

8 HISTORY OF FLOODING

The Bega township has a history of both mainstream and overland flooding with impacts from the Bega and Brogo Rivers. In February 1971 Bega experienced a record flood that inundated numerous properties and created significant damages. The largest flood since then seems to have occurred in March 2011. There were also a number of other significant events in very recent history that were noted from local newspaper articles (source: Bega District News) and communication with Council, including the March 2012, February 2010 and March 1983 events.

In addition to providing the rainfall and flow data, the WRC Report highlights substantial damage in the town of Bega with the February 1971 flood resulting in the highest level in more than 100 years of records. The report stated that in the South Coast two people lost their lives, over 50 bridges were destroyed, and the damage was estimated at \$7 million (presumably 1971 value), and electricity and telephone lines were out of service. Towns south of Bega were out of water supply as water mains were destroyed. Hancocks (i.e. Tathra) bridge spanned 700 feet near Mogareeka but only six of the fifteen spans remained in place after the flood had passed.

In light of two recent events experienced during 2010 and 2011, inundation has occurred in some areas unexpected by some. Some properties on the Bega township fringe also experienced local overland flooding due to backwaters effects. In some areas access to the downstream villages of Kalaru and Tathra was disrupted during these events. A number of bridges were lost in the rural areas due to debris build up, abutment damage and approach damage. This damage caused isolation of residents in some areas for a number of days. The village of Candelo also has past history of flooding in areas adjacent to Candelo Creek which runs through the middle of Candelo village.

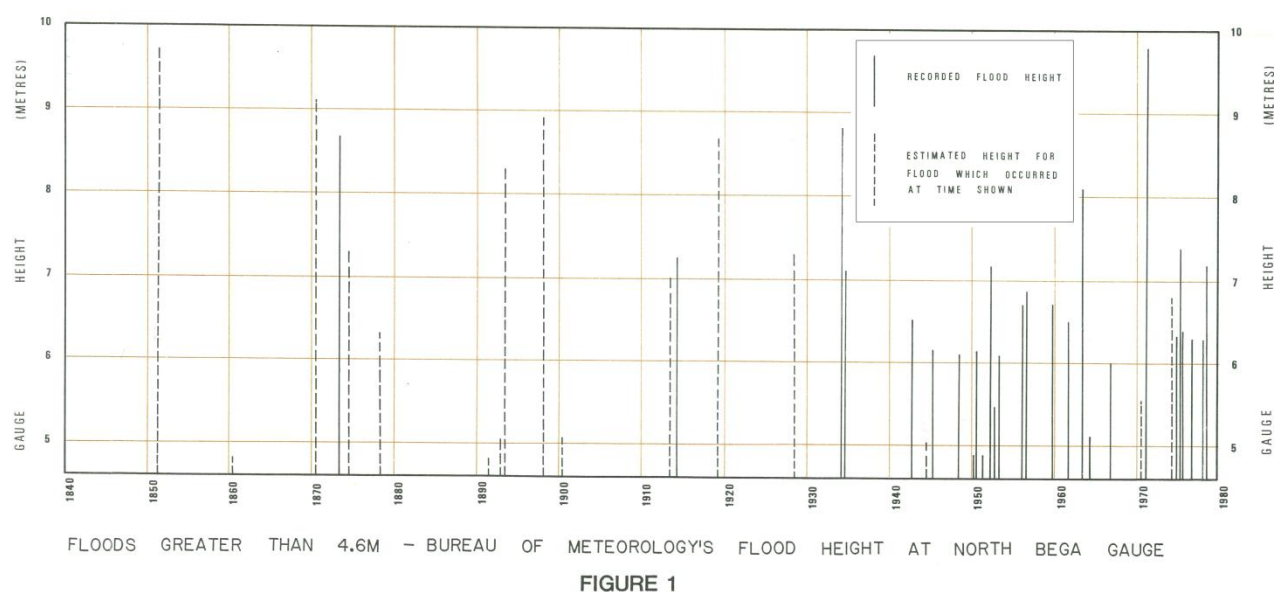
The March 2011 event was noted in newspaper articles as similar to the 1893 flood and the heaviest in 40 years. This flood caused about \$10 million worth of damages and was said to have been greater than the February 1971 event. It reached a peak river depth of only 8.7m, approximately a meter lower than in 1971.

