

Flood summary for the Comet River at Rolleston

- The town of Rolleston is on the Comet River in the Fitzroy River catchment
- The flood heights at Rolleston are measured on a manual gauge owned by the Bureau of Meteorology (Bureau station number: 035145).
- 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

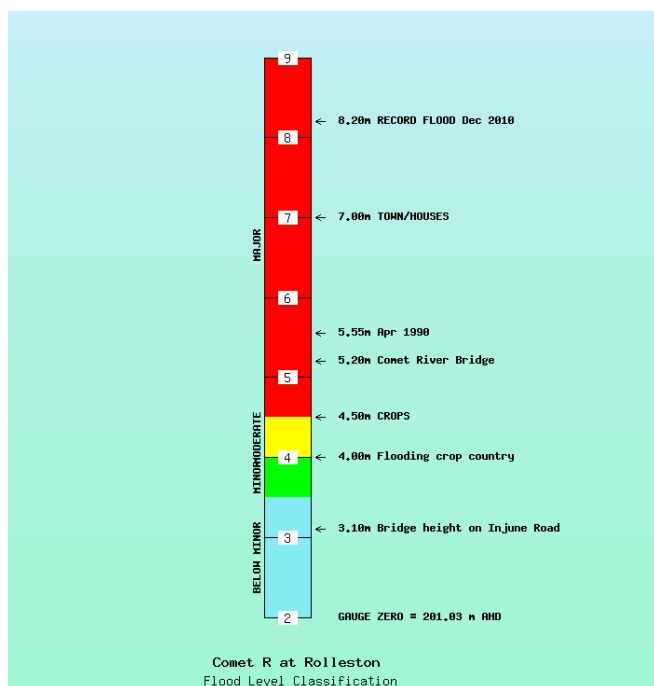
Location map



Figure 1. Map showing location of Rolleston.

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

Flood effects and severity



- **Peaked at:**
8.54 metres at 1:00 PM on 27/12/2010
Additional flood peaks have occurred in December 2010 and January 2011 but were not recorded.
- Minor: 3.5 metres
Moderate: 4.0 metres
Major: 4.5 metres
- Gauge zero is 201.030 AHD.
- The peak height recorded on 27/12/2010 exceeds the previous record flood height by 2.67 metres.
- Above major flood level (4.5 metres) from 03/12/2010 to 09/12/2010 and again from 21/12/2010 to 09/01/2011.*
- Above minor flood level (3.5 metres) from 01/12/2010 to 17/12/2010 and again from 19/12/2010 to 12/01/2011.*

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

* Data from the Rolleston Manual Gauge was incomplete for the period from 01/12/2010 to 12/01/2011 so these dates have been estimated from peak stage relationships using river heights recorded downstream at The Lake Alert.

Rainfall summary

- Between 600 and 1000 mm of rainfall was recorded over the upper Comet River and its tributaries from 01/12/2010 to 31/01/2011.
- Very heavy rainfall of between 300 and 400 mm and isolated falls above 400 mm were recorded over the upper tributaries of the Comet River in the 48 hours to 9am on 28/12/2010 which led to record flood levels at Rolleston on the 27/12/2010.

