

## Flood summary for Myall Creek at Dalby

- The town of Dalby is on Myall Creek in the Condamine and Balonne catchment.
- The flood heights at Dalby are measured with a combination of a manual and an automatic gauge co-owned by the Bureau of Meteorology and the Western Downs Regional Council (Bureau station number: manual gauge – 041478 and automatic gauge – 541041).
- 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

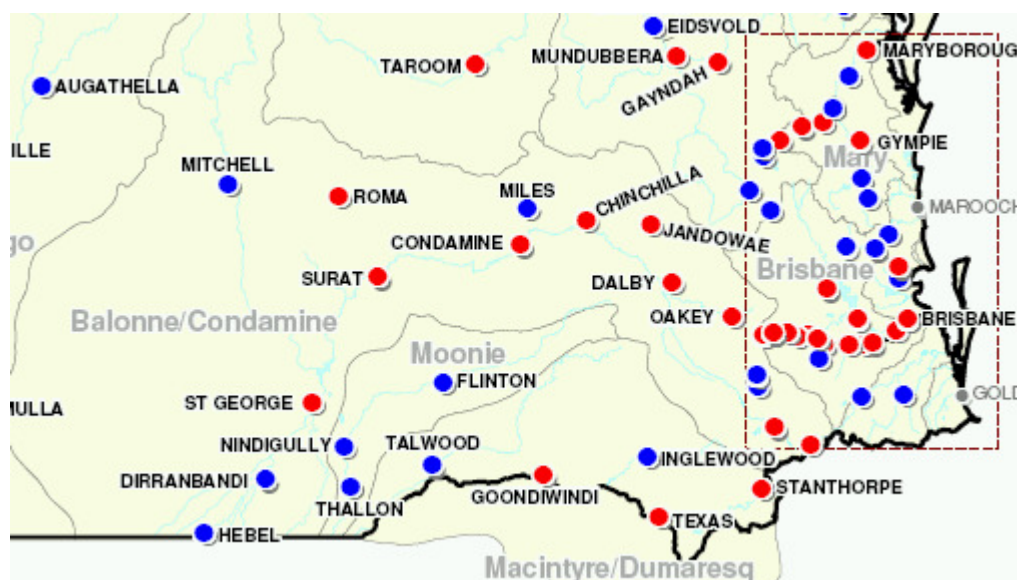
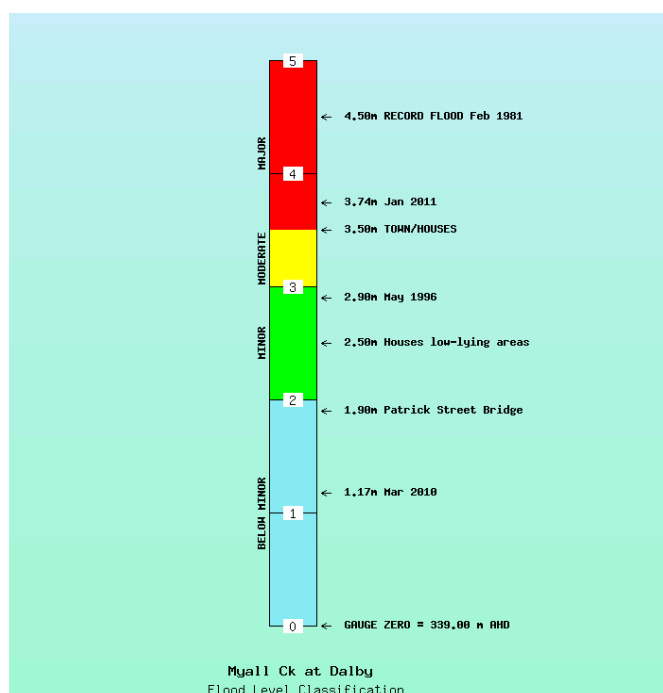


Figure 1. Map showing location of Dalby.

