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Monthly Weather Bulletin February 1994

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Monthly Weather Bulletin

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Temperature Diary 16

Continuing unsettled

-storm on the 3rd

-cold spell mid-month

Cover

Clearing the snow in Enniskerry, Co. Wicklow, on Tuesday the 15th. An anticyclone over Scandinavia swept very cold air across much of Europe during the middle of the month. This cold air mass reached as far as Ireland on the 14th, 15th and 16th, bringing snow to many southern and eastern parts of the country. (picture Irish Times)

The storm that struck the country on Thursday the 3rd was the most notable feature of February's weather. The forecasters had identified a developing depression on the far side of the Atlantic some days previously. By the time it reached the southwest of Ireland on the morning of the 3rd, pressure at the centre of the depression had fallen to around 955hPa and the easterly to southeasterly winds ahead of it were blowing strong to gale force. (See satellite picture across.) Most stations reported gusts of 50 knots or more. (1knot=1.15mph) The wind reached violent storm force 11 at Malin Head and gusted to 80 knots. The mean wind speed for the day at that station was 46 knots.

It was during this storm that a Maltese ship sank a couple of hundred miles off the southwest coast with the loss of all twenty-seven of her crew. The storm force winds caused a build-up of sea salt deposits on a high-voltage electricity transmission system in Northern Ireland, resulting in a power cut that left three-quarters of the province in darkness for up to six hours. The stormy seas and strong easterly winds forced the closure of Dublin Port and severely disrupted ferry schedules. A number of rivers in Dublin flooded, which together with fallen trees blocking roads caused considerable traffic problems. Flooding was also reported from counties Sligo and Leitrim and parts of Co. Donegal were also affected by power cuts.

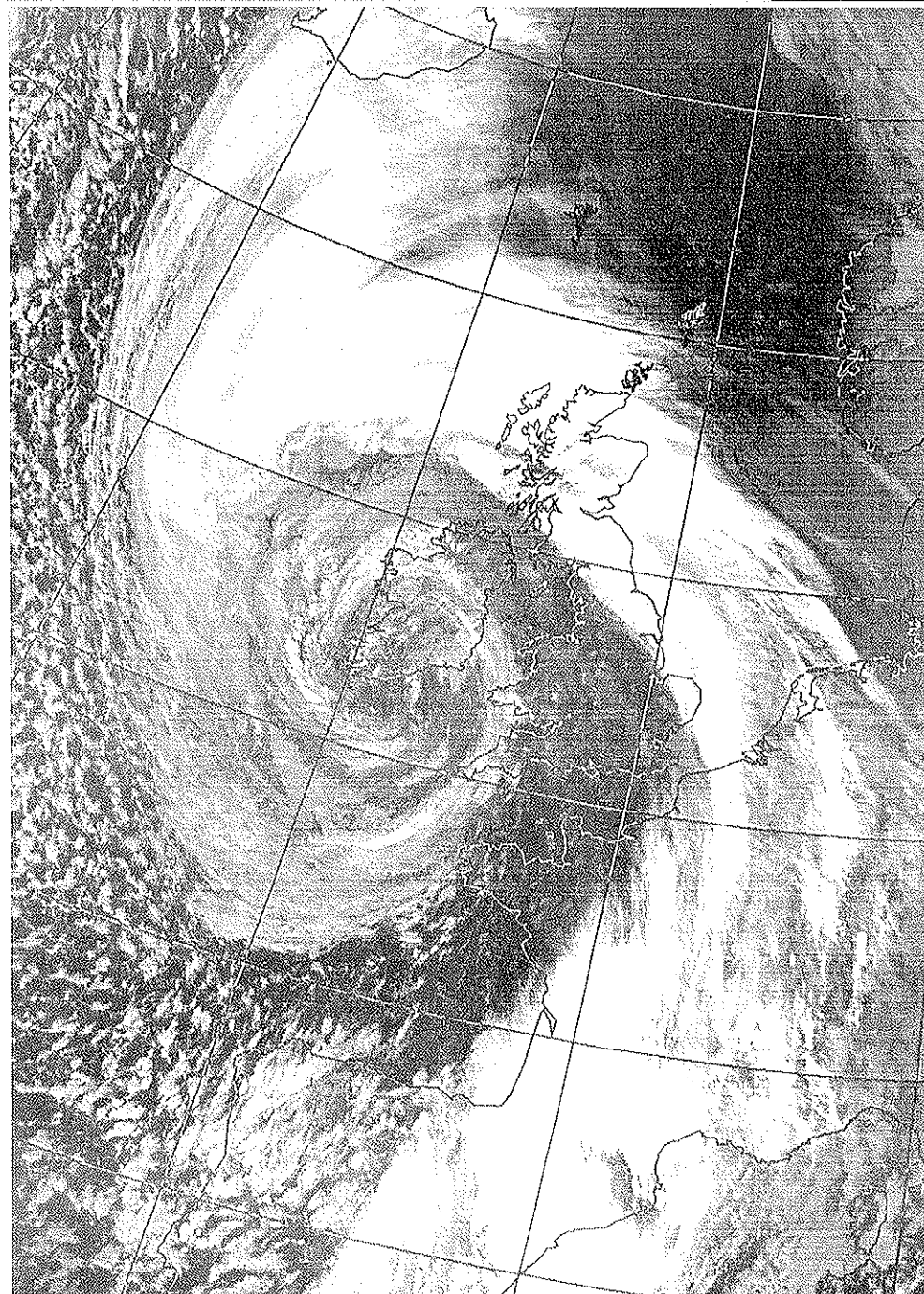
Apart from the snow that affected the south and east of the country around the middle of the month, snow also fell on the 1st and on the 22nd and 23rd. Hail showers were confined to the first week, mainly affecting northern and western stations. Thunder was reported from Belmullet on the 1st and from Valentia Observatory on the 5th and 6th, and the

ESB power station at Moneypoint in Co. Clare was struck by lightning on the 7th, blacking out around 10% of the country for half-an-hour that evening. Apart from Cork Airport, which reported fog on fourteen days during the month, fog was mostly confined to the 11th, 18th/19th, 23rd and 26th. Gale gusts were reported on between five and ten days from most stations but there were from fifteen to twenty-five days with gale gusts in the north and west. There were fifteen days with full gales at Malin Head.

A depression south-east of Greenland on the 1st of the month gave a mild, strong and gusty southerly airflow over Ireland which brought rain, some of which was heavy. Temperatures dropped during the morning after the passage of a cold front and winds veered westerly which allowed polar maritime air in over the country bringing cooler conditions and showers of hail, sleet and snow by the end of the day. Despite the flow becoming more southerly again on the 2nd due to a ridge of high pressure passing over the country, the temperature was slow to rise, mainly

Across

This infra-red satellite picture shows the centre of the deep depression that affected Ireland on the 3rd over the southwest of the country that afternoon. (picture Dundee University)



because warmer air was held well south of Ireland by a warm front moving eastwards at an unusually low latitude. The parent depression of this front continued to move eastwards towards the south coast on the 3rd with the centre hitting Co. Cork during the afternoon. This area of very low pressure then tracked northwards over western counties on the 4th moving out into Donegal Bay that evening. During the 5th it merged with another deep depression in the North Atlantic, and this combined depression, which remained almost stationary between Ireland and Greenland and was evident right up through the atmosphere, dominated our weather until the 8th. The airflow for the period was mainly southwesterly with frontal troughs frequently moving eastwards across the country giving rain and showers each day, some of the showers of hail with thunder at times, but there were sunny spells in most areas also. The depression moved eastwards into the North Sea on the 9th and a ridge of high pressure built up behind it affecting Ireland later on the 9th and early on the 10th.

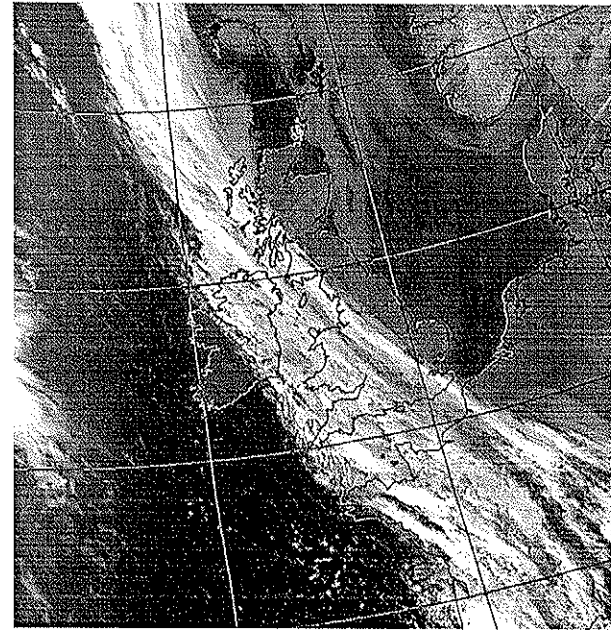
However frontal troughs pushed eastwards from the Atlantic later on the 10th and during the 11th, despite the persistence of high pressure at upper levels over the area. This upper-air high pressure area moved northeastwards over Scandinavia and helped a surface-level high pressure area in the same area to intensify. This had the effect of pushing the frontal trough that had moved eastwards across Ireland on the 11th back across the country in a westward direction on the 12th, though it was very weak at this stage. Ireland remained in a southeasterly airflow between the 12th and the 15th with cold air originating over the Continent pushing in over the country. Temperatures dropped gradually during the period with widespread nighttime air frost by the 14th. Precipitation was low and mainly fell as snow showers in the south and east of the country; winds were strong at times as we lay sandwiched between the high pressure to the northeast and a complex low pressure

area in the Atlantic. One centre of this low pressure area moved northwards over Ireland on the 15th and brought some snow followed later by rain. Over the next couple of days the flow changed from cold continental to warmer maritime, as another large complex depression in the Atlantic became slow-moving west of Ireland.

The 17th and 18th were mild days with a southerly to southwesterly airflow and spells of rain or showers. On the 19th a shallow depression developed on a frontal trough approaching Ireland and moved eastwards to the south of the country on the 20th giving a quick blast of easterly winds from Northern Europe. Between the 21st and the 26th cold air from the continent lay over eastern and northern parts and milder more maritime air pushed in slowly from the Atlantic. On the 21st most of the country was under the cold continental air. Milder air pushed in from the Atlantic over Munster and parts of Leinster on the 22nd, bringing rain and drizzle which fell on the colder side, i.e. most of Leinster, Connaught and Ulster, as snow and sleet. Snow was confined to the extreme north and northeast on the 23rd, although the really mild air remained in Munster and south Leinster.

