

# Monthly Weather Bulletin

No. 298

FEBRUARY 2011



Kitesurfer enjoying the fine weather at the beginning of the month at Garrylucas beach, Co. Cork (picture courtesy Irish Examiner)

## MILD AND WET, BUT SUNNY IN MOST PLACES

After the extreme low temperatures of early winter caused by an Arctic airstream over Ireland, Atlantic weather patterns dominated during February, resulting in much milder and wetter conditions across the country. Deep depressions also brought strong winds at times,

particularly early in the month. It was the warmest February for between nine and 13 years almost everywhere, with mean air temperatures for the month around two degrees higher than normal. There were only between three and seven days with air frost at most inland stations,

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*Highest February daily fall at Shannon Airport since 1945*

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**Another cold winter over northern Europe**

Produced by Met Éireann, Glasnevin Hill, Dublin 9. Annual subscription 80 euro



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Notes on the tables and map showing location of stations appear in January issue

compared with the normal number for February of between five and nine, and where frost did occur it was mostly slight. Monthly rainfall totals were above normal everywhere and were well above normal in parts of the west and midlands, where it was the wettest

February since 2002 at some stations and the wettest since 1997 at Claremorris. The heaviest daily falls were measured between the 4th and 8th, with 5-day totals of over 100mm between the 3rd and 7th in places; falls of snow were recorded in northern

## ARCTIC OSCILLATION EFFECTS ON NORTHERN HEMISPHERE



**During the Northern Hemisphere winter of 2010/2011, unusually low temperatures and heavy snowstorms affected North America and Europe, while conditions were unusually warm further north. The U.S. National Snow and Ice Data Center (NSIDC) has reported that Arctic sea ice was at its lowest extent ever recorded for January (since satellite records began).**

This image shows the average Arctic sea ice concentration during the last winter, based on observations from the Advanced Microwave Scanning Radiometer for EOS (AMSR-E) aboard NASA's Aqua satellite. Blue indicates open water, white indicates high sea ice concentrations and turquoise indicates loosely-packed sea ice. The yellow line shows the average sea ice extent for January for the period 1979 to 2000. NSIDC reported that ice extent was unusually low in Hudson Bay, Hudson Strait and Davis Strait in the early winter. Normally frozen over by late November, these areas did not completely freeze until mid-January 2011. The Labrador Sea was also unusually ice-free.

NSIDC offered two possible explanations. One reason is the Arctic Oscillation (AO), a see-saw pattern of differences in atmospheric pressure. In the "positive" mode of the AO, high pressure over the mid-latitudes and low pressure over the Arctic sets up wind patterns that trap cold air in the far North. In "negative" mode, air pressure is not as low over the Arctic or quite as high over the mid-latitudes. This enables cold air to creep south and relatively warm air to move north. The AO was in negative mode in December 2010 and January 2011. At mid-latitudes, the negative mode resulted in extremely low temperatures and heavy snow in Europe and North America (see *Monthly Weather Bulletins of December and January*). At the same time, warm air over the Arctic impeded sea ice growth. Another factor in the low Arctic sea ice extent, NSIDC explained, could be that the areas of open ocean were still releasing heat to the atmosphere. Due to its bright appearance, sea ice reflects most of the sun's light and heat back into space. Dark ocean water, by contrast, absorbs most of that energy and reinforces the melting process.

(images and text courtesy NASA Earth Observatory)

areas on the 6th/7th. There were between 14 and 23 wetdays during the month at most stations (days with 1mm or more rainfall), higher than the normal range for February of between 11 and 16 wetdays. Despite a dull start to the month, sunshine totals were above normal almost everywhere, with very sunny conditions developing between the 26th and 28th.

**1st to 9th:** A period of very unsettled weather, as a series of deep Atlantic depressions moved quickly eastwards over or to the north of Ireland. Their associated frontal systems produced spells of rain or showers each day, together with stormy weather at times, resulting in very high seas on western coasts. The heaviest rain was recorded in western, southwestern and some southeastern parts of the country, with most stations measuring their highest daily falls between the 5th and 7th. Temperatures were above normal with little or no air frost, while most days during the period were dull. Strong southwesterly winds with gale to storm force gusts were recorded on most days, particularly on the 3rd, 4th and 7th.

**10th to 28th:** Although still unsettled, rainfall amounts in this period were smaller than during the first week, especially in

eastern areas, and tended to be more showery in nature. This allowed long sunny spells to develop on several days, particularly in the west. Temperatures were near or below normal around mid-month, but rose well above normal subsequently; maximum daily values of around 15°C on the 23rd and 24th were the highest for February for between six and 13 years in places. Clear skies allowed frost to develop on some nights, especially late in the month. Winds were mainly south to southwesterly, moderate in strength.

**Wind and elements:** Mean windspeeds for the month of between 7 and 19 knots (13 and 35 km/h) were above normal everywhere and were the highest for February for eight or nine years in places. The strongest winds of the month were measured in the first week, with the highest gust of 76 knots (141 km/h) observed at Malin Head on the 3rd. Thunder was infrequent, but there was thunderstorm activity near western and northwestern coasts on the 1st and 2nd, while a funnel cloud was observed in central Dublin on the 27th. Hail showers were recorded in the periods 1st to 3rd, 12th to 15th and 25th and 27th. Snow fell in northern areas on the 6th and 7th, with isolated snow showers also on the 14th. Most fog was recorded on the 17th and 22nd.

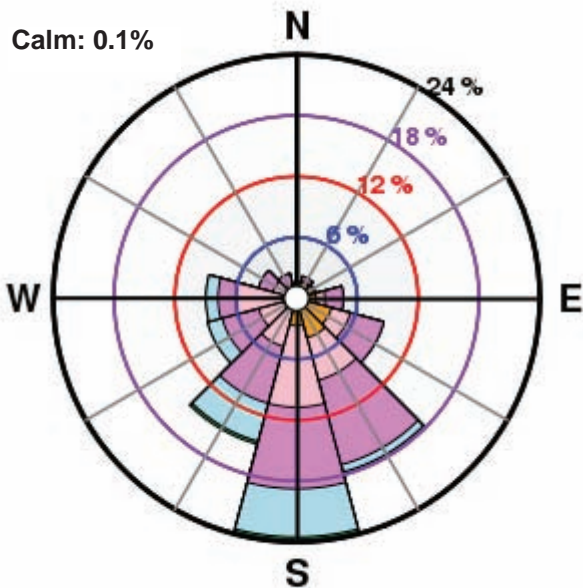
#### Below

Although February was a wet month, there was fine weather for farmers at the Cahermore ploughing match in Clonakilty, Co. Cork (picture courtesy Irish Examiner)

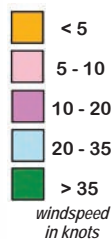
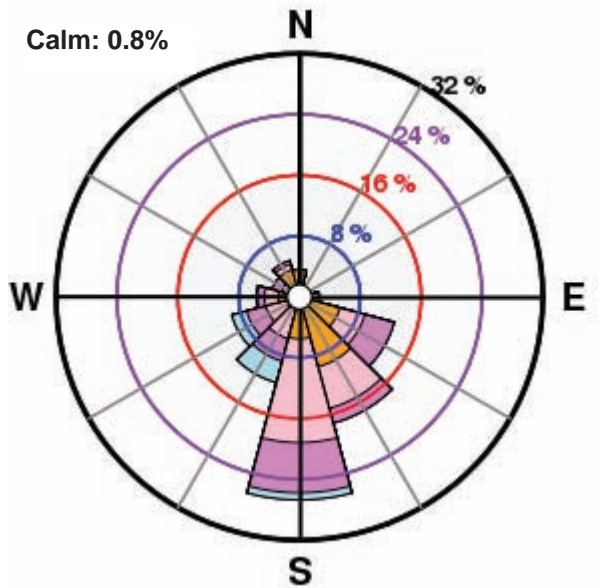


County / Station	WIND (KNOTS)						ELEMENTS							
	Mean speed	Max. dir.	10-min. speed	mean date/hour	Max. dir.	Gust speed date/time	Days with gales	gale gusts	Hours with gale gusts	Snow	Snow Lying	Hail	Thunder	Fog
<b>CO. CARLOW</b> Carlow(Oak Park)	8.4	270°	32	7/08	270°	46 7/0851	0	5	33					
<b>CO. CAVAN</b> Ballyhaise	7.3	230°	29	4/15	230°	51 4/1004	0	3	25					
<b>CO. CLARE</b> Shannon Airport	9.1	220°	37	4/22	230°	52 4/2134	3	6	43	0	0	1	0	4
<b>CO. CORK</b> Roche's Point	13.5	230°	40	7/05	230°	53 7/0532	5	9	101					
Cork Airport	11.2	220°	34	3/16	220°	50 3/1707	2	9	91	1	0	2	0	14
<b>CO. DONEGAL</b> Malin Head	18.8	250°	52	3/20	260°	76 3/1923	4	16	139					
<b>CO. DUBLIN</b> Dublin Airport	11.6	240°	39	4/12	250°	54 4/1059	3	10	62	0	0	0	0	4
Casement Aerodrome	11.1	200°	35	7/04	210°	52 3/1619	2	11	74	0	0	3	0	1
<b>CO. KERRY</b> Valentia Observatory	10.1	220°	32	4/19	220°	50 4/1744	0	12	81	0	0	3	0	1
<b>CO. MAYO</b> Belmullet	11.7	190°	47	3/13	190°	72 3/1234	2	10	97	0	0	7	0	1
Knock Airport	10.0	260°	36	3/20	210°	53 3/1341	1	8	46	1	0	2	0	10
<b>CO. TIPPERARY</b> Gurteen	9.6	230°	31	4/17	240°	50 4/1634	0	5	38					
<b>CO. WESTMEATH</b> Mullingar	6.8	220°	23	3/18	210°	41 4/1427	0	2	22					
<b>CO. WEXFORD</b> Johnstown Castle	8.5	210°	24	7/ 06	200°	41 7/0440	0	6	43					

Belmullet

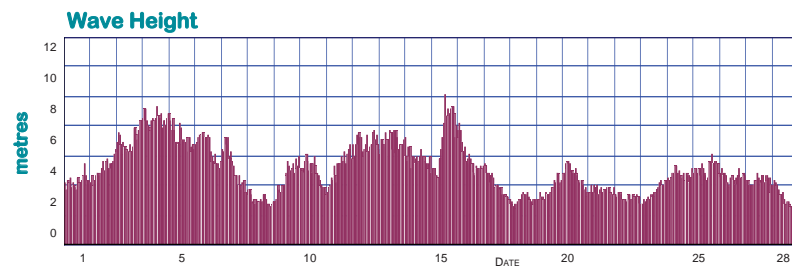
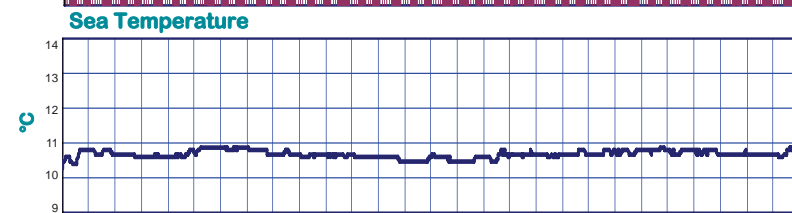
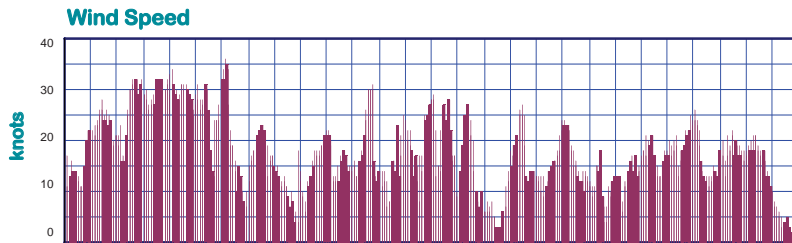
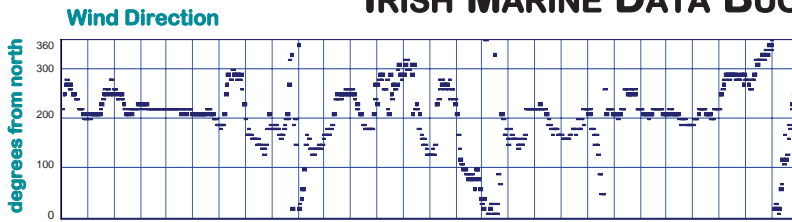