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:  
2.94 metres on 20/12/2010,  
3.54 metres on 27/12/2010,  
3.74 metres on 10/01/2011,  
3.49 metres on 12/01/2011.
- Minor: 2.0 metres  
Moderate: 3.0 metres  
Major 3.5: metres
- Gauge zero is 339.0 metres AHD.
- Houses in low lying areas begin to be affected at 3.5 metres.
- 100 properties inundated during the 3.54 metre peak on 27/12/2010 (Courier Mail).
- Dalby was above major flood level (3.5 metres) on the 27/12/2010 and again from 10/01/2011 to 11/01/2011.
- It remained above minor flood level (2.0 metres) for about 7.5 days total over the four main flood peaks.

Figure 2. Flood level classifications and flood effects for Dalby

## Rainfall summary

- Between 300 and 600 millimetres of rainfall was recorded over the Condamine River and nearby creeks during the month of December 2010. Further heavy rain and falls between 200 and 400 millimetres were recorded during early January 2011.
- The heaviest rainfall periods during December 2010 and January 2011 occurred from the 06/01/2011 to 12/01/2011 with falls between 200 and 400 millimetres.

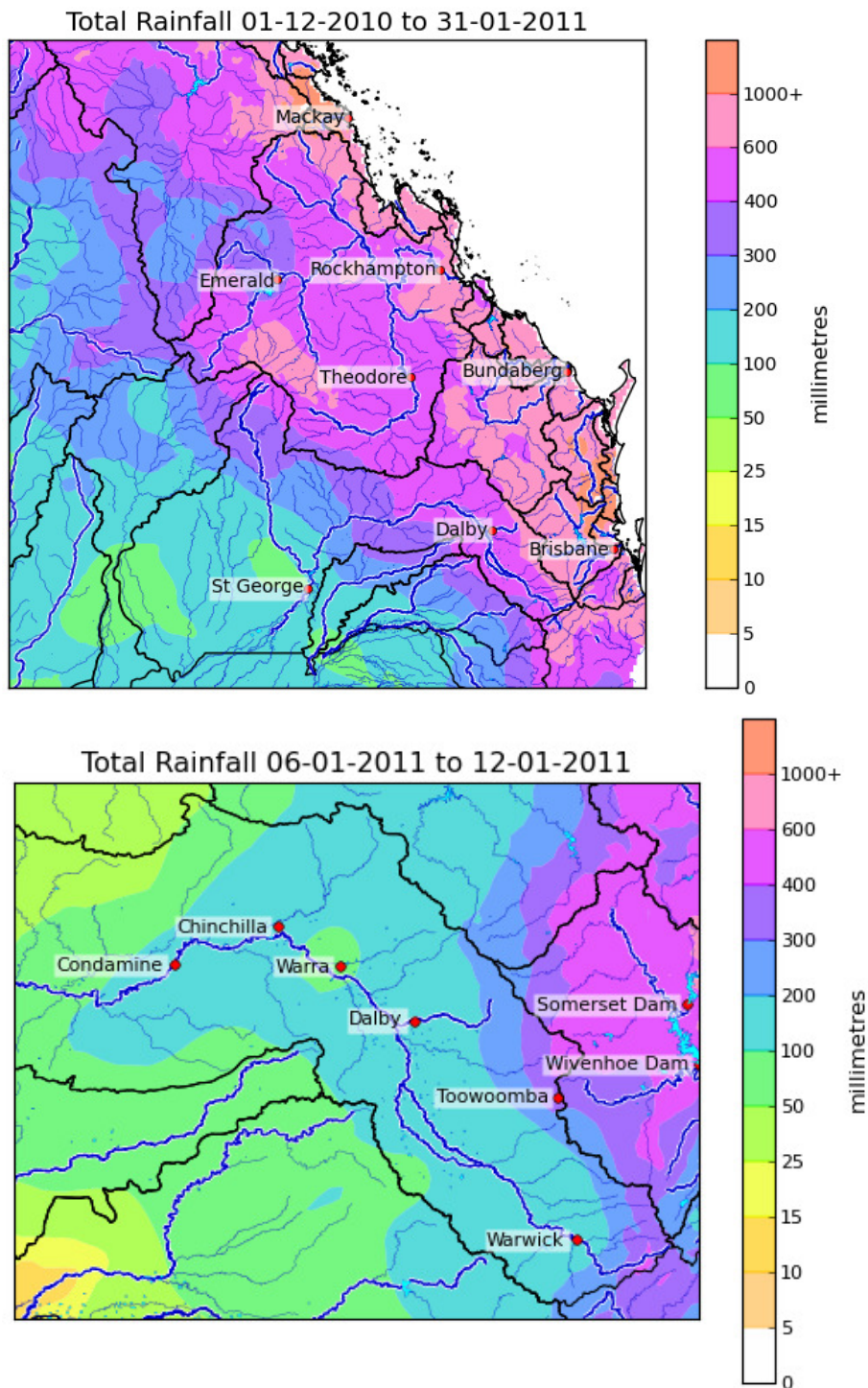


Figure 3. Rainfall map from 01/12/2010 to 31/01/2011 (top) and for the period between 06/01/2011 and 12/01/2011 (bottom).

## Rainfall Intensity

- Maximum rainfall intensities for two selected stations at Cooringa AL and Mt Brigalow AL in the upper Myall Creek catchment are shown in Table 1.
- The most significant rainfall intensities for Cooringa AL in January 2011 occurred on the 06/01/2011, and 09/01/2011 – 11/01/2011. Intensities for all durations were well below the 1% Annual Exceedence Probability (100 year Average Recurrence Interval) intensities.
- The most significant rainfall intensities for Mt Brigalow AL in January 2011 occurred on the 11/01/2011. Intensities for all durations were well below the 1% Annual Exceedence Probability (100 year Average Recurrence Interval) intensities.

**Table 1. Recorded Maximum Rainfall Intensities for Cooringa AL and Mt Brigalow AL on Myall Creek for January 2011.**

| Rainfall Duration | Cooringa AL   |                  |             | Mt Brigalow AL |                  |             |
|-------------------|---------------|------------------|-------------|----------------|------------------|-------------|
|                   | Rainfall (mm) | Period ending    | ARI (years) | Rainfall (mm)  | Period ending    | ARI (years) |
| 3hr               | 36            | 10:55 06/01/2011 | <1          | 63             | 03:50 11/01/2011 | 5-10        |
