

## Flood summary for the Bremer River at Ipswich

- The city of Ipswich is on the Bremer River in the Brisbane River catchment.
- The flood heights at Ipswich are measured with a combination of a manual and an automatic gauge co-owned by the Bureau of Meteorology and the Ipswich City Council (Bureau station number: manual gauge – 040101 and automatic gauge – 040831).
- 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](http://www.bom.gov.au/hydro/flood/qld/brochures/river_maps.shtml)

## Location map

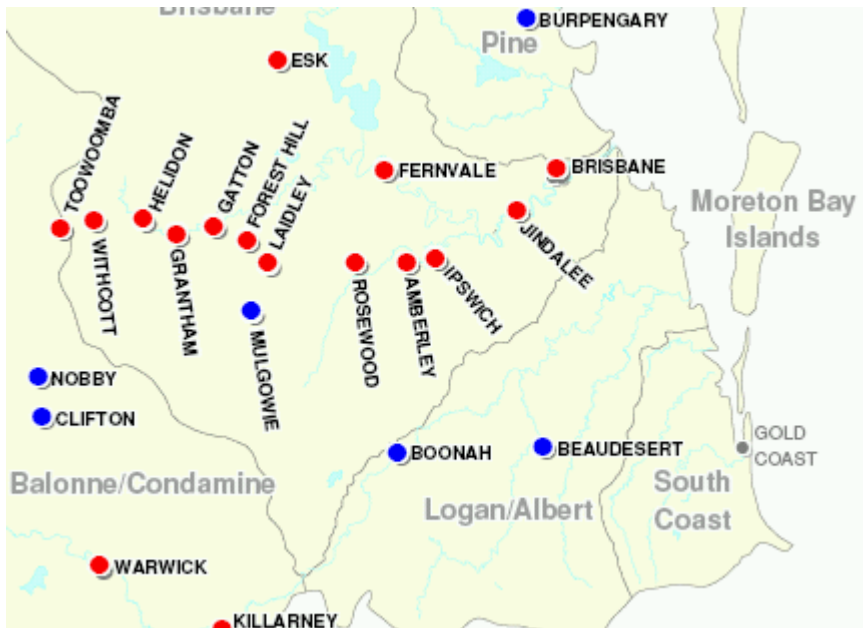
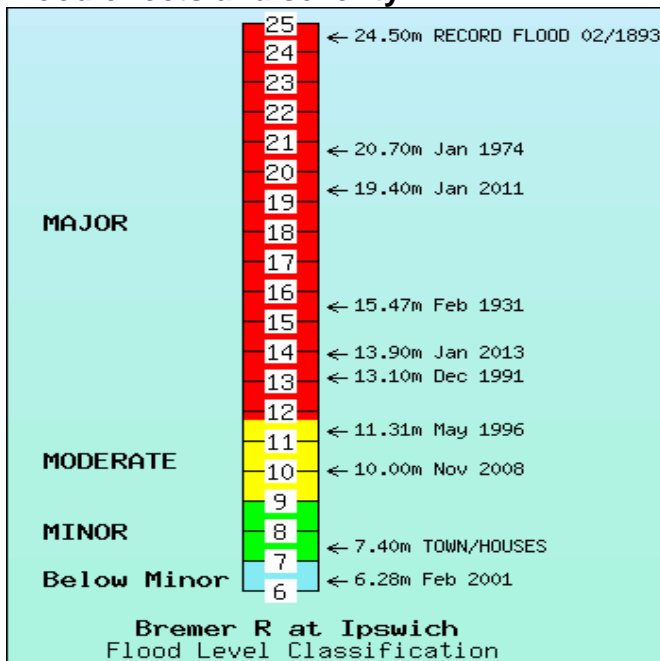


Figure 1. Map showing location of Ipswich.

