

MONTHLY WEATHER BULLETIN

NO. 355
DECEMBER 2015



Waves whip the coastline near Owenahincha, Co. Cork, during Storm Desmond which affected Ireland on the 4th and 5th. The storm's highest 10-minute mean wind speed and highest gust were both reported at Mace Head, Co Galway at around 6pm on the 4th, with the highest 10-minute mean reported as 46 knots (85 km/h) and the highest gust as 64 knots (119 km/h). (Picture courtesy Irish Examiner; photographer Denis Minhane)

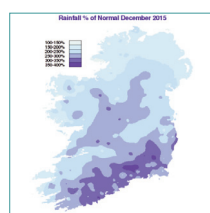
RECORD BREAKING RAINFALL AND TEMPERATURE IN PLACES

All stations reported well above Long-Term Average (LTA) rainfall with most stations across the country reporting double or triple their normal rainfall for December. Wettest conditions (compared to LTA) were in county Cork, Tipperary and Kilkenny where some stations

reported over 350% of LTA. Percentage of LTA were up to 395% at Piltown (Kildalton Agriculture College), Co Kilkenny with a monthly total of 401.0 mm, its highest December rainfall on available record since the station opened in 1971. A succession of winter storms tracked across the



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**RECORD BREAKING RAINFALL
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country in December, Storm Desmond, Storm Eva and Storm Frank bringing persistent and, in places, record-breaking rainfall for both 24-hour and monthly rainfall totals across Ireland. Malin Head, Co Donegal reported its wettest December since 1885 with 262.5 mm (226% of LTA) while Valentia Observatory, Co Kerry reported its wettest December since 1934 with 340.7 mm (207% of LTA). Five stations exceeded the previous record for Ireland's highest monthly rainfall total (previous record was October 1996 at a gauge in the Cummeragh Mountains, Co Kerry with 790.0 mm). The five stations were; Ballingearry (Tooreenaneen), Co Cork with 800.2mm, Ballingearry (Vocational School), Co Cork with 818.2 mm, Breenreagh Mountains, Co Kerry with 879.9 mm, Cloone Lake (Caragh River Area), Co Kerry with 910.7mm and at Gernapeka, Co Cork with 943.5 mm, the new Irish record for both December and any month. The wettest days were the mainly the 4th (during Storm Desmond) and 29th (during Storm Frank) and some isolated stations on these dates in Mayo, Kerry, Leitrim and Wexford reported 24-hour rainfall totals of over 100 mm. The highest 24-hour total was reported at Keenagh Beg, Co Mayo on the 4th during Storm Desmond with 160.8 mm, its highest daily rainfall on record since the station opened in 1944. The number of wet days (*days with 1 mm or more*) ranged from 19 at Malahide Castle, Co Dublin to 31 days (everyday reported as a wet day) at around a fifth of stations mainly located in parts of the Southwest and South. The number of very wet days (*days with 10 mm or more*) ranged from five days at Ballyroan (Oatlands), Co Laois to 29 at both Gap of Dunloe, Co Kerry (monthly total 754.3 mm, 274% of LTA, wettest on available record since 1941) and Ballingearry (Vocational School), Co Cork (monthly total 818.2 mm, 352% of LTA, wettest since station opened in 1947).

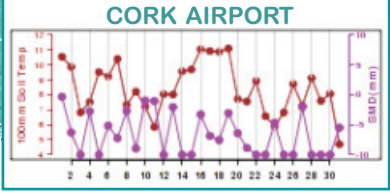
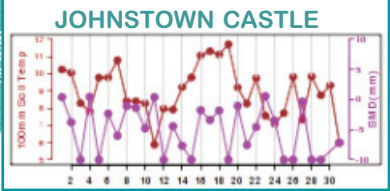
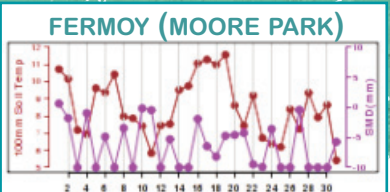
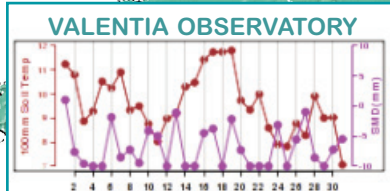
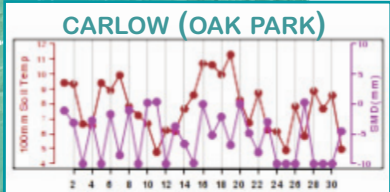
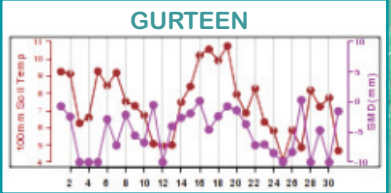
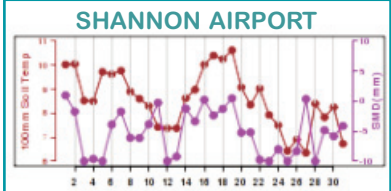
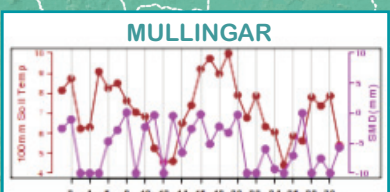
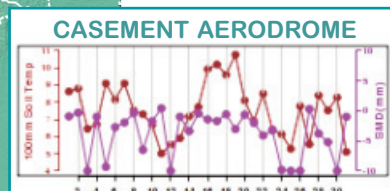
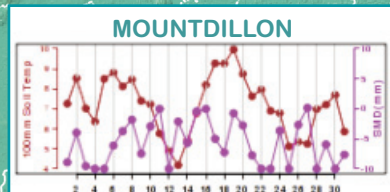
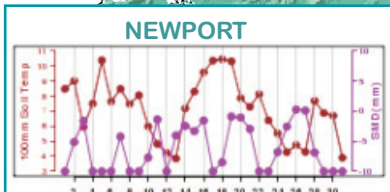
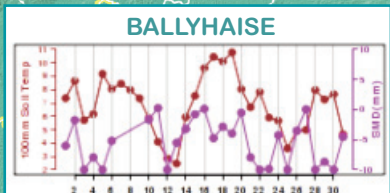
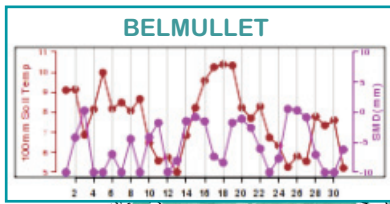
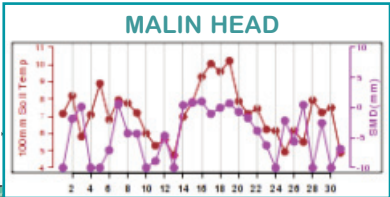
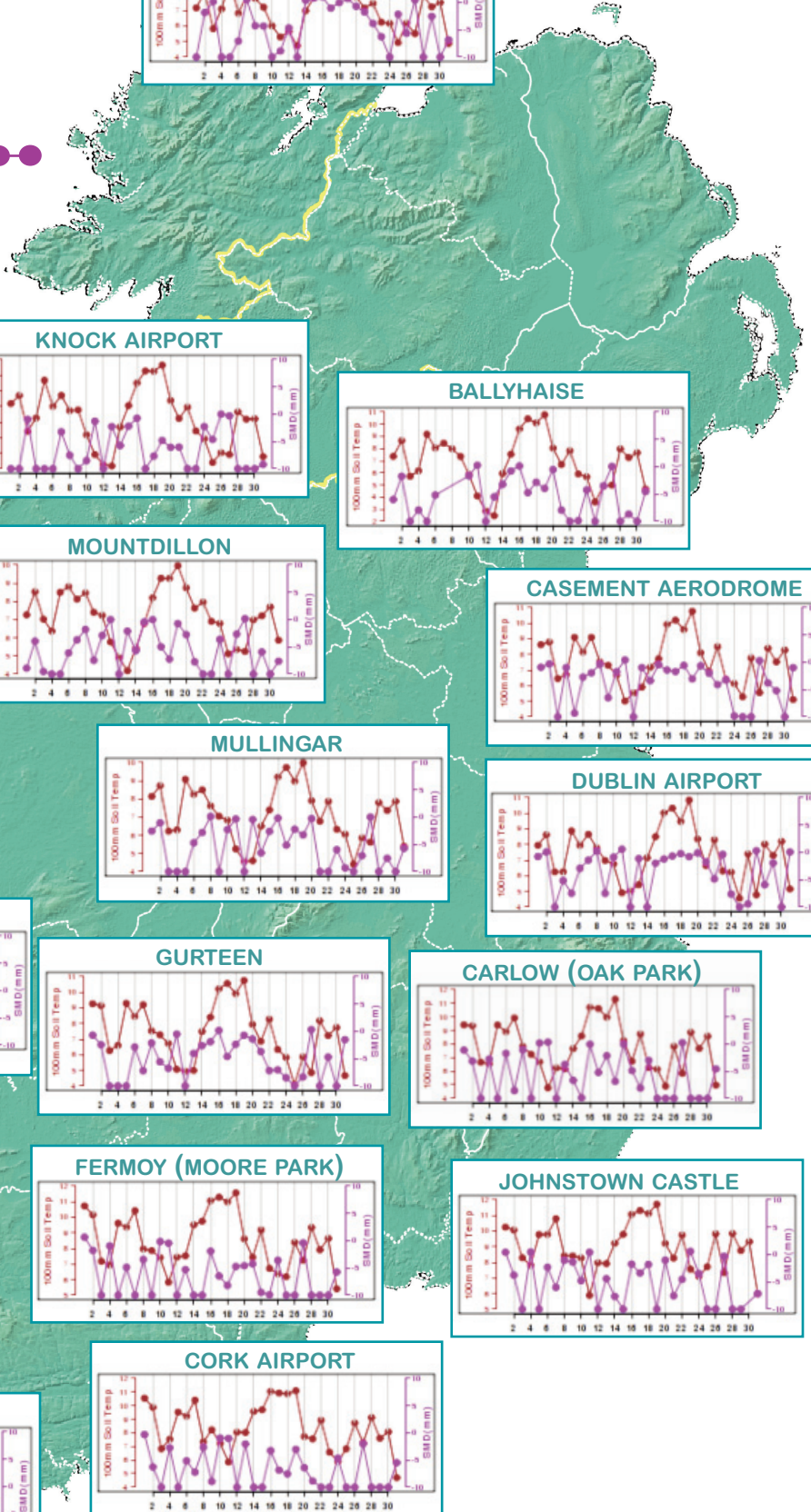
All mean temperatures for December were well above their LTA with differences from LTA ranging from 1.7°C at three stations; Malin Head, Co Donegal, Markree, Co Sligo, Belmullet, Co Mayo to 3.4°C at Dublin (Phoenix Park), with a mean temperature of 8.7°C, its warmest December since 1857 and its second highest on record since the station opened in 1855, while Valentia Observatory had its highest

December mean temperature since 1893 with 10.1°C (2.3°C from LTA). The majority of stations reported it as their warmest on record in the parts of the South, Southwest, Midlands, Southeast and East reported their warmest December on record. Most highest maxima were reported on the 18th, while the lowest minima of the month were recorded on the 13th, 25th and 27th. The month's lowest and highest air temperature were both recorded at the same station at Dublin (Glasnevin); the lowest temperature was -3.1°C on the 27th while the highest 16.6°C was reported on the 18th. The number of days with air frost were up to four days at both Dundalk (Annaskeagh WW), Co Louth and at Knock Airport, Co Mayo. The number of days with ground frost were up to 13 at three stations Straide, Co Mayo, Kilkenny (Greenshill) and Markree, Co Sligo.

Percentage of Long-Term Average (LTA) ranged from just 6% at Sherkin Island, Co Cork with the month's lowest sunshine total of 2.8 hour to 91% at Dublin Airport with the month's highest sunshine total of 48.0 hours. Sherkin Island's low monthly total resulted in a new lowest monthly sunshine total recorded for Ireland. The number of dull days (*days with less than 0.5 hours of sunshine*) ranged from 15 at the Airports at Shannon and Dublin to 30 at Sherkin Island. December's highest daily sunshine was 5.8 hours on the 24th at Clonroche (Knoxtown), Co Wexford.

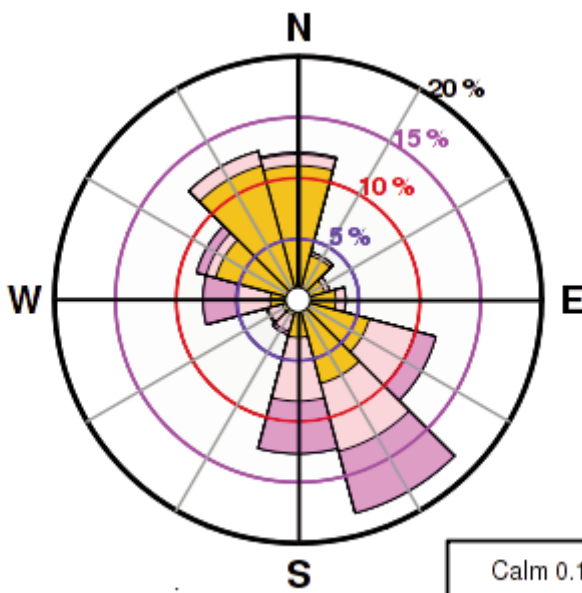
Wind and Elements: Monthly mean wind speeds ranged from 8.9 knots (16.5 km/h) at Fermoy (Moore Park), Co Cork to 21.8 knots (40.4 km/h) at Mace Head, Co Galway. Over half of stations had their highest monthly wind speeds in six to 28 years with Valentia Observatory reporting equalling its windiest December in 41 years with monthly mean wind speeds of 14.8 knots (27.4 km/h). Three named wind storms occurred during the month; Storm Desmond (4th and 5th), Storm Eva (23rd), Storm Frank (29th and 30th). The month's highest gust was 73 knots (135 km/h) at Belmullet on the 23rd, its highest December gust since 2002. The highest 10-minute wind speed was 55 knots (102 km/h) at Sherkin Island, Co Cork on the 30th. Snow was reported on the 12th, 13th, 24th and 31st in parts of the Southwest, Midlands, West and Northwest.