| 6hr               | 52            | 19:50 09/01/2011 | 1-2         | 75             | 04:00 11/01/2011 | 5-10        |
| 12hr              | 63            | 22:35 09/01/2011 | 1-2         | 82             | 06:10 11/01/2011 | 2-5         |
| 24hr              | 67            | 00:40 10/01/2011 | 1-2         | 93             | 06:10 11/01/2011 | 2-5         |
| 48hr              | 104           | 05:45 11/01/2011 | 2-5         | 174            | 10:20 11/01/2011 | 20-50       |
| 72hr              | 107           | 05:45 11/01/2011 | 2-5         | 187            | 14:30 11/01/2011 | 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 event timeline for Dalby.**

| Time/Date          | Event Description               | Gauge height (metres) | Comment   |
|--------------------|---------------------------------|-----------------------|---|
| 18/12/2010         | First warning issued            | 1.34                  |   |
| 27/12/2010         | Exceeded minor flood level      | 2.00                  | Remained above minor flood levels for ~2 days.            |
| 27/12/2010         | Exceeded moderate flood level   | 3.00                  | Remained above moderate flood levels for ~1.5 days.       |
| 27/12/2010         | Exceeded major flood level      | 3.50                  | Remained above major flood levels for ~5 hours.           |
| 6:48 PM 27/12/2010 | Major flood peak                | 3.54                  | Equal 10th highest on record.                             |
| 27/12/2010         | Fell below major flood level    | 3.50                  |   |
| 28/12/2010         | Fell below moderate flood level | 3.00                  |   |
| 29/12/2010         | Fell below minor flood level    | 2.00                  |   |
| 09/01/2011         | Exceeded minor flood level      | 2.00                  | Remained above minor flood levels for ~3 days.            |
| 10/01/2011         | Exceeded moderate flood level   | 3.00                  | Remained above minor flood levels for ~2.5 days.          |
| 10/01/2011         | Exceeded major flood level      | 3.50                  | Remained above minor flood levels for ~18 hours.          |
| 4:45 PM 10/01/2011 | Major flood peak                | 3.74                  | Largest since 1983 and 5 <sup>th</sup> highest on record. |
| 11/01/2011         | Fell below major flood level    | 3.50                  |   |
| 12/01/2011         | Fell below moderate flood level | 3.00                  |   |
| 13/01/2011         | Fell below minor flood level    | 2.00                  |   |
| 7:41 AM 14/01/2011 | Final warning issued            |                       |   |