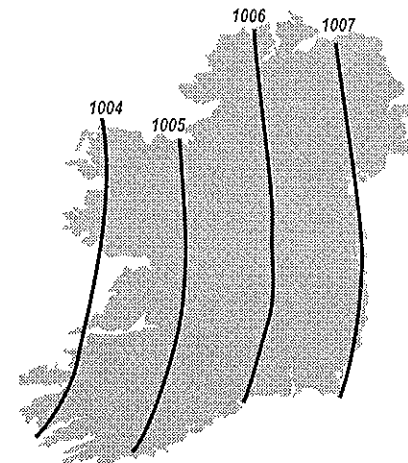
The cold air pushed back southwards again early on the 24th as another depression moved eastwards south of the country and cut off the supply of warm air for a short time. However by late on the 25th the milder air was restored to all areas as frontal troughs from the parent depression in the Atlantic pushed northwards over the country. The flow over the country was cyclonic between the 26th and 28th as a depression which began its life in southern latitudes tracked northwards over Ireland and then eastwards over Britain bringing generally mild, dull conditions with spells of rain to the country.

Facing
A cold front makes its way across Ireland on the morning of the 18th. (picture Dundee University)



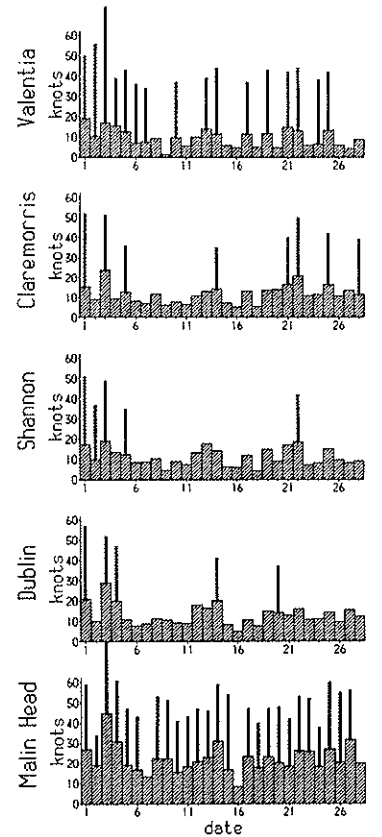
MEAN ATMOSPHERIC PRESSURE

High mean pressure over Scandinavia deflected the normal mean southwesterly flow to a more southerly direction but low pressure was the dominant feature over Ireland during the month however, with the result that mean pressure values were between 6 and 7hPa below normal, confirming the pattern of the earlier winter months. It was the storm that hit the country on the 3rd that not surprisingly gave the lowest pressure values of the month, the barometer at Cork



Airport dropping to 952.9hPa that day. The highest values occurred on the 9th, and on the 10th in the east and southeast. Barometers at a number of southern and eastern stations rose to 1028.4hPa as a ridge of high pressure affected the country.

(The mean pressure map for the North Atlantic and Europe is not available this month due to a computer problem.)



Daily mean wind speeds and maximum significant gusts (34 knots or more)

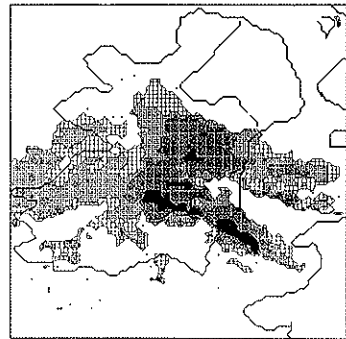
SEA TEMPERATURES

Sea surface temperatures off the Derry and Antrim coasts cooled from 7.5°C to around 6°C by the end of the month. The warmer waters to the west cooled from 9.5°C to 8.5°C, while the surface temperature of Kerry's coastal waters began and ended the month at around 9.5°C. These values are normal for the west and southwest but a little cooler than usual off the northeast. Malin Head's mean sea surface temperature for the month was 6.4°C, which is only a little below normal for February.

Wettest in south and east

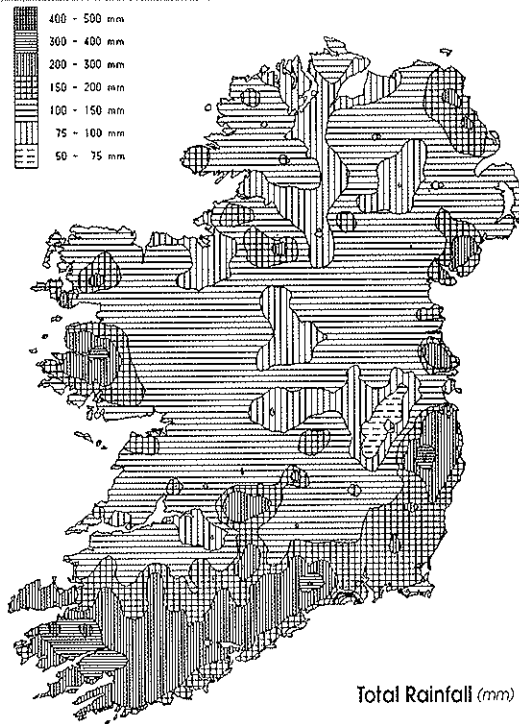
The month had got off to a wet and windy start, many stations measuring an inch of rain (25mm) or more and gusts in excess of 50 knots during the first three days. The storm of the 3rd brought heavy falls to Dublin and Cork in particular. Indeed Casement Aerodrome's rainfall total that day made it the wettest February day at the station since 1967.

Overall it was yet another very wet month. Southern and eastern stations recorded more than double their normal February rainfall. Ardee's total of 141mm comes to 239% of normal. Cork Airport had its wettest February since 1966, it was the wettest February at Rosslare since the station opened in 1956, and even at Birr, which with 76mm of rain is the least wet station in the country, that amount is still 46% more than normal. Despite this however, with the exception of southern coastal areas the month was not as wet as February 1990, when many stations in the

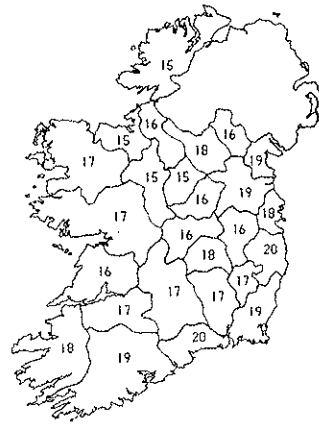


Above - This radar image shows the rainfall pattern at 1800 on the 26th as a band of rain moved northwards across the country.

midlands and west received more than three times their normal February falls. There were between fourteen and twenty days with significant amounts of rain, (1mm or more). The weather was unsettled from the beginning of the month until a ridge of high pressure gave a mostly dry day on the 9th. Rain returned on the 10th but it was mostly dry again from the 11th to the 13th. There wasn't much rain over the subsequent three days but snow affected much of the south and east during this period. The weather continued unsettled for the rest of the month, with heavy falls of rain particularly on the 19th, 22nd, 25th and 26th. Daily falls in excess of 25mm were reported from Cork Airport on three occasions during the last ten days of the month.



Total Rainfall (mm)

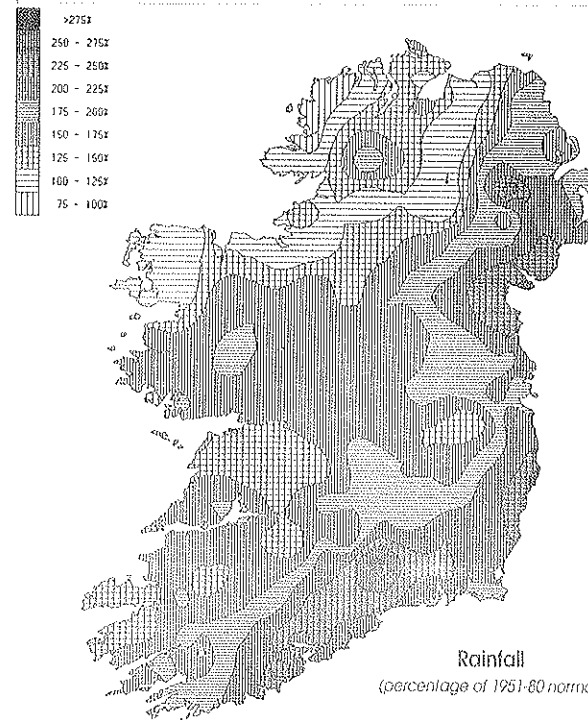


Above - The number of wet days - days with 1mm or more of rain - in each county during February 1994

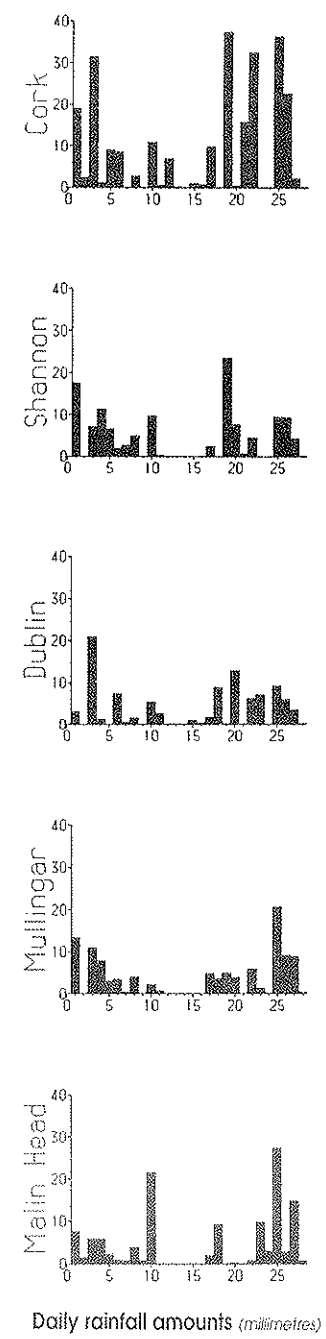
DAILY RAINFALL EXPRESSED AS % OF MONTHLY NORMAL (1951-80)