DAILY SOIL MOISTURE DEFICITS & SOIL TEMPERATURES



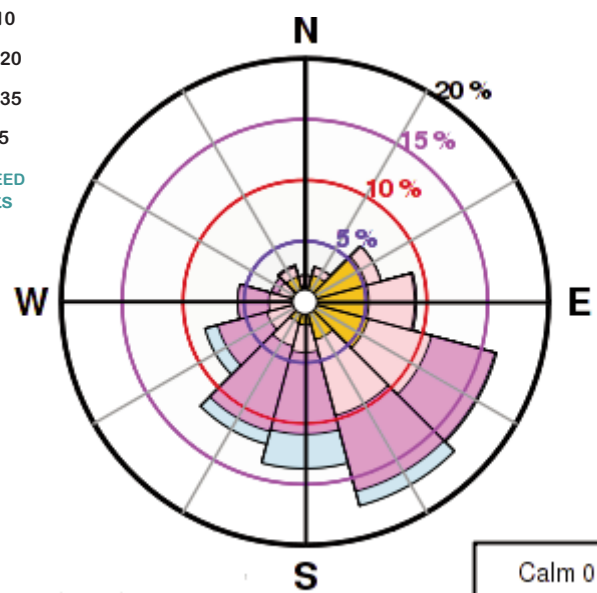
COUNTY / STATION	WIND (knots)										ELEMENTS (no.of days)					
	MEAN SPEED	MAX. 10-MIN. DIR.	MEAN		MAX. GUST DIR.	MAX. GUST SPEED	GUST DATE/TIME	DAYS WITH		HOURS WITH		SNOW	SNOW LYING	HAIL	THUNDER	FOG
			DATE/HOUR	DATE/HOUR				GALES	GUST > 34KNOTS	GUST > 34KNOTS	GUST > 34KNOTS					
CO CARLOW OAK PARK	12.0	220°	37	30/11	230°	52	30/1155	1	15	98						
CO CAVAN BALLYHAISE	9.6	220° 160°	25 25	4/15 23/21	220°	44	4/2053	0	12	48						
CO CLARE SHANNON AIRPORT	12.8	210°	36	22/21	260°	51	30/1040	3	17	84	0	0	1	0	2	
CO CORK FERMOY (MOORE PARK)	8.9	190°	30	30/ 9	190°	46	30/ 911	0	9	40						
SHERKIN ISLAND	19.8	240°	55	30/ 9	230°	72	30/ 855	13	28	278						
ROCHE'S POINT	19.1	200°	52	30/ 9	200°	66	30/ 911	17	26	239						
CORK AIRPORT	14.8	200°	39	30/ 9	200°	56	30/ 807	3	25	189	0	0	0	0	12	
CO DONEGAL MALIN HEAD	19.1	210°	45	4/16	160°	60	29/1808	12	27	275						
FINNER	14.1	220°	39	24/ 8	160°	60	29/1738	4	23	173						
CO DUBLIN DUBLIN AIRPORT	14.9	220°	39	30/14	220°	57	30/1258	1	20	134	0	0	0	0	0	0
CASEMENT AERODROME	15.8	230°	41	30/13	180°	58	30/1046	10	21	193	0	0	1	0	0	0
CO GALWAY MACE HEAD	21.8	260°	47	24/ 6	210°	64	4/1811	18	26	329						
ATHENRY	10.3	210° 220°	27 27	4/17 6/ 2	220°	44	4/1554	0	13	65						
CO KERRY VALENTIA OBSERVATORY	14.8	260°	37	30/ 9	150°	58	29/1222	2	25	185						
CO MAYO CLAREMORRIS	11.5	200°	32	9/12	210°	52	4/1553	0	18	94						
BELMULLET	17.8	200° 180°	50 50	9/12 23/15	190°	73	23/1551	12	23	262						
NEWPORT	13.9	220°	41	9/13	220°	60	9/1334	6	21	162						
KNOCK AIRPORT	12.6	200°	32	9/14	200°	57	9/1216	0	21	126	5					9
CO MEATH DUNSANY (GRANGE)	12.0	230°	31	30/13	240°	53	30/1306	0	13	75						
CO ROSCOMMON MOUNTDILLON	9.6	280°	25	30/12	210°	42	4/1346	0	10	35						
CO TIPPERARY GURTEEN (AG COLLEGE)	12.4	160°	33	29/18	230° 150°	48 48	6/ 243 29/1458	0	14	91						
CO WESTMEATH MULLINGAR	9.3	160°	25	29/16	160°	44	29/1900	0	7	34						
CO WEXFORD JOHNSTOWN CASTLE	12.6	210° 210°	27 27	4/23 5/ 0	210°	46	5/1216	0	20	115						

CARLOW (OAK PARK)



Calm 0.1 %

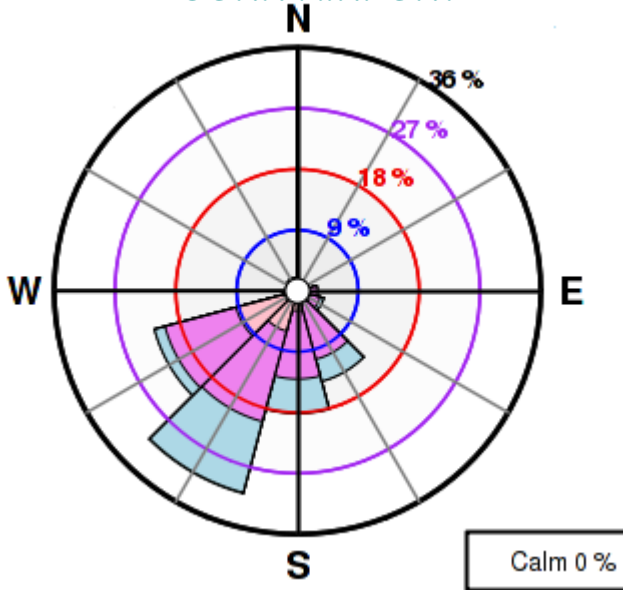
BELMULLET



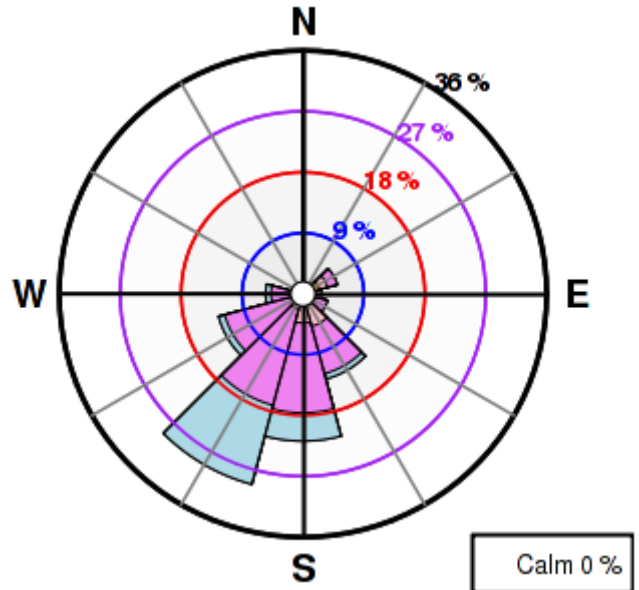
Calm 0 %

PERCENTAGE FREQUENCY OF WIND DIRECTION

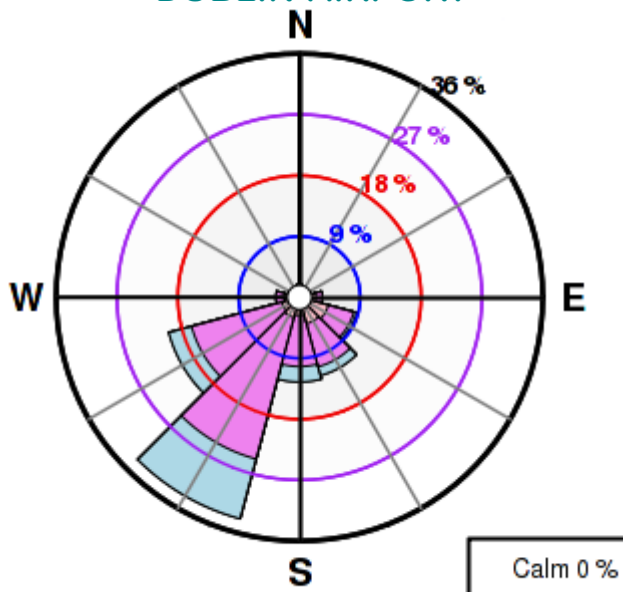
CORK AIRPORT



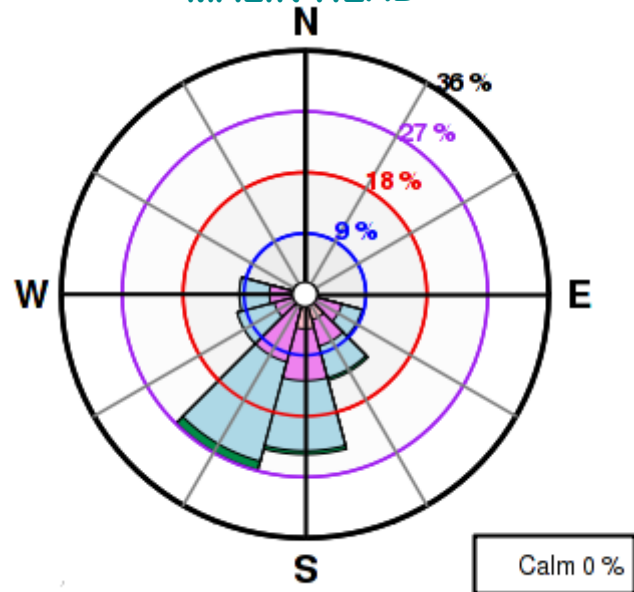
VALENTIA OBSERVATORY



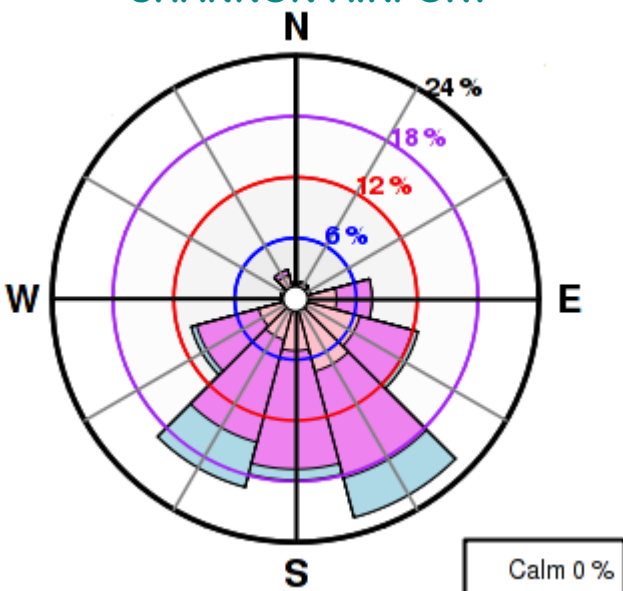
DUBLIN AIRPORT



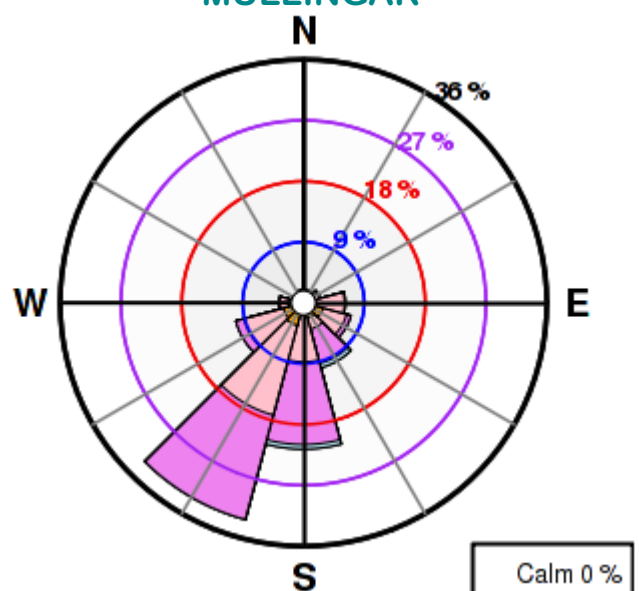
MALIN HEAD



SHANNON AIRPORT



MULLINGAR

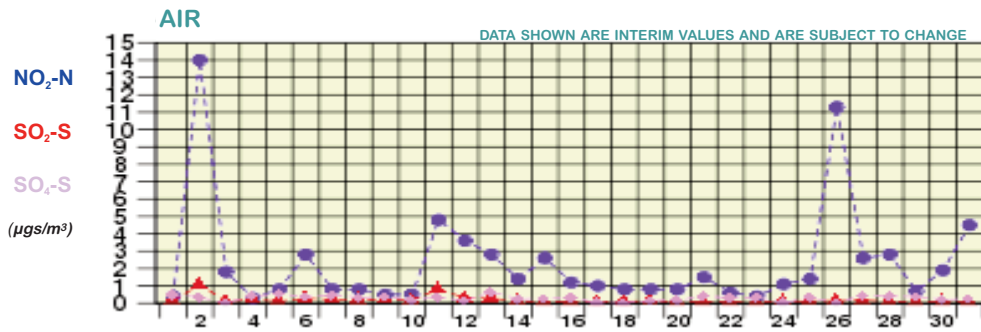
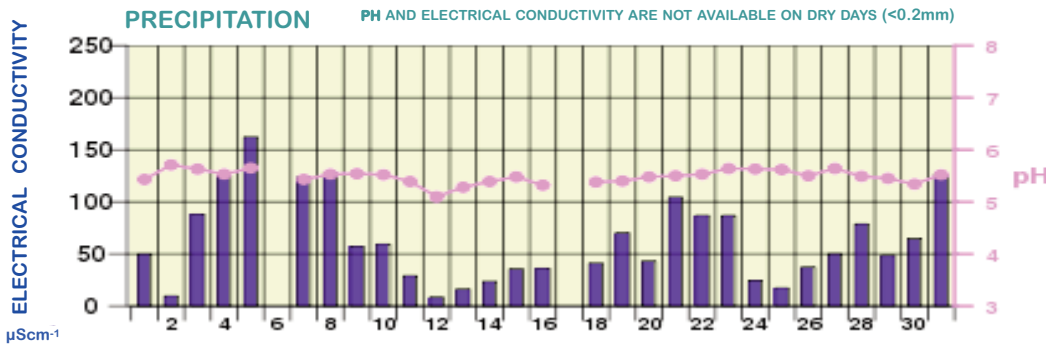


