



eVENT: December 9th 2011 Windstorm Friedhelm

December 2011 Windstorm Friedhelm UK

Headline Points

- Windstorm damage is likely to be lower than the £400m UK loss experienced to Windstorm Kyrill (January 2007) and more similar to that experienced from Windstorm Elaine (January 2008)
- Hurricane strength peak gusts (165 mph or 74 metres per second, m/s) were observed at Scottish highlands (Cairngorm)
- Low-lying urban areas experienced significantly lower peak gusts; 34m/s (77mph) in Edinburgh, 32m/s (71mph) in Glasgow and Dundee
- These peak gusts, to low lying-areas, are below those experienced from Windstorm Kyrill (January 2007) – which ranged from 37.5m/s in Blackpool to over 40m/s in Isle of Wight.
- Early indications indicate isolated incidents of coastal and riverine flooding in Scotland, England and Wales

Meteorological and damage reports

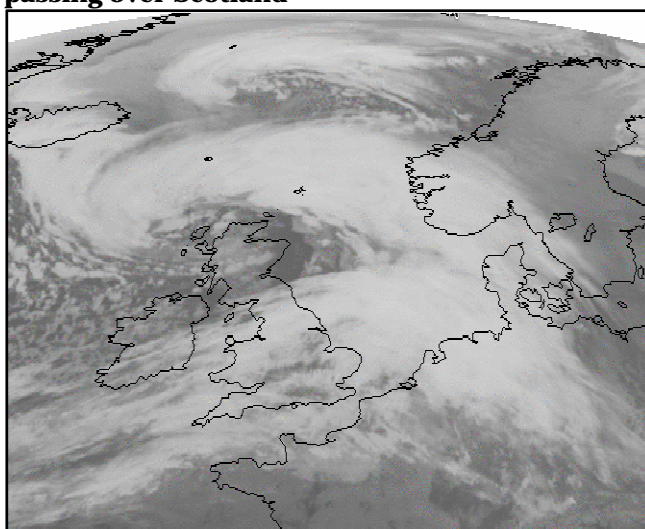
At 12.00 on Thursday 8th December the low-pressure system reached a minimum sea level pressure of 957 hPA, which is considered as an extremely low pressure and was accompanied by hurricane strength peak gusts to highland regions of Scotland and Northern England.

The low "Friedhelm" is the most recent storm to develop under the current strong positive North Atlantic Oscillation (NAO) conditions present since mid November. This positive NAO regime has since produced a train of strong extratropical cyclones moving along the 60°N latitude band.

Peak gusts of 34m/s (77 mph) were recorded in Edinburgh during rush hour on Thursday 8th December while peak gusts of 32m/s (71 mph) were recorded in Glasgow and Dundee (Met Office). 150,000 homes lost electricity during the day on Thursday leaving 70,000 without electricity over night.

Damage has been reported over a wide-spread area with significant tree-fall reported. Ardrossan Wind Farm in North Ayrshire experienced damage to one of its wind turbines.

Figure 1: Infrared satellite imaginary on December 8th at 12:00 while Windstorm Friedhelm was passing over Scotland



Source: Geostationary Satellite Images from the Cooperative Institute for Meteorological Satellite Studies (CIMSS) at the University of Wisconsin-Madison

Figure 2: Peak gust recordings 8th December 2011

Location	Maximum gust speed (mph)
Cairngorm Summit	165 mph
Aonach Mor	145 mph
Tiree	90 mph
Dunstaffnage	86 mph
Aberdaron	81 mph
Church Fenton	73 mph
Glasgow, Bishopton	71 mph
Edinburgh, Gogarbank	69 mph
St Bees Head	74 mph
Mumbles Head	62 mph

Source: UK Met Office

Heavy rainfall combined with the antecedent soil conditions led to flood warnings being issued by the English, Scottish and Welsh Environment Agencies for the following rivers in England: Brathay, Rothay, Winster, Derwent, Ouse, Ure and Swale Rivers. There are initial reports of flooding in the Windermere area of Cumbria.

In Scotland flood warnings were issued for the River Conon and various coastal locations around Inverclyde where coastal flooding was reported.

Figure 3: River networks on flood alert and Scottish coastal locations impacted by coastal flooding



Source: RMS and GFK Macon

In Wales the Conwy, Vyrnwy and Dyfi rivers were issued with flood warnings.

Early damage indications

The peak gusts for Windstorm Friedhelm are thought to be comparable to Windstorm Elaine that impacted the same region in January 2008 (RMS: peak gusts recorded of 32m/s at Glasgow airport). According to RMS the Windstorm Elaine industry loss was around £130m and significantly less than the loss experience from Windstorm Kyrill (January 2007) which was around £400m for the UK insurance industry.

Windstorm vulnerability is considered less in northern UK and Scotland than in southern regions due to superior building roof design. So if the event had hit in a more southerly direction industry losses would likely be higher.

We will continue to monitor any adverse developments and follow-up with further analysis as required.

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