Carlow (Oak Park)



PERCENTAGE FREQUENCY OF WIND DIRECTION

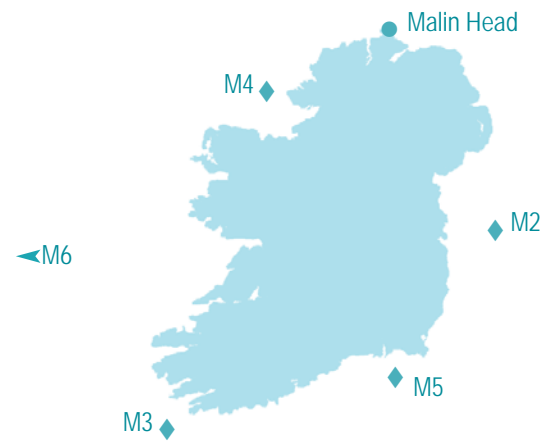
## MARINE OBSERVATIONS FROM IRISH MARINE DATA BUOY NETWORK



Hourly wind and wave conditions at M3 (51.2°N, 10.5°W)

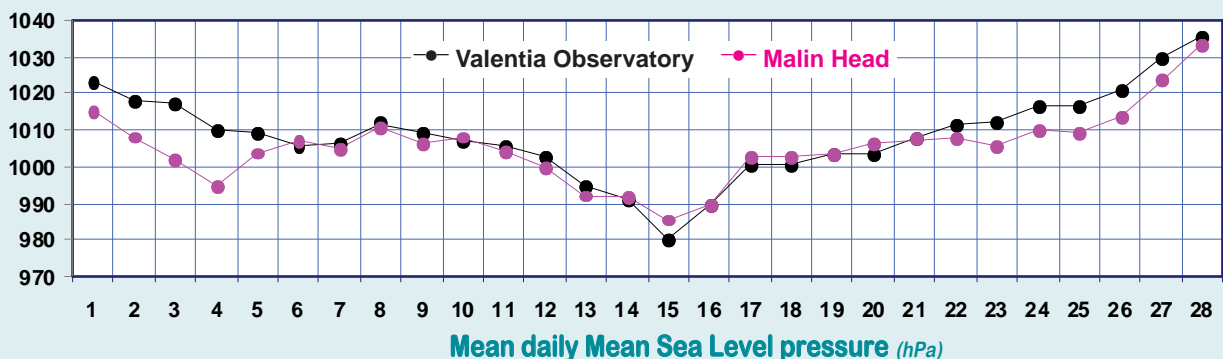
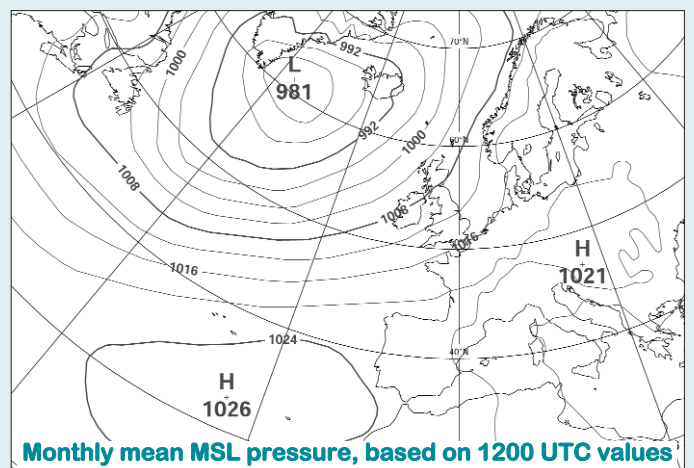
Buoy	Sea surface temp. (°C)	Mean wind speed (knots)	Max. 10-min wind (knots)	Mean wave height (m.)	Max. wave height (m.)
M2		not available			
M3	10.7	17.3	36	5.0	10.1
M4	10.1	19.3	42	n/a	n/a
M5	8.3	15.1	34	3.1	6.3
M6	11.1	n/a	n/a	5.3	10.3
Malin Head	7.1				

### Summary of Mean Monthly Values



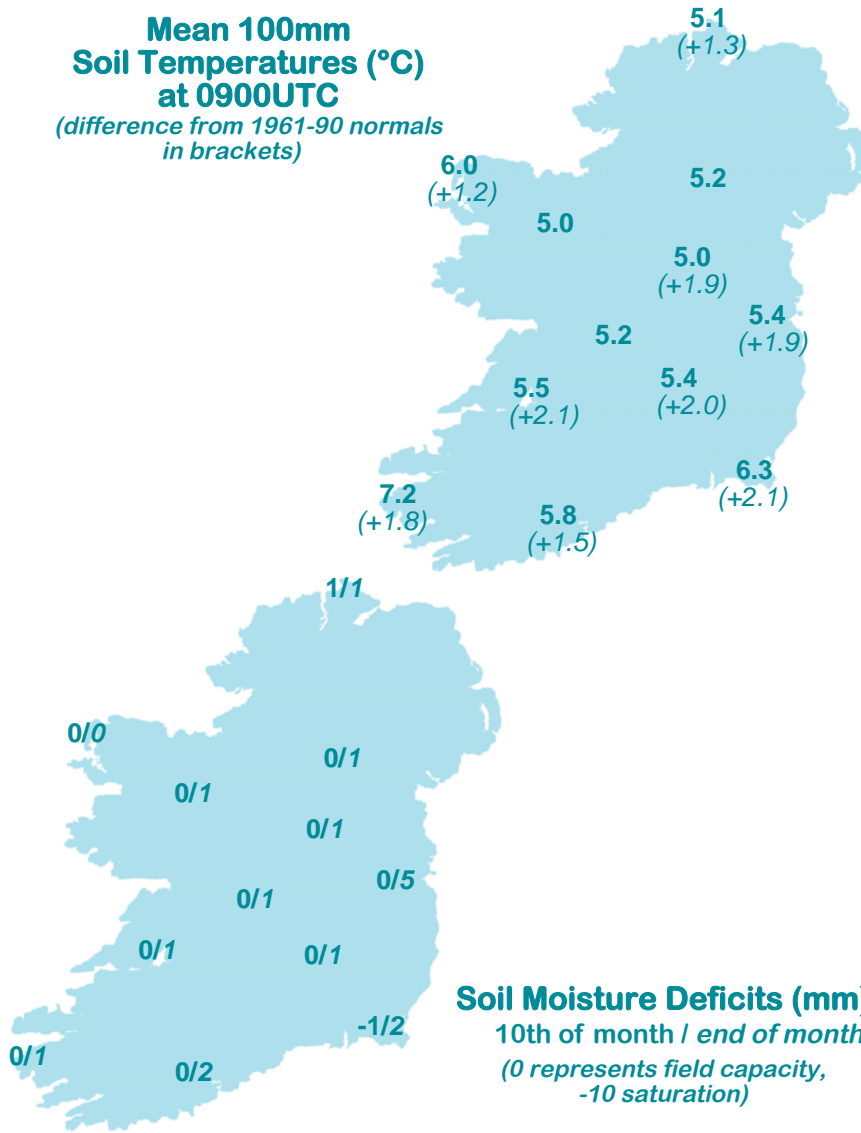
## MEAN ATMOSPHERIC PRESSURE

The monthly mean pressure was just below average for the country, at around 4hPa below normal for the month. Pressure was close to normal for the beginning of February, but fell well below average during the period between the 13th and 18th, when a series of Atlantic depressions affected the country. High pressure then dominated in the latter part of the month, with the month's highest pressure of 1037.9hPa recorded at Gurteen on the 28th. The lowest pressure value recorded in February was 976.2hPa at Knock Airport on the 15th.



**Mean 100mm Soil Temperatures (°C) at 0900UTC**

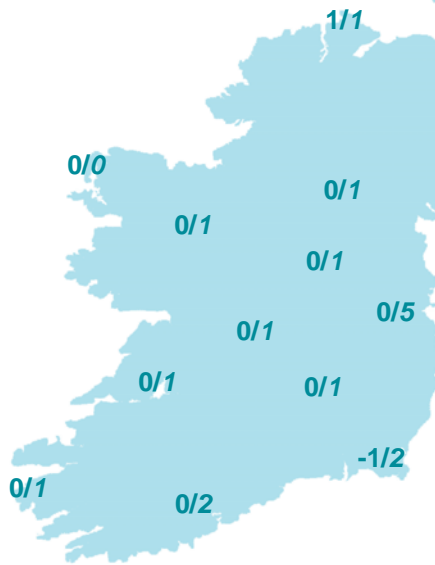
(difference from 1961-90 normals in brackets)



**Soil Temperatures at 0900UTC**

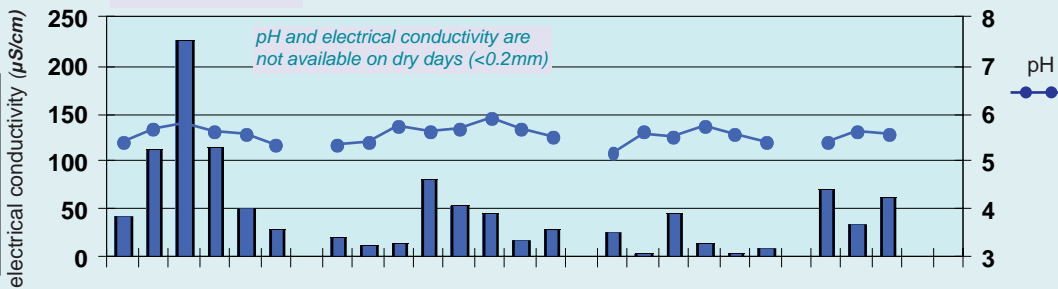
County/ Station	°C		
	100mm	200mm	300mm
CO. CARLOW			
CARLOW (OAK PARK)	5.4	5.8	5.8
CO. CAVAN			
BALLYHAISE	5.2	5.6	5.9
CO. CLARE			
SHANNON AIRPORT	5.5	5.8	6.4
CARRON	5.7		6.0
CO. CORK			
ROCHE'S POINT	6.6	7.2	7.4
FERMOY (MOOREPARK)	5.6	5.9	6.2
CORK AIRPORT	5.8	6.1	6.5
SHERKIN ISLAND	7.5	7.8	8.0
BALLINCURRIG (PEAFIELD)	5.8	5.7	6.5
CO. DONEGAL			
MALIN HEAD	5.1	5.8	6.4
CO. DUBLIN			
DUBLIN (PHOENIX PARK)	5.3	5.9	6.0
DUBLIN AIRPORT	5.3	5.7	6.1
CASEMENT AERODROME	5.4	5.8	6.2
CO. KERRY			
VALENTIA OBSERVATORY	7.2	7.6	8.1
CO. LIMERICK			
MOUNTRUSSELL	5.6	5.9	
CO. MAYO			
BELMULLET	6.0	6.5	7.0
NEWPORT (FURNACE)	5.2	5.7	5.9
STRAIDE	5.0		
CONNACHT AIRPORT	4.0	4.9	5.3
CO. MEATH			
WARRENSTOWN	5.1	5.7	5.7
CO. TIPPERARY			
GURTEEN	5.2	5.6	6.0
FETHARD (PARSONSHILL)	5.7	6.1	
CO. WATERFORD			
DUNGARVAN (CARRIGLEA)		6.6	6.8
CO. WESTMEATH			
MULLINGAR	5.0	5.4	5.6
CO. WEXFORD			
JOHNSTOWN CASTLE	6.3	6.6	6.7
JOHN F. KENNEDY PARK	6.0	6.7	6.9
CLONROCHE (KNOXTOWN)	6.1	6.2	6.0
CO. WICKLOW			
ASHFORD (CRONYKEERY)	6.1	6.5	