CHEMICAL ANALYSIS OF PRECIPITATION AND AIR SAMPLES AT VALENTIA OBSERVATORY

Acid rain occurs when pollutants combine with moisture in the air to form sulphuric or nitric acid. pH is the simplest way of measuring the acidity of precipitation. Usually pH of 7.00 is considered neutral but this is not the case in rainfall samples. Pure water in the atmosphere has an equilibrium pH value of 5.65 at 20°C owing to carbon dioxide in the air dissolving to form carbonic acid. Any value below pH 5.65 is considered acid while any value above is considered alkaline.

Conductivity measures the total ion activity in the rainfall, i.e. the higher the conductivity the greater the number of ions.

Sulphur dioxide and sulphate in air contribute to the formation of sulphuric acid; nitrate in air contributes to the formation of nitric acid.

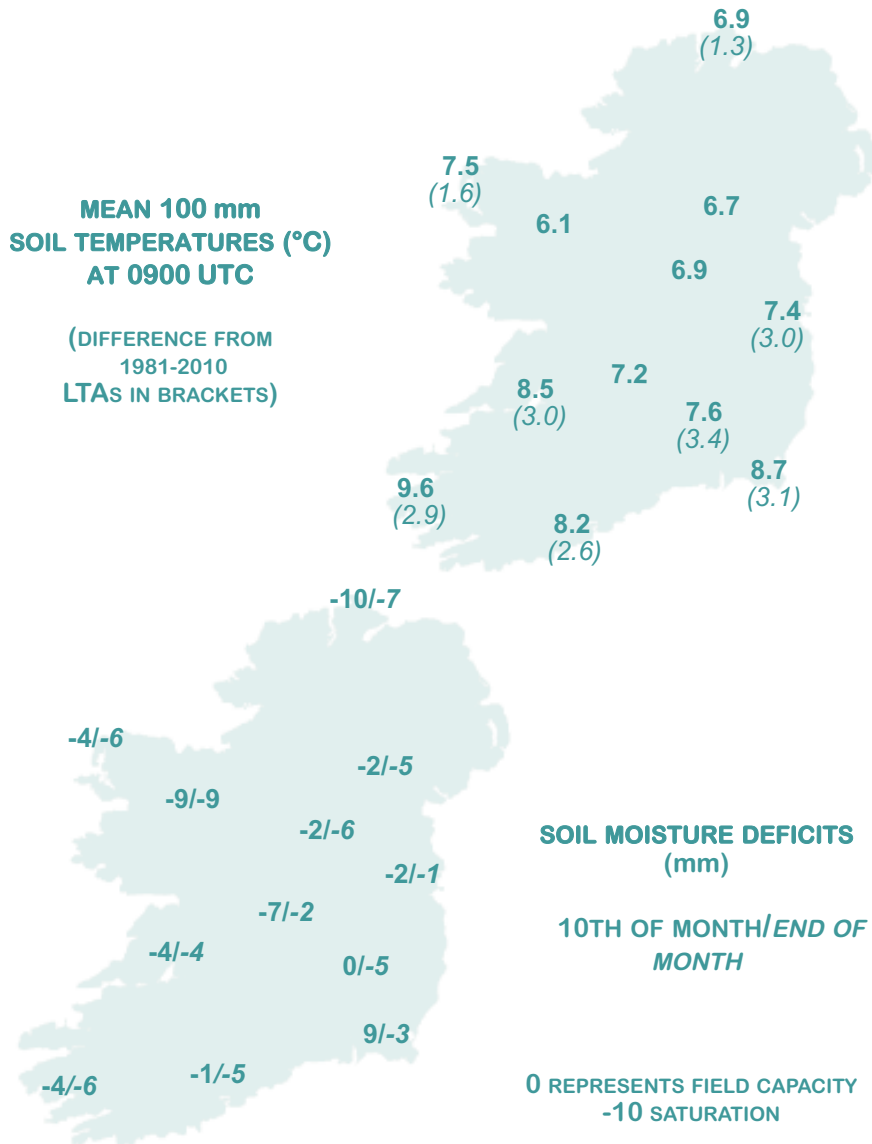


MEAN SOIL TEMPERATURES (°C) AT 0900 UTC

COUNTY/STATION	100 mm	200 mm	300 mm
CO CARLOW			
CARLOW (OAK PARK)	7.6	8.0	8.1
CO. CAVAN			
BALLYHAISE	6.7	7.0	7.4
CO CLARE			
SHANNON AIRPORT	8.5	8.7	9.5
CARRON	7.4		8.2
CO CORK			
ROCHE'S POINT	8.9	9.3	9.5
FERMOY (MOORE PARK)	8.2	8.5	8.8
CORK AIRPORT	8.2	8.9	9.4
SHERKIN ISLAND	9.6	10.1	10.6
BALINCURRIG (PEAFIELD)	8.8	8.9	9.0
CO DONEGAL			
MALIN HEAD	6.9	7.5	8.2
CO DUBLIN			
PHOENIX PARK	7.0	7.6	8.4
DUBLIN AIRPORT	7.1	7.6	8.0
CASEMENT AERODROME	7.4	7.8	8.0
CO KERRY			
VALENTIA OBSERVATORY	9.6	9.8	9.9
CO LIMERICK			
MOUNTRUSSELL	7.4	7.8	
CO MAYO			
BELMULLET	7.5	8.0	8.3
NEWPORT (FURNACE)	6.9	7.2	7.5
STRAIDE	6.8		
KNOCK AIRPORT	6.1	6.4	6.7
CO MEATH			
WARRENSTOWN			
DUNSANY (GRANGE)	6.9	7.7	7.8
CO TIPPERARY			
GURTEEN (AG COLLEGE)	7.2	7.5	7.7
FETHARD (PARSONSHILL)	7.9	8.2	
CO WATERFORD			
DUNGARVAN (CARRIGLEA)		10.1	9.9
CO WESTMEATH			
MULLINGAR	6.9	7.4	8.0
CO. WEXFORD			
JOHNSTOWN CASTLE	8.7	9.1	9.2
JFK PARK	8.7	9.0	9.7
CLONROCHE			---not available---
CO WICKLOW			
ASHFORD (CRONYKEERY)	8.5	8.9	9.3

MEAN 100 mm SOIL TEMPERATURES (°C) AT 0900 UTC

(DIFFERENCE FROM 1981-2010 LTAs IN BRACKETS)



10-DAY VALUES FOR SELECTED AGROMETEOROLOGICAL STATIONS		RAINFALL (mm)				TEMPERATURE (°C)											SUNSHINE (hours)				
STATION	PERIOD	AMOUNT	% OF AVERAGE	RAIN DAYS	WET DAYS	MEAN MAX.	MEAN MIN.	MEAN DAILY	DIFF. FROM AVERAGE	LOWEST MIN.	DATE	DAYS WITH AIR FROST	DEGREE DAYS > 4.4°C	DEGREE DAYS > 10.0°C	LOWEST "GRASS-MIN."	DATE	DAYS WITH GROUND FROST	MEAN 10CM AT 0900H	MEAN 30CM AT 0900H	TOTAL NO. OF HOURS	% OF AVERAGE
CO CORK	1-10	96.7		10	9	11.2	5.9	8.6		2.0	9	0	43	4	1.0	9	0	9.2	9.4	3.5	
BALLINCURRIG	11-20	117.5		10	10	12.2	7.3	9.8		3.0	12	0	54	9	2.5	13	0	9.6	9.4	6.5	
(PEAFIELD)	21-END	190.1		11	11	10.4	3.9	7.2		1.2	25	0	33	3	0.5	31	0	7.7	8.4	14.6	
	MONTH	404.3	308	31	30	11.2	5.6	8.4	2.8	1.2	25	0	130	16	0.5	31	0	8.8	9.0	24.6	45
CO DONEGAL	1-10	199.1		10	9	11.1	4.0	7.6		-0.4	1	1	34	4	-1.8	4	5	-	-	-	
GLENTIES HATCHERY	11-20	39.5		9	8	10.9	6.1	8.5		-1.9	13	1	46	10	-5.7	13	3	-	-	-	
	21-END	112.3		11	11	9.0	3.5	6.3		-0.6	27	1	27	3	-3.2	27	4	-	-	-	
	MONTH	350.9	198	30	28	10.3	4.5	7.4	2.2	-1.9	13	3	107	16	-5.7	13	12	-	-	-	
CO KERRY	1-10	79.7		10	10	12.7	6.9	9.8		4.5	4	0	54	9	3.2	9	0	-	-	-	
ARDFERT	11-20	57.2		10	10	13.3	8.0	10.7		3.7	13	0	62	16	3.7	11	0	-	-	-	
(LISCAHANE)	21-END	112.6		11	11	10.9	4.6	7.8		2.5	25	0	39	5	1.0	25	0	-	-	-	
	MONTH	249.5	191	31	31	12.2	6.4	9.3	2.7	2.5	25	0	155	30	1.0	25	0	-	-	-	
CO MONAGHAN	1-10	59.5		10	9	11.5	4.3	7.9		-0.8	1	1	39	6	-1.1	1	3	-	-	-	
CARRICKMACROSS	11-20	52.1		10	10	11.0	6.0	8.5		-1.9	13	1	46	10	-4.4	13	4	-	-	-	
	21-END	105.8		10	8	9.6	2.9	6.3		0.9	25	0	27	3	-1.9	25	5	-	-	-	
	MONTH	217.4	232	30	27	10.7	4.3	7.5	2.6	-1.9	13	2	112	19	-4.4	13	12	-	-	-	
CO WATERFORD	1-10	104.4		10	9	12.9	6.7	9.8		0.3	9	0	55	11	-3.5	9	2	-	10.4	2.8	
DUNGARVAN	11-20	102.0		10	10	13.6	7.8	10.7		3.7	11	0	63	16	1.0	11	0	-	10.1	4.9	
(CARRIGLEA)	21-END	189.3		11	11	11.9	5.0	8.5		0.7	25	0	46	6	-2.5	25	3	-	9.3	15.5	
	MONTH	395.7	316	31	30*	12.7	6.4	9.6	3.3	0.3	9	0	164	32	-3.5	9	5	-	9.9	23.2	53
CO WEXFORD	1-10	87.2		9	9	11.3	6.4	8.9		1.6	4	0	46	5	0.5	4	0	9.1	9.9	3.2	
JFK PARK	11-20	97.3		10	9	12.3	7.9	10.1		3.2	11	0	57	11	1.1	11	0	9.3	9.8	6.2	
	21-END	148.0		11	11	11.0	4.7	7.9		2.0	31	0	39	4	-1.2	27	2	7.7	9.5	12.9	
	MONTH	332.5	323	30	29	11.5	6.3	8.9	3.0	1.6	4	0	142	20	-1.2	27	2	8.7	9.7	22.3	43
CO WICKLOW	1-10	94.0		9	9	12.2	5.7	9.0		0.0	9	0	47	8	-4.0	9	4	8.9	9.5	8.0	
ASHFORD	11-20	80.1		10	9	12.8	8.3	10.6		3.6	12	0	62	16	-1.7	11	2	9.1	9.4	9.3	
(CRONYKEERY)	21-END	144.2		11	10	11.4	3.1	7.3		-0.8	28	2	37	5	-5.1	28	7	7.6	9.1	16.2	
	MONTH	318.3	311	30	28	12.1	5.6	8.9	2.6	-0.8	28	2	145	29	-5.1	28	13	8.5	9.3	33.5	48