## Flood heights at Dalby

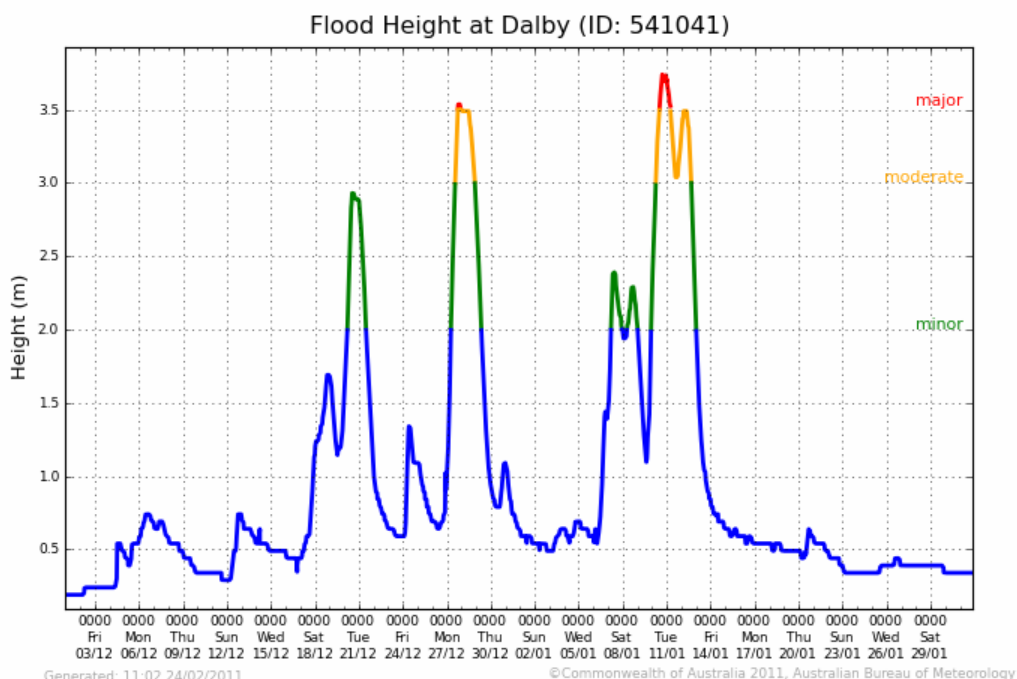


Figure 4. Flood heights at the Dalby AL gauge.

## Comparison with previous floods

- Start of record 1908 with 11 major flood peaks in the record with 2 occurring in 1956 and 2 also in 1981.
- The last major flood recorded at Dalby was 3.80 metres in June 1983 and the record flood is 4.50 metres in February 1981.