**Soil Moisture Deficits (mm) 10th of month / end of month**  
(0 represents field capacity, -10 saturation)



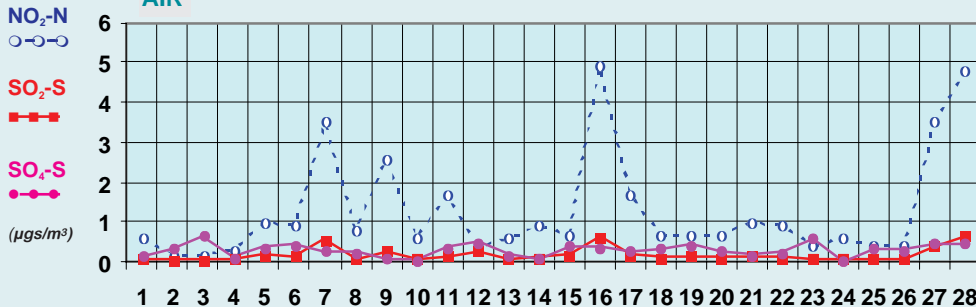
**Chemical Analysis of Precipitation and Air Samples at Valentia Observatory**

**PRECIPITATION**



data shown here are interim values and are subject to change

**AIR**



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.

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

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

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
Ballincurrig	11-20	50.3	-	7	7	8.8	1.5	5.2	-	-1.1	14	4	17	1	-2.0	14	5	4.7	5.9	19.3	-
	21-end	12.6	-	6	4	11.5	5.2	8.4	-	-0.2	28	1	34	4	-1.6	28	1	6.7	7.5	29.3	-
	<b>month</b>	<b>113.7</b>	<b>-</b>	<b>22</b>	<b>16</b>	<b>10.2</b>	<b>3.3</b>	<b>6.8</b>	<b>-</b>	<b>-1.1</b>	<b>14</b>	<b>6</b>	<b>83</b>	<b>7</b>	<b>-2.0</b>	<b>14</b>	<b>9</b>	<b>5.8</b>	<b>6.5</b>	<b>67.3</b>	<b>-</b>
<b>Co. Donegal</b>	1-10	125.6	-	10	10	9.4	2.5	6.0	-	-1.5	10	2	21	1	n/a	-	-	-	-	-	-
Glenties	11-20	38.7	-	7	4	9.0	1.3	5.2	-	-2.4	17	5	18	1	n/a	-	-	-	-	-	-
	21-end	25.6	-	6	6	11.8	5.4	8.6	-	-2.2	28	1	36	4	n/a	-	-	-	-	-	-
	<b>month</b>	<b>189.9</b>	<b>176</b>	<b>23</b>	<b>20</b>	<b>9.9</b>	<b>2.9</b>	<b>6.4</b>	<b>2.1</b>	<b>-2.4</b>	<b>17</b>	<b>8</b>	<b>75</b>	<b>6</b>	<b>n/a</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Co. Kerry</b>	1-10	100.6	-	10	8	11.6	5.1	8.4	-	1.5	8	0	41	4	-0.1	8	1	-	-	15.9	-
Ardfert	11-20	39.3	-	10	7	9.5	1.9	5.7	-	-0.3	16	1	20	1	-1.3	16	5	-	-	12.9	-
	21-end	17.9	-	6	5	12.6	6.3	9.5	-	0.5	28	0	41	8	-1.1	28	1	-	-	28.3	-
	<b>month</b>	<b>157.8</b>	<b>-</b>	<b>26</b>	<b>20</b>	<b>11.1</b>	<b>4.3</b>	<b>7.7</b>	<b>1.9</b>	<b>-0.3</b>	<b>16</b>	<b>1</b>	<b>101</b>	<b>13</b>	<b>-1.3</b>	<b>16</b>	<b>7</b>	<b>-</b>	<b>-</b>	<b>57.1</b>	<b>-</b>
<b>Co. Monaghan</b>	1-10	70.0	-	9	9	10.3	1.7	6.0	-	-2.9	8	3	24	2	-3.8	8	6	-	-	-	-
Carrickmacross	11-20	42.1	-	8	5	8.4	1.2	4.8	-	-2.2	15	2	13	0	-4.3	15	7	-	-	-	-
	21-end	5.8	-	5	1	11.7	4.8	8.3	-	-1.4	28	1	33	5	-3.0	28	2	-	-	-	-
	<b>month</b>	<b>117.9</b>	<b>200</b>	<b>22</b>	<b>15</b>	<b>10.0</b>	<b>2.4</b>	<b>6.2</b>	<b>-</b>	<b>-2.9</b>	<b>8</b>	<b>6</b>	<b>70</b>	<b>7</b>	<b>-4.3</b>	<b>15</b>	<b>15</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Co. Waterford</b>	1-10	54.9	-	8	6	11.6	3.4	7.5	-	-3.0	1	3	38	6	-3.5	8	4	-	6.6	18.1	-
Dungarvan	11-20	49.6	-	8	6	9.8	1.9	5.9	-	-2.0	12	2	23	1	-3.0	12	3	-	6.1	16.5	-
	21-end	15.0	-	5	4	12.3	6.3	9.3	-	0.4	28	0	41	7	-1.4	28	1	-	8.0	34.3	-
	<b>month</b>	<b>119.5</b>	<b>-</b>	<b>21</b>	<b>16</b>	<b>11.2</b>	<b>3.7</b>	<b>7.5</b>	<b>1.9</b>	<b>-3.0</b>	<b>1</b>	<b>5</b>	<b>102</b>	<b>14</b>	<b>-3.5</b>	<b>8</b>	<b>8</b>	<b>-</b>	<b>6.8</b>	<b>68.9</b>	<b>106</b>
<b>Co. Wexford</b>	1-10	55.8	-	7	7	10.3	4.1	7.2	-	-0.2	1	1	31	1	-2.4	1	3	6.2	6.3	14.2	-
J.F.K. Park	11-20	53.6	-	7	7	8.9	3.1	6.0	-	-0.3	14	1	21	0	-0.6	16	2	5.0	6.7	14.8	-
	21-end	9.4	-	6	3	10.9	5.7	8.3	-	1.0	27	0	32	2	-0.2	28	2	7.0	7.8	31.7	-
	<b>month</b>	<b>118.8</b>	<b>150</b>	<b>20</b>	<b>17</b>	<b>9.9</b>	<b>4.2</b>	<b>7.1</b>	<b>2.1</b>	<b>-0.3</b>	<b>14</b>	<b>2</b>	<b>84</b>	<b>3</b>	<b>-2.4</b>	<b>1</b>	<b>7</b>	<b>6.0</b>	<b>6.9</b>	<b>60.7</b>	<b>107</b>
<b>Co. Wicklow</b>	1-10	61.2	-	8	6	11.4	3.8	7.6	-	-2.8	8	1	37	4	-8.9	8	4	6.0	-	23.1	-
Ashford	11-20	65.4	-	9	6	9.2	1.8	5.5	-	-1.8	16	3	19	1	-7.4	16	7	5.4	-	20.2	-
	21-end	7.4	-	6	2	12.0	5.3	8.7	-	-1.6	28	1	36	6	-7.3	28	3	7.2	-	31.3	-
	<b>month</b>	<b>134.0</b>	<b>-</b>	<b>23</b>	<b>14</b>	<b>10.8</b>	<b>3.5</b>	<b>7.2</b>	<b>-</b>	<b>-2.8</b>	<b>8</b>	<b>5</b>	<b>93</b>	<b>11</b>	<b>-8.9</b>	<b>8</b>	<b>14</b>	<b>6.1</b>	<b>-</b>	<b>74.6</b>	<b>-</b>

MEASURED POTENTIAL EVAPOTRANSPIRATION (P.E.) AND SOIL MOISTURE					
Station	Period	P.E. (mm)		Soil Moisture (mm)	
		Amount	Deficit	Accum/ld Deficit	Surplus
<b>Co. Kerry</b>	1-10	14.5	-	0	75
	11-20	3.3	-	0	63
Valentia Obs.	21-end	1.8	-	0	29
	<b>month</b>	<b>19.6</b>	<b>-</b>	<b>0</b>	<b>167</b>
<b>Co. Wexford</b>	1-10	11.0	-	0	38
	11-20	5.6	-	0	38
Johnstown Castle	21-end	0.0	-	0	17
	<b>month</b>	<b>16.6</b>	<b>-</b>	<b>0</b>	<b>93</b>

MONTHLY EVAPORATION (MM) FROM CLASS A PAN			
County	Station	Monthly Rainfall (mm)	Monthly Evaporation (mm)
<b>Kerry</b>	Valentia Observatory	188.9	22.2
<b>Kerry</b>	North Kerry Landfill	159.6	2.0
<b>Mayo</b>	Newport (Furnace)	192.7	1.4
<b>Offaly</b>	Derrygreenagh	116.4	5.2
<b>Waterford</b>	Dungarvan (Carriglea)	119.5	6.4
<b>Wexford</b>	J.F.K. Park	118.8	12.0

Station	P.E. (Penman)	GLOBAL SOLAR RADIATION (MJ/sq.m.)			
	total(mm)	1st-10th	11th-20th	21st-end	Total
<b>Co. Carlow</b>					
Carlow (Oak Park)*	16	30.91	41.42	52.26	124.59
<b>Co. Cavan</b>					
Ballyhaise*	14	29.71	48.72	53.36	131.79
<b>Co. Clare</b>					
Shannon Airport	16	global solar radiation values for stations marked * are provisional			
<b>Co. Cork</b>					
Cork Airport	12				
Roche's Point*		35.21	52.27	51.34	138.82
<b>Co. Donegal</b>					
Malin Head	20	24.61	50.39	54.83	129.83
<b>Co. Dublin</b>					
Dublin Airport	17	33.97	40.98	57.39	132.34
Casement Aerodrome	17				
<b>Co. Kerry</b>					
Valentia Obs.	21	30.09	39.63	49.30	119.02
<b>Co. Mayo</b>					
Belmullet	15	31.81	48.57	51.00	131.38
Knock Airport	12				
<b>Co. Tipperary</b>					
Curteen*	15	30.96	49.42	58.56	138.94
<b>Co. Westmeath</b>					
Mullingar*	13	28.92	49.67	55.50	134.09
<b>Co. Wexford</b>					
Johnstown Castle*	13	29.88	38.92	44.94	113.74

**Tuesday 1st:** Early frost cleared to give a bright, fresh day with sunny spells and just well scattered showers. Dry in the east and south in the afternoon. Scattered showers in Connacht, Ulster and north Leinster, dying out in the evening. Winds; moderate to fresh, west to southwesterly in direction.

