



MET ÉIREANN

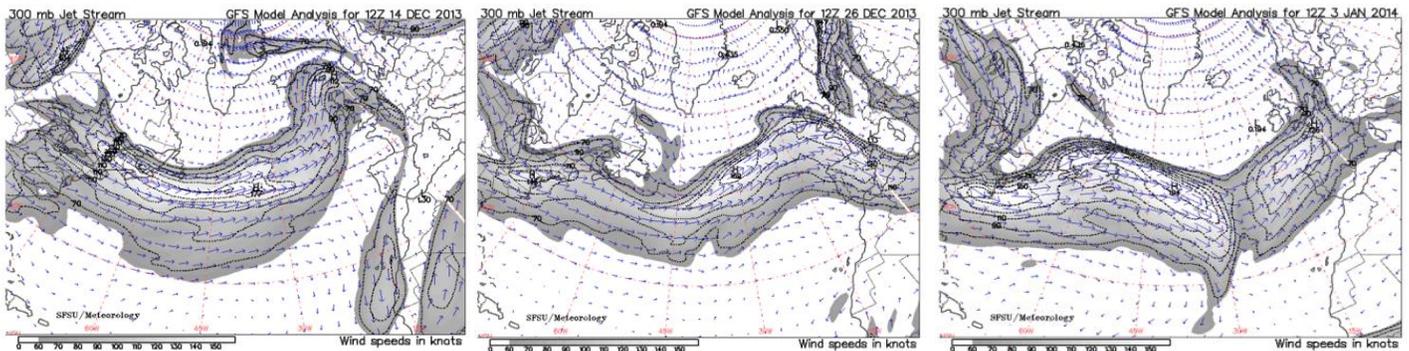
The Irish Meteorological Service

Winter 2013/2014.

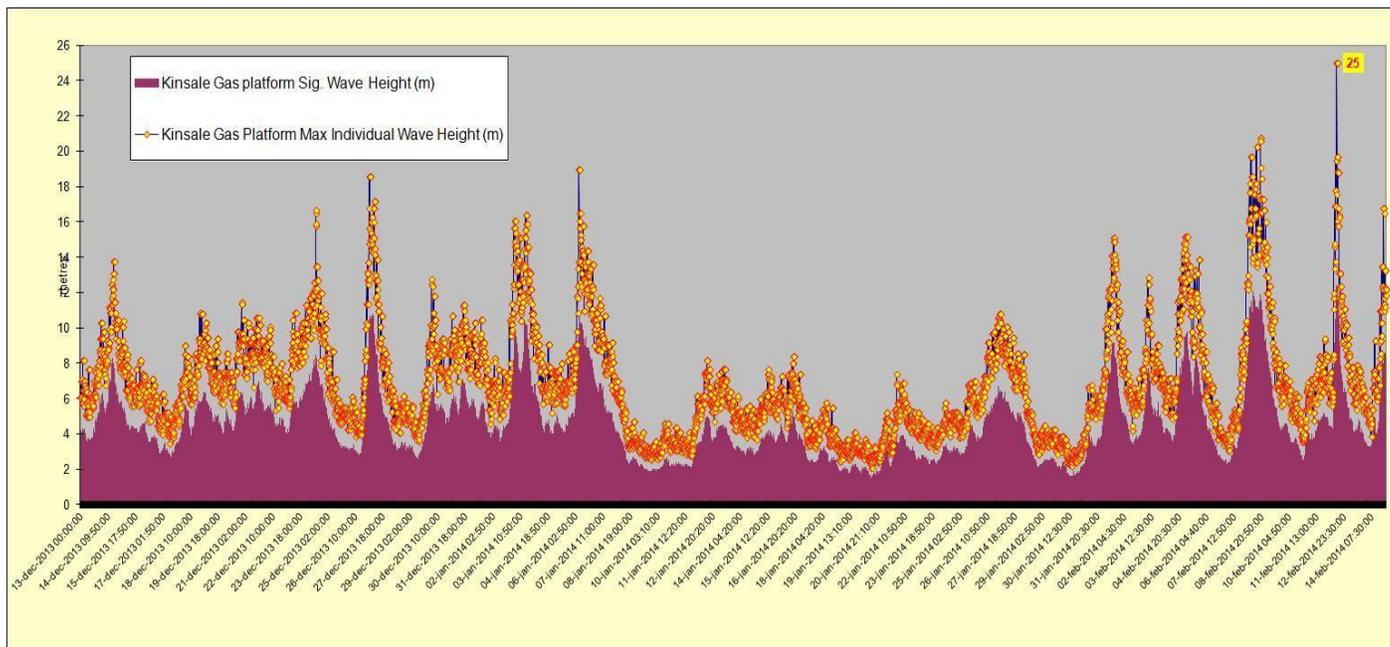
The winter of 2013/14 was severely affected by an exceptional run of winter storms, culminating in serious coastal damage and widespread, persistent flooding.