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

## Flood effects and severity



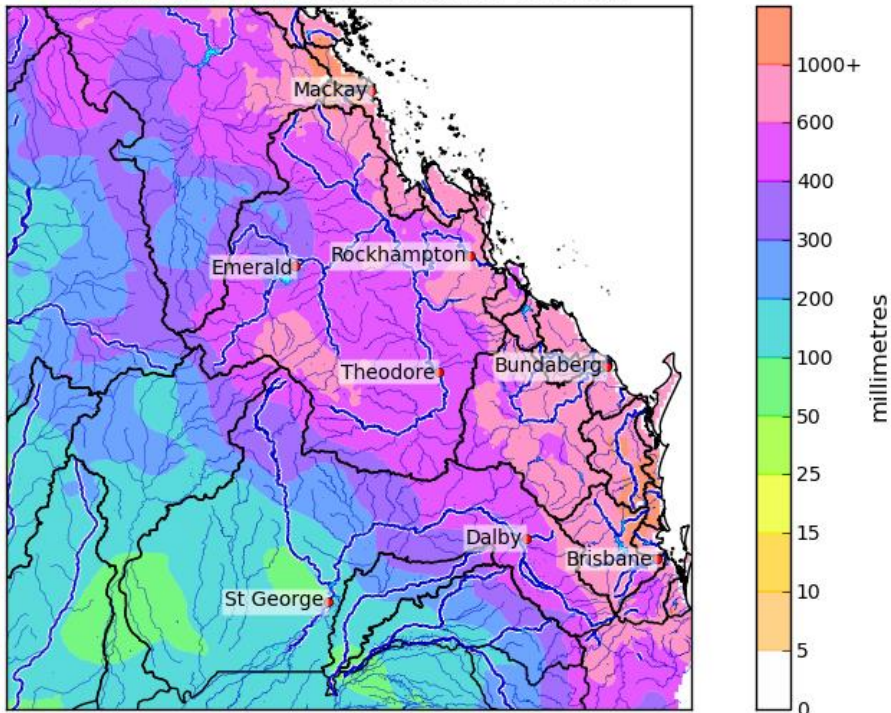
- **The river peaked at 19.40 metres on 12/01/2011.**
- Minor: 7 metres  
Moderate: 9 metres  
Major: 11.7 metres
- Gauge zero is 0.0 metres AHD.
- 3000 properties were inundated in the Ipswich area. (ABC 612 Radio)
- Ipswich was above major flood level (11.7 metres) from 11/01/2011 to the 14/01/2011.
- It remained above minor flood level (7 metres) from 10/01/2011 to 18/1/2011.

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

### Rainfall summary

- Rainfalls in excess of 1000mm were recorded in parts of the Brisbane River catchment during December 2010 and January 2011.
- The vast majority of this rainfall fell between 09/01/2011 and 13/01/2011.

