STORM BERT

Sustained winds peaked on Saturday 23 November 2024

The second named storm of the 2024/2025 season
Named by Met Éireann on Thursday 21 November 2024

Published Friday 23 May 2025

Meteorological Overview

Storm Bert was a significant weather event for Ireland. Winds peaked on Saturday 23 November 2024. The storm formed on Thursday 21 November 2024 near Newfoundland, fuelled by warm, moisture-laden air from the south. It moved into the mid-Atlantic on Friday, rapidly intensifying as it interacted with a powerful jet stream.

By Saturday, it reached peak intensity northwest of Ireland before stalling and gradually weakening by Monday. In the days leading up to the storm, snow was reported. The storm brought heavy rain with new station November records for daily rainfall at Knock Airport (57.4 mm), Oak Park (41.7 mm), and Finner (41.2 mm) were also observed. Bert also delivered prolonged strong winds, with storm force winds in the northwest. Winds shifted from southerly to westerly as the storm progressed. Bert's influence diminished as it transitioned towards southern Scandinavia by Tuesday.

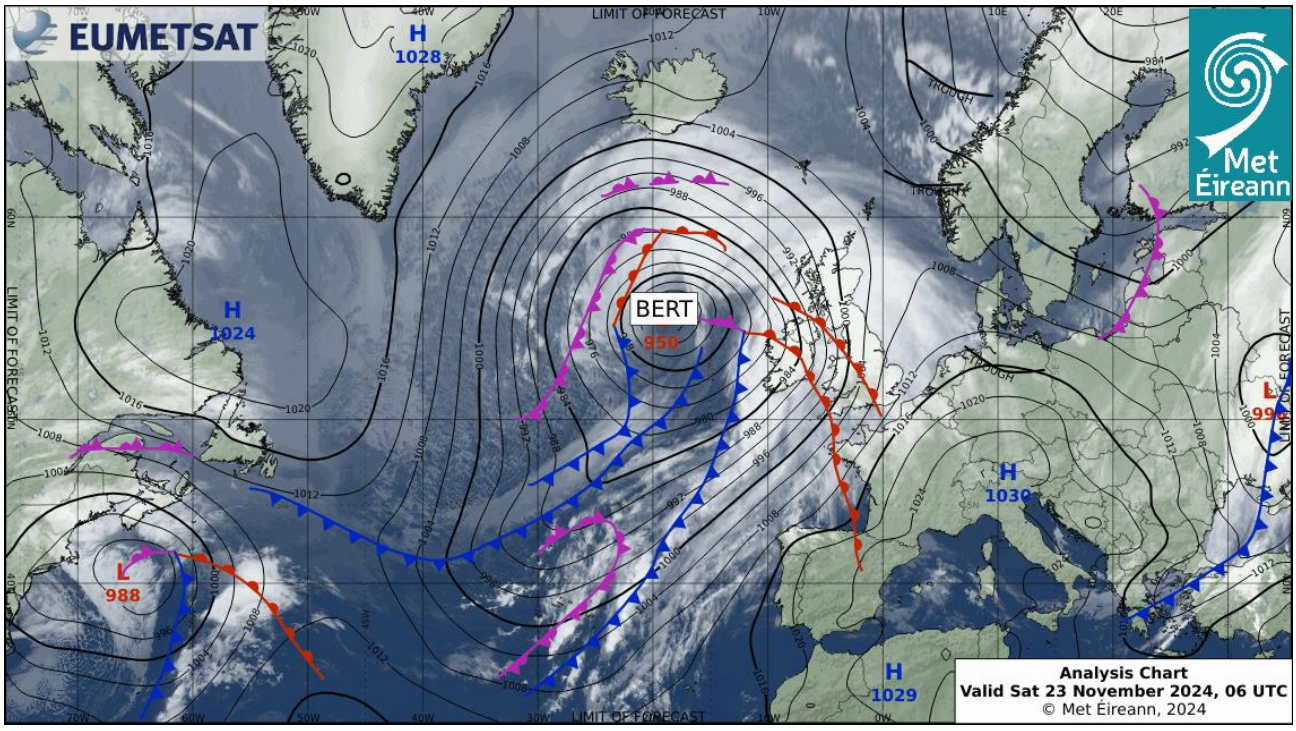

Figure 1. EUMETSAT Analysis Chart at time of highest sustained wind speed Sat 23 Nov 2024 at 06 UTC

Summary of Extremes

- On Saturday 23 November 2024, sustained (10-minute mean) wind speeds ranged from a east-southeasterly 89 km/h storm force (48 knots or 55 mph) at Malin Head (coastal), Co Donegal at 06 UTC (6 am local time) to the lowest 35 km/h fresh breeze (19 knots or 22 mph) from the southwest at Athenry , Co Galway at 00 UTC (12 pm local time).
- Gust (3-second mean) wind speeds ranged from highest 115 km/h (62 knots or 71 mph) from the east-southeasterly at Malin Head (coastal), Co Donegal on Saturday 23 around 06:19 UTC (6:19 am local time) to the lowest 61 km/h (33 knots or 38 mph) from the southwest at Athenry , Co Galway at 23:57 UTC (11:55 pm local time).