COUNTY	DAY																												TOTAL
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Carlow	1	22	26	12	17	3	2	1	-	14	2	1	-	4	1	-	12	-	18	1	7	7	4	5	24	15	2	...	203
Cavan	4	4	23	12	5	4	7	6	-	32	-	-	-	-	1	-	10	4	2	3	1	6	8	22	23	10	1	...	174
Clare	4	3	11	16	8	6	8	4	-	12	-	-	-	-	-	-	4	29	6	1	3	1	3	8	16	7	...	147	
Cork	1	21	14	4	11	4	3	2	-	11	2	3	-	2	1	1	7	3	28	3	18	19	-	14	11	19	1	...	201
Donegal	6	2	12	11	2	1	4	5	1	19	-	-	-	-	-	-	7	1	2	-	4	2	1	38	20	5	1	...	116
Dublin	6	24	43	4	15	3	1	3	-	12	1	-	-	-	2	-	34	3	16	3	-	11	5	4	11	17	3	...	201
Galway	4	3	15	6	8	4	7	2	1	9	-	-	-	-	-	-	7	40	5	-	5	1	32	19	17	1	...	170	
Ferry	2	15	17	5	9	5	7	2	-	8	-	-	-	-	1	-	8	6	16	-	12	15	2	9	10	10	1	...	146
Kildare	2	32	20	13	17	5	4	3	-	6	-	-	-	-	1	-	7	2	1	-	-	5	1	3	14	20	4	...	140
Kilkenny	4	11	24	9	19	7	1	1	-	16	1	1	-	1	3	1	16	-	17	4	-	9	-	3	25	19	2	...	188
Laois	3	2	32	24	7	5	3	3	1	10	-	-	-	-	1	6	14	6	-	9	1	8	24	33	6	1	...	172	
Leitrim	6	4	19	32	5	1	5	4	-	11	-	-	-	-	-	-	13	10	-	8	5	4	18	17	3	...	143		
Limerick	1	11	14	11	10	4	1	2	-	21	-	2	-	-	1	-	3	22	5	1	10	-	8	6	15	2	...	140	
Longford	2	4	21	12	6	3	8	1	-	11	-	-	-	-	-	-	12	-	8	-	8	4	6	18	25	1	...	192	
Louth	4	14	51	7	8	8	2	9	-	16	6	-	-	-	5	18	1	5	6	-	21	9	4	33	34	8	...	249	
Mayo	8	3	33	3	10	4	6	5	-	9	-	-	-	-	-	4	28	5	-	8	1	5	20	16	1	...	149		
Meath	3	17	19	5	12	9	3	5	-	15	-	-	-	-	1	15	2	2	2	-	15	5	5	23	30	4	...	192	
Monaghan	8	4	29	34	6	5	2	8	-	17	-	-	-	-	2	-	9	1	1	-	3	11	-	27	15	7	...	170	
Offaly	5	4	16	31	8	3	4	4	-	9	-	-	-	-	-	11	14	2	-	6	1	6	24	28	5	...	165		
Rosemount	8	4	13	9	5	5	5	2	-	9	-	-	-	-	-	5	25	2	-	10	4	6	16	26	2	...	182		
Sligo	3	4	9	7	3	1	8	5	-	10	1	-	-	-	-	7	17	-	-	6	3	1	13	10	3	...	105		
Tipperary	2	17	20	10	15	3	9	1	-	9	-	-	-	1	3	5	6	1	33	2	7	33	1	6	18	25	1	...	191
Waterford	2	21	18	6	14	2	1	1	-	16	6	3	-	1	6	1	9	32	2	3	37	2	15	20	13	1	...	232	
Westmeath	11	-	22	9	6	5	-	7	-	5	-	-	-	-	-	14	10	4	-	10	2	-	35	26	5	...	171		
Wexford	3	19	13	6	10	2	1	2	-	15	2	-	-	2	13	-	19	14	3	1	32	5	9	18	9	2	...	211	
Wicklow	2	17	27	11	9	2	1	3	-	9	2	1	-	1	6	-	20	1	30	5	-	15	3	4	27	17	1	...	218
MEAN	4	10	19	9	9	4	4	4	-	12	1	-	-	-	2	-	10	1	17	3	2	12	3	6	19	19	3	...	173

NOTE: In the above table, each value represents the percentage of the monthly normal that fell on each day. Stations within each county are averaged together. For example, 1% of the average monthly rainfall in Co. Carlow fell on the 1st.



Rainfall (percentage of 1951-80 normals)



Daily rainfall amounts (millimetres)

TEMPERATURE

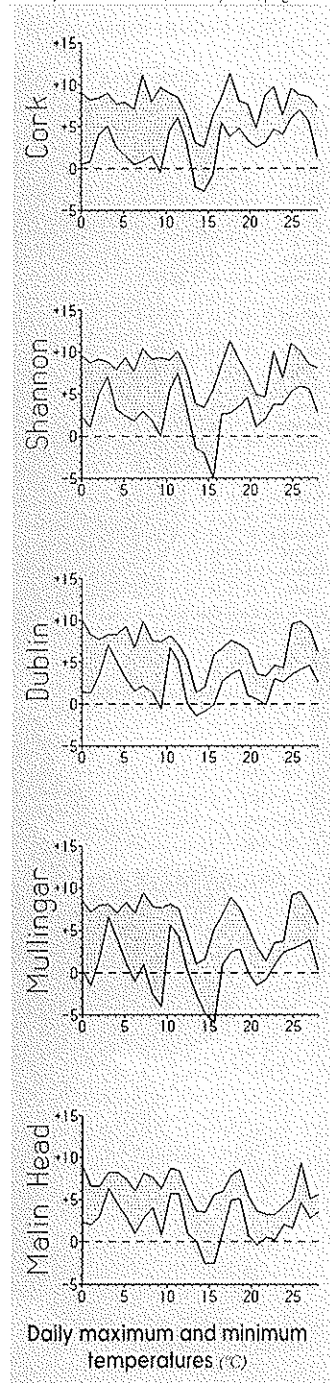
Cold snap mid-month

Mean temperatures for the month ranged from 3.4°C at Ballinamore to 7.2°C at both Valentia Observatory and Sherkin Island. Sherkin's mean is a degree above normal and Malin Head's mean of 4.3°C almost a degree below but otherwise stations in the southern half of the country were a little above normal and stations in the northern half a little below.

Mean maximum values were slightly below normal in most cases and mean minima a little above, reflecting the fact that it was a dull month. It was mainly on the 1st, 8th, 18th, 25th and 26th that values of 10°C or more were recorded, although it was on the 12th that the thermometer at

Ardferit in Co. Kerry touched 12.9°C, the highest temperature of the month. During the very cold spells on the 14th and 15th and again on the 21st and 22nd, the temperature failed to reach even 5°C at most stations; indeed the maximum value at Clones on the 15th was just 0.5°C. Most stations recorded their lowest night-time minimum values either on the 10th or between the 14th and the 16th, when not even the coastal stations escaped the widespread air and ground frost. The lowest air temperature of the month was -7°C, recorded at Ballygar in east Co. Galway on the 15th. The month's lowest ground temperature, -13.5°C, was recorded at Birr the following night, making it the coldest February night there since 1969. Overall there were from two to twelve nights with air frost and between five and twenty-seven nights of ground frost.

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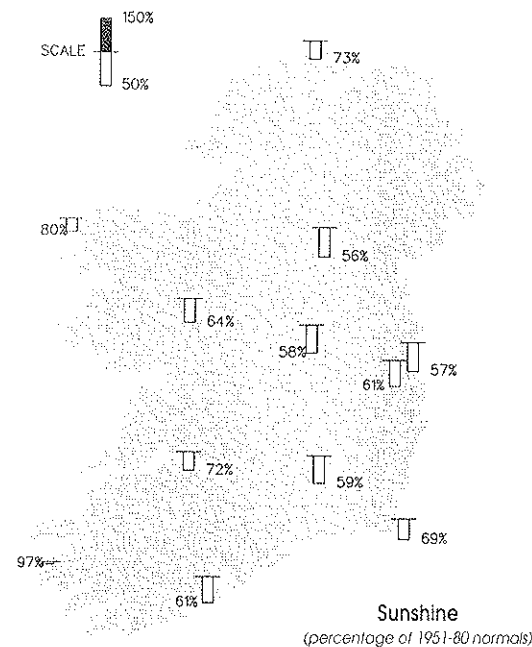
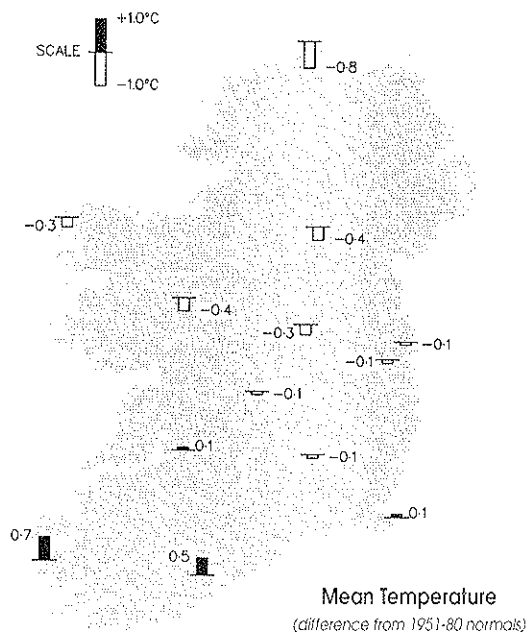
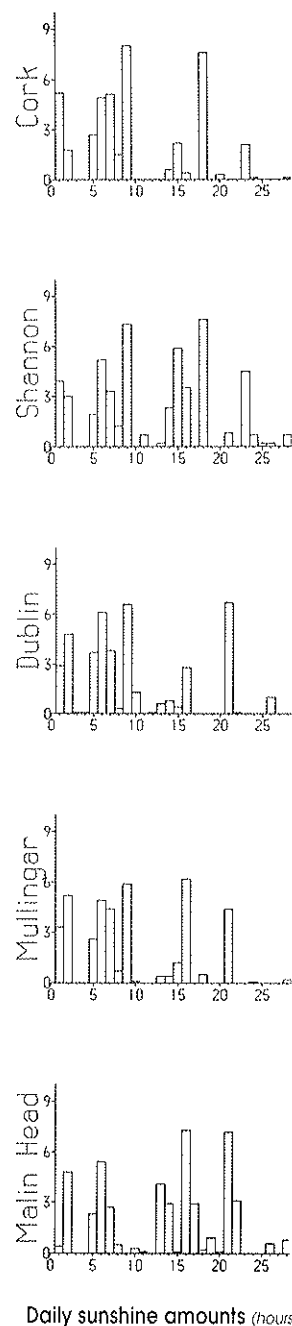
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West fares best in generally dull month

February was a dull month. It was the dulllest on record at Mullingar and the dulllest since 1947 at Dublin Airport; February hasn't been as dull at Casement Aerodrome for 29 years. Most stations received less than 70% of normal sunshine and there was less than 60% in parts of the midlands, north and east. The sunniest day of the month was enjoyed at Sherkin Island on the 18th, when the sun shone for a total of 8.4 hours. Overall there were between ten and eighteen dull days. (A dull day is a day with less than half-an-hour of sunshine.)

