level	5.50	Remained above moderate flood level for ~5 days
29/12/2010	First time it exceeded major flood level	7.00	Remained above major flood level for ~3 days
10:00 AM 30/12/2010	Major flood peak	7.92	Highest since 1942
31/12/2010	Fall below major	7.00	
01/01/2011	Fall below moderate	5.50	
02/01/2011	Fall below minor	3.50	
10/01/2011	Exceeded minor flood level	3.50	Remained above minor flood level for ~6 days
12:00 PM 10/01/2011	Minor flood peak	4.03	
13/01/2011	Exceeded moderate flood level	5.50	Remained above moderate flood level for ~2 days
13/01/2011	Moderate flood peak	5.76	
14/01/2011	Final fall below moderate	5.50	
15/01/2011	Final fall below minor	3.50	
10:04 AM 15/01/2011	Final warning issued		

Flood Heights at Bundaberg

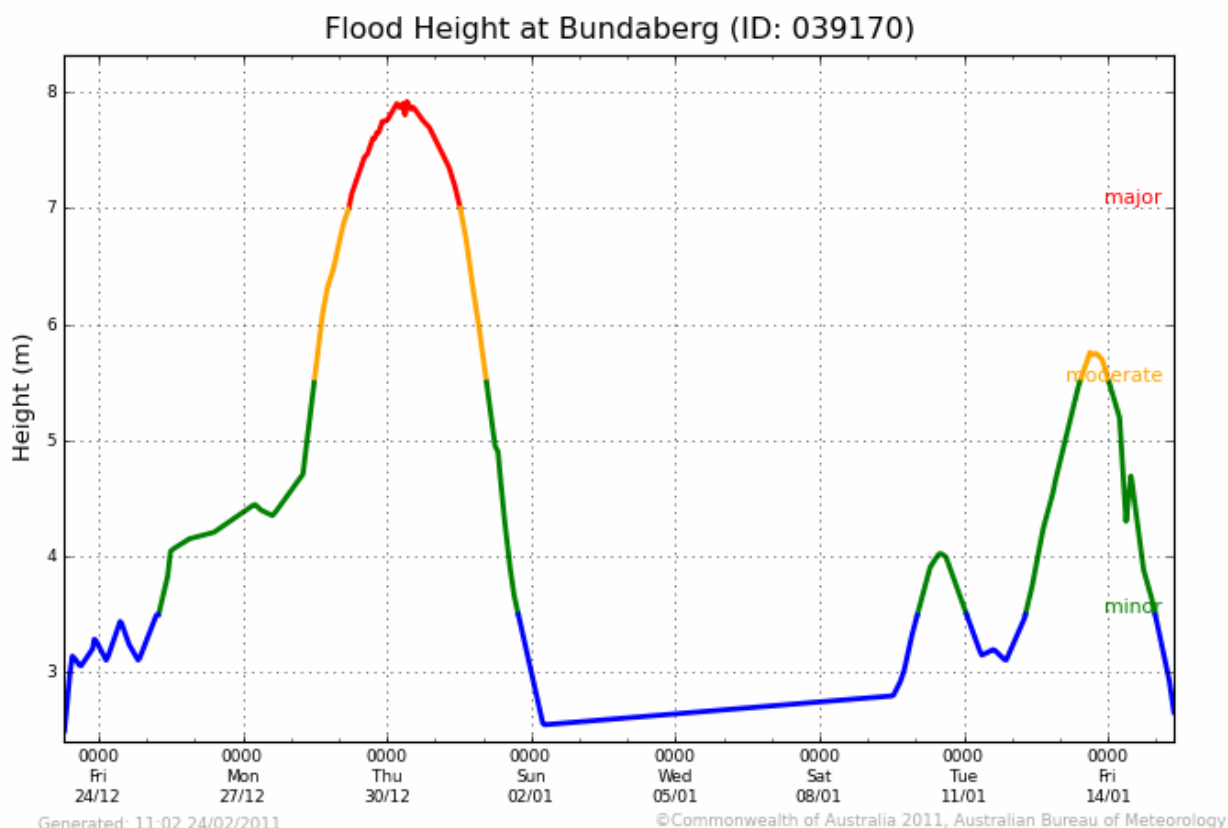


Figure 4. Flood heights for the Bundaberg manual gauge.

Comparison with previous floods

- Start of record 1875 with 9 major flood peaks in the record including 3 major flood peaks in 1893.
- Last major flood was 7.26 metres July 1954 but previous to that was 8.48 metres in February 1942.