Total Rainfall 01-12-2010 to 31-01-2011



Total Rainfall 09-01-2011 to 13-01-2011

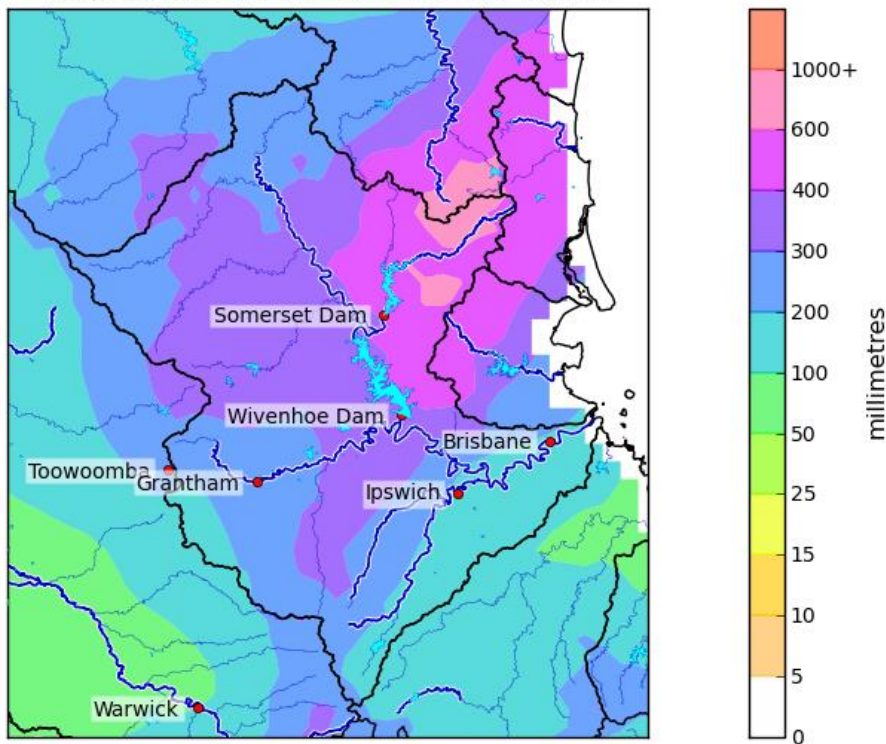


Figure 3. Rainfall map from 01/12/2010 to 31/01/2011 (top) and for the 96 hours to 9am on 13/01/2011 (bottom).

## Rainfall Intensity

- Maximum rainfall intensities for two selected stations at Tallegalla AL and Spressers Bridge AL on the Bremer River upstream of Ipswich are shown in Table 1.
- The most significant rainfall intensities for Tallegalla AL in January 2011 exceeded the 1% Annual Exceedence Probability (100 year Average Recurrence Interval) intensities for multiple durations.
- The most significant rainfall intensities for Spressers Bridge AL in January 2011 exceeded the 1% Annual Exceedence Probability (100 year Average Recurrence Interval) intensities for multiple durations.

**Table 1. Recorded maximum rainfall intensities for Tallegalla AL and Spressers Bridge AL on the Bremer River for January 2011.**

Rainfall Duration	Tallegalla AL			Spressers Bridge AL		
	Rainfall (mm)	Period ending	ARI (years)	Rainfall (mm)	Period ending	ARI (years)
5 min	9	07:45 11/01/2011	1	9	09:10 11/01/2011	1
6 min	11	07:46 11/01/2011	1-2	11	09:11 11/01/2011	1-2
10 min	16	07:50 11/01/2011	1-2	18	09:10 11/01/2011	2
20 min	33	08:05 11/01/2011	2-5	28	09:15 11/01/2011	2-5
30 min	45	08:30 11/01/2011	5-10	41	09:30 11/01/2011	2-5
1hr	73	09:25 11/01/2011	10-20	58	09:35 11/01/2011	5-10
2hr	122	09:45 11/01/2011	50-100	86	09:35 11/01/2011	10-20
3hr	159	12:45 11/01/2011	>100	104	09:50 11/01/2011	20-50
6hr	241	17:45 11/01/2011	>100	172	14:05 11/01/2011	>100
12hr	336	19:10 11/01/2011	>100	233	17:55 11/01/2011	>100
24hr	360	14:05 11/01/2011	>100	241	19:25 11/01/2011	>100
48hr	424	15:10 11/01/2011	>100	290	17:55 11/01/2011	50-100
72hr	450	19:15 11/01/2011	>100	324	21:40 11/01/2011	50-100

Note: A flood frequency analysis would be required to assess the probability of flood levels reached at each location. The frequency analysis in this report is for rainfall only.