Mean daily sunshine amounts ranged from just over an hour at Ballyshannon to more than 2.4 hours at Valentia Observatory in Co. Kerry. The sun shone for up to one in four of the available hours of daylight along the west coast but for just over 10% of the daytime at Ballyshannon. Days with five or more hours of sun were not very frequent, most of them occurring on the 7th (in Wexford), 9th, 16th, 18th and 21st. The sunniest day of the month was enjoyed at Sherkin Island on the 18th, when the sun shone for a total of 8.4 hours. Overall there were between ten and eighteen dull days. (A dull day is a day with less than half-an-hour of sunshine.)

SUNSHINE



Apart from a relatively dry spell mid-month, February proved to be another wet month

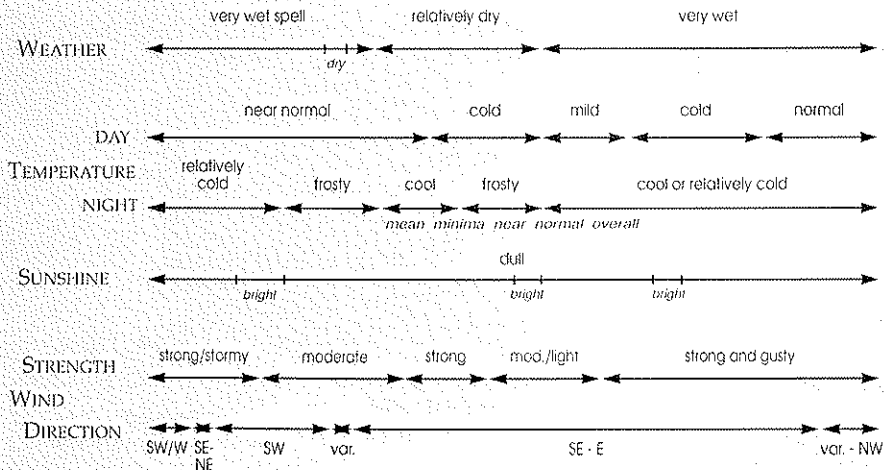
1st - 10th: Active low pressure in the eastern Atlantic produced storm force winds on the 3rd and gale gusts to the 6th. Spells of heavy rain throughout.

11th - 16th: High pressure over northern Europe brought drier weather. Southeasterly winds prevailed, there was a frosty spell, and rainfall was very low in many places.

17th - 28th: Atlantic troughs penetrated inland from the south, became slow-moving, and shed considerable rain over the country. Rainfall during this spell was two to three times the average. While the temperature was above average by 0.5°C in the south, it was below average by 0.5°C in the north midlands and about 2°C below average in the extreme north.

TIME-LINE SEQUENCES OF WEATHER IN FEBRUARY

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28



10-DAY VALUES FOR SELECTED AGROMETEOROLOGICAL STATIONS	Station	period	RAINFALL			TEMPERATURE										SUNSHINE							
			amount	% of average	rain days	mean max.	mean min.	mean daily	diff. from average	lowest min.	date	days with air frost	° degree days > 4.2°C	° degree days > 10.0°C	lowest "grass-min."	date	days with ground frost	mean 10cm at 0800h	mean 30cm at 0300h	total no. of hours	% of average	mean wind speed (m/s) (20 ft)	P.E. (Penman) (mm)
Co. Cork Fenway	1-10	35.9	-	7	6	9.1	0.5	4.8	-	-4.3	10	4	17	0	-9.4	10	6	4.8	5.0	26.3	-	3.3	-
	11-20	55.4	-	7	5	7.1	2.0	4.6	-	-2.0	15	3	15	0	-3.6	15	4	5.0	9.9	9.9	-	3.5	-
	21-end	68.9	-	6	5	8.6	4.5	6.6	-	1.4	21	6	20	0	-1.0	21	6	6.0	6.1	6.1	-	3.4	-
	month	179.7	227	20	16	8.2	2.2	5.2	0.2	-4.5	10	7	52	1	-9.4	10	11	5.2	5.0	42.2	62	3.4	10
Co. Donegal Letterkeney	1-10	46.9	-	10	8	7.9	1.8	4.9	-	-2.5	16	2	13	0	-	-	-	-	-	-	-	-	-
	11-20	7.7	-	4	3	5.8	2.0	3.9	-	-5.5	16	2	10	0	-	-	-	-	-	-	-	-	-
	21-end	51.2	-	7	6	5.5	0.6	3.2	-	-1.6	21	3	5	0	-	-	-	-	-	-	-	-	-
	month	105.8	-	21	17	6.4	1.6	4.0	-	-5.5	16	7	29	0	-	-	-	-	-	-	-	-	-
Co. Kerry Ardara	1-10	52.9	-	9	8	9.4	2.7	6.1	-	0.1	10	6	21	1	-4.3	10	7	-	-	-	-	-	-
	11-20	16.3	-	3	2	8.4	2.1	5.3	-	-4.7	16	4	23	1	-3.6	16	5	-	-	-	-	-	-
	21-end	44.7	-	6	6	9.1	4.4	6.8	-	2.4	21	6	21	1	-2.4	21	3	-	-	-	-	-	-
	month	113.9	-	18	16	8.9	2.9	5.9	-	-4.7	16	4	65	3	-9.0	16	15	-	-	-	-	-	-
Co. Leitrim Ballinamore	1-10	67.2	-	9	9	7.6	0.6	4.1	-	-4.3	10	4	10	0	-9.6	10	7	4.3	5.1	20.9	-	3.0	-
	11-20	21.5	-	6	2	5.5	0.2	2.9	-	-6.7	16	3	6	0	-12.5	16	6	4.1	4.5	7.1	-	3.4	-
	21-end	76.7	-	6	6	5.2	0.7	3.0	-	-2.5	22	3	5	0	-9.0	21	5	3.3	3.9	7.6	-	3.5	-
	month	159.4	190	21	17	6.2	0.5	3.4	-0.6	-6.7	16	12	21	0	-12.5	16	18	3.9	4.5	35.6	55	3.5	7
Co. Louth Ardee	1-10	55.6	-	na	na	8.3	1.1	4.7	-	-3.2	18	3	13	0	-10.1	18	10	3.8	4.0	-	-	-	-
	11-20	20.8	-	7	5	6.0	0.5	2.8	-	-6.4	16	6	6	0	-13.1	16	10	3.4	4.1	-	-	-	-
	21-end	64.6	-	6	6	6.0	1.8	3.6	-	-0.4	23	2	7	0	-5.9	22	7	3.4	3.7	-	-	-	-
	month	141.0	239	na	na	6.8	0.7	3.8	-	-6.4	16	11	25	0	-13.1	16	27	3.5	4.2	-	-	-	-
Co. Wexford Dungarvan	1-10	53.5	-	9	7	9.6	0.2	4.9	-	-4.4	10	6	18	0	-6.7	10	7	-	6.0	32.4	-	3.0	-
	11-20	72.3	-	7	7	7.4	2.6	5.8	-	-3.0	15	3	17	1	-4.3	15	4	-	5.7	8.4	-	3.3	-
	21-end	111.5	-	7	6	8.6	4.4	6.5	-	1.0	22	8	19	0	0.4	23	0	-	6.6	3.3	-	3.0	-
	month	237.3	-	23	20	8.5	2.3	5.4	-	-4.4	10	9	55	1	-6.7	10	11	-	6.0	44.1	-	3.1	7
Co. Wexford Johnstown Castle	1-10	58.7	-	9	8	8.8	3.5	5.7	-	-1.1	10	1	10	0	-3.0	10	4	4.8	5.8	34.8	-	-	-
	11-20	44.7	-	5	5	7.0	3.5	4.8	-	-2.3	14	3	16	0	-2.8	14	4	4.6	5.3	5.9	-	-	-
	21-end	59.8	-	7	6	8.0	3.3	5.7	-	-1.1	21	1	15	0	-6.3	21	3	5.2	5.7	6.7	-	-	-
	month	163.2	207	21	19	7.9	2.7	5.3	0.2	-2.3	14	5	49	0	-6.3	21	10	4.9	5.7	47.4	66	-	n/a

MEASURED POTENTIAL EVAPOTRANSPIRATION (P.E.) AND SOIL MOISTURE

County/Station	Period	P.E. (mm)		Soil Moisture (mm)	
		Amount	Deficit	Accumulated Deficit	Surplus
Co. Carlow Callow (Oak Park)	1-9	9.5	---	---	38
	10-20	10.1	---	---	13
	21-end	9.0	---	---	19
month	28.6	---	---	---	
Co. Dublin Kinsealy	1-9	(2.6)	---	---	37
	10-20	0.0	---	---	32
	21-end	1.0	---	---	31
month	(1.6)	---	---	---	
Co. Kerry Valentia Obs.	1-10	6.3	---	---	69
	11-20	5.1	---	---	46
	21-end	(2.0)	---	---	65
month	9.4	---	---	---	
Co. Leitrim Ballinamore	1-10	1.6	---	---	48
	11-20	7.3	---	---	32
	21-end	10.9	---	---	54
month	19.8	---	---	---	
Co. Wexford Johnstown Castle	1-10	(2.5)	---	---	48
	11-20	7.9	---	---	50
	21-end	9.8	---	---	50
month	15.2	---	---	---	

See back page for notes on the data

GLOBAL SOLAR RADIATION (MJ/sq.m.) P.E. (Penman)

County/Station	10-day Totals			total for month	total for month(mm)
	1-10	11-20	21-end		
Co. Donegal Main Head	27.37	38.18	27.06	92.61	32
	44.71	25.40	24.39	94.50	17
Co. Dublin Dublin Airport					
Co. Kerry Valentia Obs.	38.01	50.04	32.72	120.77	20
	42.29	26.98	24.50	93.77	11
Co. Mayo Belmullet	30.54	40.11	35.88	106.53	27
Co. Monaghan Clones	29.94	25.57	22.20	77.71	13
Co. Offaly Birr	40.03	35.76	28.10	103.89	14

Summary of significant weather worldwide during February 1994

'Sarah', 'Geralda', and 'Hollandia' too

Torrential rain in east Africa and northeast Australia made the news during the first few days of the month. Tropical storm 'Sarah' was the culprit down under, dumping an amazing total of 507mm in just 36 hours on Cardwell in Queensland early in the week. In Africa, it was tropical storm 'Geralda' that was responsible and Madagascar that bore the brunt: 328mm of rain fell at Maintirano on the coast of the Mozambique Channel during the 30 hours up to midday GMT on the 4th, nearly twice the monthly average. Cold nights featured over North Africa and Turkey. In Tunisia, temperatures fell to freezing point in many places on the 2nd, and as low as -5°C at Sidi Bouzid. In the mountainous east of Turkey records were broken on two successive nights at Erzurum when -29°C and -30°C were recorded, the previous lowest being -27°C.