P.E. (PENMAN)		GLOBAL SOLAR RADIATION (MJ/m²)				MONTHLY EVAPORATION (mm) FROM CLASS A PAN			
STATION /COUNTY	TOTAL (mm)	STATION /COUNTY	1ST-10TH	11TH-20TH	21ST-END	TOTAL	COUNTY/ STATION	MONTHLY RAINFALL (mm)	MONTHLY EVAPORATION (mm)
CO CARLOW		CO CARLOW							
CARLOW (OAK PARK)	13	CARLOW (OAK PARK)*	15.22	12.50	17.39	45.11			
CO CAVAN		CO CAVAN							
BALLYHAISE	12	BALLYHAISE*	7.08	11.06	14.99	33.13			
CO CLARE		CO CORK							
SHANNON AIRPORT	19	ROCHE'S POINT*	15.92	17.38	18.48	51.78	CO KERRY		
CO CORK		CO DONEGAL					VALENTIA OBSERVATORY	340.7	30.1*
CORK AIRPORT	9	MALIN HEAD*	10.65	10.82	12.01	33.48	CO KERRY		
CO DONEGAL		CO DUBLIN					NORTH KERRY LANDFILL	N/A	N/A
MALIN HEAD	26	DUBLIN AIRPORT*	15.20	14.13	18.10	47.43	CO MAYO		
CO DUBLIN		CO KERRY					NEWPORT (FURNACE)	278.4	4.2
DUBLIN AIRPORT	20	VALENTIA OBS.*	13.99	13.53	15.00	42.52	CO OFFALY		
CASEMENT AERODROME	17	CO MAYO					DERRYGREENAGH	234.3	7.6
CO KERRY		BELMULLET*	10.50	9.29	11.61	31.40	CO WATERFORD		
VALENTIA OBS.	24	CO TIPPERARY					DUNGARVAN (CARRIGLEA)	395.7	20.1
CO MAYO		GURTEEN (AG.COLLEGE)*	14.20	12.56	16.66	43.42	CO WEXFORD		
BELMULLET	26	CO WESTMEATH					JFK PARK	332.5	15.3
KNOCK AIRPORT	8	MULLINGAR*	13.20	11.14	15.47	39.81			
CO TIPPERARY		CO WEXFORD							
GURTEEN (AG.COLLEGE)	15	JOHNSTOWN CASTLE*	12.83	11.35	17.18	41.36			
CO WESTMEATH									
MULLINGAR	12								
CO WEXFORD									
JOHNSTOWN CASTLE	14								

GLOBAL SOLAR RADIATION VALUES FOR STATIONS MARKED
* ARE PROVISIONAL
* ARE FROM AUTOSOL INSTRUMENTS
RAINFALL VALUES MARKED * ARE ESTIMATED.

Tuesday 1st: Widespread rain, heaviest in Connacht, cleared overnight. Cold, to begin with, in the northern half of the country but the rain introduced much milder air. There were some sunny breaks but mostly cloudy. Winds were fresh to strong, southwesterly, with gales in the West.
Rainfall: Nil at Dublin (Ringsend) to 39.9 mm at Gernapeka
Temperature: Lowest max. 11.7°C at Knock Apt, highest max. 15.3°C at Dublin (Glasnevin).
Lowest min. -0.8°C at Carrickmacross (Dunoge), highest min. 12.0°C at Sherkin Island, Glengarriff (Inacullin)
Sunshine: Nil at numerous locations to 1.6 hours at Shannon Apt

Wednesday 2nd: Dry early in the night but rain and drizzle became widespread later. Some rain and drizzle in eastern areas during the early morning but dry in western parts. The afternoon and evening was mostly dry with some short breaks in cloud. Winds were fresh to strong, southwesterly, with gales in the North and West.
Rainfall: Nil at numerous locations to 34.1 mm at Kinsale (Voc Sch)
Temperature: Lowest max. 8.4°C at Knock Apt, highest max. 14.5°C at Listowel (Gurtcloghane).
Lowest min. 6.5°C at Listowel (Gurtcloghane), highest min. 12.2°C at Dublin (Glasnevin)
Sunshine: Nil at numerous locations to 2.8 hours at Newport (Furnace)

Thursday 3rd: Rain spread from the South to affect the whole country by midday with the heaviest falls in the South and East. A clearance followed during the afternoon clearing the east coast by late evening. Showers moved into the West from the Atlantic shortly before midnight. Winds were moderate to strong, variable in direction.
Rainfall: Nil at numerous locations to 57.7 mm at Kilbride (Togher)
Temperature: Lowest max. 7.2°C at Oak Park, highest max. 12.5°C at Cahore (Kilmichael Hse).
Lowest min. 1.6°C at Straide, highest min. 6.7°C at Dun Laoghaire
Sunshine: Nil at numerous locations to 1.4 hours at Belmullet

Friday 4th: A slight frost in places and isolated showers overnight mainly in the West and South cleared by morning to give a dry start before storm Desmond's arrival. A band of very heavy, continuous rain arrived in the Northwest by the afternoon, giving particularly heavy falls of rain in Connacht, that spread slowly countrywide. Winds were gale to storm force, southwesterly.
Rainfall: 2.1 mm at Clogher Head (Port) to 160.8 mm at Keenagh Beg
Temperature: Lowest max. 10.5°C at Slieve Bloom Mtns (Nealstown), highest max. 14.2°C at Dungarvan (Carriglea).
Lowest min. 0.2°C at Dundalk (Annaskeagh WW), highest min. 5.9°C at Mace Head
Sunshine: Nil at numerous locations to 1.9 hours at Arklow (Ballyrichard Hse)

Saturday 5th: Very strong winds and intense heavy rain from Storm Desmond overnight and through the day, the worst of it in the West and North with lighter amounts of rain in the East. The rain cleared later in the evening. Winds were strong to gale force, southwesterly.
Rainfall: 1.4 mm at Fenor South to 119.5 mm at Leenane (Glanagimla)
Temperature: Lowest max. 11.1°C at Ballincurragh (Peafield), highest max. 14.8°C at Dungarvan (Carriglea).
Lowest min. 5.8°C at Dundalk (Annaskeagh WW), highest min. 11.2°C at Mace Head, Sherkin Island
Sunshine: Nil at all locations

Sunday 6th: The high winds of Storm Desmond eased off through the early hours with the rain also clearing from the Northwest by late morning. Isolated showers followed in light variable winds until further rain in the evening, mainly in the South but spreading northwards. Winds were strong to gale force, variable in direction.
Rainfall: Nil at numerous locations to 49.8 mm at Frenchpark (Callow)
Temperature: Lowest max. 11.4°C at Knock Apt, highest max. 15.1°C at Delphi Lodge.
Lowest min. 2.5°C at Cloosh (For Stn), highest min. 9.6°C at Johnstown
Sunshine: Nil at numerous locations to 4.1 hours at Straide

Monday 7th: Wet and windy weather overnight with light intermittent rain to begin with. Rain became heavier and more persistent in the afternoon in the West and moved across the country, with scattered showers following later in the evening in the South and West. Winds were fresh to strong, southerly with gales in the South.
Rainfall: Nil at Slane (Ardcalf) to 56.3 mm at Frenchpark (Callow)
Temperature: Lowest max. 11.5°C at Slieve Bloom Mtns (Nealstown), highest max. 15.0°C at Delphi Lodge.
Lowest min. 1.1°C at Dundalk (Annaskeagh WW), highest min. 8.1°C at Sherkin Island
Sunshine: Nil at numerous locations to 0.2 hours at Casement

Tuesday 8th: Showery rain overnight, with a more organised band of rain crossing the country during the early afternoon. Showers returned to Atlantic coasts later on. Conditions were mild for December; some sunny breaks everywhere. Winds were fresh to strong, southwesterly with gales in the West and South.
Rainfall: Nil at numerous locations to 43.3 mm at Leenane (Glanagimla)
Temperature: Lowest max. 9.9°C at Knock Apt, Athy (Chanterlands), highest max. 12.5°C at Killarney (Muckross Hse), Maam Valley.
Lowest min. 4.2°C at Adare Manor, highest min. 9.6°C at Dublin (Glasnevin)
Sunshine: 0.6 hours at Ballyshannon (Cathleen's Fall) to 4.6 hours at Ashford (Cronykeery)

Wednesday 9th: Rain crossed the northern half of the country overnight. Dry for the early part of the day but more rain reached the West by early afternoon and crossed the country through the afternoon and evening. There were some heavy, squally downpours mixed in with otherwise light rain. It was mostly cloudy and mild for December. Winds were fresh to strong, southwesterly with gales to storm force winds on Atlantic coasts.
Rainfall: 0.5 mm at Boolavogue Knockavocca to 50.1 mm at Gernapeka
Temperature: Lowest max. 10.0°C at Slieve Bloom Mtns (Nealstown), highest max. 13.5°C at Killarney (Muckross Hse).
Lowest min. 0.0°C at Ashford (Cronykeery), highest min. 7.5°C at Sherkin Island
Sunshine: Nil at numerous locations to 0.7 hours at Casement

Thursday 10th: Some showers in the West overnight and in the morning but mainly dry over the East, with some sunshine. The showers became widespread during the afternoon, heavy in places. Winds were moderate to strong, southwesterly with gales in the West.
Rainfall: Nil at numerous locations to 41.3 mm at Oldbridge (Ookview)
Temperature: Lowest max. 5.1°C at Knock Apt, highest max. 12.2°C at Dungarvan (Carriglea).
Lowest min. 1.5°C at Markree, highest min. 9.0°C at Sherkin Island
Sunshine: Nil at numerous locations to 4.2 hours at Dublin Apt

Friday 11th: Overnight showers affected the western half of the country. These became confined to Connacht and west Ulster by midday and died out by late afternoon. Widespread rain moved into the South of the country during the early night and moved northeastwards towards midnight. Winds were fresh to strong, westerly with gales in the North.
Rainfall: 2.9 mm at Clogherhead (Port) to 74.1 mm at Gernapeka
Temperature: Lowest max. 6.5°C at Knock Apt, highest max. 13.5°C at JFK Park.
Lowest min. -0.3°C at Dundalk (Annaskeagh WW), highest min. 8.1°C at Sherkin Island
Sunshine: 0.1 hours at Sherkin Island to 5.4 hours at Dublin Apt

Saturday 12th: Rain overnight, heavy in the Southwest, spread countrywide and continued until the afternoon, with some wintry falls in the North of the country and on high ground. The rain gradually retreated south affecting southern parts of Munster and Leinster by evening. There were cooler temperatures in the northern half of the country. Winds were fresh to strong, variable in direction.
Rainfall: Nil at numerous locations to 40.2 mm at Dereen
Temperature: Lowest max. 2.3°C at Knock Apt, highest max. 14.4°C at Dungarvan (Carriglea).
Lowest min. -0.3°C at Knock Apt, highest min. 6.8°C at Sherkin Island
Sunshine: Nil at all locations

Sunday 13th: Some overnight frost and fog in the northern half, before rain from the South (some snow flurries overnight in the Midlands) spread country wide, heavy in places, and cleared northwards with the passing warm front to drier conditions behind. Also some falls of snow on high ground in the North as rain lingered from the front, with some further rain arriving later in the South. Winds were moderate to strong, easterly.
Rainfall: Nil at numerous locations to 31.8 mm at Waterville Oative No.9
Temperature: Lowest max. 7.8°C at Ballinamore, highest max. 13.3°C at Valentia Obs.
Lowest min. -3.1°C at Markree, highest min. 6.7°C at Wexford Wildfowl Reserve
Sunshine: Nil at all locations

Monday 14th: Dry overnight in the northern half of the country. A band of rain in the South tracked north across the country giving some heavy falls, particularly early on in the South but leaving scattered showers in its wake, before further rain arrived in the South later in the evening. Winds were moderate to strong, southeasterly.
Rainfall: Nil at numerous locations to 34.5 mm at Coomclogh
Temperature: Lowest max. 8.7°C at Knock Apt, highest max. 13.9°C at Listowel (Bunaghara).
Lowest min. 0.0°C at Ballyhaise, Cavan (Drumconnick), highest min. 11.8°C at Valentia Obs
Sunshine: Nil at numerous locations to 1.1 hours at Shannon Apt

Tuesday 15th: A cloudy but mild day. Temperatures rose as the day went on due to a warm southerly airflow and many stations recorded their highest values after nightfall. Scattered showers and bands of rain followed and the southern half of the country had some heavy spells of rain. Winds were moderate to strong, southeasterly with gales on Atlantic coasts.
Rainfall: Nil at Dromod (Ruskey) to 43.2 mm at Cloone Lake (Caragh River Area)
Temperature: Lowest max. 11.1°C at Knock Apt, highest max. 15.7°C at Mallow (Hazelwood).
Lowest min. 4.5°C at Dundalk (Annaskeagh WW), highest min. 10.5°C at Killarney (Muckross Hse)
Sunshine: Nil at all locations

Wednesday 16th: Rain in the East cleared quickly during the early hours of the morning. It was mostly dry through to the afternoon when patchy rain began to affect the South and West. It was generally cloudy, very mild for time of year. Winds were moderate to strong, southwesterly.
Rainfall: Nil at Dublin (Ringsend) to 33.6 mm at Gernapeka
Temperature: Lowest max. 12.0°C at Cashel (Ballydoyle Hse), highest max. 16.0°C at Malin Head, Dublin (Glasnevin).
Lowest min. 6.6°C at Dundalk (Annaskeagh WW), highest min. 11.2°C at Valentia Obs, Waterford (Tycor), Dublin (Glasnevin) and Piltown (Kildalton Agr Col)
Sunshine: Nil at numerous locations to 1.3 hours at Arklow (Ballyrichard Hse)

Thursday 17th: Rain overnight cleared the east coast around dawn. Heavy showers developed in the western half of the country during the afternoon and evening. There were exceptionally mild conditions during the early morning hours. There were some short sunny breaks, the best of these in the East. Winds were fresh to strong, southwesterly.