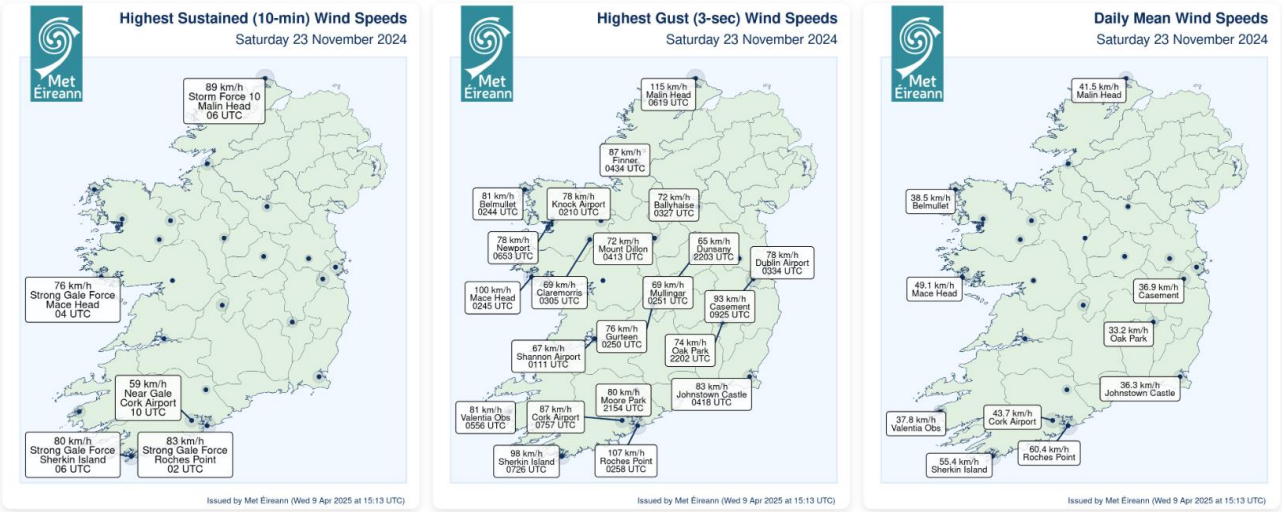

Figure 2. A map of the (a) Highest Sustained (10-min) Wind Speeds (b) Highest Gust (3-sec) Wind Speeds and (c) Daily Mean Wind Speeds on Sat 23 Nov 2024

- The lowest land-station hourly mean sea pressure (MSLP) was 969.6 hPa on Sunday at around 16 UTC (4 pm local) observed at Malin Head (coastal), Co Donegal.
- The highest daily (00-00 UTC) rainfall total was 57.4 mm on Saturday at Knock Airport, Co Mayo (40 % of its 1991-2020 Long Term Average (LTA)).
- The highest 24-hour (09-09 UTC) rainfall total was 88.9 mm on Friday 22nd at Gernapeka, Co. Cork (30 % of its LTA).
- The highest individual wave height was 14.8 m at Buoy M6 (in the deep Atlantic) around 20 UTC on Sunday.
- Between the Tuesday 19th and Friday 22nd, snow was reported at stations in many counties including Kerry, Cork, Mayo, Meath and Tipperary. Snow depth estimates of up to 4 cm were observed at Knock Airport, Co Mayo on the Thursday before the storm.

Daily Weather Summaries

Friday 22 November 2024

A fresh to near gale and unstable northwesterly airflow covered Ireland, with low pressure of 986 hPa to the northeast and high pressure of 1020 hPa to the southwest. A brief ridge built over Ireland during the day, ahead of Storm Bert. Widespread frost and icy stretches overnight. The conditions persisted into the morning, with some rain and sleet showers, along with isolated snow showers, mainly in the North and West. Conditions improved in the afternoon, with some good spells of sunshine, particularly in the eastern and southeastern counties. However, by nightfall, it became wet and windy as Storm Bert approached.

