

# Ex-hurricane Bertha

From Sunday 10 to Monday 11 August 2014, the UK experienced some unseasonably windy and very wet weather from the remnants of ex-hurricane Bertha.

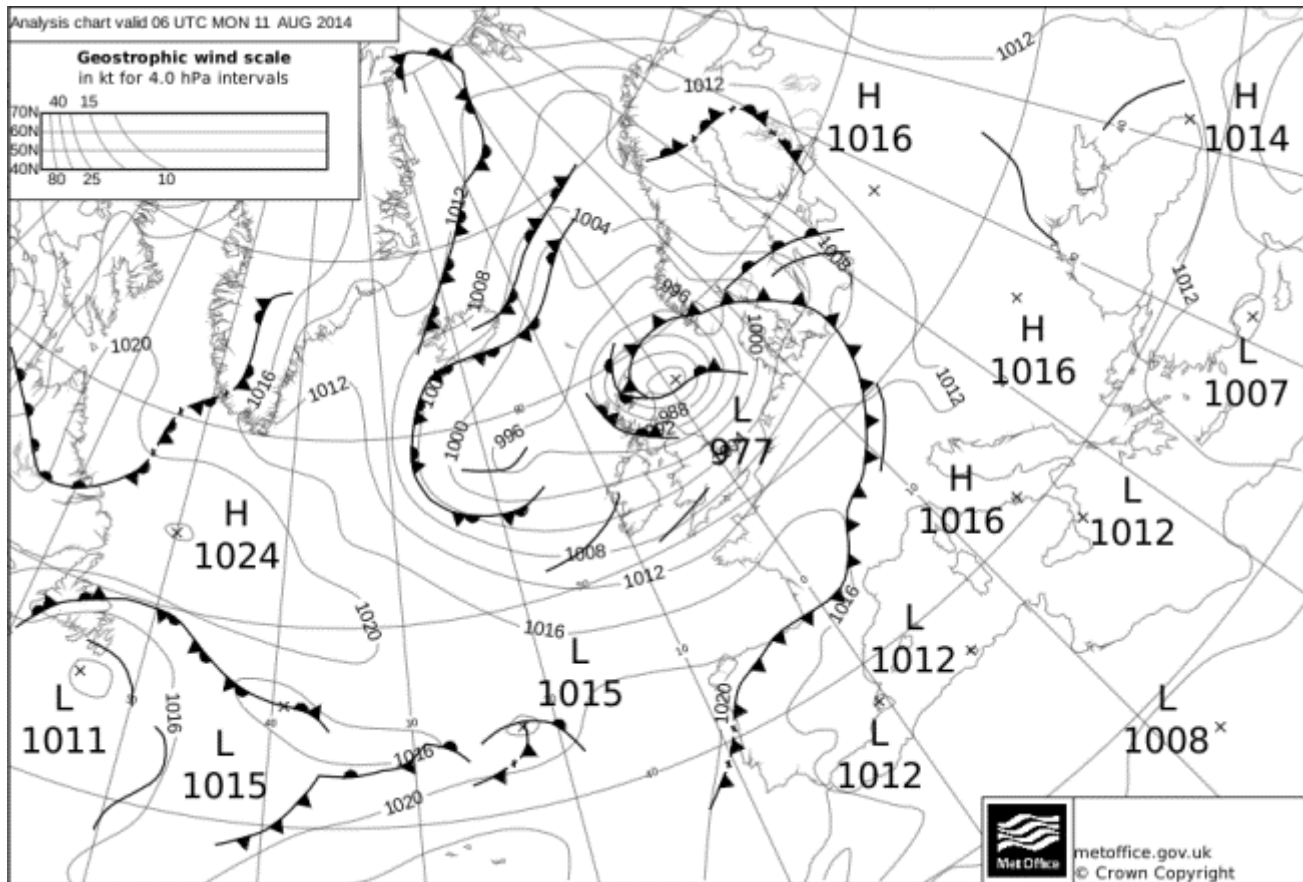
Some locations in north-east Scotland received double the August long-term average rainfall, resulting in significant flooding problems. Parts of eastern England were also affected by this storm.

