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Monthly Weather Bulletin January 1997

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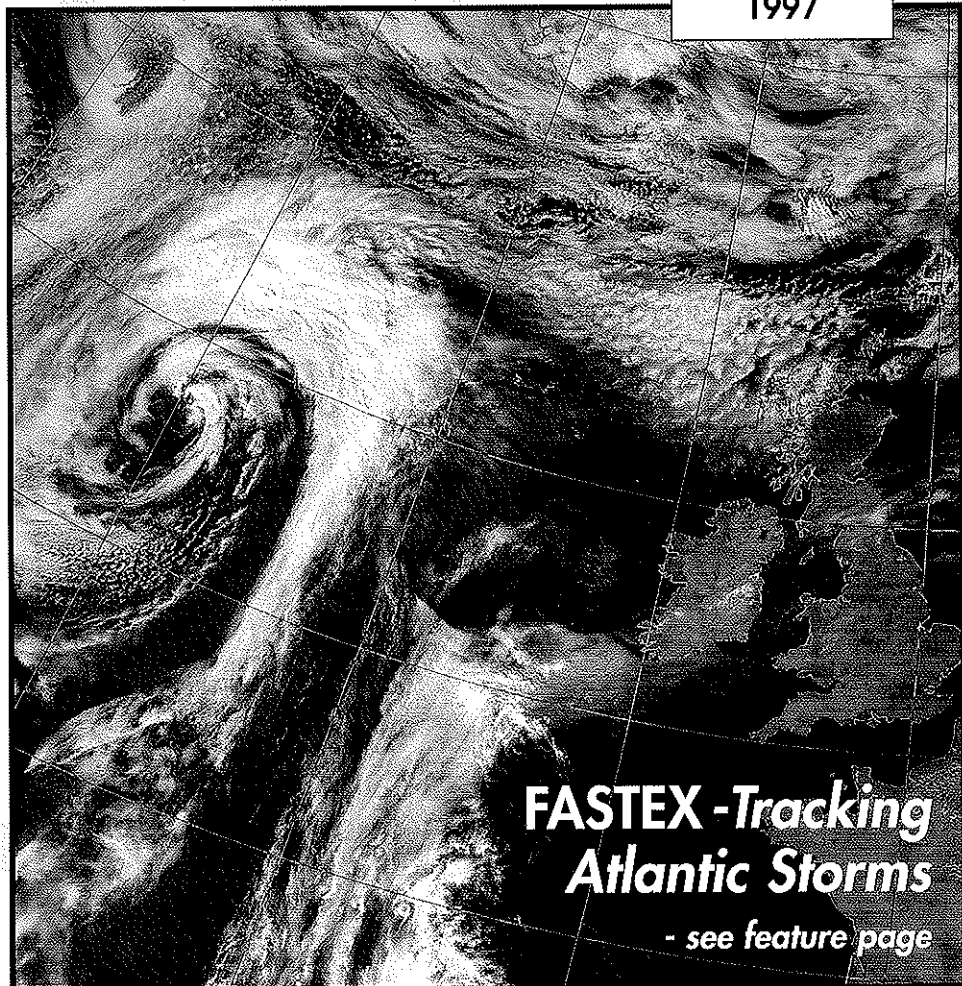


No. 129

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Monthly Weather Bulletin

JANUARY
1997



FASTEX - Tracking Atlantic Storms

- see feature page

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Above
Despite air temperatures close to freezing, there were many participants in the annual New Year's Day fancy dress sea swim at Bray, Co. Wicklow. (picture Irish Times)

VERY DRY BUT DULL; BECOMING Milder AFTER COLD START

The very dry weather during much of December continued for most of this month also as anticyclones, or high pressure areas, were again the dominant influence. The position of these anticyclones to a large extent determined the temperatures over the country during the month. Bitterly cold easterly or northeasterly winds during the first week were replaced by milder conditions during much of the remainder of the month as winds veered to a more southerly direction.

Despite all the dry weather, however, it was a dull month generally.