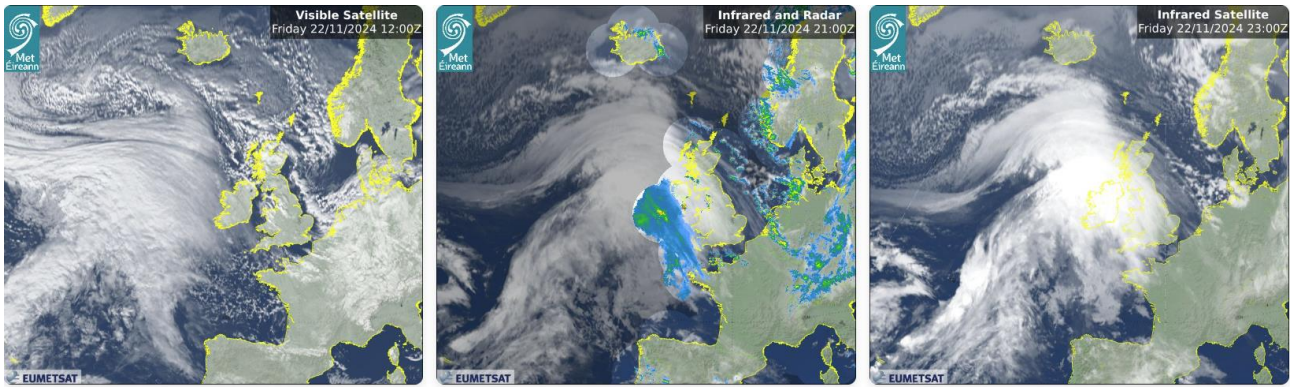

Figure 3. Visible Satellite, Infrared Radar and Infrared Satellite images on Fri 22 Nov 2024 at the hours 12 UTC, 21 UTC and 23 UTC

Saturday 23 November 2024

A gale force to strong gale force southeast, veering southwest airflow covered Ireland, driven by Storm Bert, a deepening depression of 954 hPa centred approximately 340 nautical miles west of Erris Head, with associated fronts crossing the country. Very heavy rain throughout the night moved eastwards and cleared by midday, with snow on roads in the North. Flooding occurred in many areas, with the heaviest rain in the West, while the east experienced less intense rainfall. Rain returned to the south by mid-afternoon and spread across the country during the evening. There were brief breaks in the cloud along the Atlantic coasts, but it remained overcast elsewhere. Gusty winds affected the country, strongest in the North.

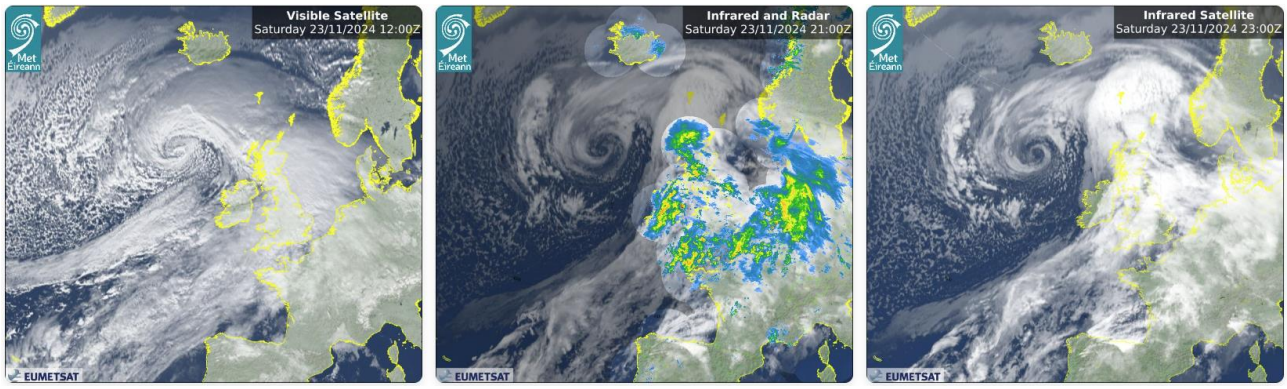

Figure 4. Visible Satellite, Infrared Radar and Infrared Satellite images on Sat 23 Nov 2024 at the hours 12 UTC, 21 UTC and 23 UTC

Sunday 24 November 2024

Ireland was under a strong to gale force south to southwest airflow, driven by Storm Bert, a depression of 945 hPa centred approximately 240 nautical miles west-northwest of Erris Head, with associated frontal troughs embedded in the flow. It was very windy on Sunday due to Storm Bert, with a mix of sunny spells and occasional heavy showers, mainly across the western half of the country. Showers became more frequent in the west later in the afternoon.

