

Storm Lorenzo

Thursday 3rd and Friday 4th October 2019

First named storm of the season was an ex-tropical system named by NOAA/National Hurricane Centre on Monday 23 September 2019.

Storm Lorenzo started as a tropical system in the Atlantic Ocean. Lorenzo became the farthest east, in the Atlantic, category 5 hurricane on record. It is extremely rare for hurricanes to become as powerful in that part of the Atlantic. Lorenzo made its transition from a tropical system to a Post-Tropical Storm when it was approximately 1000km southwest of Ireland on Thursday October 3rd after making landfall in the Azores Islands as a category 2 hurricane on the Wednesday the 2nd. Lorenzo deepened slightly off the west coast of Ireland before weakening as it crossed the country. Lorenzo took an unusual track, moving north north-eastwards close to the west coast, before turning right and tracking across the country as it weakened.

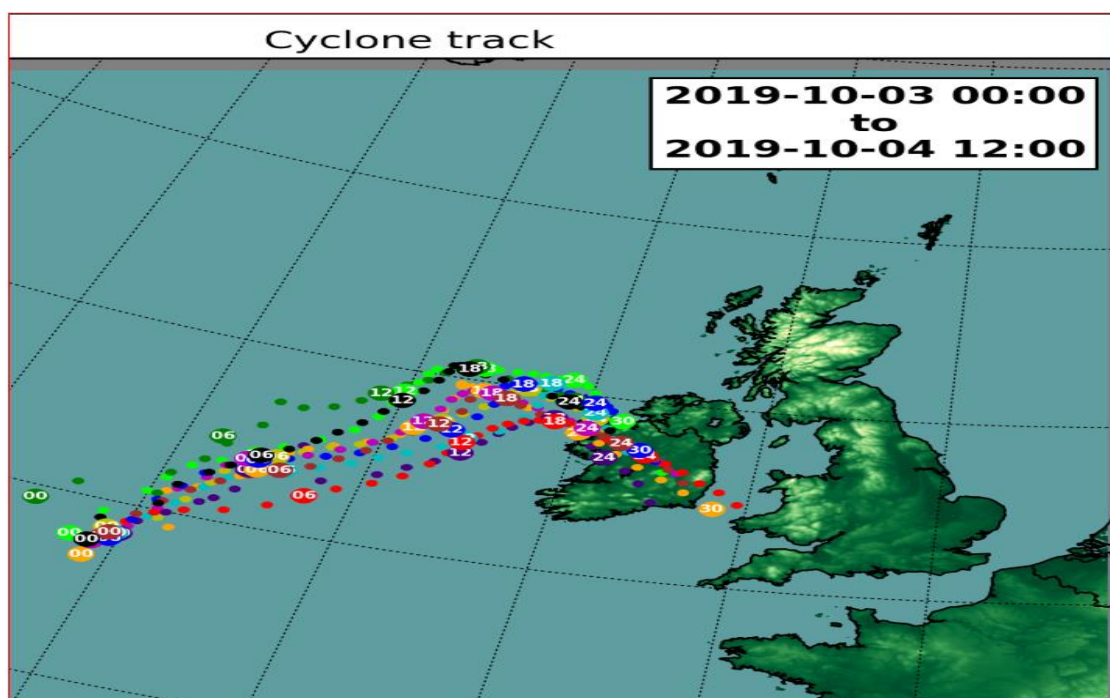


Figure 1. Storm Lorenzo cyclone track.

Peak sustained wind speed was 89 km/h (storm force 10) at Mace Head, Co Galway around 5 am on Friday 4 October 2019. This station was the only wind station, of 25, which recorded storm force 10 sustained wind speeds. The peak gust wind speed was 107 km/h, also at Mace Head, Co Galway at 4:44 am (UTC) on Friday.

Six stations (24% of total) observed gusts \geq 48 knots in Connacht (5 stations) and Munster (1 station). The main impact day from these gusts was Friday, however there was strong gusts on Thursday also.

Impacts:

- Up to 20,000 ESB customers without power
- Roads closed with reports of fallen trees and other debris
- Coastal flooding and flooding in the Northwest due to heavy rain

Station Name	Rainfall (mm)	Highest 10-minute mean wind speed (km/h).	Highest Gust (km/h)	Wind Direction (degree)	Hour of occurrence (utc)
MACE HEAD	5.4	80 (43 kt)	107 (58 kt)	250	2300
BELMULLET	13.3	70 (38 kt)	98 (53 kt)	240	2300
MALIN HEAD	3.0	63 (34 kt)	80 (43 kt)	110	1000
ROCHES POINT	4.5	63 (34 kt)	87 (47 kt)	160	1100
Sherkin Island	4.5	57 (31 kt)	78 (42 kt)	160	0900
SHANNON AIRPORT	2.3	56 (30 kt)	80 (43 kt)	140	1100
NEWPORT	14.7	50 (27 kt)	76 (41 kt)	210	1400
GURTEEN	2.0	48 (26 kt)	67 (36 kt)	130	1100
CORK AIRPORT	9.0	48 (26 kt)	67 (36 kt)	160	1000
VALENTIA	10.1	48 (26 kt)	85 (46 kt)	250	1600
FINNER	15.9	44 (24 kt)	67 (36 kt)	110	1100
KNOCK AIRPORT	15.2	44 (24 kt)	74 (40 kt)	130	1200
DUBLIN AIRPORT	1.8	41 (22 kt)	67 (36 kt)	150	1500
JOHNSTOWN	4.8	41 (22 kt)	61 (33 kt)	150	1000
ATHENRY	8.8	41 (22 kt)	74 (40 kt)	250	2300
CASEMENT	1.7	41 (22 kt)	65 (35 kt)	140	1500
CLAREMORRIS	10.0	39 (21 kt)	67 (36 kt)	220	1500
MT DILLON	6.6	37 (20 kt)	54 (29 kt)	130	1400
MOORE PARK	5.5	35 (19 kt)	57 (31 kt)	140	0800
BALLYHAISE	9.4	35 (19 kt)	57 (31 kt)	120	1200
MULLINGAR	8.5	35 (19 kt)	59 (32 kt)	130	1200
OAK PARK	3.4	31 (17 kt)	50 (27 kt)	140	1200
DUNSANY	2.3	28 (15 kt)	46 (25 kt)	140	1300