Rainfall: Nil at numerous locations to 30.9 mm at Keenagh Beg
Temperature: Lowest max. 10.7°C at Knock Apt, highest max. 14.6°C at Dublin (Glasnevin), Killarney (Muckcross Hse). Lowest min. 7.6°C at Dundalk (Annaskeagh WW), highest min. 12.6°C at Killarney (Muckcross Hse)
Sunshine: Nil at numerous locations to 2.9 hours at Casement

Friday 18th: Rain and drizzle in the South and Southwest spread to the Northeast overnight. The rain cleared in the Southwest during the morning and cleared the east coast by early afternoon. There were showers during the afternoon and southerly winds became strong and gusty. There were more showers through the evening and night in the West. Winds were fresh to strong, southerly with gales on Atlantic coasts.

Rainfall: Nil at Straffan (Turnings) to 43.3 mm at Leenane (Glanagimla)
Temperature: Lowest max. 12.7°C at Roches Pt, highest max. 16.6°C at Dublin (Glasnevin). Lowest min. 7.8°C at Dundalk (Annaskeagh WW), highest min. 12.2°C at Valentia Obs
Sunshine: Nil at numerous locations to 0.4 hours at Dublin Apt

Saturday 19th: Overnight rain in the Midlands and South moved eastwards. A clearance followed but further showers moved in to the West from the Atlantic, moving east across the country during the late morning and afternoon. A further band of rain moved into the east and southeast coasts during the evening, becoming more widespread towards midnight. Winds were fresh to strong, southwesterly, with gales in the West.

Rainfall: Nil at numerous locations to 18.3 mm at Bantry (Shandrum)
Temperature: Lowest max. 10.9°C at Knock Apt, highest max. 16.1°C at Dublin (Glasnevin). Lowest min. 7.0°C at Ballycroy (Knockmoyleen), highest min. 13.4°C at Dublin (Glasnevin)
Sunshine: Nil at numerous locations to 2.9 hours at Dublin (Glasnevin)

Sunday 20th: As a band of heavy rain cleared the East, heavy showers arrived in the West and South overnight. Hail and isolated thunder showers became more widespread through the day, particularly in the morning but with good sunny spells. Towards evening showers became more scattered and isolated. Winds were fresh to strong, southwesterly.

Rainfall: 0.4 mm at Naas (Osberstown), Dun Laoghaire to 28.5 mm at Gernapeka
Temperature: Lowest max. 8.2°C at Knock Apt, highest max. 14.0°C at Dungarvan (Carriglea). Lowest min. 5.0°C at Knock Apt, highest min. 10.3°C at Wexford Wildfowl Reserve
Sunshine: 0.2 hours at Straide, Sherkin Island to 4.9 hours at Dublin Apt

Monday 21st: Rain arrived overnight in the West and spread quickly eastwards to all parts, clearing by the afternoon and turning into sunny spells and scattered showers. A further spell of heavy rain from the Southwest passed through the evening. There were mild conditions overall. Winds were fresh to strong, southwesterly with gales on Atlantic coasts.

Rainfall: 0.3 mm at Gowran to 67.5 mm at Gernapeka
Temperature: Lowest max. 10.0°C at Craggaunowen, highest max. 14.9°C at Glengarriff (Ilmacullin). Lowest min. 1.1°C at Ashford (Cronykeery), highest min. 7.5°C at Belmullet, Sherkin Island
Sunshine: Nil at Sherkin Island to 5.5 hours at Shannon Apt

Tuesday 22nd: Heavy rain cleared eastwards through the morning followed by sunny spells and scattered showers, some heavy and with isolated hail and thunder, particularly in the afternoon in the West and Southeast. Winds were strong to gale force, southwesterly.

Rainfall: Nil at Dublin (Ringsend) to 26.5 mm at Gap of Dunloe
Temperature: Lowest max. 7.8°C at Knock Apt, highest max. 13.5°C at Mallow (Hazelwood). Lowest min. 4.2°C at Ballycroy (Knockmoyleen), highest min. 10.0°C at Wexford Wildfowl Reserve
Sunshine: Nil at numerous locations to 2.8 hours at Ballyshannon (Cathleen's Fall), Shannon Apt

Wednesday 23rd: There were some scattered showers during the day before a band of rain with embedded heavy bursts approached the west coast just after dark reaching the east coast after midnight. Temperatures rose during the day to the low teens. The arrival of Storm Eva, brought winds that were strong to gale force, southwesterly with storm force winds on the western coasts.

Rainfall: 2.3 mm at Lough Glencar and Castlebridge (Sewage Works) to 46.7 mm at Cloone Lake (Caragh River Area)
Temperature: Lowest max. 8.2°C at Craggaunowen, highest max. 12.9°C at Dublin (Glasnevin). Lowest min. 0.0°C at Ballycroy (Knockmoyleen), highest min. 6.6°C at Sherkin Island
Sunshine: Nil at Sherkin Island to 5.0 hours at Dublin Apt

Thursday 24th: It was very mild during the early hours but temperatures dropped during rain. There were a few sunny breaks, the best of these in the South and East. Winds were moderate to gale force, southwesterly.

Rainfall: Nil at Dundalk (Annaskeagh WW) to 69.5 mm at Moneypoint E.S.B.
Temperature: Lowest max. 4.0°C at Knock Apt, highest max. 11.9°C at Sherkin Island. Lowest min. 1.3°C at Carrickmacross (Dunoge), highest min. 5.9°C at Dublin (Glasnevin)
Sunshine: 0.2 hours at Newport (Furnace) to 5.8 hours at Clonroche (Knoxstown)

Friday 25th: Cold and frosty in the early hours of the morning but cloud and rain moved up from the South reaching most areas by dawn. The rain continued through the afternoon, clearing the West towards evening and became lighter and patchy elsewhere. Temperatures in the North were low but were milder further South, in Munster and Leinster. Rainfall totals were highest in the South and East. Winds were strong to gale force, southeasterly.

Rainfall: Nil at numerous locations to 55.7 mm at Gernapeka
Temperature: Lowest max. 3.4°C at Knock Apt, highest max. 13.6°C at Valentia Obs. Lowest min. -0.8°C at Dundalk (Annaskeagh WW), highest min. 5.8°C at Sherkin Island
Sunshine: Nil at all locations

Saturday 26th: Rain over the southern half of the country overnight, but dry in the North. The rain continued in the South during the morning with occasional showers in the North. The rain spread further North during late afternoon and evening, with a clearance in the Southwest by mid-afternoon. Rain in the East in the early evening, mostly dry over southern parts and clearing all areas by late evening. Winds were moderate to strong, variable in direction.

Rainfall: 0.1 mm at numerous locations to 39.4 mm at Gap of Dunloe
Temperature: Lowest max. 4.1°C at Knock Apt, highest max. 12.7°C at Wexford Wildfowl Reserve. Lowest min. 0.0°C at Ballymore, highest min. 10.0°C at Cloyne (Lisanley)
Sunshine: Nil at numerous locations to 0.1 hours at Belmullet

Sunday 27th: Overnight frost cleared quickly. Cloud increased from the South during the afternoon with patchy drizzle and with a band of rain moving northwards across the country. It was an overcast evening, mostly dry but with further patchy drizzle during the early night. Winds were moderate to strong, southeasterly.

Rainfall: Nil at numerous locations to 28.8 mm at Coomclogh
Temperature: Lowest max. 10.7°C at Slieve Bloom Mtns (Nealstown), highest max. 15.4°C at Delphi Lodge. Lowest min. -3.1°C at Dublin (Glasnevin), highest min. 6.0°C at Ballycroy (Knockmoyleen)
Sunshine: Nil at numerous locations to 3.8 hours at Dublin Apt

Monday 28th: Rain moved into the Southwest of the country during the night and extended to all parts of the country by the afternoon. The rain continued into the evening and began to clear northwards towards midnight. Winds were fresh to strong, southeasterly.

Rainfall: 2.1 mm at Valentia Obs to 64.0 mm at Pitttown (Kildalton Agr Col)
Temperature: Lowest max. 10.7°C at Cloosh (For Stn), highest max. 14.5°C at Mullagh (Carrowlagan). Lowest min. -1.5°C at Dublin Apt, highest min. 10.1°C at Sherkin Island
Sunshine: Nil at all locations

Tuesday 29th: There were isolated showers, some heavy, but a dry cloudy start to the day with some sunny spells in the afternoon. Heavy rain approached the Southwest and spread eastwards and countrywide as the southerly winds increased along the Atlantic coast with the arrival of Storm Frank. Winds were moderate to strong, southeasterly with gales on north and west coasts.

Rainfall: 6.2 mm at Malahide Castle to 128.6 mm at Cloone Lake (Caragh River Area)
Temperature: Lowest max. 9.0°C at Cavan (Drumconnick), highest max. 14.9°C at Dublin (Glasnevin). Lowest min. 3.4°C at Knock Apt, Dundalk (Annaskeagh WW), highest min. 9.0°C at Wexford Wildfowl Reserve
Sunshine: Nil at numerous locations to 1.5 hours at Dublin Apt

Wednesday 30th: Very windy overnight with gale force winds and widespread heavy rain, some thundery, as Storm Frank continued. Winds eased slightly before increasing again, veering westerly in the morning. There was widespread heavy rain overnight, some thundery. The rain cleared slowly eastwards with some heavy rain, hail and sleet showers and a little frost later in the night. The highest rainfall was in the South, winds were strong to gale force, southerly with storms on the Atlantic coast.

Rainfall: 1.3 mm at Gurteen to 38.2 mm at Kilcoole (Treatment Plant)
Temperature: Lowest max. 6.8°C at Sligo Airport, Belderrig, highest max. 12.8°C at Dungarvan (Carriglea). Lowest min. 2.5°C at Ballycroy (Knockmoyleen), highest min. 8.7°C at Wexford Wildfowl Reserve
Sunshine: Nil at numerous locations to 1.6 hours at Straide, Dublin Apt

Thursday 31st: Showers moved north and east across Ireland during the first half of the day, gradually dying out by early evening. There were some breaks in the cloud everywhere giving a few sunny spells. It turned cold after dark with widespread frost. Winds were fresh to strong, southwesterly, in the Midlands and gale to storm force on the west coast.

Rainfall: Nil at Dundalk (Annaskeagh WW) to 33.0 mm at Clonmel (Redmondstown)
Temperature: Lowest max. 3.3°C at Knock Apt, highest max. 10.1°C at Mallow (Hazelwood), Waterford (Tycor). Lowest min. -1.2°C at Slieve Bloom Mtns (Nealstown), highest min. 6.0°C at Sherkin Island
Sunshine: Nil at numerous locations to 2.7 hours at Cork Apt

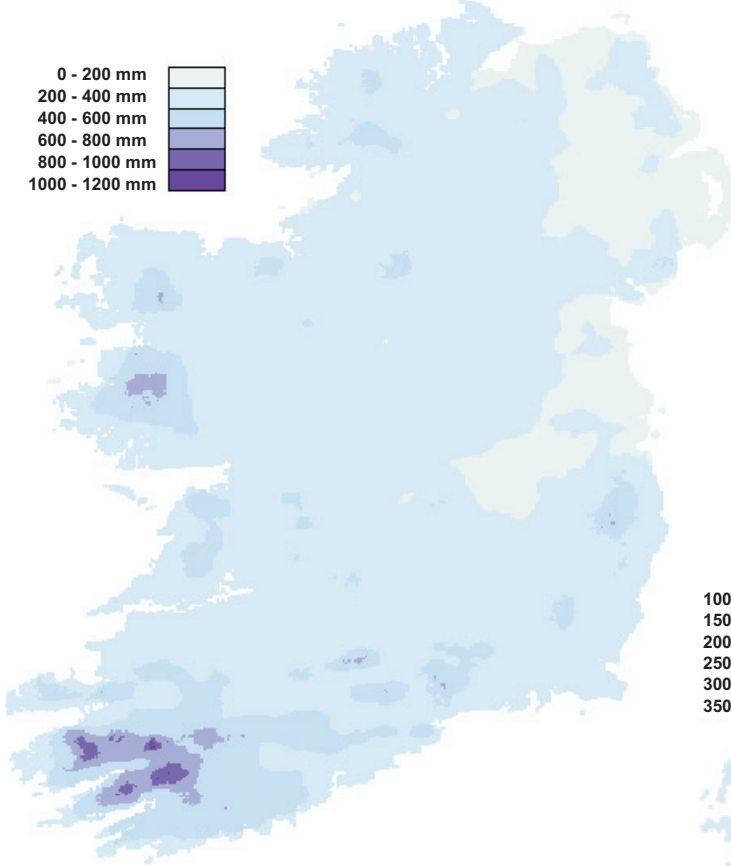
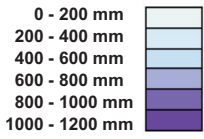
NEARLY FOUR TIMES THE AVERAGE RAINFALL REPORTED IN PARTS

Rainfall totals were all above their Long-Term Average (LTA). Nearly three-quarters of stations reported double or more of their normal December rainfall, with parts of Cork, Tipperary and Kilkenny reporting over 350% of their LTAs. Percentage of LTA values ranged from 111% at Glentornan (Grogan More), Co Donegal (monthly total of 234.9 mm) to 395% at Piltown (Kildalton Ag College), Co Kilkenny (monthly total of 401.0 mm), its highest December rainfall on available record since the station opened in 1971. Four-fifths of stations reported their wettest December on record. The longest series of observations exceeded at Malin Head, Co Donegal reported its wettest December since 1885 with 262.5 mm (226% of LTA). The month's lowest rainfall total was at Malahide Castle, Co Dublin with a monthly total of 149.0 mm (219% of LTA) its wettest December since 1981. Five stations exceeded the previous record for Ireland's highest monthly rainfall total (previous record was October 1996 at a gauge in the Cummeragh Mountains, Co Kerry with 790.0 mm). The five stations were; Ballingearry (Tooreenaneen), Co Cork with 800.2mm, Ballingearry (Vocational School), Co Cork with 818.2 mm, Breenreagh Mountains, Co Kerry with 879.9 mm, Cloone Lake (Caragh River Area), Co Kerry with 910.7mm and at Gernapeka, Co Cork with 943.5 mm, the new Irish record for both December and any month. Mainly the month's wettest days were mainly reported around the time of Storm Frank (affected Ireland on the 29th and 30th). However the month's highest daily rainfall was reported at Keenagh Beg, Co Mayo on the 4th during Storm Desmond (affected Ireland on the 4th and 5th) with 160.8 mm, its highest daily rainfall on record since the station opened in 1944.