## Impacts

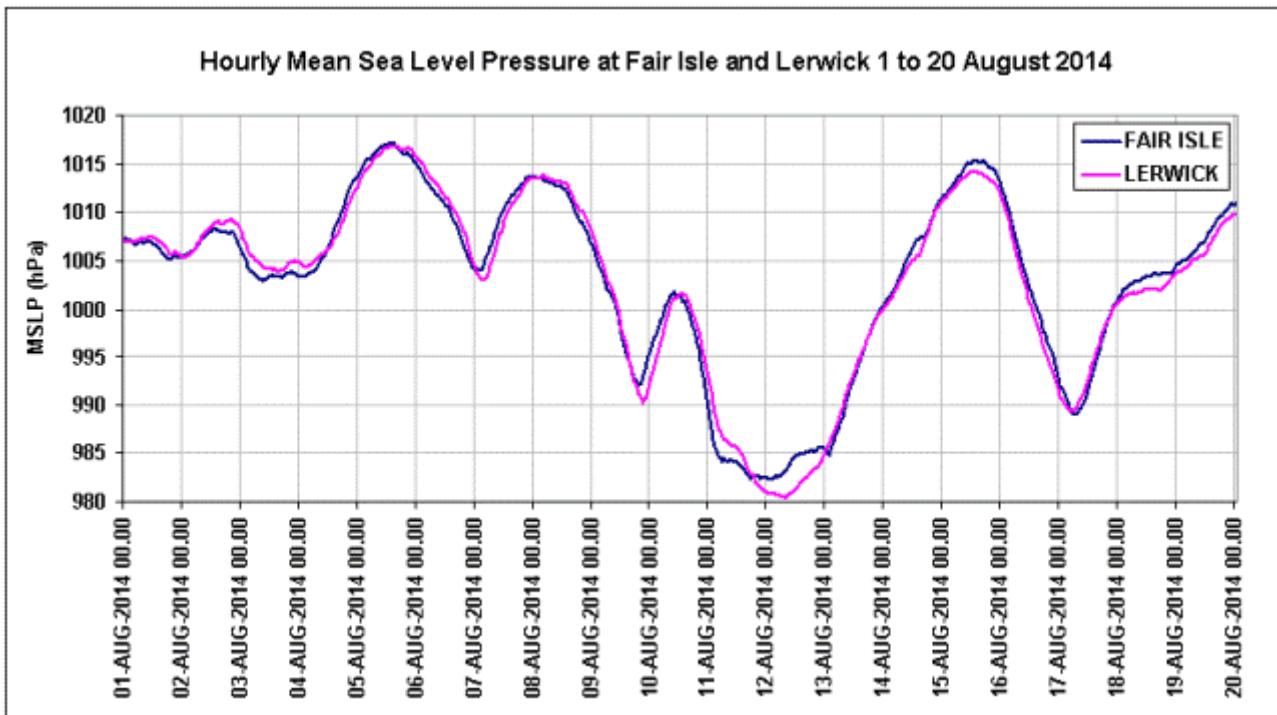
North-east Scotland was worst affected by flooding, particularly the Inverness to Moray area and Kingussie to Aviemore but also around Ullapool. Rail travel was affected, there was flooding and damage to roads and 200 homes were evacuated in Elgin. Ferry services were cancelled and there were reports of fallen trees across north-east Scotland and in eastern England. A key footbridge at the foot of Glen Derry for walkers accessing the Cairngorms was washed away.

## Weather data

The chart below shows the area of low pressure associated with ex-hurricane Bertha located off north-east Scotland. This low pressure system remained centred near Shetland for several days before finally drifting east on 14 August.

