

# Met Éireann

The Irish Meteorological Service

## Storm Floris

### Marine Storm Report

Marine Unit

Report Date: 02 October 2025

Report Time: 14:39 UTC

### Marine Observations Summary

#### Data Sources

- Buoy 62091** (M2 Buoy): 53.47°N, 5.42°W
- Buoy 62092** (M3 Buoy): 53.48°N, 5.42°W
- Buoy 62093** (M4 Buoy): 51.22°N, 6.70°W
- Buoy 62094** (M5 Buoy): 51.69°N, 6.70°W
- Buoy 62095** (M6 Buoy): 53.06°N, 7.90°W

#### Peak Conditions Observed

Buoy (Location)	Sustained Wind Speeds	Gust Wind Speeds	Significant Wave Height	Individual Wave	MSLP (hPa)
<b>M2 Buoy</b> (in the Irish Sea)	<b>51 km/h</b> (28 knots or 14 mph) Mon 04 Aug 2025 08 UTC	<b>67 km/h</b> (36 knots or 19 mph) Mon 04 Aug 2025 08 UTC	<b>2.5 m</b> Mon 04 Aug 2025 09 UTC	<b>4.2 m</b> Mon 04 Aug 2025 16 UTC	<b>1003.7</b> Mon 04 Aug 2025 08 UTC 13UTC

<b>M3 Buoy</b> (in the Irish Sea)	<b>43 km/h</b> (23 knots or 12 mph) Mon 04 Aug 2025 04 UTC	<b>66 km/h</b> (35 knots or 18 mph) Mon 04 Aug 2025 05 UTC	<b>4.1 m</b> Tue 05 Aug 2025 14 UTC	<b>6.4 m</b> Tue 05 Aug 2025 05 UTC	<b>1010.7</b> Mon 04 Aug 2025 05 UTC 13UTC
<b>M4 Buoy</b> (off the Cork coast)	<b>56 km/h</b> (30 knots or 16 mph) Wed 06 Aug 2025 21 UTC	<b>73 km/h</b> (39 knots or 20 mph) Wed 06 Aug 2025 19 UTC	<b>4.6 m</b> Tue 05 Aug 2025 09 UTC	<b>7.8 m</b> Tue 05 Aug 2025 16 UTC	<b>1004.0</b> Wed 06 Aug 2025 22 UTC 13UTC
<b>M5 Buoy</b> (off the Donegal coast)	<b>54 km/h</b> (29 knots or 15 mph) Mon 04 Aug 2025 08 UTC	<b>70 km/h</b> (38 knots or 20 mph) Mon 04 Aug 2025 08 UTC	<b>3.0 m</b> Mon 04 Aug 2025 10 UTC	<b>4.4 m</b> Mon 04 Aug 2025 10 UTC	<b>1010.4</b> Mon 04 Aug 2025 08 UTC 13UTC
<b>M6 Buoy</b> (in the south Wexford coast)	<b>54 km/h</b> (29 knots or 15 mph) Mon 04 Aug 2025 01 UTC	<b>79 km/h</b> (43 knots or 22 mph) Wed 06 Aug 2025 12 UTC	<b>5.4 m</b> Tue 05 Aug 2025 00 UTC	<b>9.1 m</b> Mon 04 Aug 2025 19 UTC	<b>1001.1</b> Mon 04 Aug 2025 00 UTC 13UTC

## Station-by-Station Analysis

### Buoy 62091 - M2 Buoy

- **Location:** 53.47°N, 5.42°W
- **Peak Wind Speed:** 27.8 knots (51.5 km/h) on Mon 04 Aug 2025 08:00 UTC
- **Peak Significant Wave Height (Hm0):** 2.5 m on Mon 04 Aug 2025 09:00 UTC
- **Peak Maximum Wave Height (Hmax):** 4.2 m on Mon 04 Aug 2025 16:00 UTC
- **Minimum Pressure:** 1003.7 hPa on Mon 04 Aug 2025 08:00 UTC
- **Data Quality:** Excellent (100.0% good data)
- **Observations:** 70 records (QC good data only)

### Buoy 62092 - M3 Buoy

- **Location:** 53.48°N, 5.42°W
- **Peak Wind Speed:** 23.3 knots (43.2 km/h) on Mon 04 Aug 2025 04:00 UTC
- **Peak Significant Wave Height (Hm0):** 4.1 m on Tue 05 Aug 2025 14:00 UTC
- **Peak Maximum Wave Height (Hmax):** 6.4 m on Tue 05 Aug 2025 05:00 UTC
- **Minimum Pressure:** 1010.7 hPa on Mon 04 Aug 2025 05:00 UTC
- **Data Quality:** Excellent (100.0% good data)
- **Observations:** 92 records (QC good data only)

