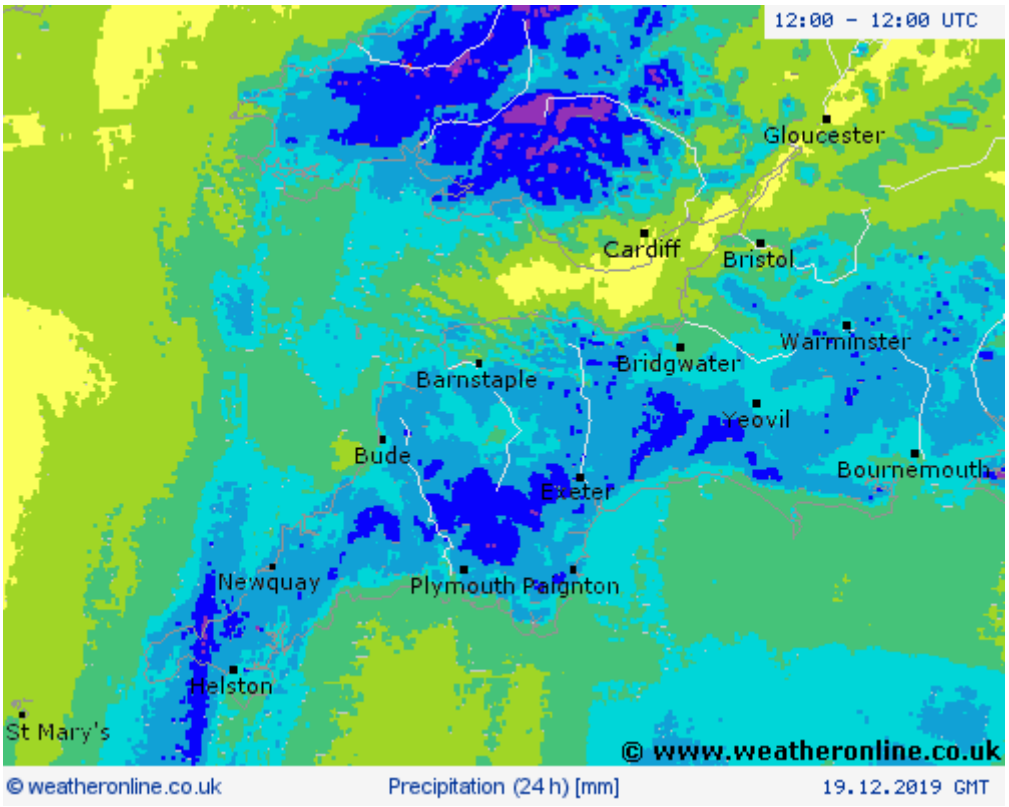
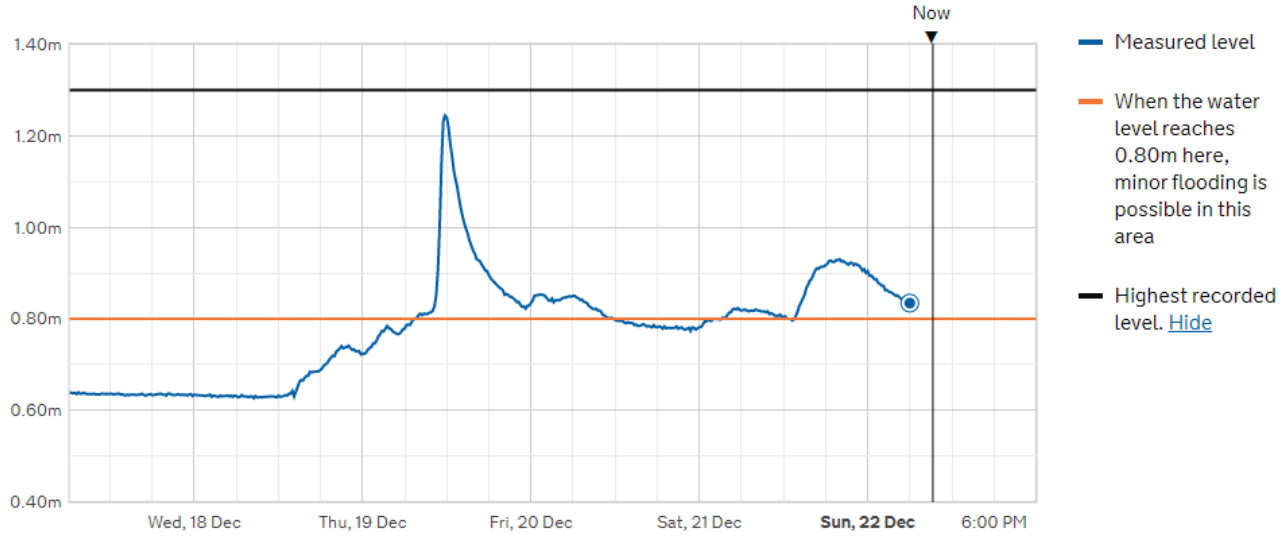
Hayle Flash Flood – 19th December 2019

During the morning of 19th December 2019 a narrow band of intense rain, just 2 or 3 miles wide with embedded thunder, moved north out of France and across west Cornwall. The area badly affected ran from Marazion to Hayle.



The total rainfall amounts in the wettest spots may not have been that exceptional, just >50mm based on the rainfall radar, but there was torrential rain for a short period of time around 10:30. The effect on the River Hayle, which was aligned with the area of intense rainfall, was dramatic. Prior to the storm the river was already very high following a prolonged period of wet weather. 18mm fell in Penzance in the 24 hours to 09:00 on 19th. The deluge pushed it to near record levels in just a few minutes. The data below is from the River Hayle near St Erth.



The Met Office did issue a weather warning for SW England. Unfortunately it commenced at 14:00, by which time it was dry, and the sun even put in a brief appearance in Penzance.

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This analysis was provided by David Smart, UCL Hazard Centre, London
The 00Z/19 Camborne ascent shows a saturated profile with a high tropopause at 250 hPa. There is thin CAPE to 500 hPa and almost uni-directional winds which supported convection organised into down sheared linear cells responsible for the narrow rainfall band. There was near 200 kt jet at ~300 hPa. The high tropopause and precipitable water content of 22mm are more warm season than December values and were due to strong moisture advection from the western sub-tropical Atlantic in an 'atmospheric river'-like flow.

The A30 became impassable between Hayle & Camborne and diversions simply directed traffic onto other flooded roads.

The flooding in Hayle (Copperhouse to be precise) was particularly severe. In this case it was not related to the high level of the river Hayle, but due to the drains being overwhelmed. Around 50 properties were flooded. Cars driving through the floods, prior to the roads being closed, made the flooding significantly worse.

The local view is that a large new housing development just above, on quite a steep slope, played a part. Not only did the water pour down these new roads, but the drains for the new development feed into the old drains lower down which were overwhelmed.

It was a classic flash flood.

Penzance was to the west of the torrential rain. There were still 2 claps of loud thunder and it became exceptionally dark for a while.

Graham
Penzance

Penzance Weather Home Page