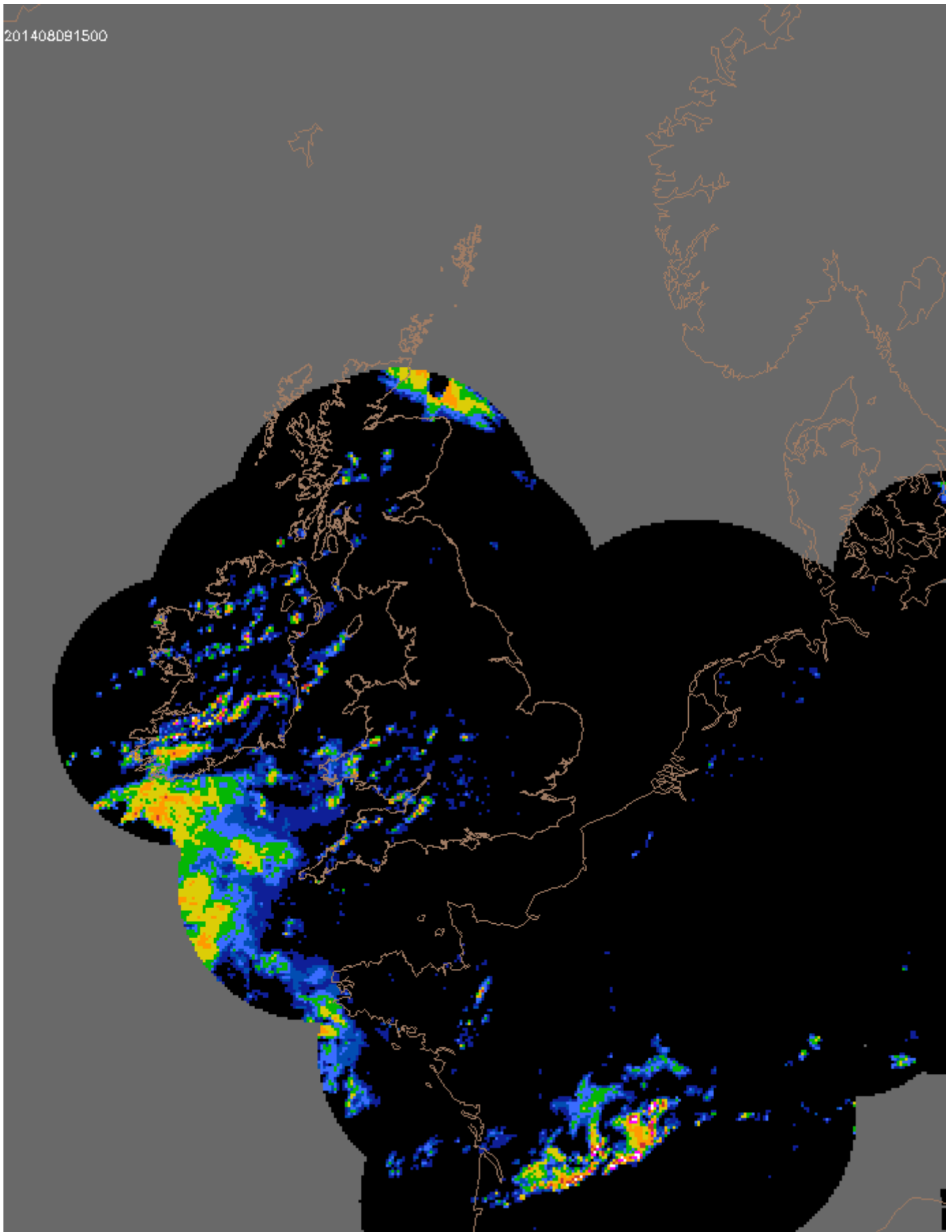


Hourly mean sea level pressure (MSLP) at Lerwick, Shetland and Fair Isle 1 to 20 August 2014, showing the prolonged period of low pressure from 11 to 13 August associated with ex-hurricane Bertha.