### Buoy 62093 - M4 Buoy

- **Location:** 51.22°N, 6.70°W
- **Peak Wind Speed:** 30.2 knots (55.9 km/h) on Wed 06 Aug 2025 21:00 UTC
- **Peak Significant Wave Height (Hm0):** 4.6 m on Tue 05 Aug 2025 09:00 UTC
- **Peak Maximum Wave Height (Hmax):** 7.8 m on Tue 05 Aug 2025 16:00 UTC
- **Minimum Pressure:** 1004.0 hPa on Wed 06 Aug 2025 22:00 UTC

- **Data Quality:** Excellent (100.0% good data)
- **Observations:** 40 records (QC good data only)

### Buoy 62094 - M5 Buoy

- **Location:** 51.69°N, 6.70°W
- **Peak Wind Speed:** 29.0 knots (53.8 km/h) on Mon 04 Aug 2025 08:00 UTC
- **Peak Significant Wave Height (Hm0):** 3.0 m on Mon 04 Aug 2025 10:00 UTC
- **Peak Maximum Wave Height (Hmax):** 4.4 m on Mon 04 Aug 2025 10:00 UTC
- **Minimum Pressure:** 1010.4 hPa on Mon 04 Aug 2025 08:00 UTC
- **Data Quality:** Excellent (100.0% good data)
- **Observations:** 92 records (QC good data only)

### Buoy 62095 - M6 Buoy

- **Location:** 53.06°N, 7.90°W
- **Peak Wind Speed:** 29.2 knots (54.0 km/h) on Mon 04 Aug 2025 01:00 UTC
- **Peak Significant Wave Height (Hm0):** 5.4 m on Tue 05 Aug 2025 00:00 UTC
- **Peak Maximum Wave Height (Hmax):** 9.1 m on Mon 04 Aug 2025 19:00 UTC
- **Minimum Pressure:** 1001.1 hPa on Mon 04 Aug 2025 00:00 UTC
- **Data Quality:** Excellent (100.0% good data)
- **Observations:** 97 records (QC good data only)

## Meteorological Analysis

### Wind Analysis

The storm produced maximum sustained winds of **30.2 knots** (55.9 km/h).

#### Wind Categories:

- Force 7 — Near gale: 28–33 kn (50–61 km/h)
- Force 8 — Gale: 34–40 kn (62–74 km/h)
- Force 9 — Severe gale (aka Strong gale): 41–47 kn (75–88 km/h)
- Force 10 — Storm: 48–55 kn (89–102 km/h)
- Force 11 — Violent storm: 56–63 kn (103–117 km/h)
- Force 12 — Hurricane force: ≥64 kn (≥118 km/h)

### Wave Analysis

**Significant Wave Heights (Hm0):** Peak values reached **5.4 m**, representing **very rough**.

**Maximum Wave Heights (Hmax):** Individual wave heights peaked at **9.1 m**. Note: Hmax values represent individual wave heights and are not used for sea state classification.

**Wave Height Relationship:** The Hmax/Hm0 ratio was **1.68**, within normal range (1.3-1.8).

#### Sea State Classification (Hm0):

- Rough: 2.5-4.0 m

- Very Rough: 4.0-6.0 m
- High: 6.0-9.0 m
- Very High: 9.0-14.0 m
- Phenomenal: >14.0 m

#### Wave Height Definitions:

- **Hm0 (Significant Wave Height):** Average height of the highest one-third of waves
- **Hmax (Maximum Wave Height):** Highest individual wave recorded during the period

## Quality Control Summary

**Total Records:** 391

#### QC Status Distribution:

- Good Data (QC=1): 391 records (100.0%)
- Adjusted Data (QC=5): 0 records (0.0%)
- Missing Data (QC=9): 0 records (0.0%)
- No QC (QC=0): 0 records (0.0%)

## Data Sources and Logger Information

### Active Logger Information During Storm Period

#### Buoy 62091 (M2 Buoy):

- Logger(s) used: 22221\_CR6 , 12145\_CR6

#### Buoy 62092 (M3 Buoy):

- Logger(s) used: 12147\_CR6 , 427\_Wavesense

#### Buoy 62093 (M4 Buoy):

- Logger(s) used: 13443\_CR6 , 12146\_CR6

#### Buoy 62094 (M5 Buoy):

- Logger(s) used: 8704\_CR6 , 347\_Wavesense

#### Buoy 62095 (M6 Buoy):

- Logger(s) used: 12142\_CR6 , 12143\_CR6

**Note:** This report uses only quality-controlled data (QC indicators 1 and 5) for meteorological analysis. Logger information shows which data acquisition systems were active during the storm period.