**Rainfall:** nil to 5mm, heaviest at Johnstown Castle, nil at Valentia  
**Temperature:** max. 9°C to 12°C, min. 4°C to 8°C, ground temperatures down to -2°C at Claremorris

**Sunshine:** 3 to 7 hours, sunniest at Cork Airport, 3 hours at Knock Airport

**Wednesday 2nd:** Overnight bands of rain moved easterly across the country, mainly affecting Connacht, Ulster and Leinster. Showers continued throughout the day with the odd sunny spell also. The showers were mainly confined to the northwest by evening. Winds; southwesterly, strong and gusty.

**Rainfall:** 1 to 12mm, heaviest at Malin Head, 1mm at Roche's Point  
**Temperature:** max. 10°C to 13°C, min. 2°C to 7°C, ground temperatures below zero at Knock Airport

**Sunshine:** 1 to 5 hours, sunniest at Shannon Airport, 1 hour at Casement Aerodrome

**Thursday 3rd:** Heavy showers in the west and north overnight. Generally dry during the late morning. Heavy rain moved into the northwest by the afternoon and spread southeastwards, easing as it did. A few sunny spells, the best of these in the east. Winds; moderate westerly, backing southwesterly and increasing to gale force, strong gale or storm force in the north and west.

**Rainfall:** nil to 19mm, heaviest at Claremorris, nil at Johnstown Castle  
**Temperature:** max. 9°C to 12°C, min. 0°C to 5°C, ground temperatures down to -1°C at Cork Airport

**Sunshine:** nil to <1 hour generally, 4 hours at Casement Aerodrome

**Friday 4th:** Rain overnight, generally light but occasionally heavy in places. Somewhat drier during the middle of the day, however, persistent rain returned to the northwest in the late afternoon and spread southeastwards through the evening. Mild after a cool start. Overcast. Winds; southwesterly, moderate to strong with gale gusts in the north and northwest, easing by evening.

**Rainfall:** trace to 33mm, heaviest at Claremorris, trace at Valentia  
**Temperature:** max. 11°C to 14°C, min. 4°C to 11°C, no ground frost

**Sunshine:** nil to trace

**Saturday 5th:** Wet and windy overnight in most areas. This pattern continued throughout the day with some very heavy falls, particularly in the south midlands. Generally dry in northern areas by evening. Overcast throughout. Winds; southwesterly, strong and gusty in southern areas, lighter elsewhere.

**Rainfall:** 2 to 33mm, heaviest at Carlow (Oak Park), 2mm at Malin Head  
**Temperature:** max. 7°C to 13°C, min. 5°C to 10°C, no ground frost

**Sunshine:** nil

**Sunday 6th:** Dry in northern areas overnight with rain over the rest of the country. The morning was generally wet and windy with strong and gusty winds over southern areas. The afternoon continued overcast with rain on and off, however, the extreme north remained mainly dry. Winds; variable, moderate over much of the country, strong and gusty in the south, easing later.

**Rainfall:** 1 to 30mm, heaviest at Valentia, 1mm at Malin Head  
**Temperature:** max. 6°C to 12°C, min. 4°C to 10°C, no ground frost

**Sunshine:** nil to trace

**Monday 7th:** Rain affected most areas overnight, heavy at times in many places. Light rain or showers continued throughout the morning. The showers became more isolated during the afternoon, mainly confined to the west. Sunny spells throughout. Winds were variable in direction, strong and gusty in Munster and Leinster, moderate elsewhere, easing back by evening.

**Rainfall:** 1 to 24mm, heaviest in the northwest, 1mm at Casement Aerodrome  
**Temperature:** max. 8°C to 12°C, min. 0°C to 4°C, ground temperatures down to -6°C at Claremorris

**Sunshine:** 2 to 6 hours, sunniest at Cork Airport, 2 hours at Casement Aerodrome

**Tuesday 8th:** Cold with a widespread frost overnight. The frost cleared early and the morning was dry with some good sunny spells in places. The afternoon continued dry, however, cloud increased everywhere. Some rain developed in the south and southwest by late afternoon. Rain moved up over the country during the evening, affecting most parts. Winds; southerly, light to moderate.

**Rainfall:** nil to 11mm, heaviest at Johnstown Castle, nil at Dublin Airport  
**Temperature:** max. 7°C to 11°C, min. -2°C to 4°C, ground temperatures down to -7°C at Casement Aerodrome

**Sunshine:** trace to 5 hours, sunniest at Dublin Airport, trace at Cork Airport

**Wednesday 9th:** A mild night with rain in the west, south and east, heaviest in the southeast. The rain was widespread during the morning with mist and fog in some southern areas. A clearance arrived in the west by the evening, while the rain continued in Ulster, Munster and Leinster. Winds; light, southerly, veering westerly in western areas during the afternoon.

**Rainfall:** 4 to 27mm, heaviest at Johnstown Castle, 4mm at Belmullet  
**Temperature:** max. 8°C to 12°C, min. 2°C to 7°C, ground temperatures down to -2°C at Belmullet

**Sunshine:** nil to <1 hour, sunniest at Casement Aerodrome

**Thursday 10th:** Rain in the east died out early in the night. Ground frost was widespread inland with a light air frost in a few places. Fog persisted well into the morning in many parts. Good sunshine in western areas. Fog cleared early in the afternoon as an east to southeasterly airflow became established. Rain, drizzle and fog during the evening on the south coast, dry elsewhere. Winds were light to moderate, southerly or variable in direction.

**Rainfall:** nil to trace generally, 1mm at Johnstown Castle  
**Temperature:** max. 7°C to 11°C, min. -2°C to 5°C, ground temperatures down to -5°C at Claremorris

**Sunshine:** trace to 6 hours, sunniest at Knock Airport, trace at Cork Airport

**Friday 11th:** Light rain in the southwest, spread slowly eastwards overnight and through the morning. A clearance followed into the west during the mid morning, clearing the northeast coast by evening. The rain was mostly light but there were some heavier bursts in the west and north. Some sunshine in the west and south, dull further east. Winds were light southeasterly at first, veering southwesterly with the clearance.

**Rainfall:** 1 to 9mm, heaviest at Valentia, 1mm at Casement Aerodrome  
**Temperature:** max. 9°C to 12°C, min. 2°C to 6°C, ground temperatures down to -4°C at Claremorris

**Sunshine:** nil to 3 hours, sunniest at Belmullet, nil in the east

**Saturday 12th:** A dry start to the day throughout with good sunshine in the east, more overcast elsewhere. Rain began to spread into the west by the afternoon and spread slowly across the country through the afternoon and evening. A clearance reached the west around nightfall. The rain was mostly light but there were heavier bursts in the south and west. Winds were light to moderate, between southeasterly and southwesterly in direction.

**Rainfall:** nil to 20mm, heaviest at Valentia, nil at Dublin Airport  
**Temperature:** max. 6°C to 10°C, min. -1°C to 4°C, ground temperatures down to -6°C at Claremorris

**Sunshine:** trace to 6 hours, sunniest at Dublin Airport, trace at Valentia

**Sunday 13th:** Rain, early in the period along the east coast with some scattered showers in the west. The morning was dry with sunny spells in many parts, but mist and fog lingered in places through the morning. Some showers developed along the west coast during the afternoon. Elsewhere it was dry with good sunny spells. Through the evening and night showers continued in the southwest and west. Winds were light and variable in direction.

**Rainfall:** nil to 16mm, heaviest at Belmullet, nil at Malin Head  
**Temperature:** max. 5°C to 10°C, min. -1°C to 3°C, ground temperatures down to -5°C at Shannon Airport

**Sunshine:** 1 to 6 hours, sunniest at Shannon Airport, 1 hour at Knock Airport

**Monday 14th:** Some showers along the west and north coasts overnight. The morning saw showers in the west and northwest, with some heavier rain over the extreme north. Dry over the rest of the country with some sunny spells. During the afternoon there were some well scattered showers, but good dry and sunny periods also. Mostly dry and clear overnight. Winds; light, variable.

**Rainfall:** nil to 7mm, heaviest at Belmullet, nil at Casement Aerodrome  
**Temperature:** max. 5°C to 7°C, min. -1°C to 2°C, ground temperatures down to -5°C at Ballyhaise

**Sunshine:** 4 to 7 hours, sunniest at Knock Airport, 4 hours at Valentia

**Tuesday 15th:** The morning was overcast with widespread rain, heavy at times in southern and eastern coastal areas. By the afternoon rain affected all areas, heavy at times in parts. During the evening rain and drizzle continued across the country but cleared up in the southwest, where skies cleared and a frost set in. Winds; southeasterly to southwesterly, light to moderate.

**Rainfall:** 1 to 21mm, heaviest at Valentia, 1mm at Knock Airport  
**Temperature:** max. 5°C to 8°C, min. -1°C to 4°C, ground temperatures down to -4°C at Ballyhaise

**Sunshine:** nil to trace



**Wednesday 16th:** Rain and drizzle overnight, mostly in the northern half of the country. Clearer skies with frost inland in the south. Dry during the morning with good sunshine in places. Rain developed in Munster and south Leinster during the afternoon, but remained dry elsewhere. During the evening the rain spread to most of Leinster, while clearing the southern coastal counties. Winds; light and generally southerly or southeasterly in direction.

**Rainfall:** nil to 6mm, heaviest at Johnstown Castle

**Temperature:** max. 7°C to 11°C, min. -1°C to 4°C, ground temperatures down to -7°C at Carlow (Oak Park)

**Sunshine:** nil to 9 hours, sunniest at Belmullet, nil in the south

**Thursday 17th:** It was a cool morning with some fog and frost in places, which lingered in spots. A mostly dry day followed with some good spells of sunshine in the western half of the country. Throughout the afternoon and evening it became mostly cloudy with some occasional light showers, mostly in the east. It became misty during the evening and into the night but remained mostly dry countrywide. Winds; light, south to southeasterly in direction.

**Rainfall:** nil to trace generally, 2mm in the east

**Temperature:** max. 6°C to 10°C, min. -1°C to 4°C, ground temperatures down to -6°C at Shannon Airport

**Sunshine:** nil to 9 hours, sunniest at Belmullet, nil in the east

**Friday 18th:** Generally dry overnight. During the early morning a band of rain moved into southwest Munster and moved northeastwards across the country. This rain affected most of the country by midday. The initial band of rain was followed by heavier and more persistent wet and windy weather, which brought rain to all parts of the country during the afternoon and evening. The rain cleared all but the extreme northeast of the country by midnight. Winds; light to moderate, southeasterly in direction.

**Rainfall:** nil to 17mm, heaviest at Cork Airport, nil at Casement Aerodrome

**Temperature:** max. 7°C to 12°C, min. 0°C to 8°C, ground temperatures down to -1°C at Belmullet

**Sunshine:** nil to trace

**Saturday 19th:** Mainly dry overnight. There was a bright and sunny start to the day across most of the country. This dry, fine weather continued into the afternoon, although it was cloudier in the west and north, while the east enjoyed the best of the sunshine. Dry weather continued into the evening and night, however, patches of mist and fog returned to some areas. Winds were light to moderate, southeasterly in direction.

**Rainfall:** nil to trace

**Temperature:** max. 9°C to 12°C, min. 2°C to 8°C, ground temperatures down to -1°C at Mullingar

**Sunshine:** 1 to 8 hours, sunniest at Casement Aerodrome, 1 hour at Cork Airport

**Sunday 20th:** Dry across much of the country overnight with patches of mist and fog also. A band of rain moved into Munster during the early morning and spread into much of Connacht and the midlands by mid-afternoon. Generally overcast across the country with the best of any sunshine in the southwest. The rain continued to track northeastwards during the evening and was followed by more showery weather. As night fell rain continued to fall in the north and northeast. Winds; fresh and gusty, south to southeasterly.