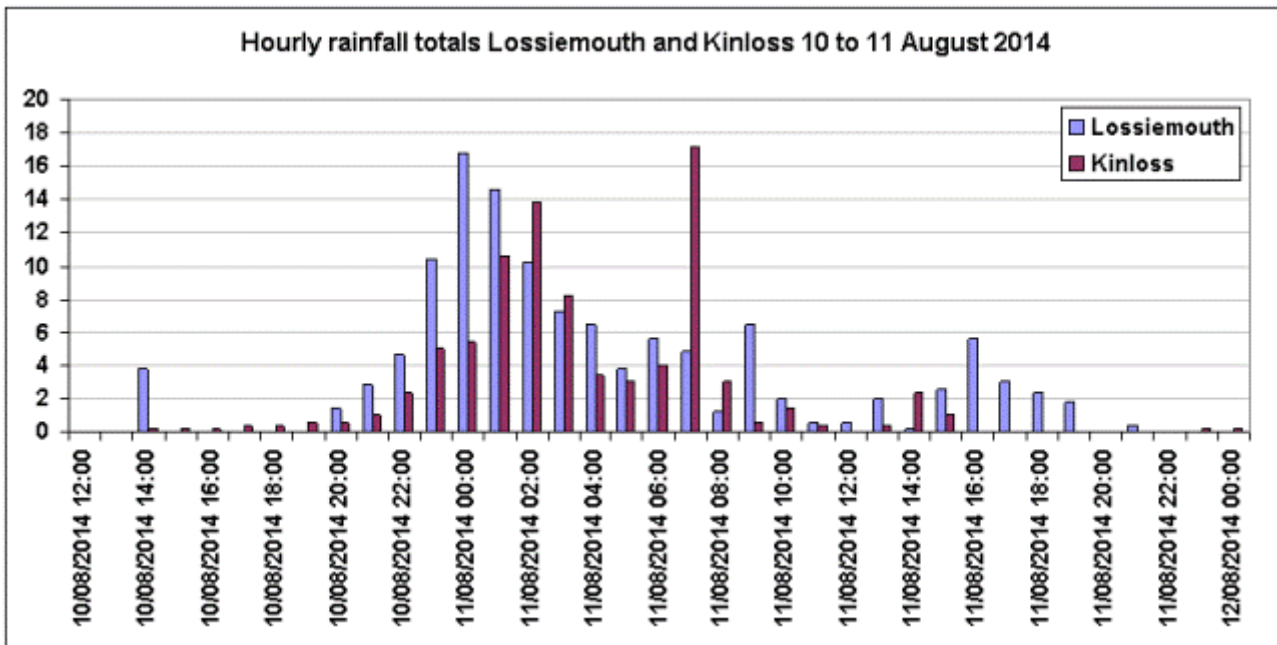


The rain-radar imagery below shows 15-minute accumulations from 1500 9 August to 0900 GMT 12 August 2014. North-east Scotland experienced persistent heavy rain from this event, with a significant orographic component; for the Inverness area the north-easterly flow resulted in an effective reversal of the normal rain-shadow effect. This then shifted to a north-westerly flow with heavy rain affecting the West Highlands.

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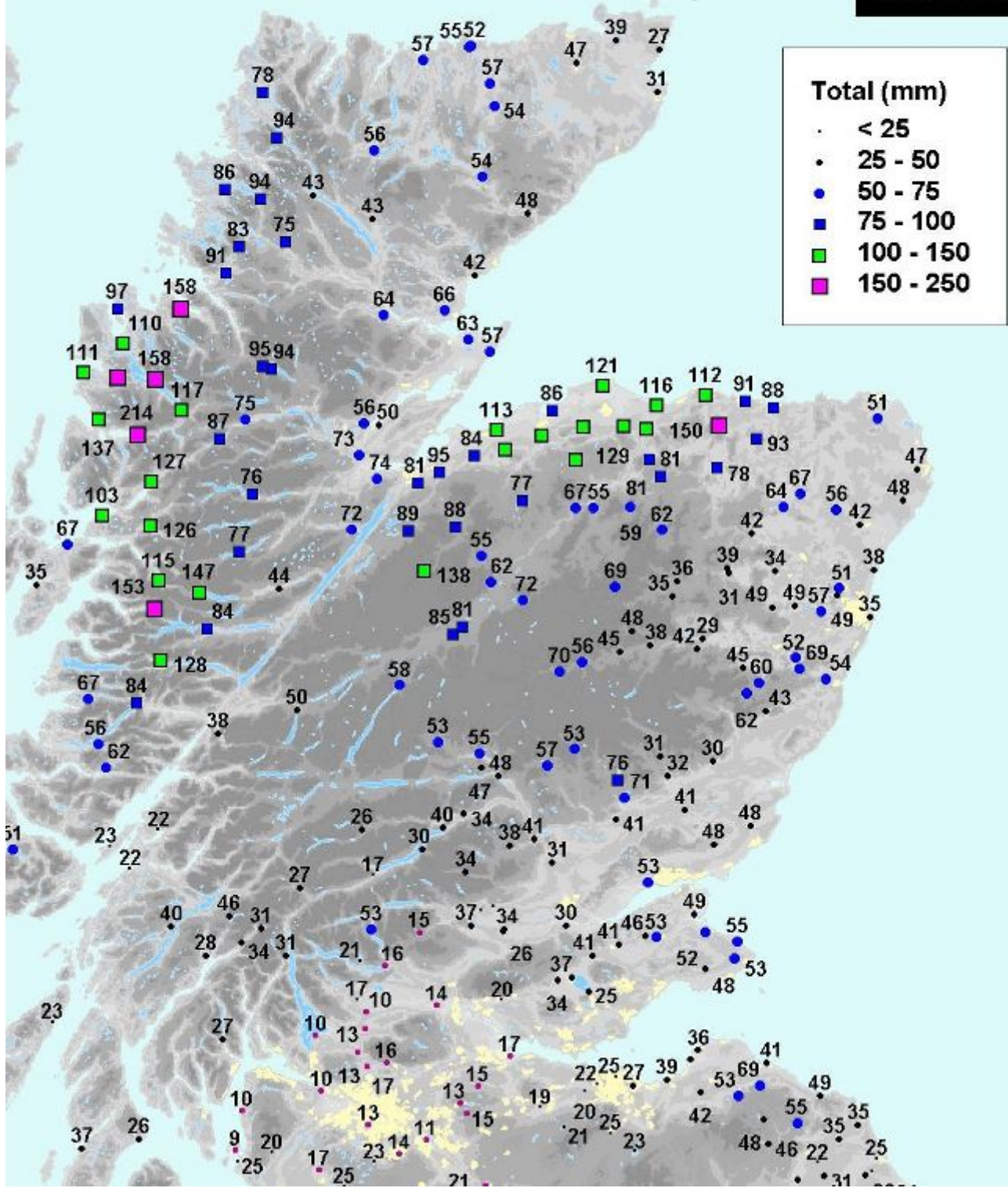
The figure below shows hourly rainfall totals for Lossiemouth and Kinloss (Moray). Lossiemouth recorded 117.0 mm in 24 hours to 1900 GMT on 11 August, compared to the August 1981-2010 long-term average of 61.9 mm (this being a climatologically dry part of Scotland).