## Data Visualization

!Storm Overview

*Figure 1: Marine meteorological analysis showing wind speed, wave height, atmospheric pressure, air temperature, wind direction, and wave period during Storm Floris.*

## Technical Notes

### QC Methods Applied

- **Manual QC:** Visual inspection and expert validation
- **Automatic QC:** Range checks, spike detection, and flat-line identification

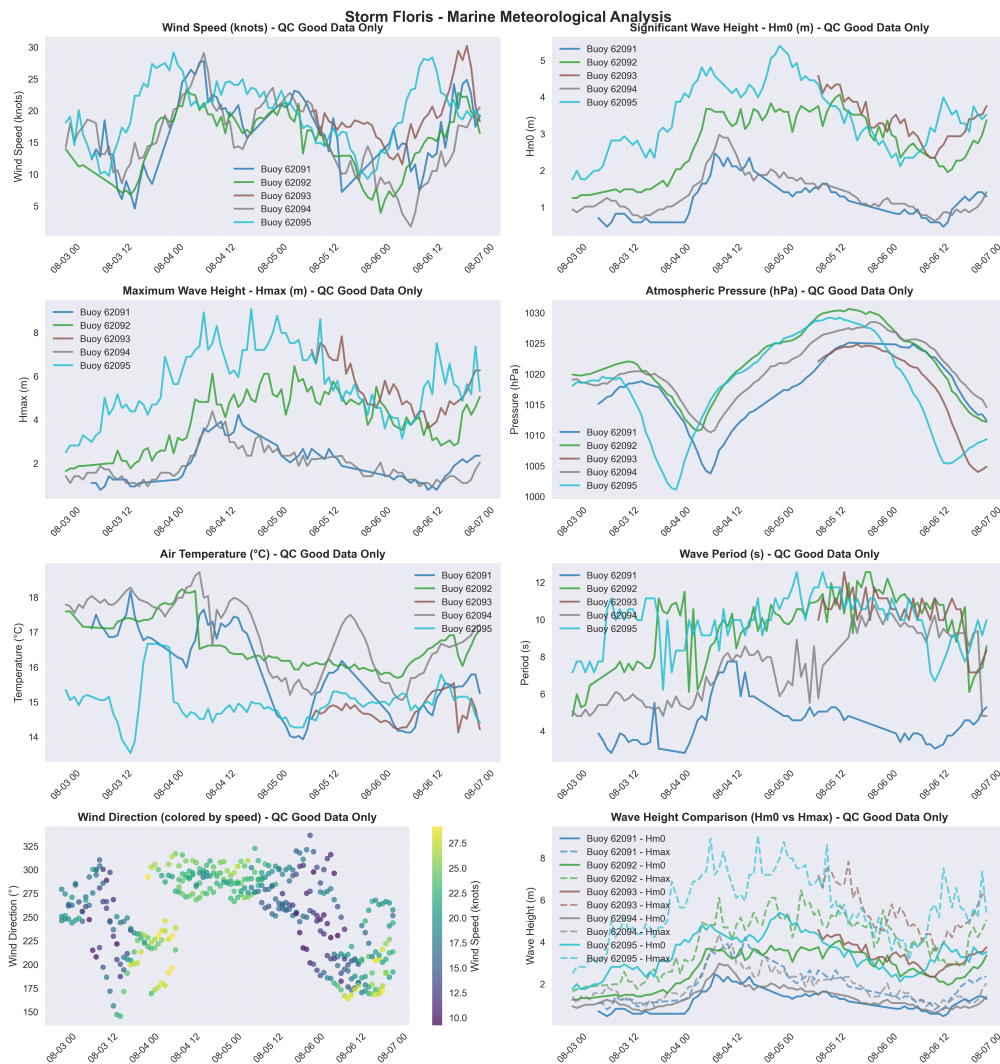
### Data Quality Indicators

- 0: No QC performed
- 1: QC performed, data OK
- 4: QC performed, raw data not OK and not adjusted
- 5: QC performed, raw data not OK but value adjusted/interpolated
- 6: QC performed, data OK (Datawell Hmax sensor specific)
- 9: Data missing

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*Report generated by Marine Storm Analysis System Data source: Irish Marine Data Buoy Network Quality controlled data from Met Éireann marine observations*

## Marine Meteorological Analysis



**Figure 1:** Marine meteorological observations during Storm Floris. Eight-panel analysis showing wind speed, significant wave height (Hm0), maximum wave height (Hmax), atmospheric pressure, air temperature, wave period, wind direction patterns, and comparative wave heights across the Irish Marine Data Buoy Network. Quality-controlled data only.