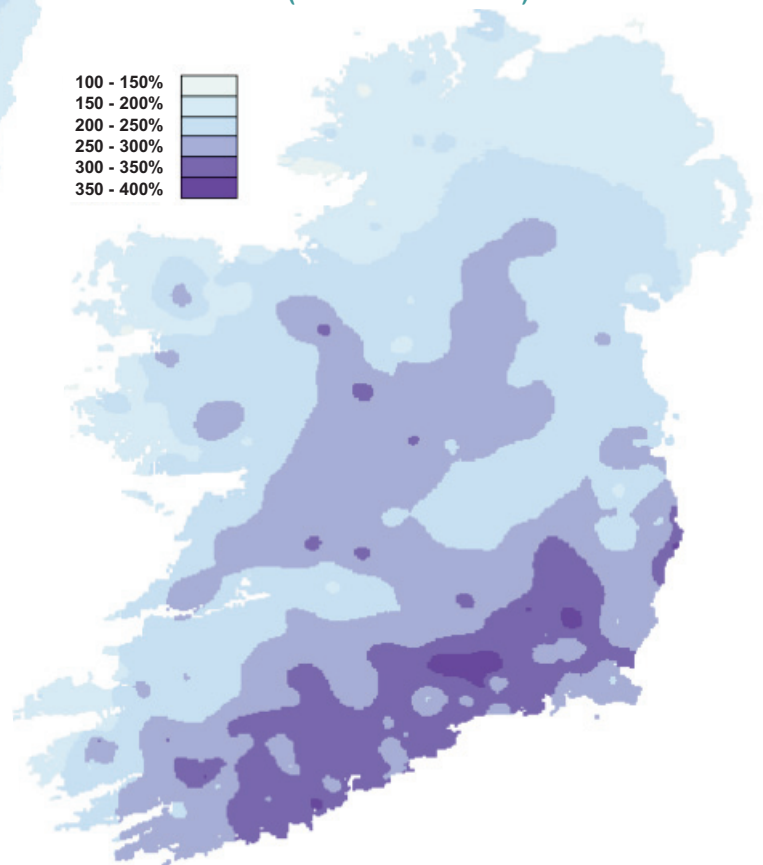
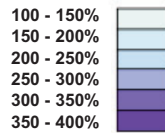
COUNTY/ STATION	TOTAL AMOUNT (mm)	% OF 1981-2010 AVERAGE	MOST IN A DAY / DATE		NUMBER OF RAINDAYS WETDAYS (≥0.2mm) (≥1mm)	
CO CARLOW						
CARLOW (OAK PARK)	269.6	322	29.8	29	30	28
CO CAVAN						
BALLYHAISE	257.8	252	33.5*	28	29*	27*
CO CLARE						
CARRON	401.2	228	61.7	4	31	31
SHANNON AIRPORT	233.1	224	24.7	11	31	30
CO CORK						
BALLINCURRIG (PEAFIELD)	404.3	308	71.6	29	31	30
CORK AIRPORT	403.7	303	61.4	29	31	30
FERMOY (MOORE PARK)	325.9	314	47.6	29	31	30
ROCHE'S POINT	342.2	343	35.0	29	31	30
SHERKIN ISLAND	294.5	226	32.0	29	31	31
CO DONEGAL						
BALLYSHANNON (CATHLEEN'S FALL)	235.7	194	44.1	4	31	25
GLENTIES HATCHERY	350.9	198	80.4	4	30	28
MALIN HEAD	262.5	226	66.0	5	28	24
CO DUBLIN						
CASEMENT AERODROME	205.2	271	30.8	3	29	26
DUBLIN (MERRION SQUARE)	182.1	269	32.8	3	28	23
DUBLIN AIRPORT	192.1	264	30.8	3	30	23
DUBLIN (PHOENIX PARK)	192.8	251	29.8*	3	30*	25*
CO GALWAY						
MAAM VALLEY	555.6	182	95.6	5	30	29
CO KERRY						
ARDFERT (LISCAHANE)	249.5	191	23.1	29	31	31
VALENTIA OBSERVATORY	340.7	207	35.7	29	31	31
CO LIMERICK						
MOUNT RUSSELL	374.0	314	38.7*	29	31*	31*
CO MAYO						
BELMULLET	246.6	179	33.8	5	30	27
DELPHI LODGE	452.3		59.2*	4	31*	31*
KNOCK AIRPOR	337.5	239	51.4	5	31	28
STRAIDE	308.3	227	48.3	4	30	28
CO MEATH						
WARRENTOWN	-----		not available		-----	-----
CO MONAGHAN						
CARRICKMACROSS (DUNOGE)	217.4	232	28.5	29	30	27
CO OFFALY						
DERRYGREENAGH	234.3	260	32.0*	29	30*	29*
CO ROSCOMMON						
MOUNTDILLON	257.1	234	33.2	4,5	30	29
CO SLIGO						
ARDTARMON	211.5	190	39.6	5	30	24
CO TIPPERARY						
FETHARD (PARSONSHILL)	263.9	289	25.9	29	31	29
GURTEEN (AG.COLLEGE)	216.0	236	23.0	4	31	29
CO WATERFORD						
DUNGARVAN (CARRIGLEA)	395.7	316	58.2*	29	31*	30*
WATERFORD (TYCOR)	319.3	325	40.9	29	30	30
CO WESTMEATH						
MULLINGAR	271.2	286	33.1	28	30	27
CO WEXFORD						
CLONROCHE (KNOXTOWN)	279.9		40.8*	29	31*	29*
JOHNSTOWN CASTLE	267.1	243	34.6	25	31	28
CO WICKLOW						
ASHFORD (CRONYKEERY)	318.3	311	45.6	29	30	28

* ESTIMATED DATA USED IN CALCULATION. TABLE REPRESENTS DATA FROM A SMALL SELECTION OF RAINFALL STATIONS. ALL DATA IS 09-09 HR

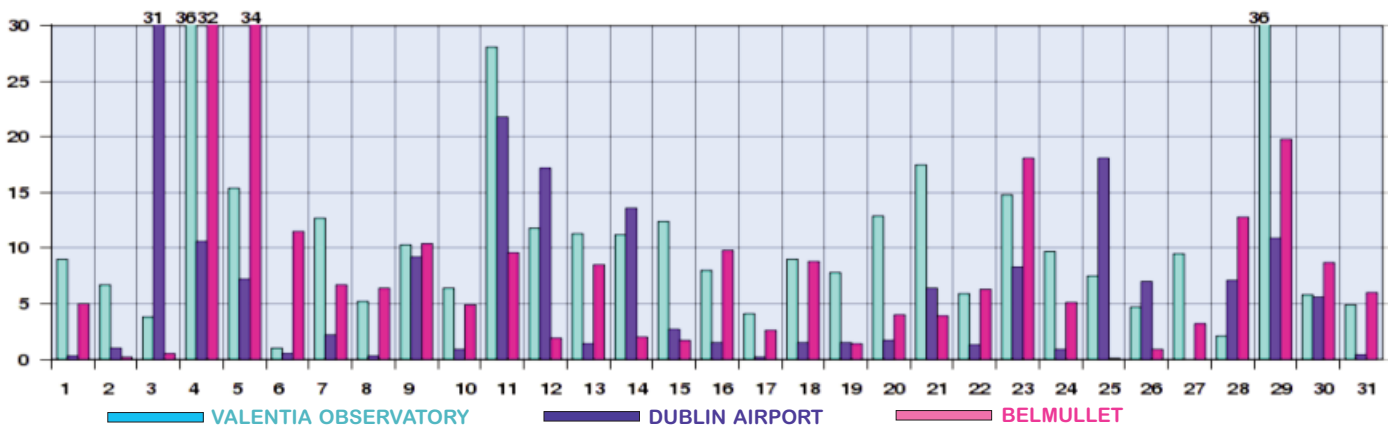
TOTAL RAINFALL (mm)



PERCENTAGE OF NORMAL RAINFALL
(1981-2010 NORMALS)

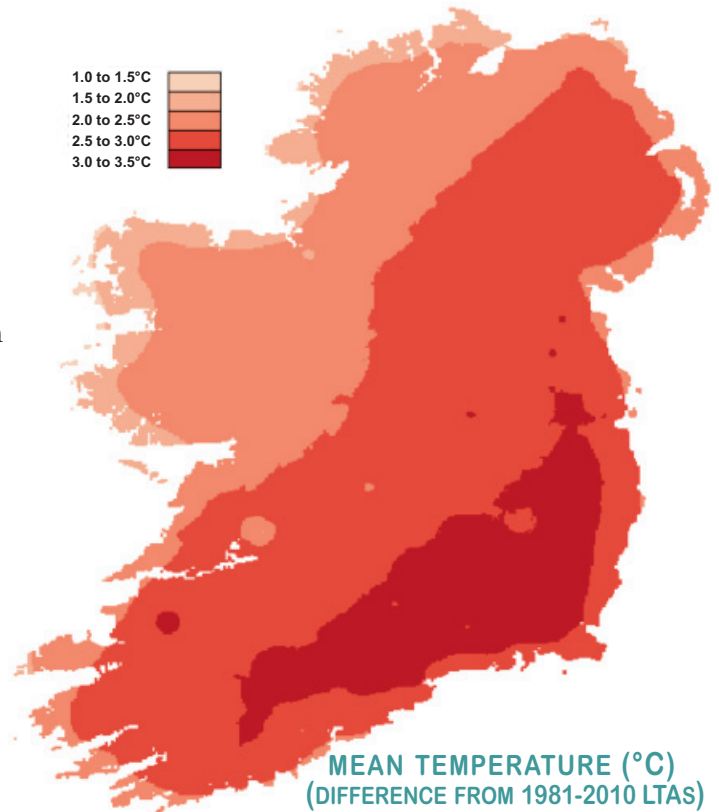


DAILY 0901-0900hr RAINFALL VALUES (mm)



WARMEST DECEMBER ON RECORD IN SOME PLACES

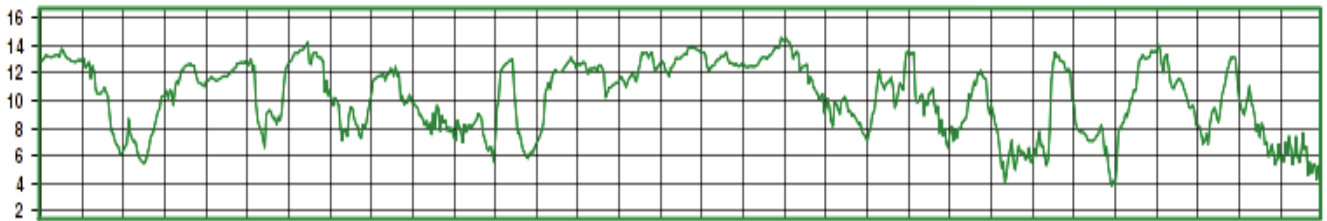
All stations reported above Long-Term Average (LTA) mean air temperatures for December, with deviations from LTA over 3.0°C in part of the East, Southeast and South. Deviations from LTA were as much as 3.4°C at Dublin (Phoenix Park), with a mean temperature of 8.7°C, its warmest December since 1857 and its second highest on record since the station opened in 1855. Mean temperatures ranged from 6.3°C at Knock Airport, Co Mayo (2.0°C from LTA) to 10.4°C at Sherkin Island, Co Cork (2.5°C from LTA), both their warmest December's on record since the stations opened in 1996 and 1974, respectively. Many stations in the South, Southwest, Midlands, Southeast and East reported their warmest December on record with Valentia Observatory, Co Kerry reporting the second longest series of observations exceeded with a mean temperature of 10.1°C (2.3°C from LTA), its highest for December since the station opened in 1893. The month's lowest and highest air temperature were both recorded at the same station at Dublin (Glasnevin). Here, December's lowest air minimum was reported on the 27th with -3.1°C, while on the 18th it also reported the month's highest temperature of 16.6°C. In general the majority of highest maxima were also recorded on the 18th and ranged from 12.9°C at Cork Airport to 16.1°C at both



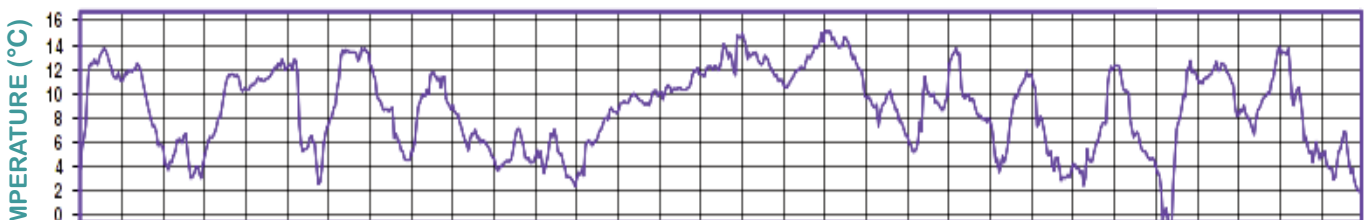
Dublin (Merrion Sq) and Ardee (Boharnamoe), Co Louth. Elsewhere, other lowest air and grass minima were mainly recorded on the 13th, 25th and 27th with lowest air minima ranging from -2.6°C at Ballyhaise, Co Cavan to 5.0°C at Sherkin Island both on the 13th. The month's lowest grass minimum was -8.2°C at Straide, Co Mayo also on the 13th.