The Polar jet stream extended across the Atlantic right over Ireland marking the tracks of successive storms resulting in wet and stormy weather. A combination of strong winds, tidal surges and low pressure conspired to cause widespread damage and flooding during the latter half of December 2013 and into the middle of February 2014. Peak wave periods were unusually long and record wave heights culminated in severe flooding and widespread damage chiefly along the southern, western and north western coastal areas. The effects of the storms were exacerbated by very high tides, causing significant disruption to individuals, businesses and infrastructure.

Position of Jet Streams over North Atlantic



Storm force winds occurred on twelve different days – on the 5th/14th/18th/24th/26th/27th Dec 2013 and 3rd/25th/26th January and 1st/8th/12th February 2014. This series of storms led to an increase in rainfall amounts of between one and a half and two times above normal and to saturated or waterlogged ground throughout the country. The most severe windstorm occurred on the 12th February 2014 and was associated with an active depression off the south coast that tracked steadily north-eastwards over the country. Kinsale Energy Gas Platform recorded a maximum wave height of 25m on the same day, its highest on record.



Rainfall totals were well above Long-Term -Average (LTA) everywhere. Percentage of LTA values ranged from 143% at Finner with 510.1mm, to 208% at Carlow Oakpark with 460.5mm. Over 50% of stations across the country reported it was the wettest winter on record. Valentia Observatory reported its wettest winter since records began in 1866 (148 years) with 848.0mm and 183% of LTA, while Malin Head reported 530.7mm, 164% of LTA its wettest winter since records began in 1885 (129 years). Shannon Airport had its wettest winter on record (68 years) while Mullingar reported its wettest winter on record (63 years) with 531.3mm and 444.5mm respectively. Other stations in the South, East and West reported their wettest winter in 6 to 57 years. The wettest day of the season was at Ballyhaise on the 17th February with 34.5mm, its wettest winter day since 2008 (6 years). The number of wet days (day with 1 mm or more) ranged from 50 at Phoenix Park to 80 at Newport.

EXTREME SEASONAL RAINFALL VALUES AT SYNOPTIC STATIONS

Highest seasonal total: 848.0 mm at Valentia Observatory (*its wettest winter since 1866*)

Lowest seasonal total: 273.5 mm at Dublin Airport (*its wettest winter since 1995*)

Highest daily rainfall: 34.5 mm at Ballyhaise on February 17th (*its highest winter daily fall since 2008*)

Winds were above average for the winter. Dublin Airport's winter mean wind speed value of 14.4 knots (26 km/h) was its highest since 1943 (71 years), Shannon Airport reported its highest winter mean wind speed in 31 years with 12.3 knots (23 km/h), while some stations in the South had their highest mean wind speeds in 24 years. The highest gust of the season was 86 knots (159 km/h) at Shannon Airport on the 12th February, its highest for winter on record (68 years), while the highest mean speed was 65 knots (120km/h) at Mace Head on the 12th February

Storm on 12th February 2014.

Meteorological situation: An active depression of 952 hPa approached Slyne Head in the morning and tracked steadily north-eastwards over the country. Storm force gradients within its circulation abated early in the night as an unstable westerly airstream crossed Ireland.