## Flood event timeline

**Table 2. Flood timeline for Ipswich.**

Time/Date	Event Description	Gauge height (metres)	Comment
06/01/2011	First warning issued	1.00	
10/01/2011	First time exceeded minor flood level	7.00	Remained above minor flood levels for ~7.5 days.
11/01/2011	First time exceeded moderate flood level	9.00	Remained above moderate flood levels for ~4 days.
11/01/2011	First time exceeded major flood level	11.70	Remained above major flood levels for ~2.5 days.
1:45 PM 12/01/2011	Major flood peak	19.40	Highest since 1974.
14/01/2011	Final fall below major	11.70	
14/01/2011	Final fall below moderate	9.00	
18/01/2011	Final fall below minor	7.00	
6:50 AM 21/01/2011	Final warning issued		

## Flood heights at Ipswich

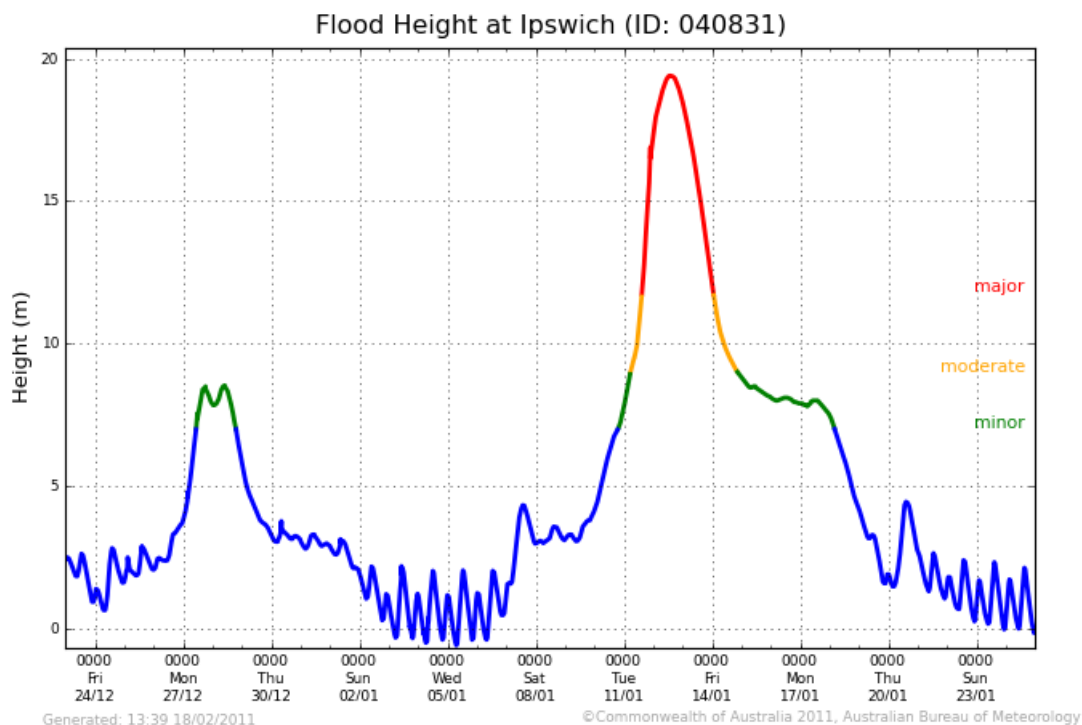


Figure 4. Flood heights at the Ipswich AL gauge.

## Comparison with previous floods

- Start of record 1840 with 18 major flood peaks in the record.
- The last major flood recorded at Ipswich was 13.10 metres in December 1991 with major floods also occurring in 1976 (13.65 metres) and 1974 (20.70 metres).
- The highest floods in 1893, 1974 and 2011 were all as a result of backwater from the Brisbane River. (Note: the 1893 record flood reached 24.5 metres.)