The February 2010 event was also quoted as one of the biggest since 1971 with approximately \$6 million worth of damages and a peak flood depth of about 6m. A flood depth of about 6.6m was quoted for the March 2012 flood event.

An analysis of water levels was undertaken by the Water Resources Commission (WRC) of NSW in 1979 indicated that the 1971 flood event had an equivalent frequency of 138 year ARI. Some of the larger events noted in the analysis by WRC are shown below, indicating that flooding at Bega has occurred for a number of years and is not a new condition:

- | | | |
|--------|--------|--------|
| • 1851 | • 1893 | • 1934 |
| • 1870 | • 1898 | • 1963 |
| • 1873 | • 1919 | • 1971 |

Figure 8.1: Floods Greater than 4.6m by WRC – Bega River at North Bega (WRC, 1979)

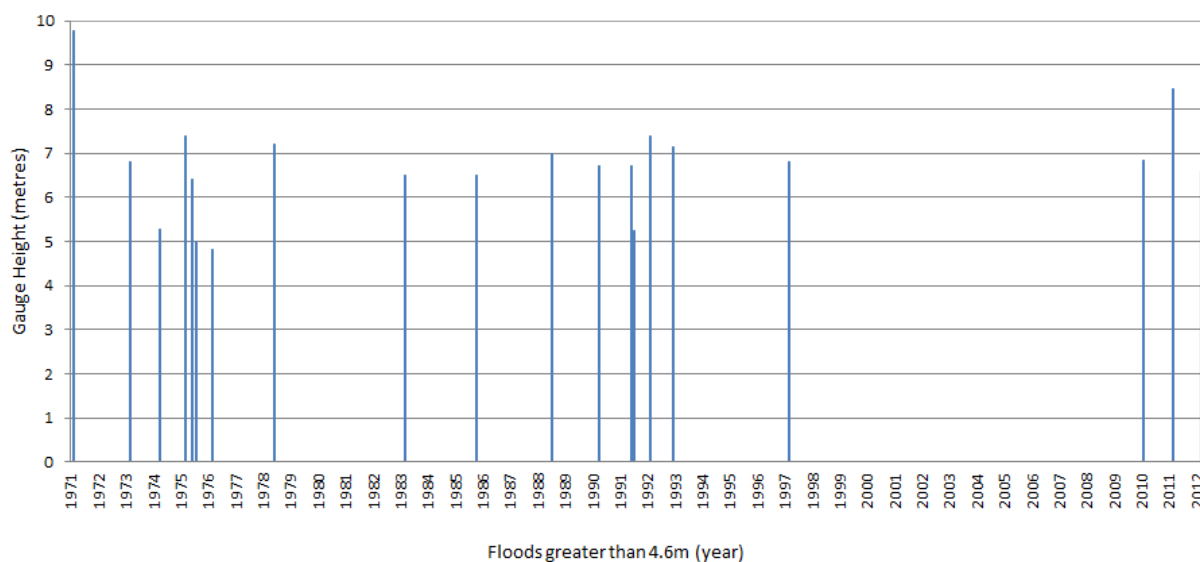


A list of the significant recent historic flood events since 1971, in order of magnitude as recorded at Bega River water level gauging station at Bega (North Bye) is presented in the following table:

Table 8.1: Recorded Flood Depths at gauging station Bega River at Bega (North Bye)*

Event	Flood Depth (m) - Bega River at Bega (North Bye)*
Feb 1971	9.78
Mar 2011	8.47
Mar 1975	7.40
Feb 1992	7.40
Jun 1978	7.20
Dec 1992	7.15
Jul 1988	7.00
Feb 2010	6.84
Mar 1973	6.80
Mar 1997	6.79
Apr 1990	6.70
Jun 1991	6.70
Mar 2012	6.58
Mar 1983	6.50
Oct 1985	6.50

Figure 8.2: Significant Floods at North Bega Gauge Since 1971



* Station 219900

**4.6m threshold adopted similar to WRC 1979 analysis

The recorded flood depths from Station 219900 indicate that, apart from the 1971 event, the order of significance of the very recent events with expected substantial number of available floodmarks to be used for the calibration and validation of models, from largest to smallest are March 2011 followed by February 2010 and March 1983.