North America made weather headlines the following week. Early in the week a Pacific storm moved across the southwest of the United States and northern Mexico bringing thunderstorms to California, where there were floods and mud slides. Rain penetrated into the semi-desert regions with parts of Arizona receiving more than the normal February rainfall in just 36 hours. In South Dakota it was the extreme cold that made the news, temperatures plunging two degrees below the previous record, reaching -41.7°C at Aberdeen. New York came to a standstill after a severe snowstorm on the 11th and then as the weather warmed up, freezing rain caused havoc over the nearby Appalachians. In the Indian Ocean, tropical storm 'Hollandia' hit Mauritius with a

vengeance. Winds reached mean speeds of 100 kts and gusted to 125 kts. Back in Europe, a large anticyclone settled over Scandinavia just in time for the winter Olympic games. Cold clear weather allowed temperatures to fall below -30 °C in northern Sweden.

While northern Europe stayed cold under the influence of high pressure, Spain and the Mediterranean had more than its fair share of rain. Records were broken on the 16th on the Costa del Sol with normally arid Almeria recording 39mm of rain in one day; that is 40% of its normal annual total, as well as being the wettest February day on record. On the other side of the world, rain fell in abundance at Hawaii, a total of 392mm during the week ending on

Friday the 16th. Meanwhile in Kenya it wasn't cricket as the dry season came to an early end to disrupt the I.C.C. International cricket competition. 51mm fell on the 15th at Nairobi. At nearby Lodwar the following day saw a maximum temperature of 39°C, one degree higher than the previous February highest. It was heat that made the news in southeast Asia too, where temperatures reached 38.5 °C at Rangoon 40°C near Bangkok .

The last week of the month saw widespread rain throughout Australia, even in the normally dry regions, with Murchison, located some 350 miles north of Perth, receiving 59mm on the 24th. It was wettest in the north of the continent, with Gunn Point near Darwin reporting 429mm in the 8-day spell ending at 1100 GMT on Saturday the 26th. Exceptionally high temperatures affected the Cape province in South Africa on Friday. Cape Town reported 37°C, but further north at Vredendal, the temperature peaked at 44°C. The month ended with spring weather across southern Europe. On the 26th San Sebastian in northern Spain reported a maximum temperature of 27.6°C, setting a new record for the month of February. On the 27th and 28th temperatures in excess of 20°C were recorded in both Belgrade and Bucharest. Meanwhile incessant snow brought chaos to Denmark over the last three days of the month, while in the same period in Scotland, Aberdeen recorded 104mm of rain, making it the wettest February on record with a total of 146mm for the month.

Wet and Dull

It was a dull wet winter, the wettest on record at midland and northern stations and in parts of the east, and the wettest for 20 years at some southern stations. There were no sustained periods of dry settled weather during the three winter months. 70 to 80 of the season's 90 days had rain, with the result that rainfall totals range between 40% and 90% above normal. Most stations recorded their greatest daily falls during the first fortnight of December, although it was the 3rd of February that provided winter's wettest day in Dublin.

Overall it was not a cold winter however: mean temperatures were

mostly normal or a little above, ranging from 4.4°C in the north midlands to 7.7°C at Valentia Observatory. The highest and lowest air temperatures of the winter were 14.6°C and -6.4°C respectively.

It was a dull winter in most places, with less than two-thirds of normal sunshine recorded in the northwest, although the sun appeared more often further south. Mean daily sunshine amounts range from just over an hour at Belmullet to just short of two hours at Rosslare. The lengthening days meant that all stations recorded their sunniest days of the winter during February.

Notes: (i) This summary is based on an analysis of data from the Meteorological Service's thirteen synoptic weather stations.
(ii) Whereat popular seasons are determined by reference to length of day, meteorological seasons are based on mean monthly temperatures. The difference in approach accounts for the fact that meteorological seasons start and finish a month later than their popular equivalents.

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 Highest	Lowest	Daily mean	% of average	most in a day amount date(s)	Rain	Snow	Air frost	Hail	Thunder	Fog	Gale gusts
CO. CLARE																	
SHERKIN AIRPORT	495.9	189	24.5 19 Feb	6.2	6.7	13.5	-5.0	1.43	74	7.6 18 Feb	91	11	8	17	3	3	37
CO. CORK																	
CORR AFBPORT	501.6	181	37.4 19 Feb	5.8	6.5	12.8	-2.7	1.62	52	8.0 9 Feb	76	7	10	5	0	31	43
CO. DONEGAL																	
BALIN TOWN	497.1	170	31.4 12 Feb	5.2	-0.4	12.8	-2.0	1.19	79	7.3 16 Feb	77	22	3	37	2	0	81
CO. DUBLIN																	
DUBLIN AIRPORT	291.9	148	20.9 1 Feb	5.2	0.2	14.9	-2.1	1.62	74	6.7 20 Feb	68	16	11	1	0	12	34
CASHNEWT AIRCROSSING	305.9	156	42.0 5 Feb	4.3	0.2	13.5	-0.5	1.34	73	7.7 21 Feb	67	13	17	2	0	5	46
CO. KERRY																	
VALENTIA OBSERVATORY	622.7	142	25.0 3 Dec	7.7	0.8	14.5	-3.0	1.38	70	7.9 9 Feb	81	2	4	13	2	0	61
CO. KILKENNY																	
KILKENNY	396.3	165	28.1 12 Dec	5.5	0.5	14.6	-4.5	1.65	85	7.1 8 Feb	75	8	28	2	0	0	31
CO. MAYO																	
CLARENSWILLS	517.6	164	24.5 8 Dec	4.7	0.2	12.3	-5.6	1.14	65	5.7 16 Feb	77	16	22	21	1	9	44
BEELMULLET	522.0	164	32.2 3 Dec	6.2	0.1	12.5	-2.0	1.98	62	7.8 18 Feb	77	14	4	33	4	1	75
CO. MONAGHAN																	
CLONS	409.8	164	23.7 8 Dec	4.4	0.2	12.2	-5.4	1.35	76	7.0 16 Feb	75	22	20	6	1	10	41
CO. OFFALY																	
BARB	364.8	161	25.0 8 Dec	5.2	0.4	13.4	-6.4	1.41	73	7.6 16 Feb	69	11	17	3	3	3	35
CO. WESTMEATH																	
BULLHURST 11	364.0	154	25.0 8 Dec	4.4	0.3	14.0	-6.0	1.47	75	6.2 16 Feb	74	15	24	1	2	9	40
CO. WEXFORD																	
ROSSHARE	392.6	150	24.9 12 Dec	6.1	0.1	12.5	-4.3	1.98	90	8.1 7 Feb	74	5	1	4	1	6	51

December - wet and windy - record rainfalls - White Christmas in parts of midlands and north - dull, especially in the west

January - continuing changeable - another wet month - mild - sunniest in the south and southeast

February - wet again - more than twice normal rain in south and southeast - dull, especially in midlands and east

Tuesday 1st: Rain and strong winds in all areas as a front crossed eastwards, clearing to showers during the late morning. Some of the showers were of hail, sleet or snow. Winds south to southwesterly, fresh to strong and gusty. Winds veered westerly and continued fresh to strong until evening when they dropped off light except in northern areas. Frost during the late evening.

Rainfall: nil to 12mm generally
Temperature: max. 8°C to 11°C, min. zero to 1°C inland, 1°C to 4°C coastal
Sunshine: trace to 5 hours

Wednesday 2nd: A cold night with air frost inland and ground frost in all but western coastal areas where some wintry showers persisted. A mostly dry bright day with good sunshine early on, but cloud increased in the afternoon and rain moved into the southwest in the evening. Winds light south-southeasterly generally; moderate to fresh and gusty in the north and northwest, backed southeasterly and increased fresh to strong and gusty in the southwest in the evening.

Rainfall: nil to 10mm generally, up to 14mm in the east, 2 to 23mm in the south
Temperature: max. 7°C to 10°C, min. -2°C to 1°C inland, 1°C to 4°C coastal
Sunshine: 1 to 6 hours

Thursday 3rd: A vigorous depression approached the southwest coast during the morning, making landfall in west Cork at about noon with a central pressure of 957hPa. During the late evening it moved northwards and by midnight it had reached Galway. Strong to gale force winds, up to storm force in the north, lashed the country, mainly east to southeasterly in direction. Winds near the depression centre were light variable.

Rainfall: 6 to 16mm generally, 20 to 34mm in the east and south, 14 to 17mm in the northwest
Temperature: max. 7°C to 10°C, min. 2°C to 3°C inland, 2°C to 6°C coastal
Sunshine: nil or trace

Friday 4th: A depression over Galway at 0000 drifted northwards during the day to lie off Bloody Foreland by 2300. During the day winds were moderate to fresh westerly in the south and strong to gale force east to southeasterly in the north and east, gradually diminishing.