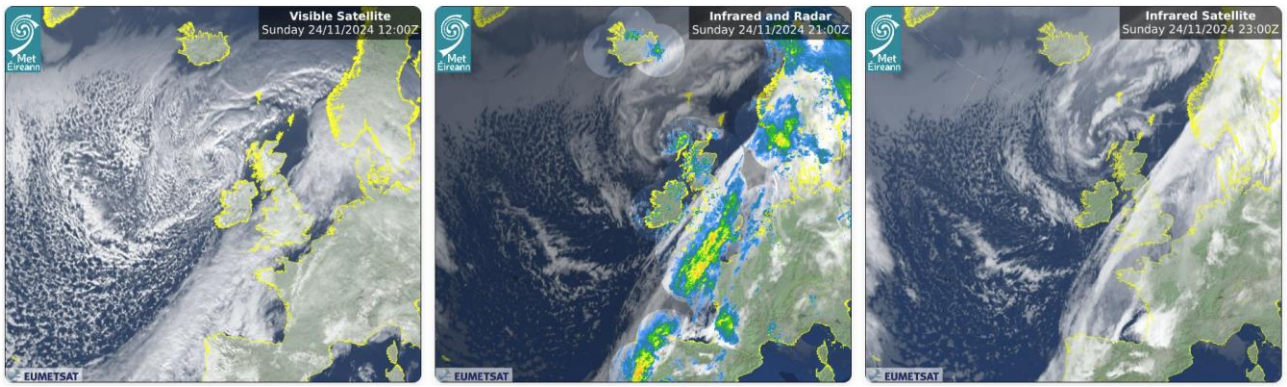

Figure 5. Visible Satellite, Infrared Radar and Infrared Satellite images on Sun 24 Nov 2024 at the hours 12 UTC, 21 UTC and 23 UTC

Monday 25 November 2024

Ireland was under a strong to gale force westerly airflow, generated by Storm Bert, with a central pressure of 959 hPa, centred just to the northwest of Scotland. Associated frontal troughs were embedded in the flow. The day brought a mix of sunshine and scattered showers, some heavy, with hail and a few isolated thunderstorms. The showers were most frequent in the North, West, and Southwest. It was rather windy for a time, especially in the North, but the winds gradually eased as Storm Bert moved away.

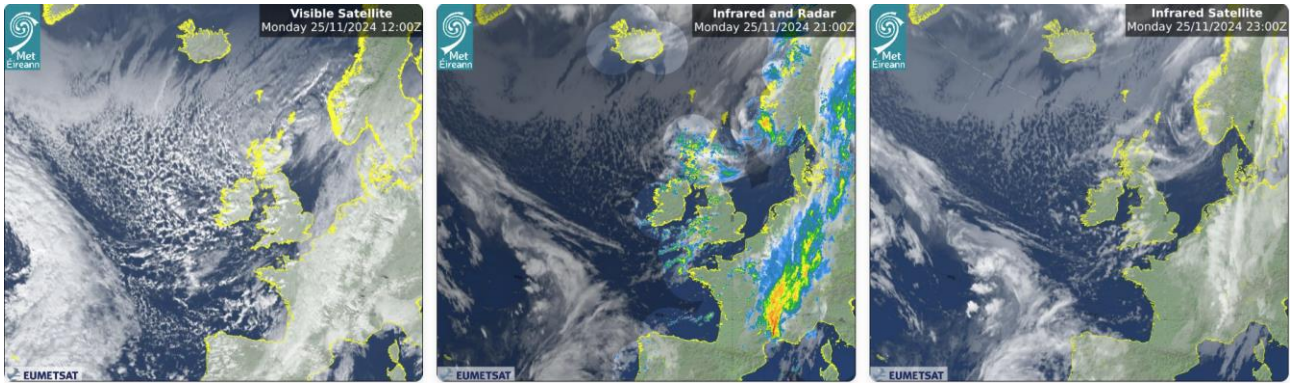

Figure 6. Visible Satellite, Infrared Radar and Infrared Satellite images on Mon 25 Nov 2024 at the hours 12 UTC, 21 UTC and 23 UTC

Atmospheric Air Pressure

The minimum hourly mean sea level pressure (MSLP) observed in Ireland during storm Bert was 969.6 hPa at Malin Head (coastal), Co Donegal around 16 UTC (4 pm local) on Sunday 24th.

Between 12 UTC (12 pm local) on Friday 22nd and 14 UTC (2 pm local) on Sunday 24th, the recorded maximum pressure drop amounted to 39.7 hPa at Belmullet, Co Mayo, as the mean sea level pressure decreased from 1009.6 to 969.9 hPa.