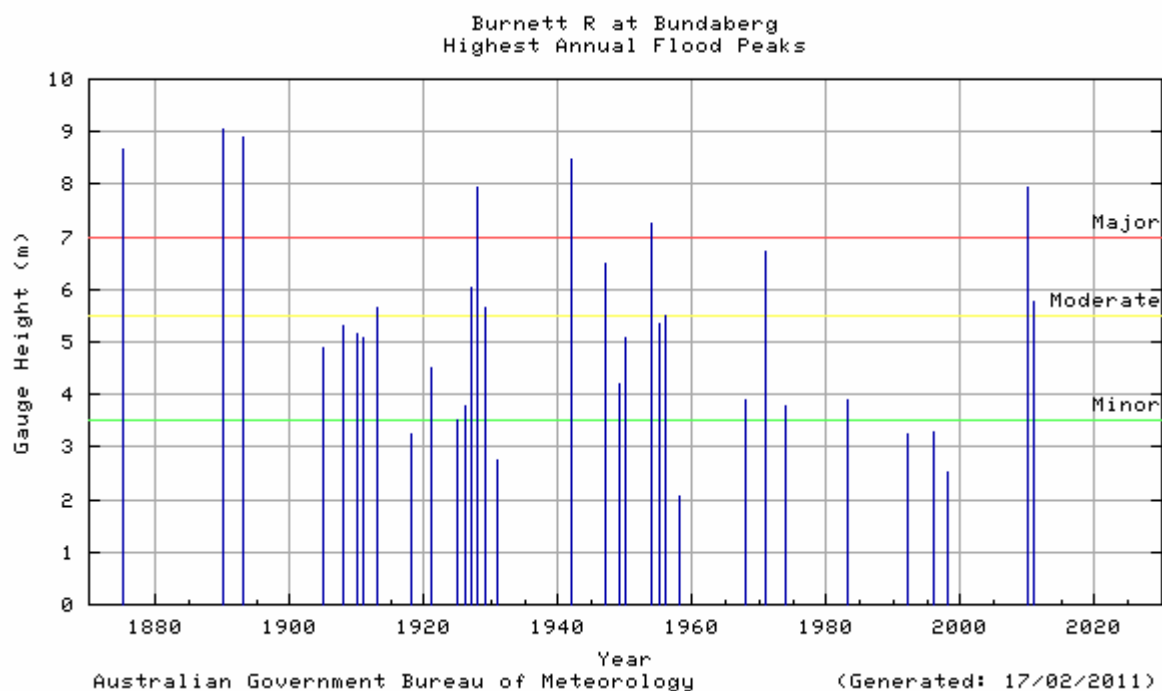


Figure 5. Highest annual flood peaks for the Burnett River at Bundaberg.

Warning and Forecast Service

- Significant runoff commenced during December with flood warnings for the Burnett River catchment issued between 12/12/2010 and 15/12/2010.
- Heavy rainfall occurred in December with warnings commencing on 19/12/2010 and continuing through to 17/1/2011.
- A total of 56 warnings were issued for the Burnett River system including the Burnett River during December 2010 and January 2011.

Table 2. Table of peak height predictions for Bundaberg

Time of Height Forecast	Forecast	Peak
First warning issued 19/12/2010.		
11:37 PM on Monday the 27th of December 2010	Exceed moderate flood level of 5.5 metres during Wednesday.	6.00 metres at 3:00 PM Tues 28/12/2010
8:00 AM on Tuesday the 28th of December 2010	Exceed moderate flood level (5.5 metres) during Wednesday. Further rises and major flood levels possible during Thursday	
12:35 PM on Tuesday the 28th of December 2010	Reach about the major flood level of 7 metres by Wednesday afternoon. Remain high during Thursday. Peak prediction for Bundaberg will be updated as upstream peaks are recorded.	7.00 metres at 5:00 AM Wed 29/12/2010 7.50 metres at 3:00 PM Wed 29/12/2010
5:07 PM on Tuesday the 28th of December 2010	Exceed the major flood level of 7 metres overnight tonight. Reach about 7.5 metres on Wednesday. Remain high until at least Thursday night.	
10:20 PM on Tuesday the 28th of December 2010	Exceed the major flood level of 7 metres overnight tonight. Reach about 7.5 metres on Wednesday. Remain high until at least Thursday night.	
12:31 AM on Wednesday the 29th of December 2010	Exceed the major flood level of 7 metres overnight tonight. Reach about 7.5 metres on Wednesday. Remain high until at least Thursday night.	7.50 metres at 3:00 PM Wed 29/12/2010
6:09 AM on Wednesday the 29th of December 2010	Peak at about 7.5 metres during Wednesday or overnight tonight. Remain high until Friday.	
12:02 PM on Wednesday the 29th of December 2010	Peak at about 7.8 metres overnight Wednesday. River levels to remain high until Friday.	
5:47 PM on Wednesday the 29th of December 2010	Peak at about 7.8 metres overnight Wednesday. River levels to remain high until Friday.	7.90 metres at 5:00 AM Thurs 30/12/2010
10:52 PM on Wednesday the 29th of December 2010	Peak at about 7.8 metres overnight Wednesday. River levels to remain high until Friday.	
7:16 AM on Thursday the 30th of December 2010	Remain around its current level during Thursday and overnight. River levels at Bundaberg should commence falling slowly overnight or during Friday morning.	
12:23 PM on Thursday the 30th of December 2010	Remain around its current level during Thursday and overnight. River levels at Bundaberg should commence falling slowly overnight or during Friday morning.	7.92 metres at 10:00 AM Thurs 30/12/2010
4:56 PM on Thursday the 30th of December 2010	Remain around its current level during Thursday and overnight. River levels at Bundaberg should commence falling slowly overnight or during Friday morning.	
11:00 AM on Tuesday the 11th of January 2011	Reach about 5 metres overnight Thursday.	5.25 metres at 6:00 AM Thurs 13/01/2011
10:25 PM on Wednesday the 12th of January 2011	Reach 5.5 metres overnight Thursday with further rises.	5.62 metres at 12:00 PM Thurs 13/01/2011
8:28 AM on Thursday the 13th of January 2011	Exceed 5.5 metres later Thursday morning. Reach about 5.75 metres (moderate peak) at about 5pm	5.76 metres at 3:00 PM Thurs

	Thursday.	13/01/2011
1:48 PM on Thursday the 13th of January 2011	Peak at about 5.75 metres (moderate peak) at about 6pm Thursday.	5.75 metres at 6:00 PM Thurs 13/01/2011
6:40 PM on Thursday the 13th of January 2011	Currently reaching a moderate flood peak at 5.75 metres.	
Last warning issued 15/01/2011.		

Note: This table does not include all forecasts issued during these flood events.