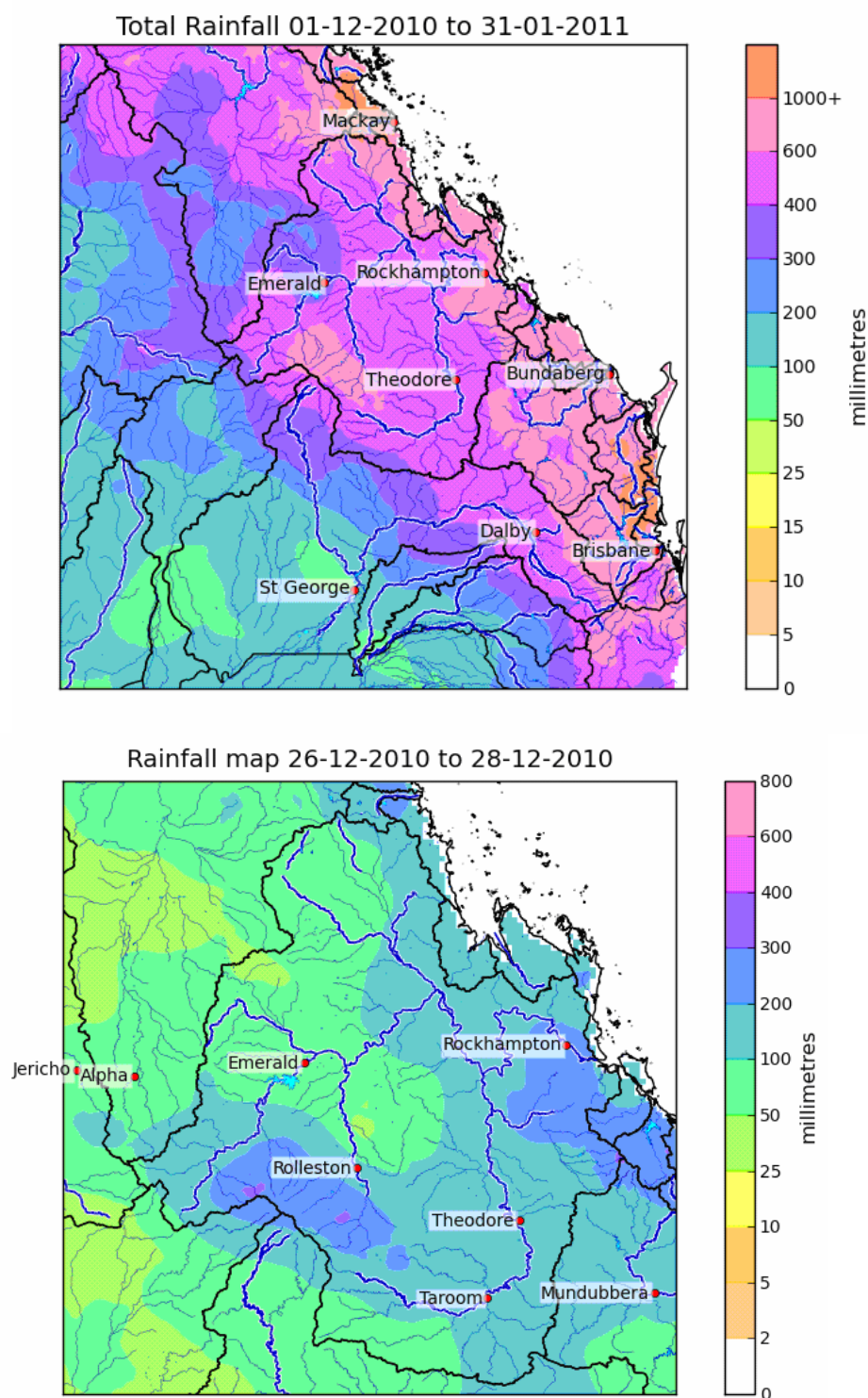


Figure 3. Rainfall map from 01/12/2010 to 31/01/2011 (top) and for the 48 hours to 9 AM on the 28/12/2010 (bottom).

Rainfall Intensity

- Maximum rainfall intensities for Lake Brown TM on the Brown River and Rewan TM on Carnarvon Creek, both upstream from Rolleston, have been selected as examples of recorded rainfall intensities across the Comet River catchment during December 2010. The rainfall intensity data is shown in Table 1.
- The most significant rainfall intensities at Lake Brown TM for December 2010 occurred in the 12 to 24 hour duration periods ending on 27/12/2010 and equalled the 2–5% Annual Exceedence Probability (20-50 year Average Recurrence Interval).
- The most significant rainfall intensities at Rewan TM for December 2010 also occurred in the 12 to 24 hour durations ending on 27/12/2010, exceeding the 1% Annual Exceedence Probability (100 year Average Recurrence Interval).

Table 1. Recorded Maximum Rainfall Intensities for Lake Brown TM on Brown River and Rewan TM on Canarvon Creek for December 2010.

Rainfall Duration	Lake Brown TM			Rewan TM		
	Rainfall (mm)	Period ending	ARI (years)	Rainfall (mm)	Period ending	ARI (years)
6hr	86	8:40 AM 27/12/2010	5-10	118	5:50 AM 27/12/2010	20-50
12hr	144	9:45 AM 27/12/2010	20-50	183	7:35 AM 27/12/2010	> 100
24hr	186	4:15 PM 27/12/2010	20-50	237	3:25 PM 27/12/2010	> 100
48hr	208	3:50 PM 27/12/2010	10-20	268	3:45 PM 27/12/2010	20-50
72hr	213	4:15 PM 27/12/2010	10-20	276	3:45 PM 27/12/2010	20-50