The maps below show daily rainfall totals for the 48 hours from 0900 GMT 10 August to 0900 GMT 12 August 2014. 100 to 150 mm fell in the Inverness - Moray area and several stations here received between 150 and 200% of the August long-term average rainfall. It was also similarly wet across parts of the West Highlands.

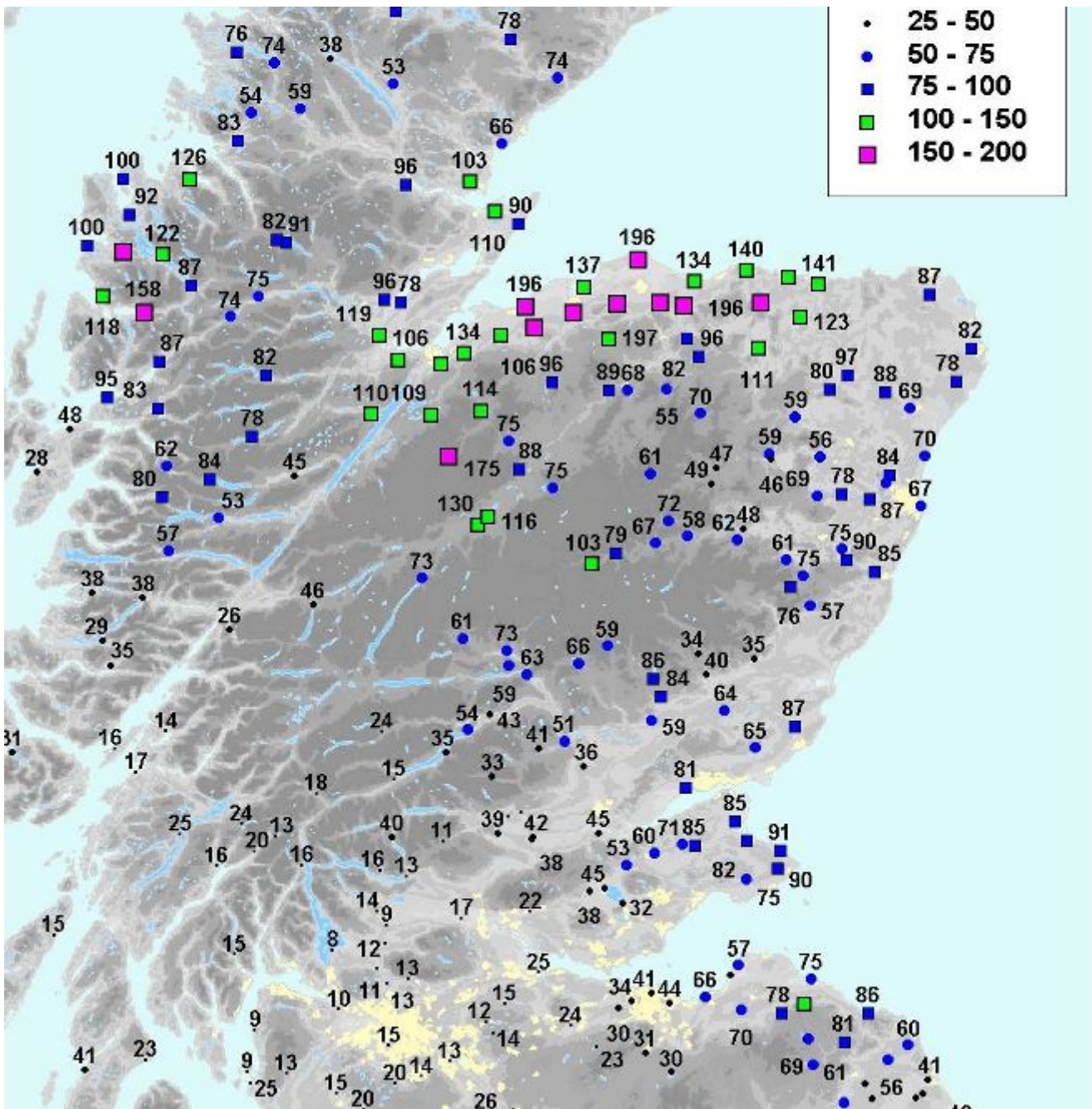


# 10 to 11 August 2014 Rainfall Totals (mm)

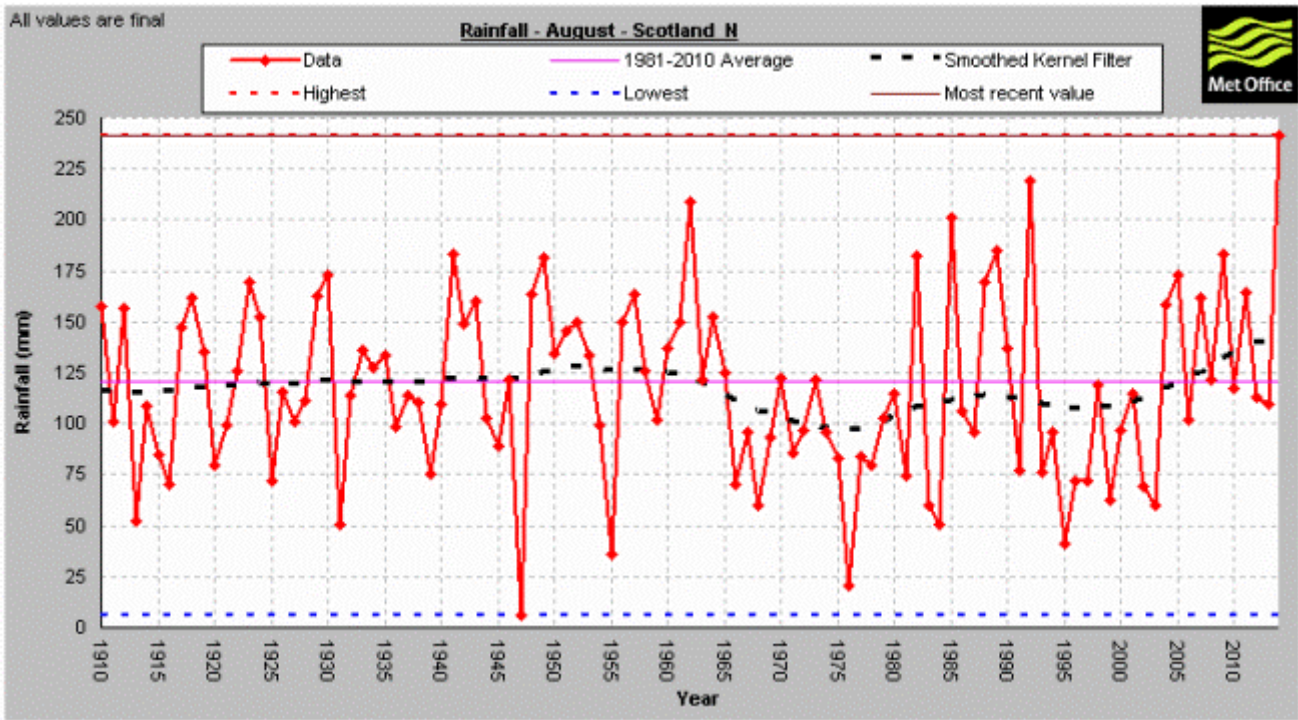


