



FLOOD IN THE BARRON RIVER

February 1999

This preliminary report only includes some observations on the flood in the Barron River which occurred on Friday 12 February and is subject to confirmation.

Rainfall

- Although there was some rainfall in the Barron River during Thursday 11 February the heaviest rain did not commence until 8pm that evening.
- Rainfall totals over the period 3am Thursday to 9am Sunday ranged from just under 300mm at Mareeba to over 800 mm at Copperlode Dam.
- Highest rainfall totals were recorded in the lower part of the catchment downstream of Mareeba.
- Three periods of heavy rain are clearly identifiable over the catchment:
3-4 hours from 0800 Thursday 11 February generally over the catchment
5-7 hours from 2000 Thursday 11 February concentrated over the lower catchment
3-4 hours from 0900 to 1600 Friday 12 February in various parts of the catchment
- Most intense 1 hourly rainfalls:

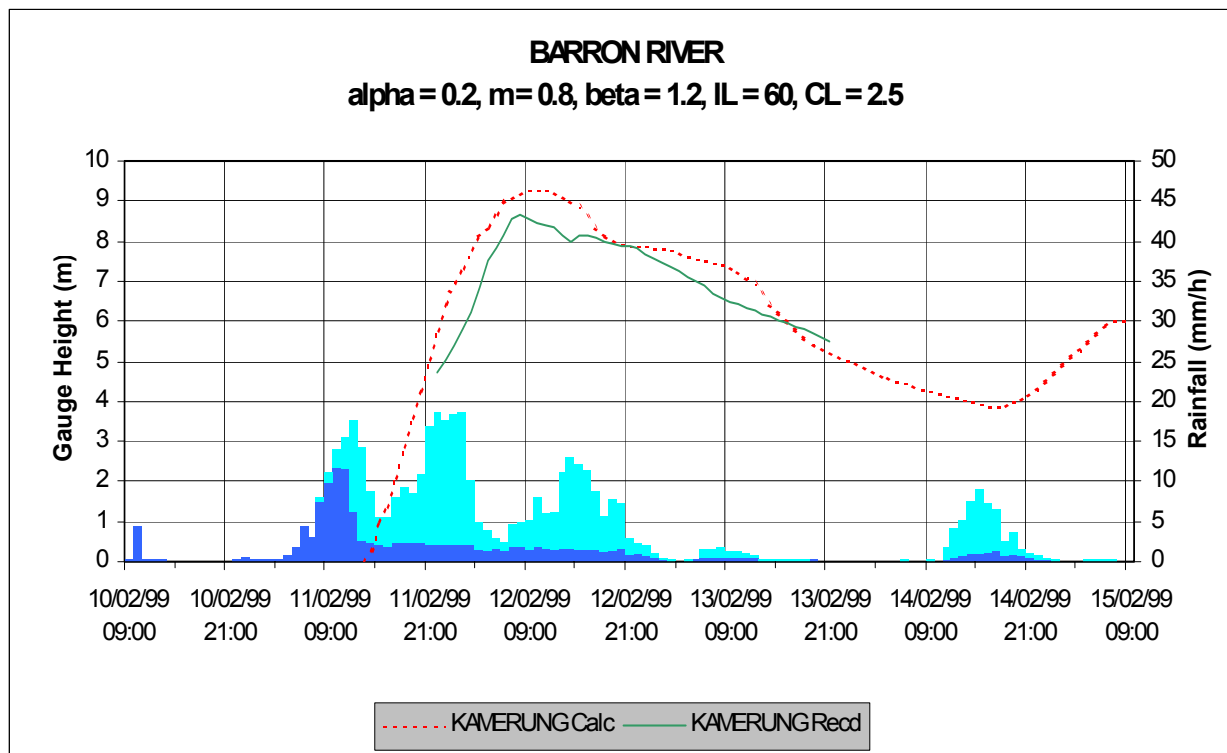
28 mm at Mareeba	ending 03:35pm Friday 12 Feb
57mm at Bolton Rd (near Koah)	ending 01:15am Friday 12 Feb
66mm at Copperlode	ending 11:10pm Thursday 11 Feb

River Heights

- River levels commenced to rise throughout the catchment from about noon on Thursday 11 Feb.
- At Myola, the river rose quickly from 0.64 metres at noon Thursday to a peak of 11.40 metres at 7am Friday. (This level is the highest since 1977, although the record flood in March 1911 may have exceeded 15 metres.)
- The peak of 8.65 metres occurred at Kamerunga at 8am, only 1 hour later. This was the highest flood since 1977 and 1979 when the flood peak was 9.5 and 9.4 metres respectively.

Impact of Tinaroo Dam

- Outflows from Tinaroo Dam had little effect on flood levels in the Barron delta.
- Tinaroo Dam only commands about 540 km² of the total catchment area of 2100km².
- The highest totals and most intense rainfall occurred in the lower 75% of the catchment.
- The peak of the flood at Kamerunga occurred at 8am Friday. The peak outflow from Tinaroo occurred about 2am Saturday, some 18 hours after the peak in the delta.
- The peak outflow from Tinaroo was about 580 m³/s compared with an estimated peak in the delta area of about 4500 m³/s.
- Typically outflows from Tinaroo Dam take some 12 to 18 hours to arrive in the Barron delta.



Flood Forecasts and Warnings

- Rainfall and river heights in the Barron River are primarily monitored by the ALERT system which instantaneously reports every 1mm of rainfall and every 50mm change in river level to base stations at Tunnel Hill, Cairns Met Office and the Bureau's Flood Warning Centre in Brisbane. With a few exceptions, the system performed very well. In the Mulgrave-Russell catchment, only very limited real time rainfall and river height information is available.
- The primary forecast point for the lower Barron River is the gauge at Kamerunga which has some records dating back to 1967.
- The gauge relies on an observer to provide manual observations (who performed very well under difficult circumstances).
- A Preliminary Flood Warning for Coastal Rivers between Cairns and Townsville was issued at 1031 on Thursday 11 February.
- A specific Flood Warning for the Barron River was issued at 1325 on Thursday 11 February and then subsequently at 1830, 2145 on Thursday 11 February and 0303 and 0611 on Friday 12 February during the rise at Kamerunga.
- Flood warnings were issued directly to Council, QES, Police and media via fax.
- River height bulletins, containing the latest river heights, were also issued directly to Council, QES, Police and media via fax.
- Flood Warnings and River Height Bulletins were also available via Weather by Fax and at the Bureau's Web site www.bom.gov.au.
- River Height Bulletins on the www and Weather by Fax were updated every hour.
- As well as being contained in warnings, height predictions for Kamerunga and the northern end of the Cairns Airport were provided verbally to Cairns City Council and the Cairns Port Authority.

Further Information

- Contact Peter Baddiley (07 3239 8768) or Terry Malone (07 3239 8765).
- A report will be prepared by the Bureau.