Rainfall: 5 to 11mm generally, 1 to 3mm in the east and southeast
Temperature: max. 8°C to 10°C, min. 5°C to 7°C
Sunshine: nil to 1 hour

Saturday 5th: A depression to the northwest moved away northwards leaving Ireland in a southwesterly airflow. Winds southwest to west, later south to southwest, generally moderate to fresh but strong in the west, north and southwest with gale gusts. Rain or showers, some of hail, mainly in the west and southwest. Thunder and lightning in Kerry.

Rainfall: nil to 8mm in the east and northwest, 4 to 20mm in the west, 4 to 15mm in the south and southeast
Temperature: max. 7°C to 10°C, min. 3°C to 7°C
Sunshine: 1 to 7 hours

Sunday 6th: A fresh southwesterly airflow covered Ireland, generally moderate to fresh but strong at times in the west and north with gale gusts. Rain crossed the country early on, followed by showers, some of hail in the west, with thunder again reported at Valentia.

Rainfall: trace to 3mm generally, 7 to 13mm in the east and southeast
Temperature: max. 7°C to 9°C, min. zero to 4°C, ground frost in places, down to -6°C in Kilkenny
Sunshine: 3 to 7 hours

Monday 7th: A moderate unstable southwest to west airflow covered the country; showers, some wintry.

Rainfall: trace to 9mm generally, 2 to 12mm in the west
Temperature: max. 6°C to 9°C, min. -2°C to 1°C inland, 1°C to 3°C coastal
Sunshine: 3 to 8 hours

Tuesday 8th: A frontal trough moved eastwards across the country during the afternoon. Light to moderate southwesterly winds became strong and gusty in places, later veering west to northwesterly and decreasing behind the front. Rain and drizzle spread eastwards before dawn, but cleared in the afternoon.

Rainfall: nil to 7mm generally
Temperature: max. 8°C to 11°C, min. -1°C to 2°C inland, 1°C to 7°C coastal
Sunshine: trace to 4 hours

Wednesday 9th: A ridge of high pressure built up in the afternoon and evening. Wind at first generally light to moderate but strong in the north with gale gusts, later anticyclonic variable, light to moderate in strength. Dry apart from some showers in north and west early on. Very cold later with air and ground frost.

Rainfall: nil to 1mm
Temperature: max. 7°C to 10°C, min. -3°C to 2°C inland, -1°C to 3°C coastal
Sunshine: nil to 8 hours

Thursday 10th: The ridge declined before dawn and frontal troughs crossed the country in the afternoon and evening bringing rain to all areas. Light variable winds at first, later southerly or southeasterly, moderate to fresh. Very cold in the early morning with air and ground frost in many areas. Temperatures gradually rose throughout the day and evening.

Rainfall: 2 to 10mm generally, 10 to 23mm in the south, north and northwest
Temperature: max. 6°C to 11°C, min. -5°C to -1°C inland, -3°C to 3°C coastal
Sunshine: nil to 2 hours

Friday 11th: As the fronts moved away to the east a south to southeasterly airflow set in. Mostly dry and cloudy after overnight rain. Widespread fog in the morning. Winds generally light, but moderate to fresh at times later in the northwest.

Rainfall: nil to 5mm
Temperature: max. 8°C to 11°C, min. 4°C to 7°C
Sunshine: nil to 1 hour

Saturday 12th: The southeasterly airflow continued to give mostly dry, cloudy conditions with the only breaks in the west and south of Dublin. Southeasterly winds were fresh on some coasts, moderate elsewhere.

Rainfall: nil to 6mm
Temperature: max. 7°C to 13°C, min. 4°C to 6°C inland, 5°C to 9°C coastal
Sunshine: nil to 3 hours

Sunday 13th: A fresh southeasterly airflow over the country as high pressure built from northeast. Mostly dry and cloudy with just some scattered light rain and drizzle. Winds southeasterly moderate to fresh, gusty in places.

Rainfall: nil to trace
Temperature: max. 4°C to 10°C, min. zero to 2°C inland, zero to 6°C coastal
Sunshine: nil to 4 hours

Monday 14th: An east-southeasterly airflow brought some showers to many areas but they were mostly light. Winds moderate to fresh and gusty. Bitterly cold.

Rainfall: nil to 5mm
Temperature: max. 1°C to 6°C, min. -2°C to zero inland, -1°C to zero coastal
Sunshine: nil to 6 hours

Tuesday 15th: A light to moderate occasionally fresh easterly airflow decreased to light variable in the morning. A shallow depression to the south brought snow to south Leinster and south and east Munster with a few flurries elsewhere. Very cold.

Rainfall: nil to 5mm generally, 7 to 16mm in the southeast
Temperature: max. 1°C to 6°C, min. -7°C to -2°C inland, -1°C to zero coastal
Sunshine: nil to 6 hours

Wednesday 16th: A shallow depression with associated rain and sleet in the south Irish Sea moved northeastwards during the day allowing a light, later moderate, southerly airflow to encroach from the Atlantic. Dry for most of the day, and sunny in the midlands and west. Cold with air and ground frost early and late.

Rainfall: nil to 1mm generally
Temperature: max. 4°C to 9°C, min. -7°C to -2°C inland, -3°C to 3°C coastal
Sunshine: nil to 7 hours

Thursday 17th: A light to moderate (strong in the west) southeasterly airflow covered the country as a frontal system approached from the Atlantic. Rain in the southwest spread northeastwards during the afternoon. Milder than of late.

Rainfall: 1 to 6mm generally, 10 to 17mm in south and southeast
Temperature: max. 6°C to 9°C, min. -1°C to 3°C inland, 1°C to 8°C coastal
Sunshine: nil to 3 hours

Friday 18th: A cold front lying from north to south moved eastwards clearing the east coast by late evening. Dark foggy conditions with outbreaks of rain in the east at first. Mostly dry with sunny spells away from the east coast in the afternoon. Slack winds generally.

Rainfall: nil to 3mm
Temperature: max. 7°C to 13°C, min. 2°C to 5°C inland, 2°C to 7°C coastal
Sunshine: nil to 8 hours

Saturday 19th: A weakening frontal trough in the Irish Sea continued to move eastwards while a further depression approached the southwest from the Atlantic. Winds southeasterly moderate to fresh occasionally strong. Rain, heavy at times, spread northeastwards to all areas. Fog during the evening.

Rainfall: nil to 8mm generally, 13 to 50mm in the west and northwest, 12 to 37mm in the south
Temperature: max. 7°C to 13°C, min. 3°C to 4°C inland, 4°C to 7°C coastal
Sunshine: nil to 1 hour

Sunday 20th: A depression over Munster gradually moved away southeastwards. Generally dull and cloudy with patches of rain and drizzle. Winds generally light to moderate southeasterly but fresh to strong at times along the east coast early in the day and northwesterly for a time in the southwest.

Rainfall: nil to 4mm generally, 5 to 7mm in the west and southwest
Temperature: max. 5°C to 11°C, min. -1°C to 3°C inland, 1°C to 5°C coastal
Sunshine: nil to 1 hour

Monday 21st: A southeasterly airflow covered the area. Winds generally moderate to fresh southeast to east. Mostly dry with some sunny spells in the morning. Rain and sleet spread into the southwest overnight.

Rainfall: nil generally, 1 to 16mm in the south, 5 to 31mm in the southwest
Temperature: max. 3°C to 7°C, min. -2°C to zero inland, -1°C to 6°C coastal
Sunshine: nil to 8 hours

Tuesday 22nd: An occlusion moved very slowly northwards spreading rain or snow over all areas. Moderate to fresh and gusty east-southeasterly winds with gales in the north. Winds decreased light variable in the southwest later.

Rainfall: 1 to 8mm generally, 20 to 44mm in southern areas
Temperature: max. 1°C to 11°C, min. -2°C to 1°C inland, -1°C to 6°C coastal
Sunshine: nil to 3 hours

Wednesday 23rd: Dull and cloudy with snow in the north and fog in the midlands during the morning. Some rain and drizzle pushed southeastwards into Leinster and Ulster during the day. Mostly dry in Connaught and Munster. Winds generally light easterly but fresh to strong at times in the extreme north.

Rainfall: nil to 2mm generally, 1 to 8mm in the east, southeast and north
Temperature: max. 2°C to 12°C, min. zero to 5°C
Sunshine: nil to 6 hours

Thursday 24th: The east-southeasterly flow continued. Some rain and snow in northern counties before dawn, otherwise a mostly dry, cloudy day. A rainbelt reached the south coast before midnight. Light to moderate east-southeasterly winds.

Rainfall: nil to 9mm generally, 1 to 19mm in the south
Temperature: max. 4°C to 10°C, min. 1°C to 3°C inland, 2°C to 5°C coastal
Sunshine: nil to 4 hours

Friday 25th: Rain in the southwest during the night spread slowly across the country, some of it heavy, particularly along southern coasts. It cleared the southwest by early afternoon but was still affecting the northeast at midnight. Winds moderate to fresh and gusty southeasterly, decreased and veered southerly later. Cold at first becoming milder.

Rainfall: 2 to 15mm in the southwest, 5 to 33mm in the west and northwest, 4 to 23mm in the east and southeast
Temperature: max. 5°C to 12°C, min. 3°C to 4°C inland, 2°C to 6°C coastal
Sunshine: nil or trace

Saturday 26th: Rain in the north died out and there was a touch of ground frost and some fog at first in Leinster. Cloud increased slowly from the southwest as a frontal system progressed northwestward across the country bringing rain to all areas, some of it moderate. Southeasterly winds backed east to northeasterly; generally light, but became moderate to fresh and gusty in some exposed coastal areas.

Rainfall: 6 to 12mm in the east and southeast, 6 to 14mm in the north, 8 to 25mm in the west and south
Temperature: max. 9°C to 12°C, min. 3°C to 6°C inland, 4°C to 9°C coastal
Sunshine: nil to 1 hour

Sunday 27th: A depression over Cork at 0000 drifted north-northeastwards during the day to lie off the Co. Down coast 24 hours later. Cyclonic winds were strongest on the north coast. A dull cloudy day with rain and drizzle in all areas at some stage.

Rainfall: nil to 4mm generally, 5 to 11mm in the north and northeast
Temperature: max. 5°C to 10°C, min. 4°C to 5°C inland, 4°C to 7°C coastal
Sunshine: nil

Monday 28th: A depression in the North Sea at midnight drifted into northern England during the day. A moderate, later light, northwesterly flow became established in its wake. Mostly cloudy, some rain or showers about.