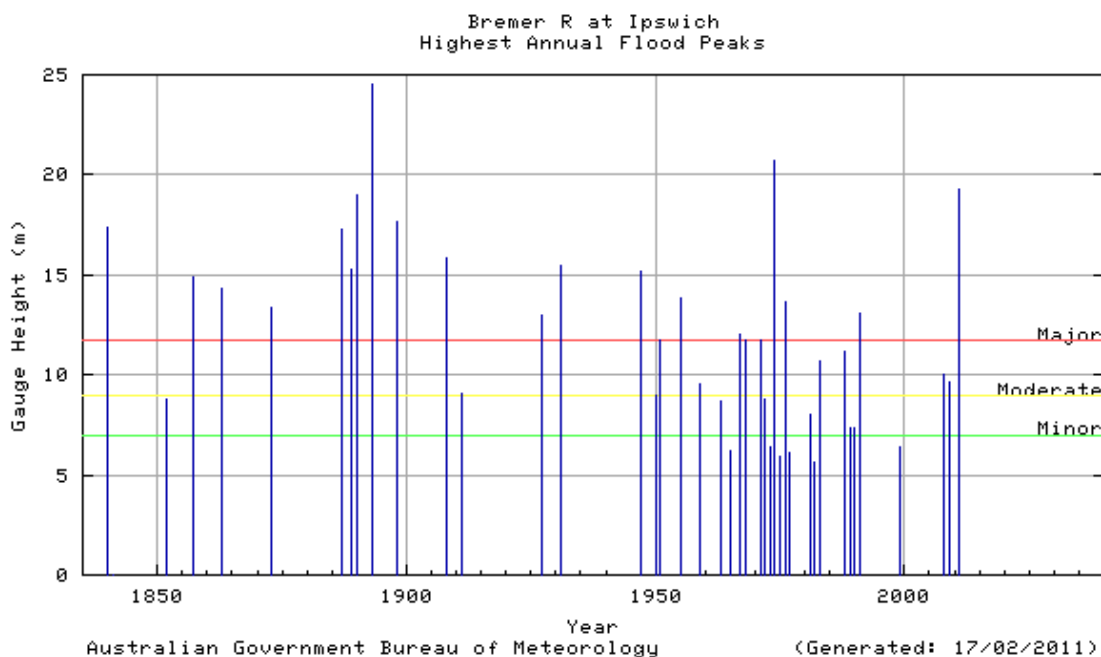


Figure 5. Highest annual flood peaks for the Bremer River at Ipswich.

## Warning and Forecast Service

- The catchment started to become saturated during October with flood warnings for the Stanley, upper Brisbane and Bremer Rivers and Lockyer Creek issued between 10/10/2010 and 19/10/2010. This included the first large scale release from Wivenhoe Dam since 2001.
- A total of 96 warnings were issued for the Brisbane River during December 2010 and January 2011.

**Table 3. Table of peak height predictions for Ipswich.**

Time of Height Forecast	Forecast/Time	Peak
<b>06/01/2011 First warning issued. Height at the time was 1.0m (below minor)</b>		
10:55 PM on Sunday 9th of January 2011	At least minor flood levels expected in the Bremer River at Ipswich during Monday night.	Rising limb forecasts – reach a level and expected to continue rising
12:36 AM on Monday 10th of January 2011	At least minor flood levels expected in the Bremer River at Ipswich during Monday night and continuing into Tuesday.	
10:28 AM on Monday 10th of January 2011	Reach at least 9.5 metres (moderate) during the early hours of Tuesday.	
4:16 PM on Monday 10th of January 2011	Reach about 12.7 metres (major) during Tuesday afternoon. Quicker rises and higher levels are possible depending on further rainfall tonight.	
12:06 AM on Tuesday 11th of January 2011	Reach about 12.7 metres (major) during Tuesday afternoon.	
9:28 AM on Tuesday 11th of January 2011	Reach at least 16 metres (major) during Wednesday; further rises.	
3:24 PM on Tuesday 11th of January 2011	Reach at least 22 metres (major) during Wednesday; further rises.	
8:05 PM on Tuesday 11th of January 2011	Reach about 21.5 metres (major) during Wednesday; further rises possible.	
7:33 AM on Wednesday 12th of January 2011	Peak about 20.5 metres (major) during Wednesday afternoon.	19.40 metres at 1:45 PM Wed 12/01/2011.
4:29 PM on Wednesday 12th of January 2011	Peak around 19.5 metres (major) during Wednesday evening.	

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