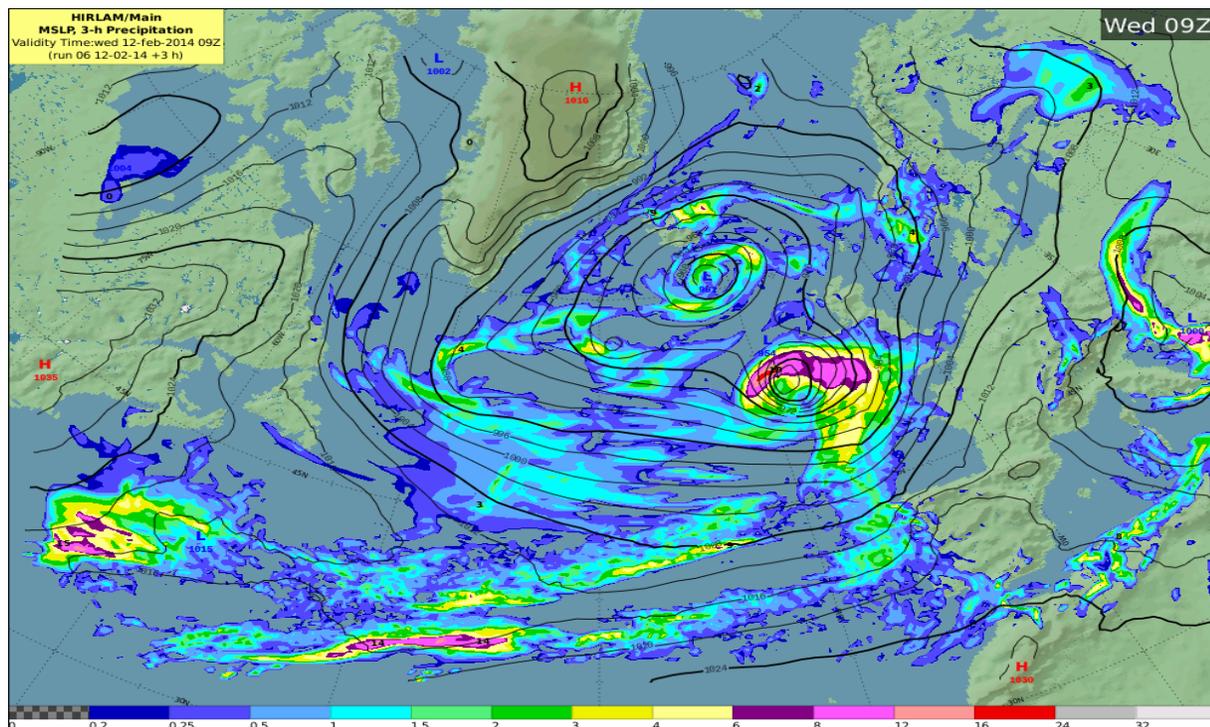
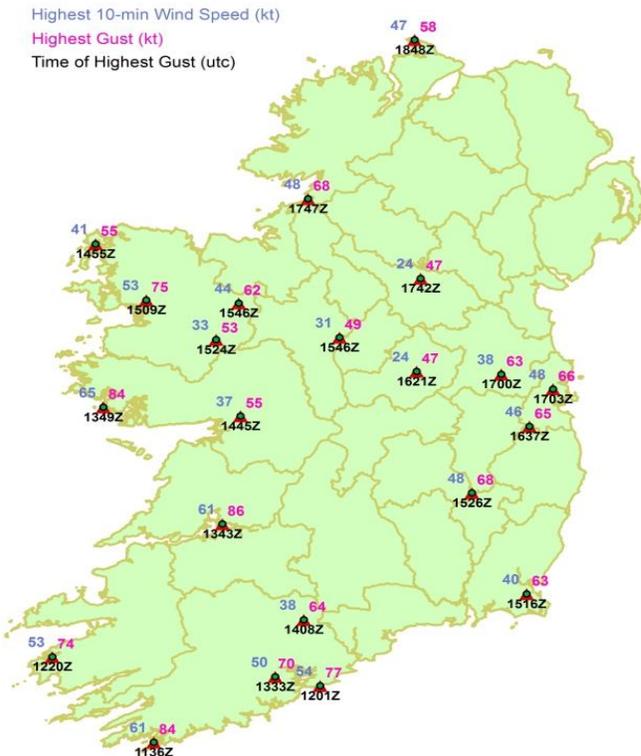
Winds: Southeast to south gale to strong gale force 9 in the morning off the south coast, increasing to storm force 10 at midday and veered west in the evening. Increased to violent storm force 11 for a time in the south and west; backed west to southwest overnight and steadily decreased to force 5 - 7 by morning. Hurricane force 12 winds off the west coast

Weather: Moderate rain at first, showers merged to longer spells of rain, some wintry and thundery.

Significant Weather Event:

- Hurricane force winds were recorded at Mace Head, a mean 10-minute wind speed of 65kts.
- Maximum gust recorded was 86kt, at Shannon Airport.
- Shannon also recorded a 10-minute mean wind speed of 61kts, its highest since records began in 1945.
- Kinsale Energy Gas Platform reported a maximum wave height of 25m in the afternoon, its highest on record.

Highest 10-min Wind Speed (kt)
Highest Gust (kt)
Time of Highest Gust (utc)



Daily Weather Statistics for 12th February 2014.

Station	Highest 10-min Wind Speed (kt)	Wind Direction at time of 10-min Wind Speed (deg)	Highest Gust (kt)	Time of Highest Gust (utc)	Rainfall (mm)
Roches Point	54	180	77	1201	11.5
Valentia	53	260	74	1220	20.6
Sherkin Island	61	270	84	1136	16.4
Mace Head	65	280	84	1349	21.5
Cork Airport	50	260	70	1333	20.9
Athenry	37	270	55	1445	13.7
Shannon Airport	61	260	86	1343	18.7
Belmullet	41	300	55	1455	15.8
Moore Park, Fermoy	38	260	64	1408	20.7
Johnstown Castle	40	250	63	1516	10.6
Mt_Dillon	31	270	49	1546	14.8
Claremorris	33	280	53	1524	17.8
Newport	53	290	75	1509	25.8
Oak Park, Carlow	48	250	68	1526	17.1
Mullingar	24	250	47	1621	11.3
Knock Airport	44	280	62	1546	20.4
Finner	48	280	68	1747	20.8
Casement Aerodrome	46	250	65	1637	10.3
Dunsany	38	260	63	1700	9.4
Ballyhaise	24	260	47	1742	9.4
Dublin Airport	48	250	66	1703	6.6
Malin Head	47	300	58	1848	10.5