**Rainfall:** nil to 11mm, heaviest at Belmullet, nil at Casement Aerodrome

**Temperature:** max. 8°C to 12°C, min. 5°C to 9°C, no ground frost

**Sunshine:** nil to trace generally, 1 hour at Valentia

**Monday 21st:** Rain in the east early in the period. Scattered showers in the west, with fog and mist in places also. The morning saw fog lingering in places, while staying dry with some sunny spells developing. The afternoon was mostly dry with some good sunshine and just the odd shower about. Continuing mainly dry during the evening and night with clear spells over parts of the east, while light rain developed along western coasts. Winds; light, southerly.

**Rainfall:** trace to 4mm, heaviest at Belmullet, trace at Malin Head

**Temperature:** max. 9°C to 13°C, min. 5°C to 8°C, ground temperatures down to -2°C at Casement Aerodrome

**Sunshine:** 2 to 7 hours, sunniest at Belmullet, 2 hours at Knock Airport

**Tuesday 22nd:** Rain in western areas overnight, dry further east with mist in places. Rain continued in the west throughout the morning, with fog in parts also. Continuing dry and cloudy over the eastern half of country. The rain continued in the west during the afternoon, spreading eastwards and becoming more patchy in eastern areas. Some fog also along the south and southwest

coasts during the afternoon. The evening and night had rain over much of the country, with fog in places also. Winds; light, southerly in direction.

**Rainfall:** nil to 18mm, heaviest at Valentia, nil at Casement Aerodrome

**Temperature:** max. 9°C to 12°C, min. 4°C to 9°C, no ground frost

**Sunshine:** nil

**Wednesday 23rd:** Widespread rain and drizzle overnight. Mist and fog in many parts during the morning. Rain continued on and off during the day as fronts moved eastwards across the country. There were some spells of hazy sunshine between the fronts, the best of these in the south and west. Rain in the northwest by late evening, staying misty and mild elsewhere. Winds were strong, southwesterly in direction.

**Rainfall:** nil to 3mm, heaviest at Belmullet, nil at Gurteen

**Temperature:** max. 10°C to 15°C, min. 8°C to 10°C, no ground frost

**Sunshine:** 1 to 3 hours, sunniest at Cork Airport, 1 hour at Casement Aerodrome

**Thursday 24th:** Rain, heavy at times in the northwest for the first few hours of the day, dry elsewhere with clear spells. Cloudy along the south coast with mist in places also. This continued into the daylight hours with some rain and drizzle in the south of the country. In the east and midlands there were long sunny spells where it was a very pleasant day. Continuing dull throughout on southern and northern coasts. Rain in the southwest and west by early evening. Winds; moderate to strong and gusty, south to southwesterly in direction.

**Rainfall:** nil to 1mm, heaviest at Cork Airport

**Temperature:** max. 10°C to 15°C, min. 5°C to 10°C, no ground frost

**Sunshine:** nil to 6 hours, sunniest in the east, nil at Valentia

**Friday 25th:** Rain crossed the country from the west overnight, heavy in places. Good sunny spells in the west during the day, while in the east and south, it remained cloudy for the most part. During the evening another band of rain moved into the west and rain to the south, moved in over Ireland again and affected most places, except the northeast, by the end of the day. Winds; moderate to strong and gusty, southwesterly in direction.

**Rainfall:** nil to 11mm, heaviest at Johnstown Castle, nil at Dublin Airport

**Temperature:** max. 10°C to 13°C, min. 6°C to 9°C, no ground frost

**Sunshine:** nil to 7 hours, sunniest at Knock Airport, nil at Valentia

**Saturday 26th:** A rainbelt crossed the country from the west during the early hours, clearing for the most part before dawn. Bands of showers followed, affecting all areas. In between the showers there were good spells of sunshine. It was cooler than of late and the strong breeze made it feel cooler still. Clear spells and some frost overnight. Winds; westerly, moderate to strong.

**Rainfall:** trace to 4mm, heaviest at Claremorris, trace at Roche's Point

**Temperature:** max. 8°C to 10°C, min. 1°C to 6°C, ground temperatures down to -3°C at Carlow (Oak Park)

**Sunshine:** 6 to 9 hours, sunniest at Cork Airport, 6 hours at Belmullet

**Sunday 27th:** A line of showers moved in over the northwest, crossing the country overnight. The showers were heaviest in the northwest and became progressively scattered and light, dying out around dawn. The day was mostly dry with just scattered showers. Long spells of sunshine everywhere. Winds were moderate at first, between southwesterly and northwesterly in direction, becoming northwesterly or westerly during the afternoon, light by evening.

**Rainfall:** nil to 3mm, heaviest at Claremorris, nil at Roche's Point

**Temperature:** max. 9°C to 11°C, min. -1°C to 5°C, ground temperatures down to -5°C at Claremorris and Shannon Airport

**Sunshine:** 6 to 9 hours, sunniest at Knock Airport, 6 hours at Valentia

**Monday 28th:** It was cold overnight with widespread frost. Fog developed in some inland places towards morning. The day was generally dry and bright, however, cloud and patchy light rain spread onto Atlantic coasts during the afternoon, dying out again in the evening. Sunny through much of the country, apart from the west coast. Winds were very light and variable in direction.

**Rainfall:** nil to trace generally, 1mm at Claremorris

**Temperature:** max. 9°C to 11°C, min. -3°C to 2°C, ground temperatures down to -8°C at Ballyhaise

**Sunshine:** 1 to 9 hours, sunniest at Dublin Airport, 1 hour at Belmullet

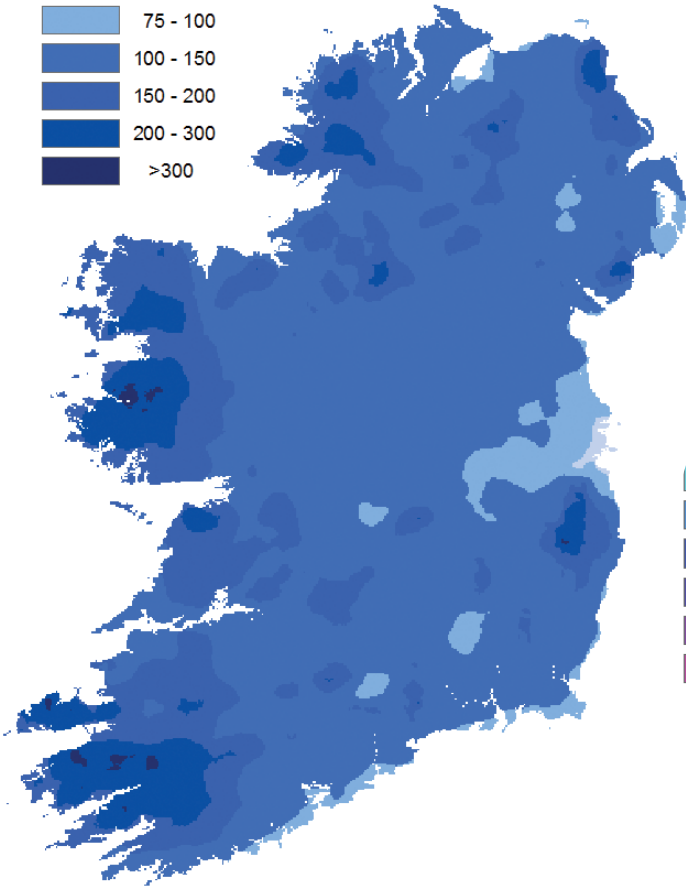
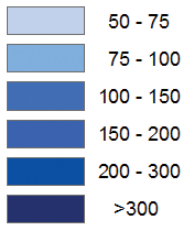
## Wetter than normal, especially in the west

Rainfall totals were above normal almost everywhere in February, with nearly double the average for the month recorded in parts of the west. Totals ranged from 73mm at Dublin (Merrion Square) to 331mm at Delphi Lodge, Co. Mayo. All stations recorded percentage of normal values between 102% and 206%, with the exception of Sherkin Island, which recorded slightly below the normal rainfall for February, with 94% of the average for the month.

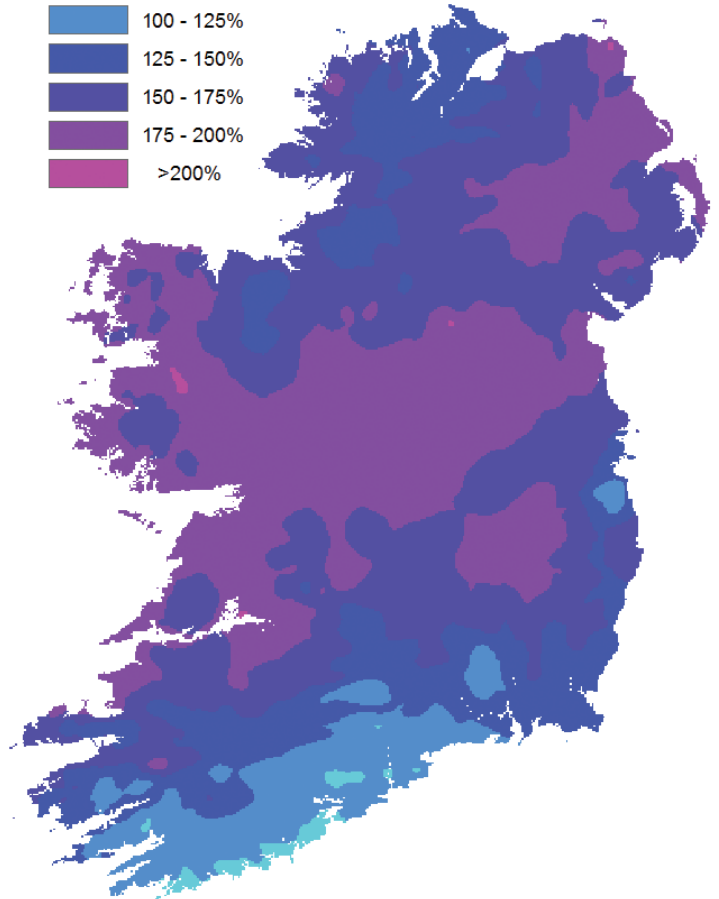
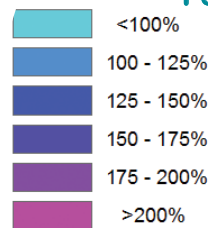
The heaviest daily falls were recorded between the 4th and the 8th, with the highest daily fall of 48.3mm measured at Delphi Lodge Co. Mayo, on the 6th. Shannon Airport recorded its highest daily fall for February with 33.8mm on the 5th, the highest measured at the station since records began in 1945. There were falls of around 100mm in western and southwestern areas in the 3-day period between the 4th and 6th of the month, leading to flooding in some areas. Some of the precipitation during the same period was wintry in nature, with falls of snow in northern areas. There were between 14 and 23 wetdays during the month, above the normal range for February of 11 to 16 wetdays.