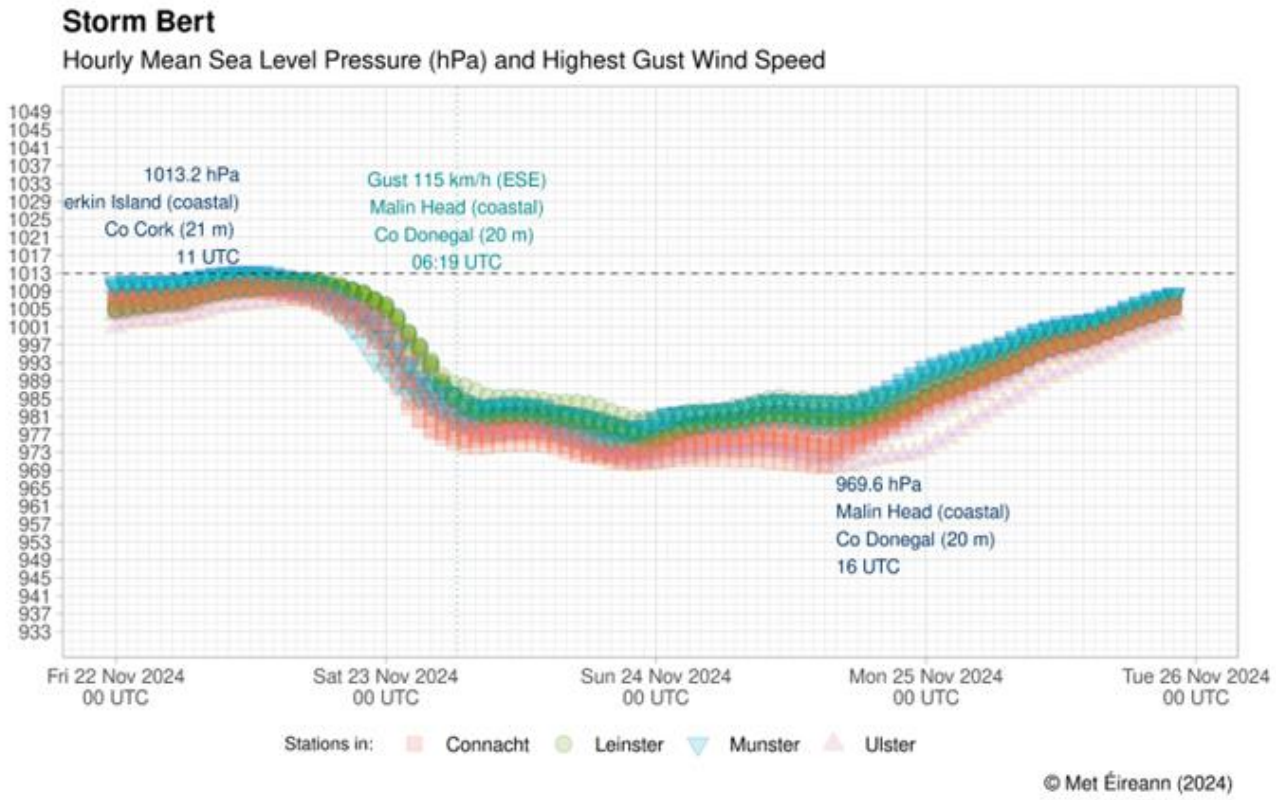

Figure 7. Hourly Mean Sea Level pressure (MSLP) and highest gust wind speed (with stations coloured by province) between Sat 22 and Mon 24 Nov 2024

For more on how we measure atmospheric pressure, see www.met.ie/climate/what-we-measure/atmospheric-pressure.

Marine Observations

The following table presents extremes from the Irish Marine Data Buoy Observation Network (IMDBON) and unless otherwise stated, the date occurring is Saturday 23 November 2024.

Table 1. Extremes of wind speeds and wave heights at buoys from Sat 22 to Mon 24 Nov 2024

Buoy (Location)	Sustained Wind Speeds	Gust Wind Speeds	Significant Wave Height	Individual Wave	MSLP (hPa)
Buoy M2 (in the Irish Sea)	69 km/h (37 knots or 43 mph) 24 UTC	90 km/h (49 knots or 56 mph) 10 UTC	4.8 m 10, 12 UTC	8.0 m 01 UTC Sun 24 Nov 2024	977.4 hPa 01 UTC Sun 24 Nov 2024
Buoy M3 (off the Cork coast)	73 km/h (39 knots or 45 mph) 23 UTC Fri 22 Nov 2024	104 km/h (56 knots or 64 mph) 23 UTC Fri 22 Nov 2024	7.3 m 14 UTC Sun 24 Nov 2024	13.6 m 02 UTC Mon 25 Nov 2024	976.3 hPa 19 UTC
Buoy M4 (off the Donegal coast)	87 km/h (47 knots or 54 mph) 03 UTC	111 km/h (60 knots or 69 mph) 03 UTC	8.6 m 14 UTC Sun 24 Nov 2024	13.1 m 13 UTC Sun 24 Nov 2024	964.9 hPa 12 UTC Sun 24 Nov 2024
Buoy M5 (off the south Wexford coast)	49 km/h (27 knots or 31 mph) 03 UTC	87 km/h (47 knots or 54 mph) 04 UTC	6.6 m 09, 11, 12 UTC	14.1 m 11 UTC	982.0 hPa 23 UTC
Buoy M6 (in the deep Atlantic)	70 km/h (38 knots or 44 mph) 20 UTC Fri 22 Nov 2024	99 km/h (53 knots or 61 mph) 20 UTC Fri 22 Nov 2024	8.9 m 08 UTC Sun 24 Nov 2024	14.8 m 20 UTC Sun 24 Nov 2024	966.7 hPa 05 UTC