# 10 to 11 August 2014 Rainfall Totals % of 1981-2010 August average





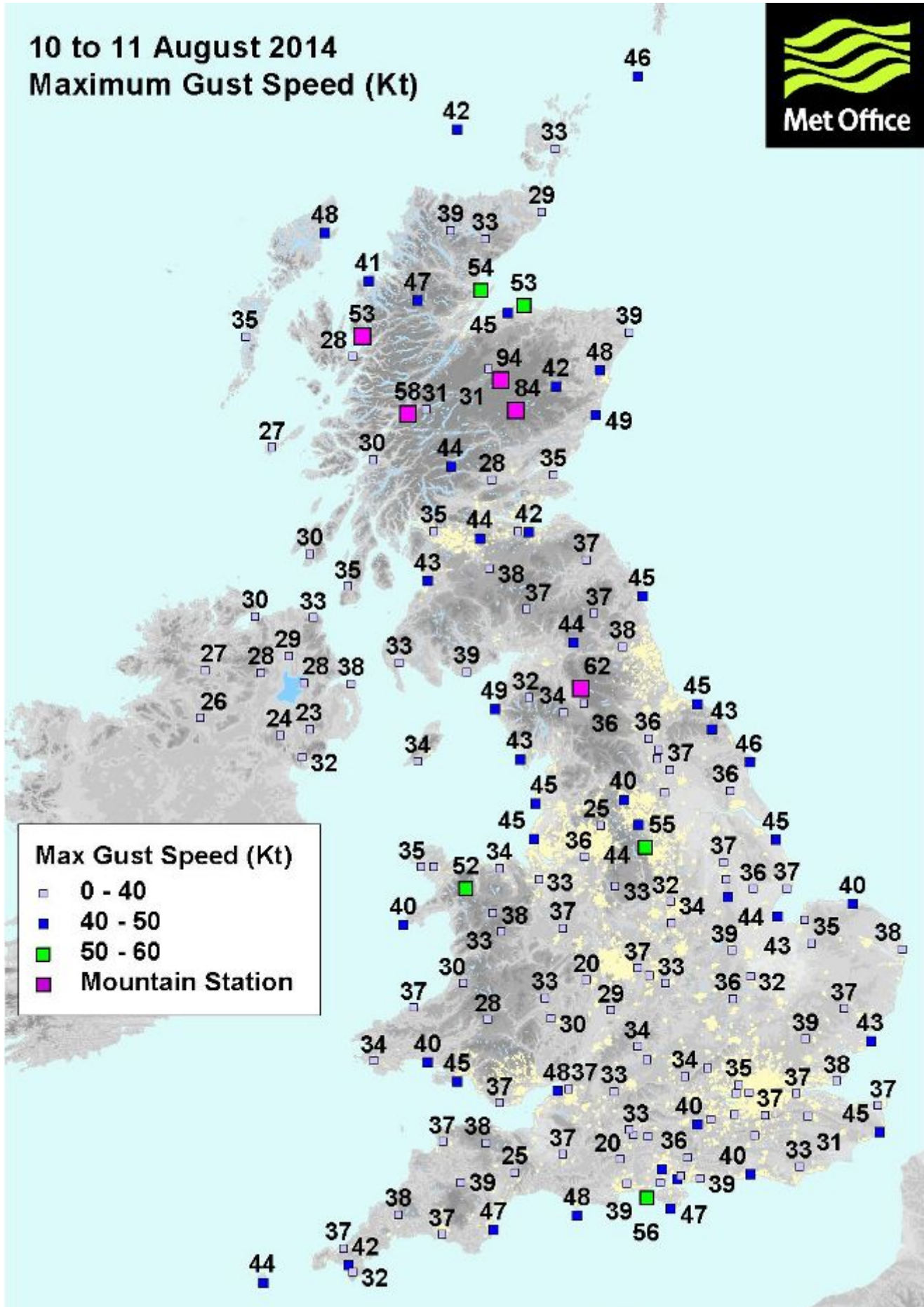
August 2014 was cool, wet and very unsettled across northern Scotland and the contribution from ex-hurricane Bertha led to this being the wettest August across Northern Scotland in a series from 1910, with 242 mm, 200 % of the average rainfall. The previous weather system to Bertha also brought some exceptionally wet weather to the Northern Isles: on 9 August around 100 mm fell across parts of Shetland and at Fair Isle 132.6 mm was recorded, easily the wettest day in a 40 year record.



The heavy rain was also associated with some strong winds, with gusts of 54 Kt (62 mph) at Tain Range (Ross and Cromarty) and 53 Kt (61 mph) at Lossiemouth. Many coastal locations recorded gusts of 40 to 50 Kt (unseasonably strong for the time of year) including along the south coast of England on 10 August. Cairngorm summit (1237 m.a.s.l.) recorded a gust of 94 Kt (108 mph). The map below shows maximum gust speeds from 10 to 11 August 2014.