<i>County/ Station</i>	Total Amount (mm)	% of 1961-90 average	Most in a day / date		Number of Raindays (>0.2mm)	Wetdays (≥1mm)
<b>CO. CARLOW</b>						
CARLOW (OAK PARK)	120.3	194	24.4	5	22	18
<b>CO. CAVAN</b>						
BALLYHAISE	115.1	169	22.0	6	22	17
CAVAN (LORETO COLLEGE)	116.6		22.3	6	21	17
<b>CO. CLARE</b>						
SHANNON AIRPORT	148.5	206	33.8	5	24	18
CARRON	201.6	196	42.5	5	26	22
<b>CO. CORK</b>						
ROCHES POINT	81.7	102	15.9	8	21	14
FERMOY (MOOREPARK)	92.2	111	14.8	5	24	18
CORK AIRPORT	127.7	110	17.0	18	23	18
SHERKIN ISLAND	103.8	94	16.3	12	25	18
BALLINCURRIG (PEAFIELD)	113.7		16.4	18	22	16
<b>CO. DONEGAL</b>						
MALIN HEAD	104.4	137	20.7	6	23	19
GLENTIES HATCHERY	189.9	170	34.2	6	23	20
BALLYSHANNON (CATHLEEN'S FALL)	128.6	171	34.0	6	24	19
<b>CO. DUBLIN</b>						
DUBLIN (PHOENIX PARK)	83.7	152	18.9	4	21	15
DUBLIN AIRPORT	75.9		18.7	4	22	13
CASEMENT AERODROME	75.8	155	19.7	4	18	11
DUBLIN (MERRION SQUARE)	72.6	142	17.3	5	18	12
<b>CO. GALWAY</b>						
GALWAY (UNIV. COLL.)	146.6	183	26.7	5	26	19
MAAM VALLEY	288.2		42.6	4	24	23
BALLYGAR	135.8	179	25.8	5	25	19
<b>CO. KERRY</b>						
VALENTIA OBSERVATORY	188.9	154	27.0	6	26	24
ARDFERT (LISCAHANE)	157.8		31.5	5	26	20
<b>CO. LIMERICK</b>						
MOUNTRUSSELL	151.6		19.1	5	24	22
<b>CO. MAYO</b>						
BELMULLET	149.4	187	31.2	6	23	21
STRAIDE	145.3	167	35.6	6	23	18
KNOCK AIRPORT	122.8		25.7	6	24	17
DELPHI LODGE II	331.3		48.3	6	25	23
<b>CO. MEATH</b>						
WARRENSTOWN	99.5	163	23.6	5	22	16
<b>CO. MONAGHAN</b>						
CARRICKMACROSS (DUNOGE)	117.9	166	23.9	6	22	15
<b>CO. OFFALY</b>						
DERRYGREENAGH	116.4	188	26.8	5	22	15
<b>CO. SLIGO</b>						
ARDTARMON	121.3		23.0	6	24	17
<b>CO. TIPPERARY</b>						
GURTEEN	104.8		29.3	5	22	16
FETHARD (PARSONSHILL)	110.5		25.9	5	24	18
<b>CO. WATERFORD</b>						
WATERFORD (TYCOR)	122.5	138	27.1	8	23	16
DUNGARVAN (CARRIGLEA)	119.5		25.0	8	21	16
<b>CO. WESTMEATH</b>						
MULLINGAR	118.5		19.1	5	24	18
<b>CO. WEXFORD</b>						
JOHNSTOWN CASTLE	109.2	137	27.0	8	23	15
JOHN F. KENNEDY PARK	118.8	141	27.4	8	20	17
CLONROCHE (KNOXTOWN)	139.6		28.3	8	20	16
<b>CO. WICKLOW</b>						
ASHFORD (CRONYKEERY)	134.0		20.0	20	23	14

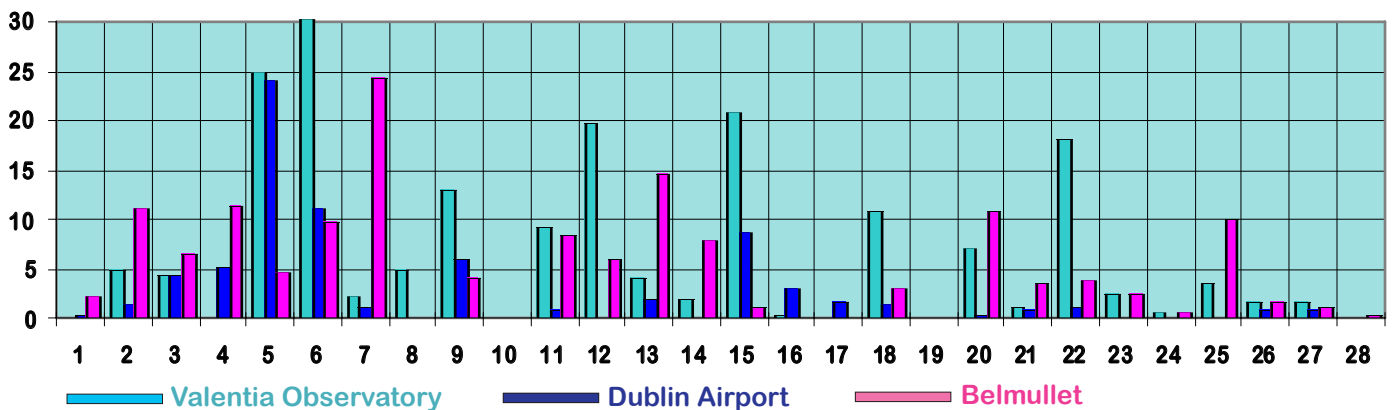
**Total rainfall (mm)**



**Percentage of normal rainfall**



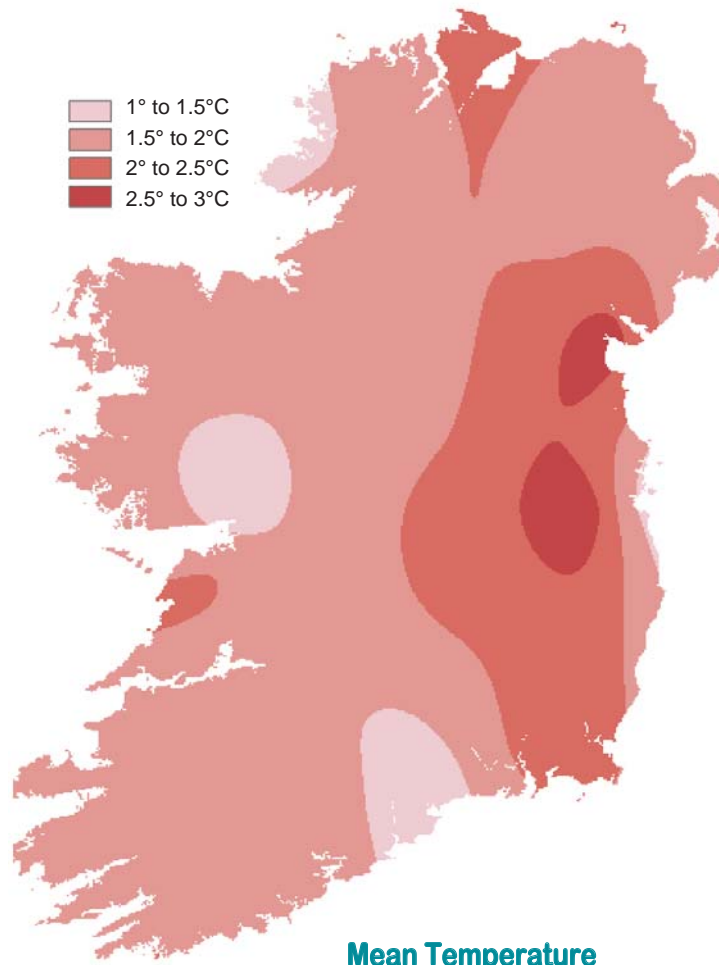
**Daily 0-24h rainfall values (mm)**



## Mild everywhere, especially in the east

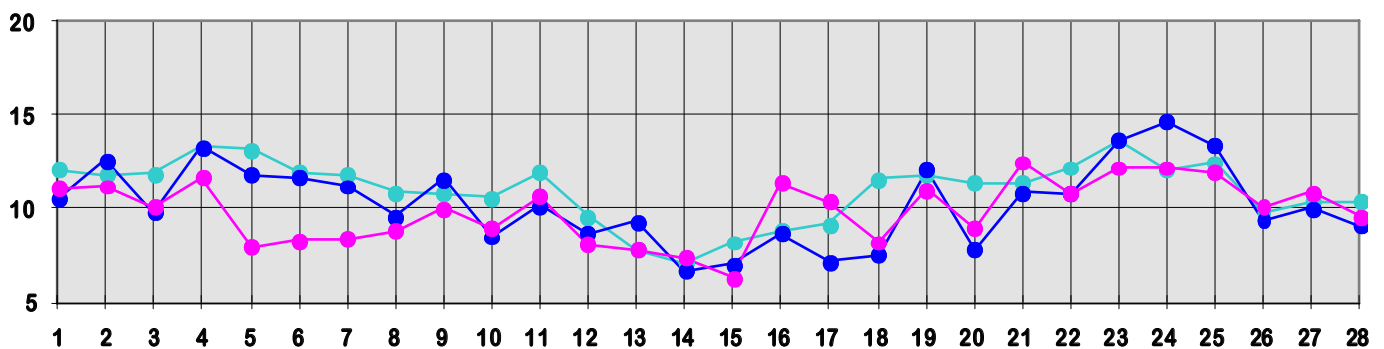
Mean monthly air temperatures were all above normal for February, with mean temperature differences for the month, ranging from one to three degrees above average; highest differences were measured in the east. Highest mean temperatures were in the south, with Sherkin Island having the highest monthly mean of 8.6°C. The lowest mean temperature for the month was 6.2°C recorded at both Carrickmacross, Co. Monaghan and Mullingar, Co. Westmeath.

The month's lowest air temperature, -7.1°C, was recorded at Waterford (Tycor), on the 1st, equalling the 1969 February minimum; the lowest ever recorded for the station since records began in 1966. The lowest grass minimum value of -7.6°C was measured at Ballyhaise, Co. Cavan on the 28th. This month most stations recorded only two to eight air frosts during the month and four to 18 ground frosts, both of which were below average for February. The highest daily temperature recorded was on the 24th at Phoenix Park, Co. Dublin which measured a highest daily temperature value of 15.7°C, the highest measured for February since 1998.

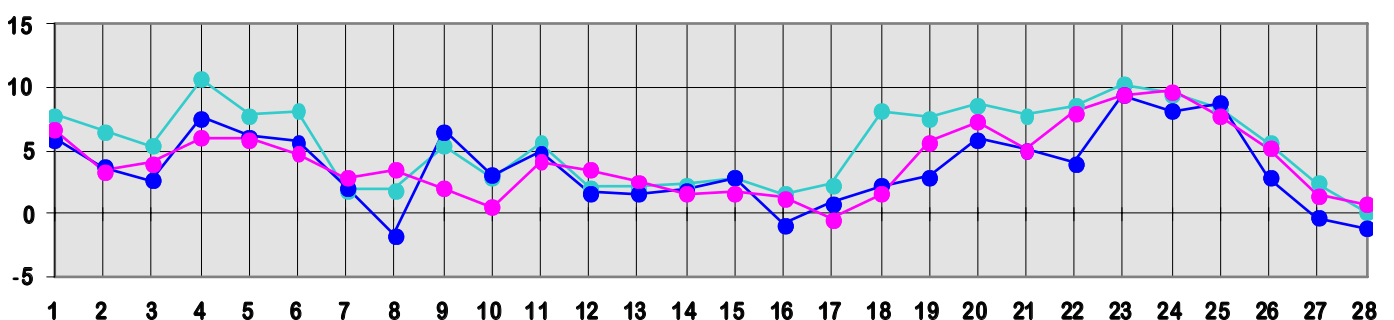


**Mean Temperature**  
(difference from 1961-90 normals)

### Daily 0-24h maximum temperatures (°C)



### Daily 0-24h minimum temperatures (°C)



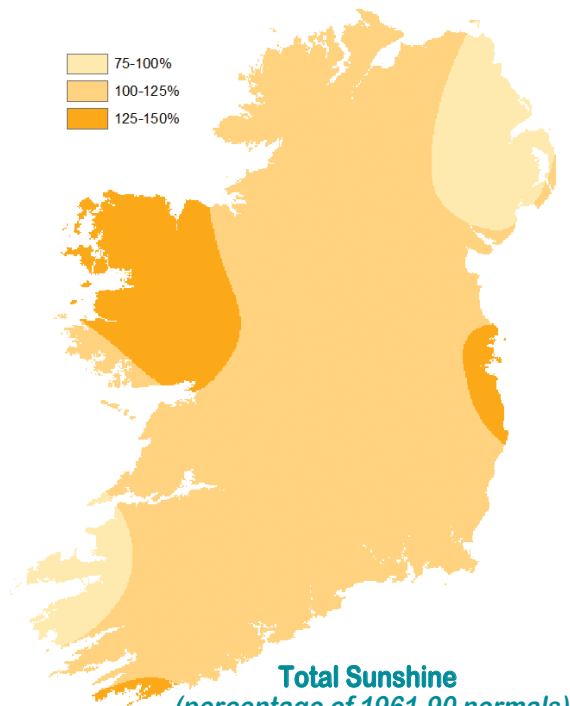
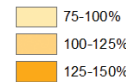
● Valentia Observatory      ● Dublin Airport      ● Belmullet