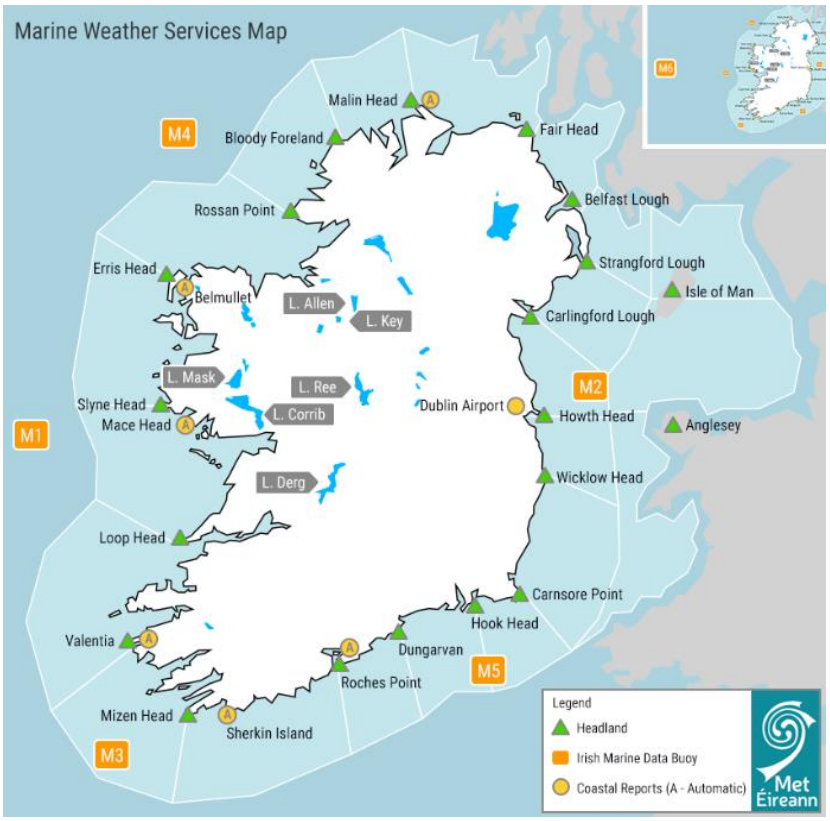

Figure 8. Marine Weather Services Map

Synoptic stations - extremes of wind speeds and rainfall totals

The table below contains wind speeds and rainfall observations for the primary (synoptic) meteorological stations during Storm Bert. Cork Airport and Roches Point saw over 50 mm of daily rainfall. Ten out of the 25 primary stations recorded over 40 mm on Saturday.