Historical Context:

The distinguishing feature of the weather this winter was the seemingly unending series of vigorous Atlantic storms that crossed the country. Nevertheless only one individual storm, on the 12th Feb 2014, was exceptional but not without parallel. We have had more violent storms in the past such as [Hurricane Debbie](#) in 1961, where the maximum gusts were between 70 and 85 knots generally with a maximum of 93kt reported in the northwest. The more recent storms of 26th December 1998 and 24th December 1997 were also of greater intensity. In February 1990, an unusually long series of vigorous storms crossed the country producing record winds and rainfall amounts.

One hundred and seventy five years ago, on the 6/7th January 1839, a hurricane known as the “Night of the Big Wind”, raged across Ireland. The following sentiments expressed in the Evening Post the next morning still remain valid today: Comparing it with all similar visitations in these latitudes, of which there exists any record, we would say that, for the violence of the hurricane and the deplorable effects which followed, as well as for its extensive sweep, embracing as it did the whole island in its destructive career, it remains not only without a parallel, but leaves far and away in the distance all that ever occurred in Ireland.

Wind Statistics Winter 2013/2014.

Date	Station	Highest 10-minute Wind Speed >= 48 kt	OR Highest Gust >= 60 kt
05 December 2013	Malin Head	50	70
14 December 2013	Belmullet	48	64
14 December 2013	Mace Head	46	60
14 December 2013	Malin head	43	60
14 December 2013	Newport	41	63
15 December 2013	Belmullet	46	63
18 December 2013	Belmullet	44	70
18 December 2013	Cork Airport	33	60
18 December 2013	Finner	47	65
18 December 2013	Knock Airport	41	61
18 December 2013	Mace Head	61	78
18 December 2013	Malin head	54	73
18 December 2013	Newport	37	63
18 December 2013	RochesPoint	45	63
18 December 2013	Valentia	33	60
19 December 2013	Malin Head	47	63
20 December 2013	Malin Head	39	66
23 December 2013	Roches Point	46	60
24 December 2013	Mace Head	49	69
24 December 2013	Sherkin Island	43	64
26 December 2013	Dublin Airport	40	60
26 December 2013	Mace Head	52	70
26 December 2013	Roches Point	50	64
26 December 2013	Sherkin Island	49	68
26 December 2013	Valentia	42	69
27 December 2013	Athenry	36	60
27 December 2013	Dublin Airport	40	63
27 December 2013	Finner	43	61
27 December 2013	Mace Head	55	71
27 December 2013	Roches Point	48	63
27 December 2013	Shannon Airport	47	65
27 December 2013	Sherkin Island	50	72
27 December 2013	Valentia	44	62
02 January 2014	Mace Head	47	64
03 January 2014	Belmullet	47	66
03 January 2014	Mace Head	56	72
03 January 2014	Newport	43	68
03 January 2014	SherkinIsland	49	64
06 January 2014	Roches Point	46	60
06 January 2014	Sherkin Island	43	60
25 January 2014	Mace Head	49	76
26 January 2014	Mace Head	52	69
26 January 2014	SherkinIsland	43	63
27 January 2014	Mace Head	46	68
27 January 2014	Sherkin Island	40	61
01 February 2014	Mace Head	51	66
01 February 2014	Roches Point	42	60
01 February 2014	Sherkin Island	49	68
01 February 2014	Valentia	44	63
04 February 2014	Sherkin Island	41	64
08 February 2014	Roches Point	48	62
08 February 2014	Sherkin Island	50	66
12 February 2014	Casement	46	65
12 February 2014	Cork Airport	50	70
12 February 2014	Dublin Airport	48	66
12 February 2014	Dunsany	38	63
12 February 2014	Finner	48	68
12 February 2014	Johnstown	40	63
12 February 2014	Knock Airport	44	62
12 February 2014	Mace Head	65	84
12 February 2014	Moore Park, Fermoy	38	64
12 February 2014	Newport	53	75
12 February 2014	Oak Park, Carlow	48	68
12 February 2014	Roches Point	54	77
12 February 2014	Shannon Airport	61	86
12 February 2014	Sherkin Island	61	84
12 February 2014	Valentia	53	74