County/ Station	°C											
	Mean max.	Mean min.	Mean/ deviation from 1961-90 average		Highest max./date	Lowest min./date	Lowest grass min./date		Days with air frost ground frost			
<b>CO. CARLOW</b>												
CARLOW (OAK PARK)	10.6	3.1	6.9	2.2	14.6 23	-1.8 1	-7.1 8	4	13			
<b>CO. CAVAN</b>												
BALLYHAISE	9.8	2.9	6.4		13.3 23	-2.7 28	-7.6 28	6	13			
CAVAN (LORETO COLLEGE)	10.0	3.2	6.6		13.6 23	-2.8 28	-6.3 28	3	16			
<b>CO. CLARE</b>												
SHANNON AIRPORT	10.7	3.6	7.2	1.6	15.0 24	-1.1 28	-6.9 28	1	12			
CARRON	9.7	2.9	6.3	2.0	13.9 24	-0.9 28	-7.2 28	2	14			
<b>CO. CORK</b>												
ROCHES POINT	10.2	5.6	7.9	1.7	13.8 23	0.7 1	-1.8 8	0	1			
FERMOY (MOOREPARK)	10.9	3.0	7.0	1.8	15.2 23	-2.8 1	-7.3 28	10	14			
CORK AIRPORT	9.8	4.0	6.9	1.8	12.9 23	-0.3 12	-5.7 8	2	11			
SHERKIN ISLAND	10.8	6.4	8.6	2.0	12.2 5 23	1.4 28	-1.5 8	0	3			
BALLINCURRIG (PEAFIELD)	10.2	3.3	6.8		14.4 23	-1.1 14	-2.0 14	6	9			
<b>CO. DONEGAL</b>												
MALIN HEAD	9.5	3.8	6.7	1.5	13.5 24	0.2 15	-4.1 17	0	9			
GLENTIES HATCHERY	9.9	2.9	6.4	2.1	12.9 24	-2.4 17		8				
BALLYSHANNON (CATHLEEN'S FALL)	9.6	2.9	6.3	1.7	13.7 4	-0.8 17 28		3				
<b>CO. DUBLIN</b>												
DUBLIN (PHOENIX PARK)	10.7	3.2	7.0	2.6	15.7 24	-1.8 8	-7.1 8	5	18			
DUBLIN AIRPORT	10.3	3.5	6.9		14.7 24	-1.7 8	-7.1 8	3	11			
CASEMENT AERODROME	10.3	3.9	7.1	2.5	14.5 24	-3.0 28	-7.2 8	3	11			
DUBLIN (MERRION SQUARE)	10.2	4.7	7.5	1.7	15.1 24	0.0 1		0				
<b>CO. GALWAY</b>												
GALWAY (UNIV. COLL.)	10.4	3.4	6.9	1.4	14.1 24	-1.4 28	-7.0 28	4	15			
MAAM VALLEY	10.6	4.3	7.5		13.1 24	-0.6 10	-5.7 17	2	8			
BALLYGAR	10.2	3.1	6.7		14.1 24	-2.5 28	-3.1 8 28	4	8			
<b>CO. KERRY</b>												
VALENTIA OBSERVATORY	10.9	5.9	8.4	1.8	13.7 23	0.1 28	-5.4 28	0	8			
ARDFERT (LISCAHANE)	11.1	4.3	7.7	1.9	15.3 24	-0.3 16	-1.3 16	1	7			
<b>CO. LIMERICK</b>												
MOUNTRUSSELL	10.3	4.0	7.2		14.3 23	-0.4 28	-3.0 28	1	11			
<b>CO. MAYO</b>												
BELMULLET	9.9	4.5	7.2	1.6	12.5 21	-0.4 17	-4.2 17	1	8			
STRAIDE	10.2	2.8	6.5	1.7	14.0 4 23	-2.8 28	-7.2 28	8	15			
KNOCK AIRPORT	8.5	2.6	5.6		12.7 23	-1.0 15	-5.4 28	5	12			
DELPHI LODGE II	10.4	4.5	7.5		13.6 23	-0.5 10 17	-6.2 10	4	13			
<b>CO. MEATH</b>												
WARRENTOWN	10.6	3.0	6.8	2.5	14.7 24	-2.7 28	-6.6 28	5	13			
<b>CO. MONAGHAN</b>												
CARRICKMACROSS (DUNOGE)	10.0	2.4	6.2		13.9 24	-2.9 8	-4.3 15	6	15			
<b>CO. OFFALY</b>												
DERRYGREENAGH	10.3	2.3	6.3	2.3	14.9 24	-2.5 28	-6.2 28	7	18			
<b>CO. SLIGO</b>												
ARDTARMON	10.0	4.1	7.1		14.0 23	0.6 17	-5.0 17	0	11			
<b>CO. TIPPERARY</b>												
GURTEEN	10.3	3.0	6.7		13.8 23	-3.4 28	-7.4 28	2	11			
FETHARD (PARSONSHILL)	10.1	3.3	6.7		13.8 23	-2.0 1	-2.0 1	3	7			
<b>CO. WATERFORD</b>												
WATERFORD (TYCOR)	10.7	2.1	6.4	1.1	13.6 21	-7.1 1		5				
DUNGARVAN (CARRIGLEA)	11.2	3.7	7.5	1.9	15.1 23	-3.0 1	-3.5 1 8	5	8			
<b>CO. WESTMEATH</b>												
MULLINGAR	10.1	2.3	6.2	2.0	13.6 24	-3.1 28	-6.9 28	5	14			
<b>CO. WEXFORD</b>												
JOHNSTOWN CASTLE	9.6	4.9	7.3	2.1	11.6 21	-0.4 1	-4.7 8	2	4			
JOHN F. KENNEDY PARK	9.9	4.2	7.1	2.1	12.1 21	-0.3 14	-2.4 1	2	7			
CLONROCHE (KNOXTOWN)	10.0	3.0	6.5		13.0 21	-3.3 8	-5.0 28	5	9			

## Very sunny in most places

Sunshine totals for February were above average for the month, except in the southwest and northeast which were below normal, receiving only 75% to 100% of the long-term average for the month. It was another very sunny month in the west and east, with 87.6 hours of sunshine recorded at Belmullet and 89.7 hours of sunshine recorded at Dublin Airport. Percentage of normal values ranged from 86% of the monthly average at Valentia Observatory to 131% at Sherkin Island. The month's highest daily value of 9.4 hours was recorded at Ashford, Co. Wicklow on the 28th.

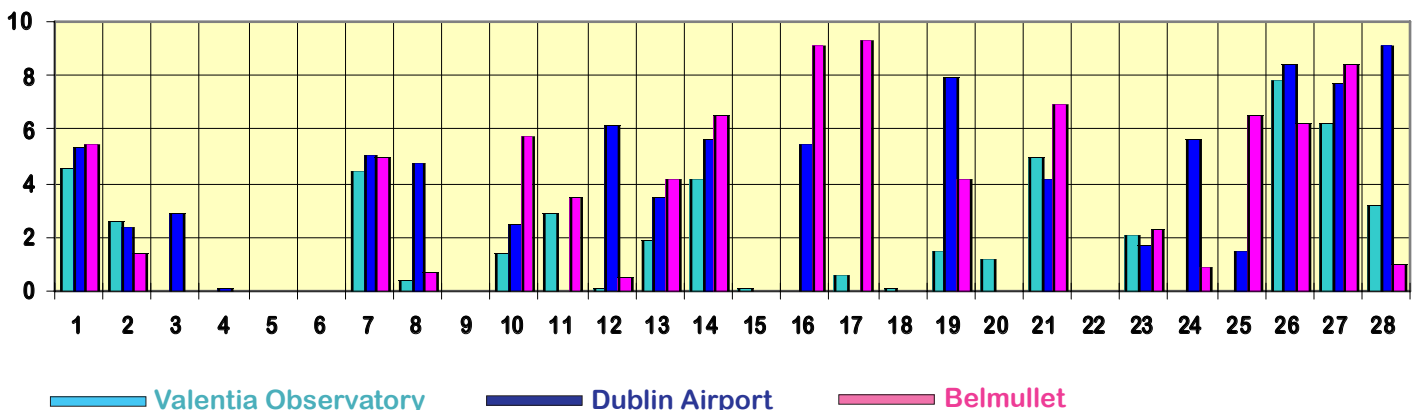
Global solar radiation totals for the month were above average over the majority of the country, with values at around 116% of normal for all stations, with the exception of Valentia, which was just below average, recording only 92% of its average for the month.



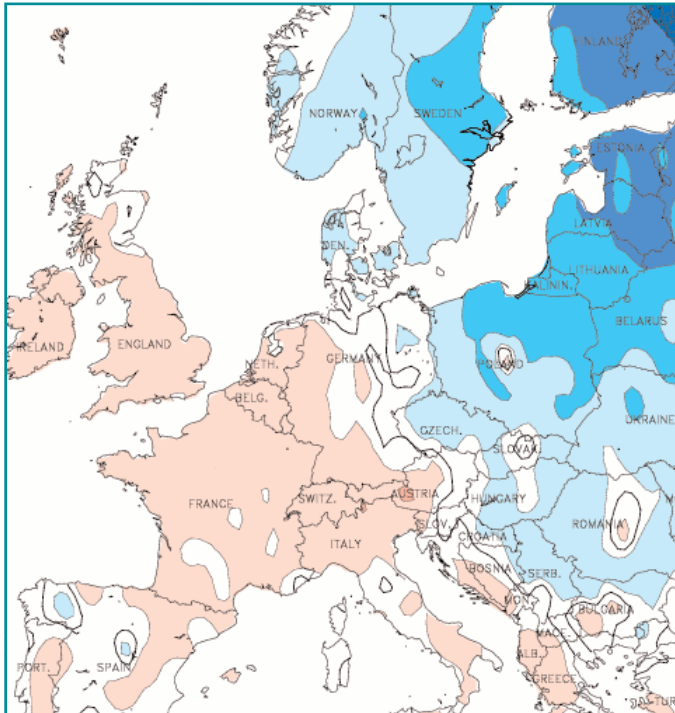
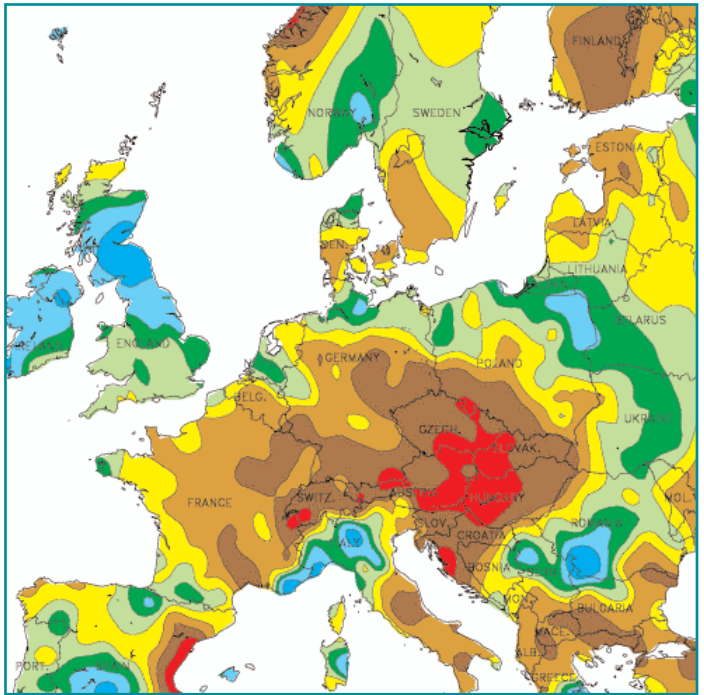
Total Sunshine (percentage of 1961-90 normals)