Figure 2. Station data for 3rd October 2019

Station Name	Rainfall (mm)	Highest 10-minute mean wind speed (km/h)	Highest Gust (km/h)	Wind Direction (degree)	Hour of occurrence (utc)
MACE HEAD	0.9	89 (48 kt)	107 (58 kt)	270	0500
BELMULLET	1.2	74 (40 kt)	102 (55 kt)	240	0000
NEWPORT	10.5	70 (38 kt)	106 (57 kt)	290	0500
ROCHES POINT	0.0	65 (35 kt)	83 (45 kt)	280	1100
MALIN HEAD	1.4	63 (34 kt)	74 (40 kt)	60	0700
SHANNON AIRPORT	0.5	63 (34 kt)	89 (48 kt)	250	0500
KNOCK AIRPORT	5.7	63 (34 kt)	91 (49 kt)	290	0700
Sherkin Island	0.7	61 (33 kt)	83 (45 kt)	250	0300
CLAREMORRIS	3.4	52 (28 kt)	91 (49 kt)	270	0500
CORK AIRPORT	0.0	50 (27 kt)	70 (38 kt)	290	1200
GURTEEN	3.3	48 (26 kt)	72 (39 kt)	270	0900
VALENTIA	0.9	48 (26 kt)	67 (36 kt)	270	0300
ATHENRY	4.5	46 (25 kt)	81 (44 kt)	310	0900
FINNER	33.9	44 (24 kt)	70 (38 kt)	220	0300
CASEMENT	8.8	43 (23 kt)	61 (33 kt)	220	0700
MOORE PARK	0.0	39 (21 kt)	63 (34 kt)	270	0900
OAK PARK	2.3	39 (21 kt)	61 (33 kt)	250	0800
JOHNSTOWN	0.4	37 (20 kt)	57 (31 kt)	260	1000
MT DILLON	4.8	37 (20 kt)	67 (36 kt)	280	0800
DUNSANY	8.8	33 (18 kt)	56 (30 kt)	220	0500
DUBLIN AIRPORT	7.7	30 (16 kt)	52 (28 kt)	10	1200
MULLINGAR	7.5	30 (16 kt)	57 (31 kt)	230	0600
BALLYHAISE	13.5	26 (14 kt)	46 (25 kt)	200	0400

Figure 3. Station data for 4 October 2019

Issue Time	Valid From	Valid To	Colour	Element	Location	Warning Text
03/10/2019 08:00	03/10/2019 18:00	04/10/2019 06:00	Yellow	Wind	Wexford, Cork, Tipperary and Waterford	Southwesterly winds of mean speeds 50 to 65km/h with gusts of 90 to 100km/h.
03/10/2019 16:00	03/10/2019 18:00	04/10/2019 06:00	Yellow	Wind	Leitrim and Sligo	West veering northwest winds of mean speeds of 50 to 65km/h with gusts of 90 to 100km/h.
04/10/2019 06:00	04/10/2019 07:00	04/10/2019 11:00	Yellow	Wind	Longford, Westmeath, Galway, Mayo, Roscommon and Clare	Strong westerly winds persist for a time this morning, mean speeds 50 to 65 km/hr with higher gusts.
04/10/2019 08:00	04/10/2019 08:00	04/10/2019 13:00	Yellow	Wind	Dublin, Kildare, Laois, Longford, Wicklow, Offaly, Westmeath, Galway, Mayo, Roscommon and Clare	Southwest winds of mean speeds of 50 to 55 km/h with occasional gusts of 90 to 100 km/h for a time.
04/10/2019 08:00	04/10/2019 08:00	04/10/2019 13:00	Yellow	Wind	Kildare, Offaly, Westmeath, Galway, Mayo, Roscommon and Clare, Offaly, and Kildare	Strong westerly winds persist for a time this morning, mean speeds 50 to 65 km/hr with higher gusts.

Figure 4. Wind Warnings issued by Met Éireann for Storm Lorenzo

DEFINITIONS

Sustained wind speeds are an average of 10-minute wind speeds.

Gust wind speeds are an average of 3-second wind speeds.

For observations of sustained (10-min mean) wind speeds:

- Storm Force 10 \geq 89 km/h (48 kt)
- Violent Storm Force 11 \geq 103 km/h (56 kt)
- Hurricane Force 12 \geq 117 km/h (64 kt)