Rainfall: nil to 2mm
Temperature: max. 6°C to 9°C, min. zero to 2°C inland, 1°C to 5°C coastal
Sunshine: nil to 4 hours

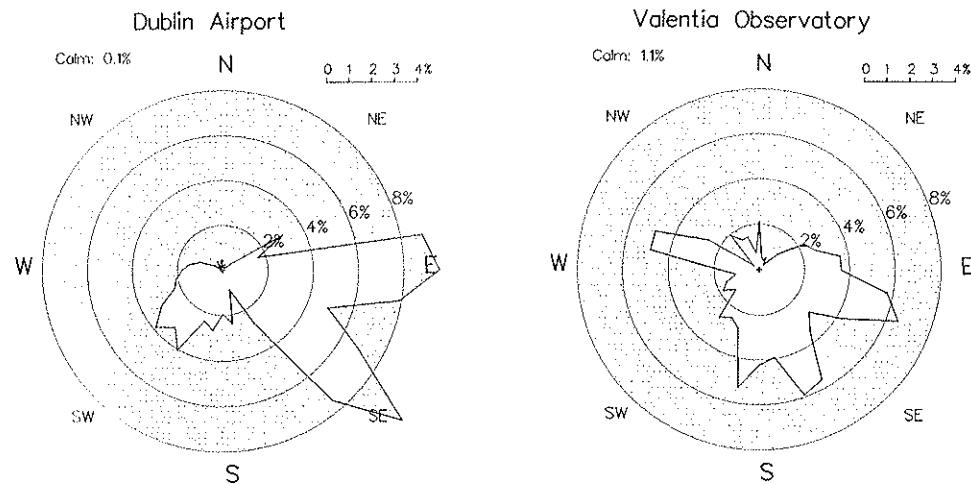
County / Station	TEMPERATURE (°C)						
	Mean max.	Mean min.	Mean/ deviation from average	Highest max./date	Lowest min./date	Lowest grass min./date	
CO. CARLOW							
CARLOW (OAK PARK)	7.8	1.8	4.8 0.2	10.8 18	-3.0 10	-7.3 10	
CO. CLARE							
SHANNON AIRPORT	8.0	2.7	5.4 0.1	11.3 18	-5.0 16	-11.4 16	
CARRON	6.8	1.8	4.3	10.4 18	-3.4 16	-7.9 16	
CO. CORK							
FERMOY (MOORE PARK)	8.2	2.2	5.2 0.2	11.8 18	-4.5 10	-9.4 10	
CORK AIRPORT	7.9	2.8	5.4 0.5	11.4 18	-2.7 15	-5.3 15	
SHERKIN ISLAND	9.3	5.1	7.2 1.0	11.1 18 20	-0.6 14 15	-2.7 10	
CO. DONEGAL							
MALIN HEAD	6.3	2.3	4.3 -0.8	9.3 26	-2.6 16	-5.3 16	
BALLYSHANNON (CATHLEEN'S FALL)	6.1	2.0	4.1 -0.4	9.2 8	-2.4 16		
LETTERKENNY (MAGHERENAN)	6.4	1.6	4.0	9.6 8 26	-5.5 16		
CO. DUBLIN							
DUBLIN AIRPORT	6.8	2.5	4.7 -0.1	9.9 8	-1.4 14	-6.9 10	
CASEMENT AERODROME	6.7	1.9	4.3 -0.1	11.3 26	-2.9 10	-8.1 16	
DUBLIN (MERRION SQUARE)	7.3	3.3	5.3 -0.4	11.0 8	-0.6 15	-3.8 16	
CO. GALWAY							
GALWAY (UGG)	7.7	2.8	5.3 0.2	11.6 18	-3.8 16		
MAAM VALLEY	7.1	2.4	4.8	11.6 18	-3.9 16	-6.9 16	
BALLYGAR	6.7	1.1	3.9	11.0 18	-7.0 15	-8.2 16	
CO. KERRY							
VALENTIA OBSERVATORY	9.8	4.5	7.2 0.7	12.7 19	-3.0 16	-6.8 16	
ARDFERT (LISCAHANE)	8.9	2.9	5.9	12.9 12	-4.7 16	-9.0 16	
CO. KILDARE							
NAAS (GOWRAN GRANGE)	6.6	1.7	4.2	11.2 26	-2.6 10	-6.3 10	
CO. KILKENNY							
KILKENNY	7.5	1.6	4.6 -0.1	11.0 18	-4.5 10	-9.3 10	
CO. LEITRIM							
BALLINAMORE	6.2	0.5	3.4 -0.6	9.1 8	-6.7 16	-12.5 16	
CO. LIMERICK							
MOUNT RUSSELL	7.2	2.3	4.8	10.9 18	-3.6 16	-8.2 16	
CO. LOUTH							
ARDEE (BOHARNAMOE)	6.8	0.7	3.8	9.2 8	-6.4 16	-13.1 16	
CO. MAYO							
CLAREMORRIS	6.8	1.0	3.9 -0.4	10.9 18	-5.6 16	-9.7 16	
BELMULLET	7.8	3.0	5.4 -0.3	11.9 26	-2.0 16	-7.5 16	
NEWPORT (FURNACE)	7.4	2.7	5.1 -0.3	11.1 12	-3.0 16	-7.5 16	
CO. MEATH							
WARRENSTOWN	6.4	1.2	3.8 -0.4	10.4 26	-3.3 16	-9.2 16	
CO. MONAGHAN							
CLONES	6.0	1.2	3.6 -0.4	10.0 26	-5.4 16	-10.0 16	
CO. OFFALY							
BIRR	7.3	1.6	4.5 -0.1	11.6 18	-6.4 16	-13.5 16	
DERRYGREENAGH	6.6	1.1	3.9 0.1	10.2 26	-5.1 16	-12.4 10	
CO. SLIGO							
MARKREE CASTLE	6.4	0.9	3.7 -0.6	10.5 18	-6.4 16		
CO. TIPPERARY							
FETHARD (PARSONSHILL)	6.5	1.2	3.9	10.8 18	-3.3 15	-5.0 16	
CO. WATERFORD							
WATERFORD (TYCOR)	8.0	1.8	4.9 -0.4	11.9 18	-4.0 16	-8.9 10	
DUNGARVAN (CARRIGLEA)	8.5	2.3	5.4	12.6 18	-4.4 10	-6.7 10	
CO. WESTMEATH							
MULLINGAR II	6.3	0.9	3.6 -0.3	9.5 26	-6.0 16	-8.5 16	
CO. WEXFORD							
JOHNSTOWN CASTLE	7.9	2.7	5.3 0.2	10.8 26	-2.3 14	-6.3 21	
ROSSLARE	7.8	3.9	5.9 0.1	9.8 18	-1.3 14	-6.1 10	
CLONROCHE	6.8	2.0	4.4 0.0	10.6 18	-2.5 10	-7.6 10	
JOHN F. KENNEDY PARK	8.6	2.5	5.6 0.6	11.6 18	-2.0 15	-6.3 10	

County / Station	RAINFALL (MM)				SUNSHINE (HRS)			
	Total amount	% of average	Most in a day/date		Daily mean (hrs./day)	% of average	% of possible	Most in a day/date
CO. CARLOW								
CARLOW (OAK PARK)	98.9	171	16.5 3		1.43	60	15	6.5 9
CO. CLARE								
SHANNON AIRPORT	111.6	177	24.5 19		1.90	72	19	7.6 18
CARRON	134.1	134	28.7 19					
CO. CORK								
FERMOY (MOORE PARK)	179.7	227	36.0 19		1.51	62	15	7.3 18
CORK AIRPORT	236.6	223	37.3 19		1.52	61	15	8.0 9
SHERKIN ISLAND	177.0	184	31.3 21		2.00	72	20	8.4 18
CO. DONEGAL								
MALIN HEAD	119.2	159	28.2 25		1.67	73	17	7.3 16
BALLYSHANNON (CATHLEEN'S FALL)	86.3	122	17.1 3		1.03	45	11	5.7 16
LETTERKENNY (MAGHERENAN)	105.8		17.6 25					
CO. DUBLIN								
DUBLIN AIRPORT	99.1	194	20.4 3		1.51	57	15	6.7 21
CASEMENT AERODROME	100.4	197	34.2 3		1.59	61	16	7.7 21
DUBLIN (MERRION SQUARE)	99.4	194	31.2 3					
CO. GALWAY								
GALWAY (UGG)	130.4	174	34.0 19		1.69	68	17	6.8 18
MAAM VALLEY	274.2		50.2 19					
BALLYGAR	111.1	161	22.8 19					
CO. KERRY								
VALENTIA OBSERVATORY	170.3	144	23.5 22		2.43	97	25	7.9 9 18
ARDFERT (LISCAHANE)	111.9		19.6 3					
CO. KILDARE								
NAAS (GOWRAN GRANGE)	81.5		11.5 3 26					
CO. KILKENNY								
KILKENNY	114.9	192	16.4 25		1.50	59	15	7.1 9
CO. LEITRIM								
BALLINAMORE	159.4	190	23.1 25		1.27	55	13	6.5 21
CO. LIMERICK								
MOUNT RUSSELL	197.0		35.2 19					
CO. LOUTH								
ARDEE (BOHARNAMOE)	141.0	239	20.2 25					
CO. MAYO								
CLAREMORRIS	135.6	176	34.3 19		1.55	64	16	5.7 16
BELMULLET	114.9	151	13.9 3		2.06	80	21	7.8 18
NEWPORT (FURNACE)	113.3	107	19.2 19					
CO. MEATH								
WARRENSTOWN	115.9	193	16.2 25					
CO. MONAGHAN								
CLONES	109.2	165	20.5 25		1.23	56	13	7.0 16
CO. OFFALY								
BIRR	76.1	146	13.3 26					
DERRYGREENAGH	102.8	180	18.1 25					
CO. SLIGO								
MARKREE CASTLE	83.1	108	12.8 19					
CO. TIPPERARY								
FETHARD (PARSONSHILL)	145.9		21.6 3					
CO. WATERFORD								
WATERFORD (TYCOR)	184.8	217	39.3 22					
DUNGARVAN (CARRIGLEA)	237.3		43.7 22		1.58		16	7.2 9
CO. WESTMEATH								
MULLINGAR II	101.5	169	20.7 25		1.45	58	15	6.2 16
CO. WEXFORD								
JOHNSTOWN CASTLE	163.2	207	26.7 22		1.69	66	17	6.9 7
ROSSLARE	137.0	199	19.9 22		1.90	69	19	8.1 7
CLONROCHE	206.7	226	25.6 22		1.58	62	16	6.1 7
JOHN F. KENNEDY PARK	194.9	238	29.5 22		1.66	68	17	6.6 9