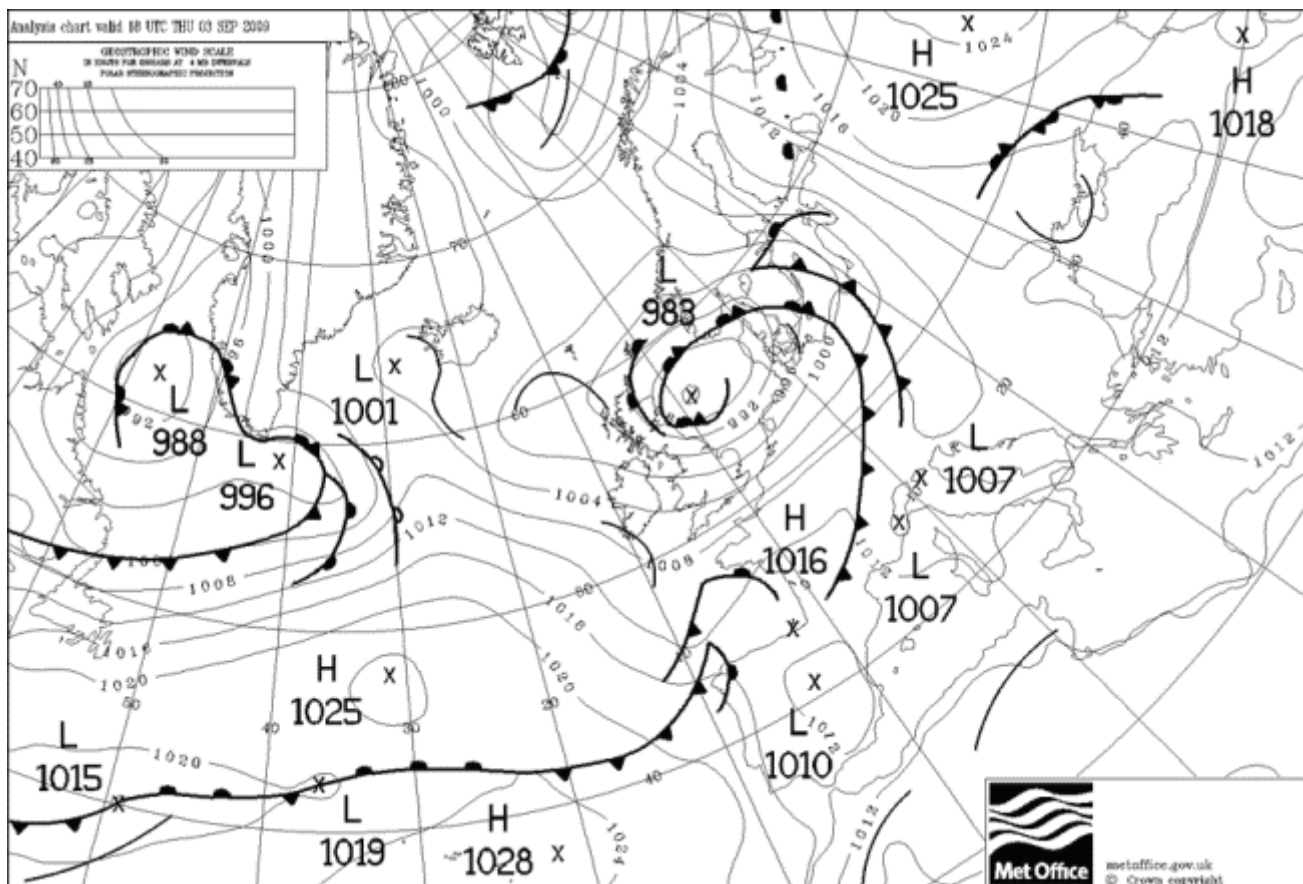
# 10 to 11 August 2014 Maximum Gust Speed (Kt)



## Historical context

This part of north-east Scotland was affected by a similar event on 3 to 4 September 2009. 86.8 mm of rain was recorded at Lossiemouth and there were significant flooding problems in the area. The analysis chart at

1800 UTC on 3 September 2009 is similar to the August 2014 event above.



Severe Atlantic storms tend to occur later in the autumn and winter, but there are examples of notable storms (including ex-hurricanes) to affect the UK at this time of year. Several such storms are listed below. At this time of year, trees are in full leaf which makes them more vulnerable to strong winds. Impacts may also affect coastal recreational activities, such as sailing, and loss of crops, as well as loss of power supplies, flooding and transport disruption. More details of previous weather events may be found in the [Monthly Weather Report](#).

On **24 to 26 September 2012 ex-hurricane Nadine** brought heavy rain and strong winds to the UK. It caused significant flooding to north-east England and a fatality from a fallen tree at Kew Gardens.

On **12 September 2011 ex-hurricane Katia** brought widespread transport disruption and a fatality from a fallen tree in northern England.

On **30 August 1992** a storm brought down trees in central London and resulted in 6 fatalities. This storm occurred a few days after Hurricane Andrew affected the US.

On **25 to 26 August 1986** the remnants of Hurricane Charley brought strong winds and heavy rain, with some flooding and damage to boats in west Wales.

A stormy spell from **2 to 5 September 1983** resulted in four fatalities, fallen trees and damage to crops.

The **Fastnet Storm** occurred on **14 August 1979**. 15 sailors died in the Fastnet yacht race and there were several other fatalities at sea and on land.

On **7 September 1974** a storm resulted in three fatalities and fallen trees across East Anglia and south-east England.

From **15 to 17 August 1970** strong winds and heavy rain caused flooding across Northern Ireland, the West Midlands and eastern Scotland, including the Moray area.

Last updated: 21 September 2015