Table 2. Extremes of wind and rainfall at synoptic stations

Station Location	Sustained (10-min mean) Wind Speed	Date highest mean	Wind Direction Highest sustained	Gust (3-sec mean) Wind Speed	Date Highest Gust	Wind Direction Highest Gust	Highest Daily Rain (mm)	4-day Total Rain (mm)
Malin Head* (coastal) Co Donegal	**89 km/h** Storm Force (48 knots or 55 mph)	Sat 23 Nov 2024 06 UTC	110° (ESE)	**115 km/h** (62 knots or 71 mph)	Sat 23 Nov 2024 0619 UTC	110° (ESE)	**35.4 mm** Sat 23 Nov 2024	**47.2 mm**
Roches Point (coastal) Co Cork	**83 km/h** Strong Gale (45 knots or 52 mph)	Sat 23 Nov 2024 02 UTC	160° (SSE)	**107 km/h** (58 knots or 67 mph)	Sat 23 Nov 2024 0258 UTC	170° (S)	**55.6 mm** Sat 23 Nov 2024	**64.3 mm**
Belmullet (coastal) Co Mayo	**80 km/h** Strong Gale (43 knots or 49 mph)	Sun 24 Nov 2024 10 UTC	200° (SSW)	**107 km/h** (58 knots or 67 mph)	Sun 24 Nov 2024 1042 UTC	200° (SSW)	**25.8 mm** Sat 23 Nov 2024	**37.3 mm**
Mace Head[2] (coastal) Co Galway	**80 km/h** Strong Gale (43 knots or 49 mph)	Sun 24 Nov 2024 13 UTC	210° (SSW)	**104 km/h** (56 knots or 64 mph)	Sun 24 Nov 2024 1439 UTC	220° (SW)	**30.7 mm** Sat 23 Nov 2024	**47.2 mm**
Sherkin Island (coastal) Co Cork	**80 km/h** Strong Gale (43 knots or 49 mph)	Sat 23 Nov 2024 06 UTC	190° (S)	**98 km/h** (53 knots or 61 mph)	Sat 23 Nov 2024 0726 UTC	190° (S)	**27.0 mm** Sat 23 Nov 2024	**46.1 mm**
Newport (coastal) Co Mayo	**63 km/h** Gale (34 knots or 39 mph)	Sun 24 Nov 2024 11 UTC	200° (SSW)	**91 km/h** (49 knots or 56 mph)	Sun 24 Nov 2024 1122 UTC	200° (SSW)	**40.4 mm** Sat 23 Nov 2024	**59.3 mm**
Finner (coastal) Co Donegal	**59 km/h** Near Gale (32 knots or 37 mph)	Mon 25 Nov 2024 00 UTC	260° (W)	**91 km/h** (49 knots or 56 mph)	Mon 25 Nov 2024 0007 UTC	240° (WSW)	**41.2 mm** Sat 23 Nov 2024	**62.0 mm**
Cork Airport (coastal) Co Cork	**59 km/h** Near Gale (32 knots or 37 mph)	Sat 23 Nov 2024 10 UTC	210° (SSW)	**87 km/h** (47 knots or 54 mph)	Sat 23 Nov 2024 0757 UTC	200° (SSW)	**52.4 mm** Sat 23 Nov 2024	**65.2 mm**
Casement Aerodrome Co Dublin	**57 km/h** Near Gale (31 knots or 36 mph)	Sat 23 Nov 2024 09 UTC	200° (SSW)	**93 km/h** (50 knots or 58 mph)	Sat 23 Nov 2024 0925 UTC	200° (SSW)	**17.7 mm** Sat 23 Nov 2024	**18.8 mm**
Johnstown Castle (coastal) Co Wexford	**54 km/h** Near Gale (29 knots or 33 mph)	Sat 23 Nov 2024 04 UTC	170° (S)	**83 km/h** (45 knots or 52 mph)	Sat 23 Nov 2024 0418 UTC	180° (S)	**36.3 mm** Sat 23 Nov 2024	**40.1 mm**
Valentia Observatory (coastal) Co Kerry	**54 km/h** Near Gale (29 knots or 33 mph)	Sat 23 Nov 2024 06 UTC	200° (SSW)	**83 km/h** (45 knots or 52 mph)	Fri 22 Nov 2024 2312 UTC	120° (ESE)	**45.2 mm** Sat 23 Nov 2024	**85.6 mm**
Gurteen Co Tipperary	**54 km/h** Near Gale (29 knots or 33 mph)	Sat 23 Nov 2024 02 UTC	130° (SE)	**76 km/h** (41 knots or 47 mph)	Sat 23 Nov 2024 0250 UTC	130° (SE)	**19.4 mm** Sat 23 Nov 2024	**27.2 mm**