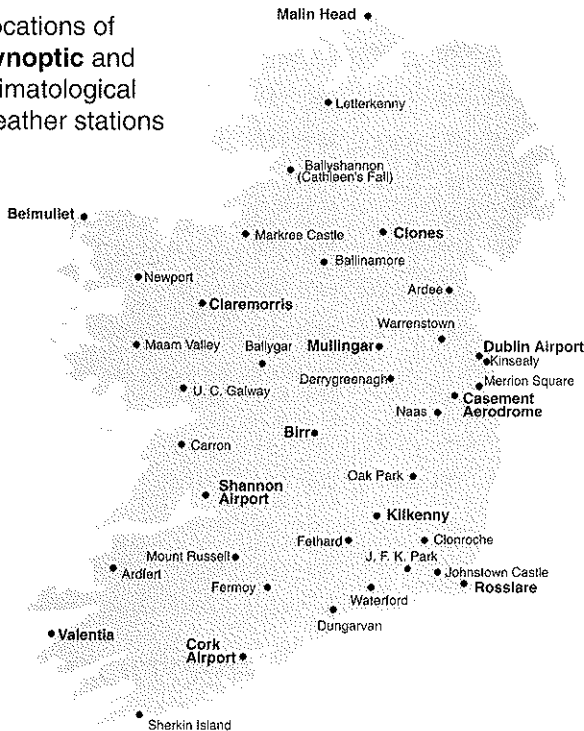
County / Station	WEATHER — No. OF DAYS WITH									MEAN 0900 SOIL TEMPERATURES (°C)		
	Rain days	Wet days	Air frost	Ground frost	Snow	Snow lying	Hail	Thunder	Fog	10cm	20cm	30cm
CO. CARLOW												
CARLOW (OAK PARK)	17	14	8	14						3.6	4.0	4.9
CO. CLARE												
SHANNON AIRPORT	18	16	4	11	5	0	3	0	3	4.5	5.5	6.0
CARRON	20	17	5	10						3.9	4.6	
CO. CORK												
FERMOY (MOORE PARK)	20	16	7	11						5.2	5.4	5.8
CORK AIRPORT	21	16	4	10	3	0	1	0	14	4.9	5.4	6.4
SHERKIN ISLAND	24	20	3	5								
CO. DONEGAL												
MALIN HEAD	17	14	3	7	7	0	5	0	0	3.4	4.0	5.2
BALLYSHANNON (CATHLEEN'S FALLS)	17	15	4									
LETTERKENNY (MAGHERENAN)	21	17	7									
CO. DUBLIN												
DUBLIN AIRPORT	19	16	5	15	5	0	0	0	6	4.1	4.7	5.3
CASEMENT AERODROME	18	18	7	13	5	0	1	0	3	3.0	3.8	4.4
DUBLIN (MERRION SQUARE)	18	14	4	8								
CO. GALWAY												
GALWAY (UCG)	17	17	4									
MAAM VALLEY	18	17	5	11								
BALLYGAR	23	16	8	14								
CO. KERRY												
VALENTIA OBSERVATORY	21	17	3	7	2	0	1	2	0	5.8	6.7	7.8
ARDPERT (LISCABANE)	18	16	4	15								
CO. KILDARE												
MAAS (GORNAN GRANGE)	20	15	7	17						3.5		
CO. KILKENNY												
KILKENNY	22	15	12	17	4	0	0	0	3	4.1	4.8	5.4
CO. LEITRIM												
BALLINAMORE	21	17	12	18						3.9	4.5	4.5
CO. LIMERICK												
MOUNT RUSSELL	23	19	5	11						4.0	4.7	
CO. LOUTH												
ARDEE (BOHARNAMOE)	21	19	11	27						3.5	3.9	4.2
CO. MAYO												
CLAREMORRIS	18	15	9	12	6	0	3	0	3	3.5	4.3	4.7
BELMULLET	18	16	3	12	6	0	4	1	1	4.6	5.1	6.0
NEMPORT (FURNACE)	20	17	4	12								
CO. MEATH												
WARRENSTOWN	22	18	10	22						3.1	3.8	4.1
CO. MONAGHAN												
CLONES	16	14	9	15	9	0	3	0	3	3.5	4.1	4.9
CO. OFFALY												
BIRR	18	15	7	15	4	0	2	0	2	3.9	4.6	5.4
BERRYGREENAGH	18	18	12	20								
CO. SLIGO												
MARKEE CASTLE	20	15	9									
CO. TIPPERARY												
PETHARD (PARSONSHILL)	21	18	10	16						4.7	4.7	
CO. WATERFORD												
WATERFORD (TYCOR)	24	18	7	9								
BUNGARVAN (CARRIGLEA)	23	20	9	11						5.4	6.0	
CO. WESTMEATH												
MULLINGAR II	16	15	12	17	5	0	0	0	4	2.9	3.6	4.4
CO. WEXFORD												
JOHNSTOWN CASTLE	21	19	5	10						4.9	5.3	5.7
ROSLARE	21	19	2	10	4	0	1	0	3	5.1	5.7	6.4
CLONBOCHE	24	20	8	15						4.7	5.0	5.2
JOHN P. KENNEDY PARK	25	18	6	14						4.5	5.0	5.8

County / Station	WIND (KTS)										
	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	
CO. CLARE											
SHANNON AIRPORT	11.0	100°	33	3/ 4	280°	51	1/1403	0	5	29	
CO. CORK											
CORK AIRPORT	12.0	110°	39	3/ 3	110°	57	3/ 205	1	9	64	
CO. DONEGAL											
MALIN HEAD	22.1	110°	56	3/13	110°	80	3/ 943	15	25	341	
CO. DUBLIN											
CASEMENT AERODROME	12.4	260°	39	3/16	260°	57	1/1528	2	8	62	
DUBLIN AIRPORT	12.9	260°	38	3/14	240°	57	1/1218	2	5	56	
CO. KERRY											
VALENTIA OBSERVATORY	9.4	110°	36	3/ 2	110°	74	3/ 137	1	16	104	
CO. KILKENNY											
KILKENNY	8.3	100°	28	3/ 5	280°	51	1/1516	0	6	45	
CO. MAYO											
BELMULLET	17.2	190°	47	3/ 2	190°	67	1/ 34	2	19	178	
CLAREMORRIS	11.6	280°	31	3/12	270°	52	1/1355	0	8	61	
CO. MONAGHAN											
CLONES	9.2	240°	28	3/15	240°	51	1/1455	0	10	60	
CO. OFFALY											
BIRR	9.5	100°	37	3/ 7	160°	55	3/ 602	1	8	49	
CO. WESTMEATH											
MULLINGAR II	10.8	110°	28	3/10	110°	48	3/ 956	0	9	50	
CO. WEXFORD											
ROSLARE	10.0	140°	31	3/ 5	140°	55	3/ 625	0	11	82	

FREQUENCY OF WIND DIRECTION



Locations of Synoptic and Climatological weather stations



The MONTHLY WEATHER BULLETIN is produced by the Climatology and Applications Division of the Meteorological Service. An annual subscription to the bulletin costs £25. Further climatological information is available from the Climate Enquiries Office, Glasnevin Hill, Dublin 9, telephone 01-8375436, fax 01-8369115.

Notes on the tables

A. General

1. Rainfall amounts are given in millimetres, temperature in degrees Celsius, sunshine duration in hours and wind speed in knots. (1 knot=1.15 m.p.h.)
2. Rainfall amounts are measured at climatological stations at 0900GMT and credited to the previous day. At synoptic stations daily totals refer to the 24-hour period ending at 0600GMT the following day. The term rainfall includes all forms of precipitation, such as snow and hail, and deposition from dew or frost, measured as equivalent rain.
3. 'Raindays' and 'wetdays' are days during which the total rainfall is not less than 0.2mm and 1.0mm respectively.
4. A 'day' for the purposes of this publication refers to the period from 0900GMT on a particular day to 0900GMT on the following day. (This is because climatological stations make their daily observations at 0900GMT.)
5. The mean daily air temperature over a period is taken as the mean of the daily maxima and daily minima (averaged separately over the period).
6. Days with air frost are those during which the minimum air temperature was below 0°C. Similarly days with ground frost indicate days when the grass minimum temperature was below 0°C. (Grass minimum temperatures are measured by a thermometer placed horizontally on pegs just above the tips of short grass.)
7. Mean soil and earth temperatures are based on readings taken at 0900GMT.
8. A gale is a mean wind over a 10 minute period of 34 knots or more. A gale gust is a gust of 34 knots or more. All wind speeds refer to the wind at an effective height of 10 metres above the ground.
9. 'e' denotes that the value is calculated using one or more estimated readings.
10. Data from Northern Ireland is kindly provided by the Belfast Weather Centre.

B. Agmet

11. Calculated Potential Evapotranspiration (P.E.) values are based on values of temperature, sunshine, wind speed and vapour pressure using the Penman formula. Because of formula limitations, negative values can occur in winter; these are replaced in the table by zero. Measured P.E. values are those measured by means of soil-filled tanks sunk into the ground with their upper grass-covered ends at surface level.
12. Soil moisture deficits and surpluses are computed from the differences between rainfall and actual evapotranspiration (A.E.). Estimates of A.E. are derived from measured values of P.E. (See Agmet. Memo No. 1, 1968). Soil moisture surpluses are assumed to be removed by drainage and surface run-off and are not therefore carried forward from one period to the next. Soil moisture deficits are regarded as being cumulative. Where heavy rain occurs near the end of the fixed period, the date of cut-off may be adjusted to avoid error due to insufficient run-off time.
13. Degree day totals are calculated using the method set out by McVicker in the Journal of Heating and Ventilating Engineers (Vol. 14 No. 18, Nov-Dec 1946).
14. Global solar radiation values are given in MJ/sq.m. correct to two decimal places (3.6MJ=1kWh).