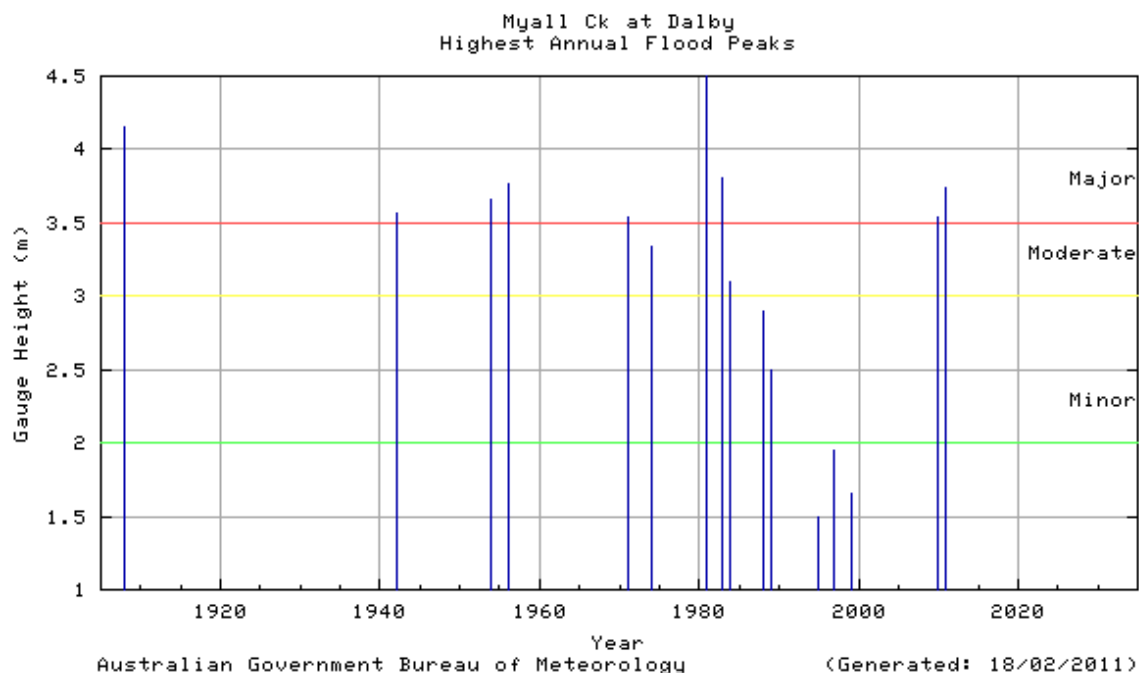


Figure 5. Highest annual flood peaks for Myall Creek at Dalby.

## Warning and Forecast Service

- The catchment started to become saturated during October with flood warnings for the Condamine and Balonne Rivers issued between 10/10/2010 and 25/10/2010.
- A total of 103 warnings were issued for the Condamine and Balonne River during December 2010 and January 2011.

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

| Time of Height Forecast  | Forecast   | Peak                                   |
|--|--|--|
| <b>18/12/2010 First warning issued. Height at the time was 1.34m (below minor)</b> |  |  |
| 6:43 PM on Sunday the 19th of December 2010  | At Dalby, a level of at least 2.5 metres is forecast with higher levels likely. Forecasts will be updated as upstream peaks are observed.                                  | 2.94 metres at 1:25 PM Mon 20/12/2010. |
| 9:01 AM on Monday the 20th of December 2010  | At Dalby, a level of at least 3.2 metres is forecast with higher levels likely. Major flood levels are possible. Forecasts will be updated as upstream peaks are observed. |  |
| 6:47 AM on Monday the 27th of December 2010  | River levels downstream at Dalby are rising with minor flood levels expected to about 2.6 metres during Monday afternoon.  | 3.54 metres at 6:50 PM Mon 27/12/2010. |
| 12:36 PM on Monday the 27th of December 2010                                       | Minor flood levels downstream at Dalby continue to rise with moderate flooding and higher levels possible during Monday afternoon.   |  |
| 5:26 PM on Monday the 27th of December 2010  | A peak of about 3.8 metres at Dalby is expected by midnight tonight causing major flooding.  |  |
| 11:46 PM on Sunday the 9th of January 2011   | Reach 3 metres (moderate) by midday Monday. Possibly reach 3.5 metres (major) Monday night.  | 3.74 metres at 4:45 PM Mon 10/01/2011. |
| 1:44 AM on Monday the 10th of January 2011   | Peak up to 3 metres (moderate flood level) by 8am Monday.  |  |
| 6:13 AM on Monday the 10th of January 2011   | Reach 3.5 metres (major flood level) by midday Monday.   |  |
| 5:25 PM on Monday the 10th of January 2011   | Major flood peak in the next 3 to 6 hours. Remain high during Tuesday.   |  |
| 10:32 PM on Monday the 10th of January 2011  | Further rises and high level major flooding possible if heavy rainfall returns to the catchment.   | 3.49 metres at 3:30 AM Wed 12/01/2011. |
| 6:55 AM on Tuesday the 11th of January 2011  | Fall this morning before rising again with a peak expected overnight to around 3.7 metres again.   |  |
| 2:15 PM on Tuesday the 11th of January 2011  | Fall this morning before rising again with a peak expected overnight to around 3.8 metres.   |  |
| 6:44 PM on Tuesday the 11th of January 2011  | Reach 3.8 metres (major) during Wednesday morning.   |  |

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