HOURLY TEMPERATURES DECEMBER 2015

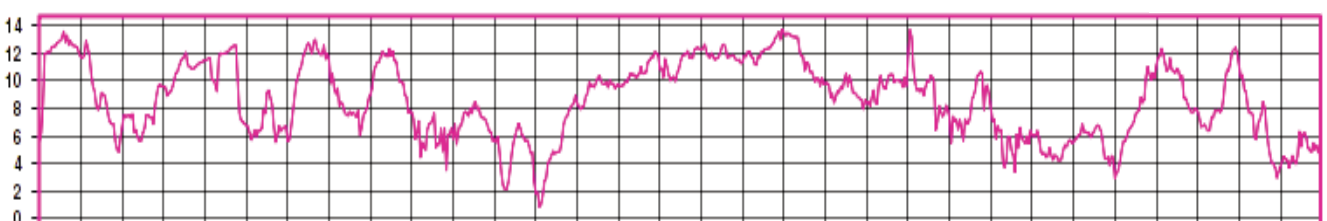
VALENTIA OBSERVATORY



DUBLIN AIRPORT



BELMULLET



DAY OF MONTH

COUNTY/ STATION	MEAN MAX.	MEAN MIN.	DIFFERENCE FROM 1981-2010		HIGHEST MAX./DATE	LOWEST MIN./DATE	LOWEST GRASS MIN./DATE	DAYS WITH FROST	
			MEAN	AVERAGE				AIR	GROUND
CO CARLOW CARLOW (OAK PARK)	11.6	5.6	8.6	2.8	14.1 18	0.1 27	-3.5 27	0	8
CO CAVAN BALLYHAISE	10.6	4.9*	7.7*	2.6*	15.0 18	-2.6* 13	-3.5 13	2*	3*
CO CLARE CARRON	10.7	4.9	7.8	2.4	13.8 1	0.6 12	-2.1 10	0	6
SHANNON AIRPORT	11.9	6.4	9.1	2.8	15.2 1	2.2 25,27	-2.2 27	0	2
CO CORK BALLINCURRIG (PEAFIELD)	11.2	5.6	8.4	2.8	13.1 19	1.2 25	0.5 31	0	0
CORK AIRPORT	10.9	6.2	8.5	2.4	12.9 18	1.7 25	-3.2 27	0	6
FERMOY (MOORE PARK)	12.0	6.2	9.1	3.3	14.3 18	1.0 4	-1.9 4	0	4
ROCHE'S POINT	11.6	7.9	9.8	2.4	13.3 15	4.3 4,25	-0.9 27	0	1
SHERKIN ISLAND	12.2	8.5	10.4	2.5	13.7 18	5.0 13	2.9 27	0	0
CO DONEGAL BALLYSHANNON (CATHLEEN'S FALL)	10.9	5.3	8.1	2.5	15.4 18	0.0 13		0	
GLENTIES HATCHERY	10.3	4.5	7.4	2.2	14.5 16,18	-1.9 13	-5.7 13	3	12
MALIN HEAD	10.7	5.4	8.1	1.7	16.0 16	0.4 13	-1.6 13	0	4
CO DUBLIN CASEMENT AERODROME	11.2	5.5	8.3	2.9	14.8 18	-0.7 27	-4.0 27	1	3
DUBLIN (MERRION SQUARE)	11.7	6.4	9.1	2.4	16.1 18	0.6 28			0
DUBLIN AIRPORT	11.4	5.3	8.3	2.7	15.5 18	-1.6 27	-5.4 27	2	5
DUBLIN (PHOENIX PARK)	11.7	5.7	8.7	3.4	15.6 18	-0.8 27,28	-5.5 27	2	12
CO GALWAY MAAM VALLEY	11.5	5.8	8.6	2.0	15.7 18	0.4 12,27	-2.1 27,31	0	3
CO KERRY ARDFERT (LISCAHANE)	12.2	6.4	9.3	2.7	15.1 18	2.5 25	1.0 25	0	0
VALENTIA OBSERVATORY	12.4	7.8	10.1	2.3	14.7 18	3.7 27	-0.7 27	0	1
CO LIMERICK MOUNTRUSSELL	11.1	5.9	8.5	2.6	14.3 18	2.1 25	-0.3 25	0	1
CO MAYO BELMULLET	10.9	6.0	8.4	1.7	14.2 18	0.7 13	-3.0 13	0	3
DELPHI LODGE	11.8	6.1	9.0	2.0	15.4 18,27	0.7 27	-3.1 27	0	4
KNOCK AIRPORT	8.9	3.7	6.3	2.0	13.2 18	-0.5 31	-1.4 27	4	8
STRAIDE	10.7	4.8	7.7	2.4	14.6 16	-2.0 13	-8.2 13	2	13
CO MEATH WARRENTOWN	-----not available-----								
CO MONAGHAN CARRICKMACROSS (DUNOGE)	10.7	4.3	7.5	2.6	14.5 18	-1.9 13	-4.4 13	2	12
CO OFFALY DERRYGREENAGH	11.0	4.7	7.9	3.2	14.2 18	0.1 27	-2.3 28	0	7
CO ROSCOMMON MOUNTDILLON	10.4	4.6	7.5	2.5	14.7 18	-1.4 13	-5.6 13	1	10
CO SLIGO ARDTARMON	10.6	5.2	7.9	1.9	14.8 16	0.3 13	-2.1* 27	0	n/a
CO TIPPERARY FETHARD (PARSONSHILL)	11.0	5.1	8.1	3.1	13.5 18	0.9 25	-1.3 25	0	1
GURTEEN (AG.COLLEGE)	11.1	5.3	8.2	2.4	15.0 18	0.4 27	-4.1 25	0	5
CO WATERFORD DUNGARVAN (CARRIGLEA)	12.7	6.4	9.6	3.3	15.6 16	0.3 9	-3.5 9	0	5
WATERFORD (TYCOR)	12.2	7.2	9.7	3.3	13.5 6,18	2.6 27		0	
CO WESTMEATH MULLINGAR	10.2	4.3	7.3	2.6	14.3 18	-0.6 27	-3.3 13	1	12
CO WEXFORD CLONROCHE (KNOXTOWN)	11.4	5.7	8.6	3.3	15.5 15	-0.4 27	-3.1 27	1	6
JOHNSTOWN CASTLE	11.6	7.2	9.4	3.0	13.0 18	2.5 27	-1.7 27	0	4
CO WICKLOW ASHFORD (CRONYKEERY)	12.1	5.6	8.9	2.6	14.9 1,18	-0.8 28	-5.1 28	2	13

* PARTIAL DATA USED IN CALCULATION. TABLE REPRESENTS DATA FROM A SMALL SELECTION OF STATIONS. ALL DATA IS 09-09 HR

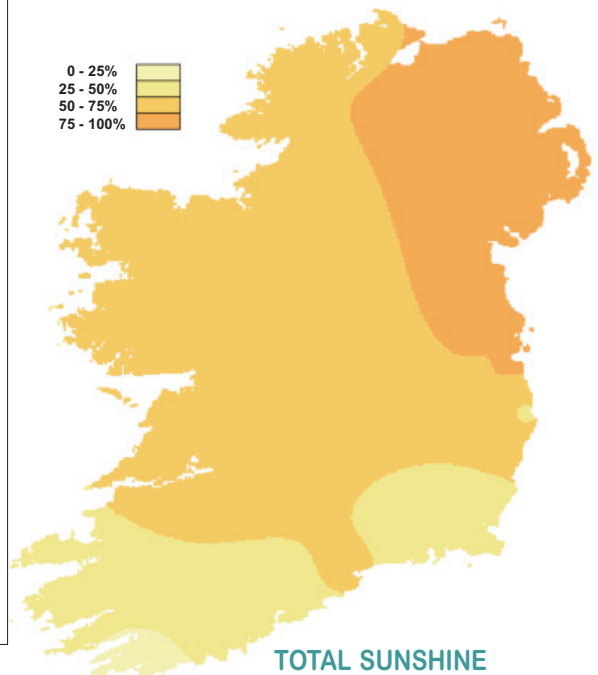
BELOW LTA SUNSHINE; EXTREMELY DULL IN THE SOUTHWEST

Percentage of Long-Term Average (LTA) sunshine values were all below normal. The lowest percentage of LTA values was just 6% at Sherkin Island, Co Cork with the month's lowest sunshine total of 2.8 hours. This was a new recorded for Ireland for the lowest monthly total reported for any month. It also recorded the month's highest number of dull days (*days with less than 0.5 hours of sunshine*) with 30. The highest percentage of LTA was at Dublin Airport with 91% with the month's highest sunshine total of 48.0 hours, its dullest December in 10 years. December's highest daily sunshine was 5.8 hours on the 24th at Clonroche (Knoxtown), Co Wexford, its lowest recorded for December at the station since it opened in 2003.

Percentage of Global Solar Radiation values were all below normal ranging from 66% at Belmullet, Co Mayo to 85% at Dublin Airport.

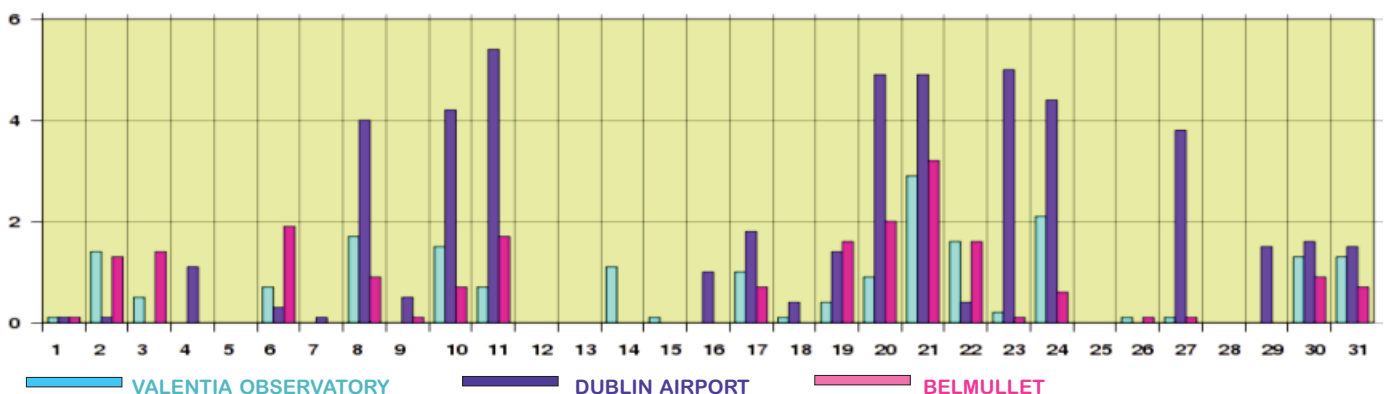
COUNTY/ STATION	DAILY MEAN (HOURS/DAY)	% OF 1981-2010 LTA	DULL DAYS (<0.5 HRS)	MOST IN A DAY/DATE
CO CLARE				
SHANNON AIRPORT	1.06	73	15	5.5 21
CO CORK				
BALLINCURRIG (PEAFIELD)	0.79	45	23	4.6 24
CORK AIRPORT	0.78	46	23	4.8 24
SHERKIN ISLAND	0.09	6	30	1.2 8
CO DONEGAL				
BALLYSHANNON (CATHLEEN'S FALL)	0.73	68	19	3.5 6
CO DUBLIN				
CASEMENT AERODROME	1.13	73	15	4.5 23
DUBLIN (GLASNEVIN)	1.21	83	18	4.5 23
DUBLIN AIRPORT	1.55	91	15	5.4 11
CO KERRY				
ARDFERT (LISCAHANE)	-----not available-----			
VALENTIA OBSERVATORY*	0.64		17	2.9 21
CO MAYO				
BELMULLET*	0.64	51	17	3.2 21
KNOCK AIRPORT	0.67	52	21	3.9 6
NEWPORT (FURNACE)	0.63	59	20	3.5 21
STRAIDE	0.70	56	20	4.1 6
CO WATERFORD				
DUNGARVAN (CARRIGLEA)	0.75	53	23	5.3 21,24
CO WEXFORD				
CLONROCHE (KNOXTOWN)	0.75	37	24	5.8 24
JFK PARK	0.72	43	24	4.8 24
WEXFORD WILDFOWL RESERVE	0.70	42	24	5.2 24
CO WICKLOW				
ARKLOW (BALLYRICHARD HSE)	1.00		20	5.5 24
ASHFORD (CRONYKEERY)	1.08	48	16	5.2 24

* PARTIAL DATA USED IN CALCULATION
 * SUNSHINE DURATION DERIVED FROM AUTOSOL INSTRUMENTS. LONG-TERM AVERAGE COMPARISONS ARE NOT USED WITH AUTOSOL READINGS.