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 Rolleston

Time/Date	Event Description	Gauge Height (metres)	Comment
5:30 PM 01/12/2010	First warning issued for the Comet River.		
01/12/2010*	First time it exceeded minor flood level	3.50	Remained above minor flood level for ~16 days
03/12/2010*	First time it exceeded major flood level	4.50	Remained above the major flood level for ~6 days.
05/12/2010*	Major flood peak	Flood peak not measured	
09/12/2010*	Below major flood level	4.50	
17/12/2010*	Below minor flood level	3.50	
19/12/2010*	Exceeded the minor flood level	3.50	Remained above minor flood level for ~24 days.
21/12/2010*	Exceeded the major flood level	4.50	Remained above the major flood level for ~19 days..
1:00 PM 27/12/2010*	Major flood peak	8.54	New Record
09/01/2011*	Below the major flood level	4.50	
12/01/2011*	Final fall below minor	3.50	
10:07 AM 13/01/2011	Final warning issued for the Comet River		

* Times are estimated by applying the peak stage relationship to river height observations recorded downstream at The Lakes Alert.

Comparison with previous floods

- Flood peak records for Rolleston date back to 1958 with 25 major flood peaks in the record.
- The flood peak of 8.54* metres on the 27/12/2010 sets a new record for Rolleston and exceeds the previous record peak of 5.87 metres that occurred on 19/02/2010 by 2.67 metres.

* Flood peak estimated from post flood survey.

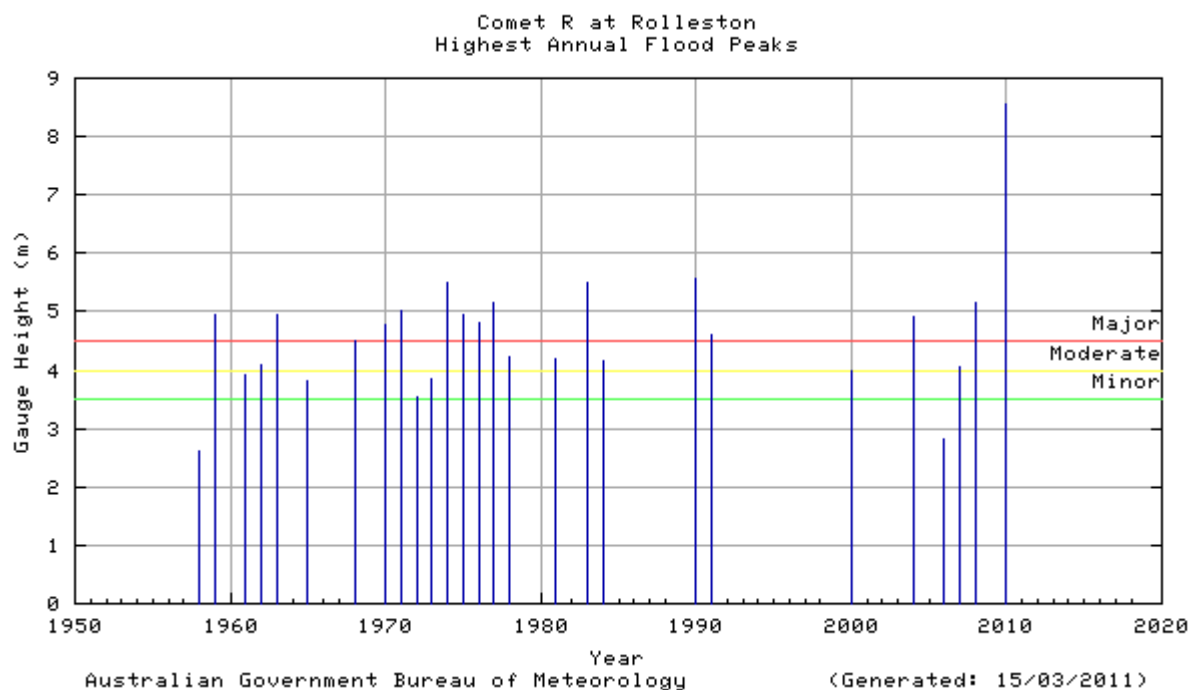


Figure 5. Highest annual flood peaks for the Comet River at Rolleston.

Warning and Forecast Service

- Significant runoff commenced during September with flood warnings for the Comet River issued between 05/09/2010 and 09/09/2010 and again between 27/09/2010 and 01/10/2010.
 - Further rainfall occurred over the Fitzroy River catchment in late November but no warnings were required for towns along the Comet River.
 - Rainfall in early December saw warnings recommence for the Comet River on 01/12/2010 and continuing through to 14/12/2010. Further warnings were then required between the 19/12/2010 to 15/01/2011 with record flooding occurring at Rolleston.
 - A total of 73 warnings were issued for the Comet River in the Fitzroy River catchment during December 2010 and January 2011.
 - Flood height predictions are not made for the town of Rolleston.
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