County/ Station	Daily mean (hours/day)	% of average	% of possible	Most in a day/date
<b>CO. CARLOW</b>				
CAVAN (LORETO COLLEGE)	2.55			7.8 28
<b>CO. CLARE</b>				
SHANNON AIRPORT	2.73	117	28	7.8 26
<b>CO. CORK</b>				
CORK AIRPORT	2.51	110	25	9.1 26
SHERKIN ISLAND	2.98	131	30	8.8 26
BALLINCURRIG (PEAFIELD)	2.40			8.4 26
<b>CO. DONEGAL</b>				
BALLYSHANNON (CATHLEEN'S FALL)	2.56	120	26	7.5 27
<b>CO. DUBLIN</b>				
DUBLIN AIRPORT	3.23	129	33	9.2 28
CASEMENT AERODROME	3.04	124	31	8.6 28
<b>CO. GALWAY</b>				
GALWAY (UNIV. COLL.)	2.88	126	29	8.8 22
<b>CO. KERRY</b>				
VALENTIA OBSERVATORY	1.85	86	19	7.7 26
ARDFERT (LISCAHANE)	2.04		21	7.7 27
<b>CO. MAYO</b>				
BELMULLET	3.12	130	32	9.3 17
STRAIDE	2.76			8.5 27
KNOCK AIRPORT	2.51			9.0 27
<b>CO. WATERFORD</b>				
DUNGARVAN (CARRIGLEA)	2.46	106	25	9.3 28
<b>CO. WEXFORD</b>				
JOHN F. KENNEDY PARK	2.25	107	23	8.8 28
CLONROCHE (KNOXTOWN)	2.35			9.2 28
<b>CO. WICKLOW</b>				
ASHFORD (CRONYKEERY)	2.66		27	9.4 28

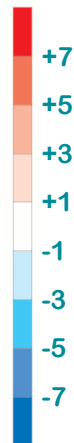
Daily sunshine values(hours)



**FEBRUARY RAINFALL**  
(percentage of 1961-1990 normal)



°C



**FEBRUARY MEAN TEMPERATURE**  
(difference from 1961-1990 normal)

Data supplied by NOAA  
Climate Prediction Centre,  
US Department of Commerce

A rare cold snap took place between February 3rd-4th across the northern Mexican state of Chihuahua. Temperatures dropped to -18°C in the border city of Ciudad Juarez. This is the lowest temperature recorded in the city since 1950. Six people were reported to have died due to the freezing temperatures. Power outages due to increased power demand closed factories and businesses across the state. City shelters were filled to capacity as residents without electricity and heat searched for reprieve from the freezing temperatures. A zoo in the town of Aldama lost power, causing the failure of heating elements and 35 animals froze to death- 14 parrots, 13 serpents, five iguanas, two crocodiles and a capuchin monkey.

On February 8th, dense smog settled over Madrid, Spain, causing air pollution concerns for the capital city for several days. Smog warnings were issued when the nitrogen dioxide levels in the city rose above 5 times the legal limit of 200 micrograms per cubic meter, set by the European Union. A strong high pressure system over the Iberian Peninsula prevented the dispersion of air pollution and limited rainfall which can act as a natural air purifier.

Heavy rains across Bolivia via the last weekend of February caused landslides across several regions of the country. At least 45 people were reported to have been killed due to floods and mudslides, and another 10,000 people lost their homes.

Between February 11th and 14th, a strong storm grazed the eastern coast of the Korean Peninsula, dropping over 91cm of snow. Samcheok, South Korea measured 100cm of snow during the course of the storm, the largest storm accumulation measured in South Korea since records began in 1911. It was reported that one rural town received 80 cm of snow in 24 hours — potentially a new South Korean record for snowfall in a single day.

Tropical Cyclone Carlos formed off the northern Australian coast on February 14th, and remained stationary for three days over Australia's Northern Territory coastal region. On the 16th, 340 mm of rain fell in Darwin, breaking the 24-hour rainfall record for the city. The three day total precipitation (14th-16th) for the city was 684.8mm, also a record. The rains caused heavy flooding in Darwin, and the city tied the record rainfall for the month by the 17th. The city dam on the outskirts of Darwin was overtopped by rising water, leaving Darwinians to watch as belongings were swept away in the resulting floods.

**Global weather highlights of the month**

### The Weather of December, January and February

## COLD, DRY AND VERY SUNNY IN PLACES

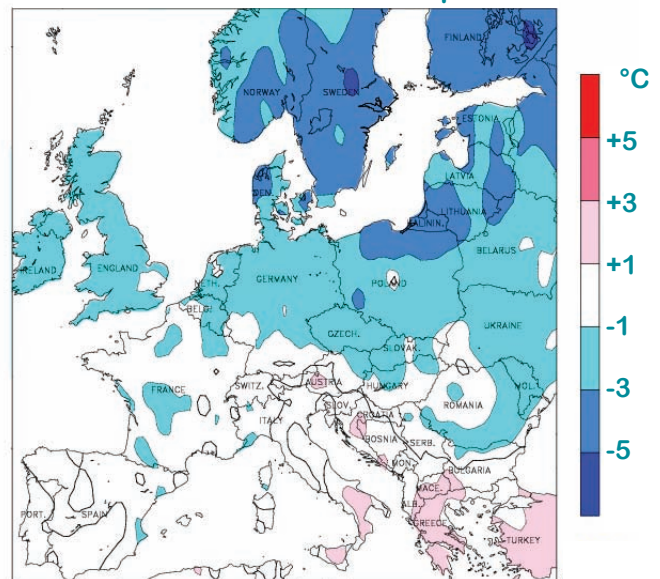
Despite mild weather during February, mean air temperatures for the season were well below normal everywhere, by between one and two degrees generally. December was one of the coldest months on record in Ireland, while cold spells also dominated during January. Overall, mean temperature values for winter were between 2.4°C and 5.8°C, among the lowest in recent years, but at no station was it as cold as last winter, when temperatures remained below normal throughout almost all of the season. The lowest temperatures this winter were measured between December 21st and 25th almost everywhere, when minimum air temperatures fell below -15°C at some stations; maximum temperatures were below freezing on eight successive days in some midland areas. There was a total of between 40 and 48 air frosts during the season at inland stations, almost twice the normal number for winter in places.

Rainfall totals for winter were below normal everywhere and were well below normal in the south. While February was a wet month everywhere, totals for both December and January were well below average amounts. Both Dublin Airport and Valentia Observatory had their driest winters since 2005/06. The precipitation during most of December was in the form of snow, giving accumulations of over 20cm of snow at some eastern stations. The heaviest daily falls of rain during the season were in the south and southwest on December 26th/27th, coinciding with the end of the exceptionally cold spell; other stations had their wettest days of the season in the period between February 4th and 7th. Most stations recorded between 44 and 63 raindays during the 3-month period (*days with 0.2mm or more rainfall*), well below the normal range for

winter. Sunshine totals for the season were above normal everywhere and were well above normal at some southern and western stations, by as much as 62% at Belmullet, where it was the sunniest winter since the station opened in 1956. The same station's daily sunshine of 9.3 hours on February 17th was its highest winter value since 2004.

Mean windspeeds of between 5 and 14 knots (*9 and 26km/h*) were the lowest on record for winter at many stations. A spell of windy weather during early February brought gusts of over 50 knots in most areas, but windspeeds during both December and January were exceptionally low. The highest gust, 76 knots (*141km/h*), was measured at Malin Head on February 3rd.

### Another exceptionally cold winter over northeastern Europe



Winter 2010/11- Mean seasonal temperature difference from normal  
(image: NOAA Climate Prediction Centre, US Dept of Commerce)

County/ Station	RAINFALL (mm)			TEMPERATURE (°C)			SUNSHINE (HOURS)			NO. OF DAYS WITH:							
	Total	% of average	Most in a day amount date(s)	Mean	diff. from average	Extremes		Daily mean	% of average	Most in a day amount date(s)	Rain	Snow	Air frost	Hail	Thunder	Fog	Gale gusts
						Highest	Lowest										
<b>CO. CARLOW</b> Carlow (Oak Park)	207.1	91	33.0 5 Feb	3.0	-1.8	14.6	-12.9				53	43					7
<b>CO. CAVAN</b> Ballyhaise	226.7	90	27.7 15 Jan	2.4		13.3	-15.2				53	48					3
<b>CO. CLARE</b> Shannon Airport	249.1	93	33.0 5 Feb	3.7	-2.1	15.0	-11.4	2.05	107	7.8 26 Feb	46	7 39	2	0	23	8	
<b>CO. CORK</b> Cork Airport	270.4	70	36.4 27 Dec	4.2	-1.6	12.9	-7.2	2.63	133	9.1 26 Feb	52	8 29	2	0	31	13	
<b>CO. DONEGAL</b> Roche's Point	194.7	69	27.1 27 Dec	5.3	-1.3	13.8	-4.4				53	21					16
<b>CO. DUBLIN</b> Malin Head	268.2	91	22.0 7 Feb	5.1	-0.5	13.5	-4.3				61	18					33
<b>CO. DUBLIN</b> Dublin Airport	158.4		24.2 5 Feb	3.5		14.7	-12.2	2.52	121	9.2 28 Feb	45	13 42	2	2	19	15	
<b>CO. DUBLIN</b> Casement Aerodrome	165.5	86	27.9 5 Feb	3.3	-1.7	14.5	-15.7	2.15	110	8.6 28 Feb	44	12 41	6	0	14	18	
<b>CO. KERRY</b> Valentia Observatory	404.3	90	49.2 26 Dec	5.8	-1.2	13.7	-7.7	2.43	138	7.7 26 Feb	55	5 28	6	0	1	19	
<b>CO. MAYO</b> Belmullet	305.9	95	23.8 7 Feb	5.1	-0.9	12.5	-7.6	2.82	162	9.3 17 Feb	63	12 23	20	0	6	25	
<b>CO. MAYO</b> Knock Airport	233.3		20.8 4 Feb	3.0		12.7	-7.4	2.71		9.0 27 Feb	57	11 40	4	0	34	13	
<b>CO. TIPPERARY</b> Gurteen	185.0		23.3 5 Feb	3.1		13.8	-13.4				52	41					7
<b>CO. WESTMEATH</b> Mullingar	202.6	80	21.4 6 Feb	2.7	-1.6	13.6	-14.1				47	47					2
<b>CO. WEXFORD</b> Johnstown Castle	257.5	86	38.2 27 Dec	4.7	-0.8	11.6	-4.5				50	29					7