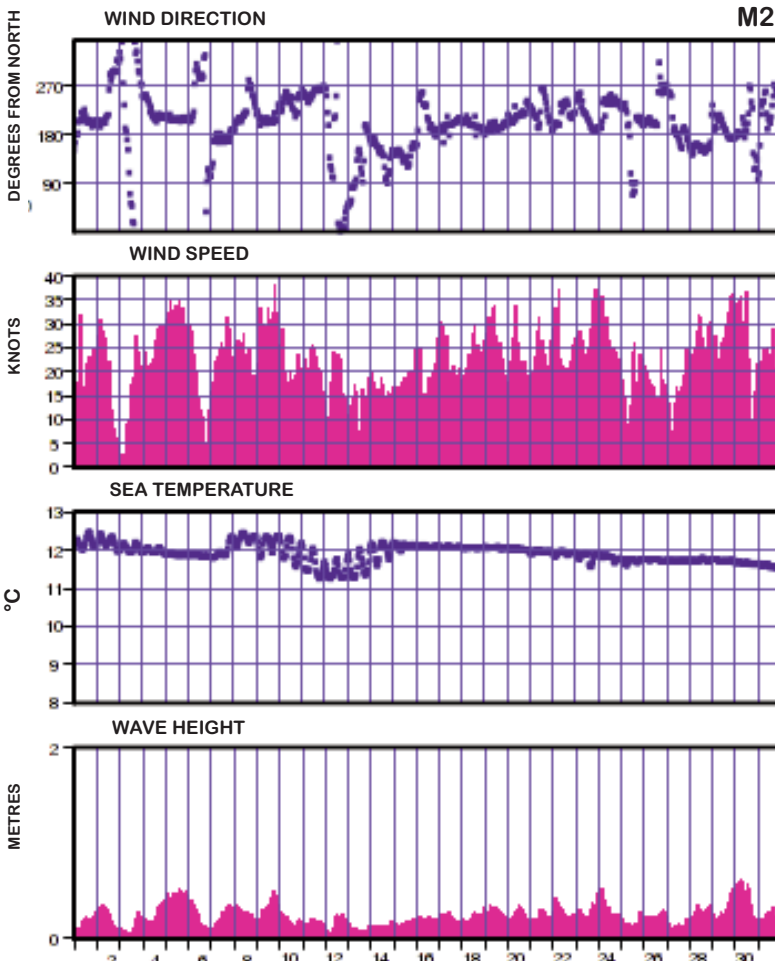


TOTAL SUNSHINE (PERCENTAGE OF 1981-2010 NORMALS)

DAILY SUNSHINE VALUES (HOURS)

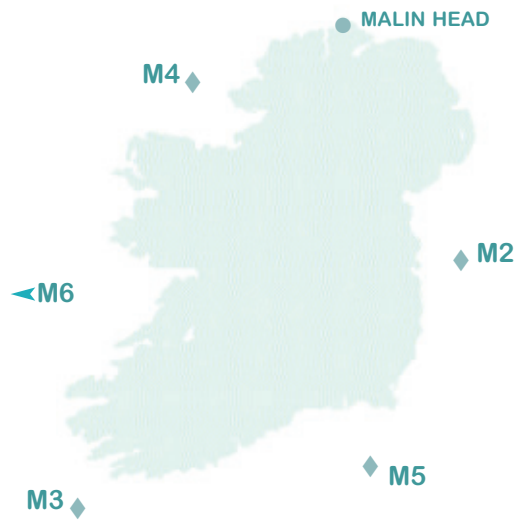


MARINE OBSERVATIONS FROM IRISH MARINE DATA BUOY NETWORK



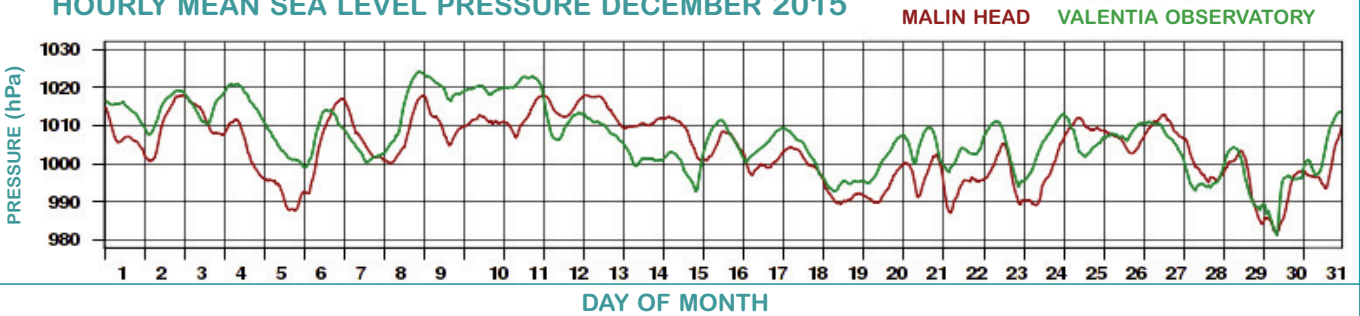
BUOY	SEA SURFACE TEMP. (°C)	MEAN WIND SPEED (knots)	MAX 10-MIN WIND (knots)	MEAN SIGNIFICANT WAVE HEIGHT (m)	MAX SIGNIFICANT WAVE HEIGHT (m)
M2	11.9	21.2	38.3	2.4	6.2
M3	-----not available-----				
M4	11.0	20.6	37.3	n/a	n/a
M5	-----not available-----				
M6	11.3	11.3*	22.8	5.5	10.6
MALIN HEAD	9.7	* PARTIAL DATA			

SUMMARY OF MEAN MONTHLY VALUES



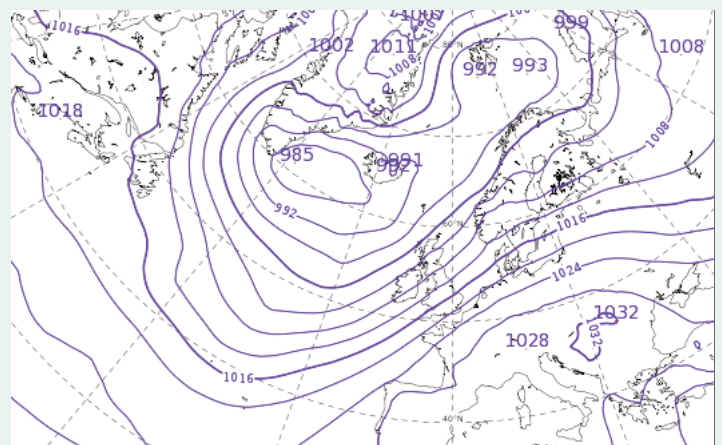
HOURLY SEA TEMPERATURE AND WAVE CONDITIONS AT M2 53.4800°N 05.4250°W

HOURLY MEAN SEA LEVEL PRESSURE DECEMBER 2015



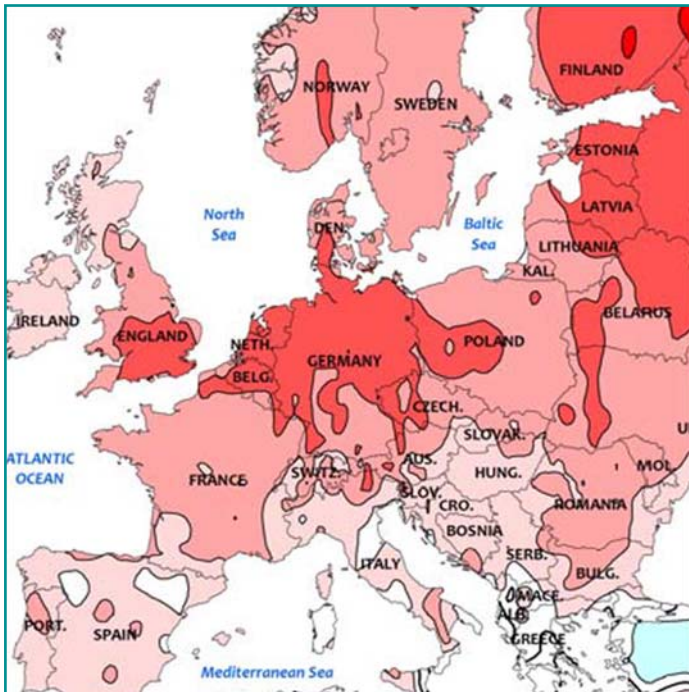
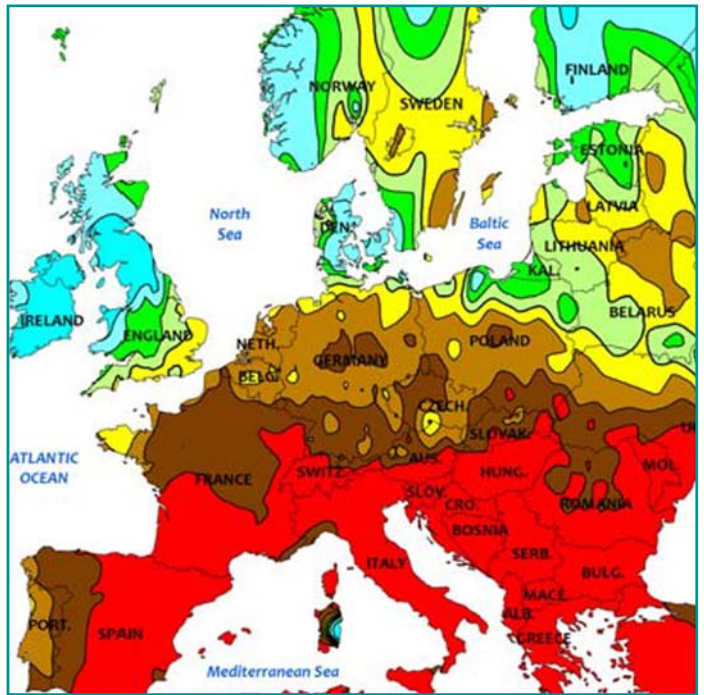
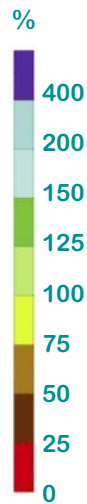
ATMOSPHERIC PRESSURE

Monthly mean sea level pressure values ranged from just above 1004 hPa in the West to just above 1010 hPa in the Southeast. The month's lowest pressure value of 980.4 hPa was recorded at Belmullet, Co Mayo on the 29th as a large low pressure centre of 938 hPa (Storm Frank) was situated off the western coast of Ireland. The month's highest pressure value was 1026.9 hPa recorded at Cork Airport on the 9th as a anticyclone of 1041 hPa centred mainly over France affected parts of the UK and Ireland.



MONTHLY MEAN MSL PRESSURE, BASED ON 1200 UTC VALUES

DECEMBER RAINFALL
(PERCENTAGE OF 1961-1990 NORMAL)



DECEMBER MEAN TEMPERATURE
(DIFFERENCE FROM 1961-1990 NORMAL)



MAPS SUPPLIED BY NOAA
CLIMATE PREDICTION CENTRE,
US DEPARTMENT OF COMMERCE.
GLOBAL WEATHER HIGHLIGHTS SUPPLIED
BY AON BENFIELD

GLOBAL WEATHER SUMMARY

A strong winter storm system tracked across much of the contiguous United States from the 12th to the 16th, leaving at least three people dead. The storm brought periods of heavy snow, rain, freezing rain and hurricane-force wind gusts to portions of the West, Rockies, Plains and Upper Midwest.

Three wind storms hit Europe in December but Storm Frank was the last storm of 2015 striking Iceland, the United Kingdom and Ireland bringing renewed flooding and high winds to the regions. Northern Ireland, Scotland, Wales, and northern England were worst affected. In Iceland, hurricane-force wind gusts whipped southern and eastern portions of the island with serious damage to structures in the East Fjords region.

Typhoon Melor made multiple landfalls in the Philippines on the 14th and 15th, killing at least 42 people and injuring 24 others. The storm brought torrential rainfall and gusty winds as it tracked through part of the archipelago at Category 4 intensity. The maximum 10-minute sustained wind was reported at 94 knots (175 km/h) and a low pressure centre of 935 hPa.

Over a three-week period from late November into early December, torrential rainfall in Kinshasa, DR Congo with the worst areas near the Ndjili and Matete Rivers. The floods left at least 31 individuals dead and 20,000 families homeless.

Portions of Argentina, Paraguay, Uruguay and Brazil were inundated throughout December following prolonged periods of heavy rainfall that prompted the worst floods in at least 50 years in some areas. At least 16 people were killed. Tens of thousands of homes were damaged or destroyed in river flooding and landslides as El Niño-enhanced rainfall occurred.

A supercell thunderstorm struck southeastern suburbs of Sydney, New South Wales on the 16th with the supercell bringing straight-line winds, large hail, torrential rain, and at least one tornado.