Station Location	Sustained (10-min mean) Wind Speed	Date highest mean	Wind Direction Highest sustained	Gust (3-sec mean) Wind Speed	Date Highest Gust	Wind Direction Highest Gust	Highest Daily Rain (mm)	4-day Total Rain (mm)
Dublin Airport (coastal) Co Dublin	**52 km/h** Near Gale (28 knots or 32 mph)	Sat 23 Nov 2024 04 UTC	150° (SSE)	**78 km/h** (42 knots or 48 mph)	Sat 23 Nov 2024 0334 UTC	150° (SSE)	**16.9 mm** Sat 23 Nov 2024	**17.7 mm**
Knock Airport Co Mayo	**48 km/h** Strong Breeze (26 knots or 30 mph)	Sat 23 Nov 2024 04 UTC	130° (SE)	**81 km/h** (44 knots or 51 mph)	Sun 24 Nov 2024 1133 UTC	200° (SSW)	**57.4 mm** Sat 23 Nov 2024	**71.5 mm**
Oak Park Co Carlow	**48 km/h** Strong Breeze (26 knots or 30 mph)	Sat 23 Nov 2024 08 UTC	180° (S)	**74 km/h** (40 knots or 46 mph)	Sat 23 Nov 2024 2202 UTC	180° (S)	**41.7 mm** Sat 23 Nov 2024	**45.9 mm**
Shannon Airport (coastal) Co Clare	**48 km/h** Strong Breeze (26 knots or 30 mph)	Sun 24 Nov 2024 13 UTC	210° (SSW)	**70 km/h** (38 knots or 44 mph)	Sun 24 Nov 2024 1310 UTC	210° (SSW)	**23.0 mm** Sat 23 Nov 2024	**41.5 mm**
Claremorris Co Mayo	**46 km/h** Strong Breeze (25 knots or 29 mph)	Sun 24 Nov 2024 13 UTC	210° (SSW)	**81 km/h** (44 knots or 51 mph)	Sun 24 Nov 2024 1330 UTC	200° (SSW)	**46.0 mm** Sat 23 Nov 2024	**64.7 mm**
Ballyhaise Co Cavan	**46 km/h** Strong Breeze (25 knots or 29 mph)	Sat 23 Nov 2024 03 UTC	120° (ESE)	**72 km/h** (39 knots or 45 mph)	Sat 23 Nov 2024 0327 UTC	120° (ESE)	**35.4 mm** Sat 23 Nov 2024	**41.4 mm**
Mount Dillon Co Roscommon	**44 km/h** Strong Breeze (24 knots or 28 mph)	Sat 23 Nov 2024 03 UTC	120° (ESE)	**72 km/h** (39 knots or 45 mph)	Sat 23 Nov 2024 0413 UTC	120° (ESE)	**36.8 mm** Sat 23 Nov 2024	**42.8 mm**
Moore Park Co Cork	**41 km/h** Strong Breeze (22 knots or 25 mph)	Sat 23 Nov 2024 06 UTC	180° (S)	**80 km/h** (43 knots or 49 mph)	Sat 23 Nov 2024 2154 UTC	190° (S)	**41.2 mm** Sat 23 Nov 2024	**48.0 mm**
Mullingar Co Westmeath	**41 km/h** Strong Breeze (22 knots or 25 mph)	Sat 23 Nov 2024 02 UTC	150° (SSE)	**69 km/h** (37 knots or 43 mph)	Sat 23 Nov 2024 0251 UTC	130° (SE)	**32.6 mm** Sat 23 Nov 2024	**36.2 mm**
Dunsany Co Meath	**41 km/h** Strong Breeze (22 knots or 25 mph)	Sun 24 Nov 2024 01 UTC	230° (SW)	**65 km/h** (35 knots or 40 mph)	Sun 24 Nov 2024 2203 UTC	230° (SW)	**27.4 mm** Sat 23 Nov 2024	**28.8 mm**
Athenry Co Galway	**35 km/h** Fresh Breeze (19 knots or 22 mph)	Sun 24 Nov 2024 00 UTC	220° (SW)	**61 km/h** (33 knots or 38 mph)	Sat 23 Nov 2024 2357 UTC	220° (SW)	**44.5 mm** Sat 23 Nov 2024	**54.8 mm**
Markree Castle Co Sligo	NA	NA	NA	NA	NA	NA	**48.1 mm** Sat 23 Nov 2024	**70.6 mm**
Phoenix Park Co Dublin	NA	NA	NA	NA	NA	NA	**17.2 mm** Sat 23 Nov 2024	**19.0 mm**

Synoptic Station Records

The following stations observed their highest daily rainfall totals for November and below include some climatological statistics at these stations and the rainfall they observed.

Table 3. Highest daily rainfall totals

Station	Daily Rainfall Total (mm)	Anomaly (% of its November LTA)	Previous Highest Daily November Rainfall Total (mm)	Highest Daily Rainfall Total any month (mm)
Knock Airport, Co Mayo	57.4 23 Nov 2024	40	46.2 14 Nov 2015	86.5 6 Sept 2010
Oak Park, Co Carlow	41.7 23 Nov 2024	45	38.6 16 Nov 2006	47.7 16 Aug 2008
Finner, Co Donegal	41.2 23 Nov 2024	30	40.4 14 Nov 2015	71.3 5 Dec 2015

Impacts

Power Outages:

- ESB Power Check some 60,000 properties were without electricity on the day of Saturday 23 November 2025. (ESB Networks' Post)

Water Shortages:

- Uisce Éireann reported water supply disruptions in Cork due to Storm Bert, with Fermoy Water Treatment Plant temporarily suspended Sunday 24 November 2025. (Uisce Éireann, 2024)

Storm Damage:

- Homes were flooded in Counties Down and Tyrone on Saturday after hours of heavy rain and strong winds from Storm Bert. (BBC News, 2024)
- The River Feale in Listowel, Co Kerry overflowed, affecting both Listowel and neighbouring Abbeyfeale. (RTE News, 2024)
- While in Killybegs, Co Donegal, water levels raised to 1.2m, damaging 16 homes and 9 businesses, with emergency services assisting in the cleanup. (RTE News, 2024)

Definitions

- Sustained (or mean) wind speeds are an average of 10-minute wind speeds. Gust wind speeds are an average of 3-second wind speeds. Unless otherwise stated daily means midnight to midnight UTC.
- Long-Term Averages (LTAs) and 'normal' refer to the observations being averaged over the period 1991-2020.
- Daily, unless otherwise specified, means 00-00 UTC.
- Beaufort Scale available at www.met.ie/forecasts/marine-inland-lakes/beaufort-scale.
- Marine area buoy maps and definitions available at www.met.ie/forecasts/marine-inland-lakes/sea-area-forecast-terminology.

This report is based on the observations from Met Éireann's weather and climate stations and data available up to the publication date.

For more information, please contact Met Éireann's Climate Services Division: enquiries@met.ie or www.met.ie/about-us/contact-us.