With a large anticyclone to the north of the country on the 1st, a strong northeasterly airstream covered the country, giving some wintry showers. A band of snow moved southwards on the 2nd, giving moderate accumulations in many places. Wintry showers continued up to the 4th, mainly in the east, with severe frost at night generally and freezing fog in places. Between the 5th and 9th the centre of the high pressure

moved southeastwards, giving a slack southeasterly airstream over Ireland. It became dry almost everywhere and although the days remained very cold, there was only slight frost at night in most places under overcast skies.

There was a major change in the weather on the 10th as an Atlantic rainbelt approached the country from the southwest, eventually clearing all areas on the 11th. Although rainfall amounts in most places were small, there was a considerable rise in temperatures as winds became

southerly and freshened. Weak rainbelts continued to affect mainly northwestern areas up to the 16th, but most places were dry, dull and misty. A more active front crossed the country on the 17th, giving some heavy rain in parts of the south, followed by another rainbelt on the 18th. This was to prove the last significant rainfall of the month in most places, however, as pressure building to the west of the country on the 20th brought a return to dry, cool weather with slack winds. Cloud amounts were variable up to the 23rd

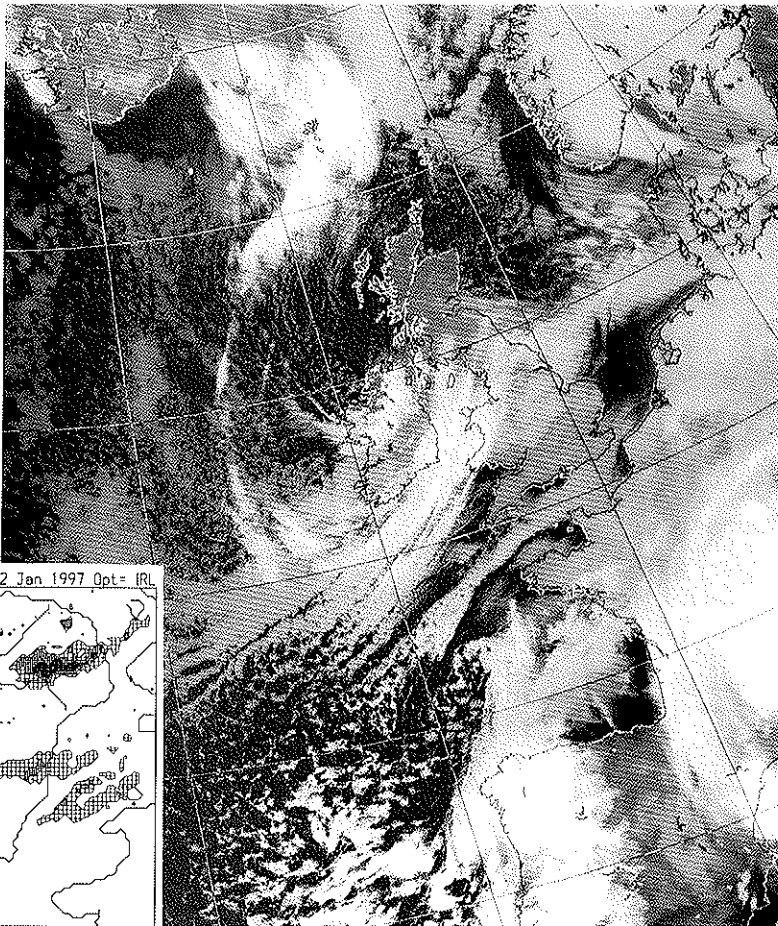
Below
Snow covered most parts of the country during the first week of the month, as here at Roundwood, Co. Wicklow. (picture Irish Times)



but frost was severe at night where skies were clear. A weak cold front moving southeastwards over the country on the 24th gave some rain, mainly in the south and southwest, but pressure rose again as it cleared. By the 28th an intense anticyclone lay over Ireland and it was dry and sunny everywhere, with widespread frost at night. Pressure fell over the country on the 31st as a warm front approached the southwest, bringing rain to those areas.

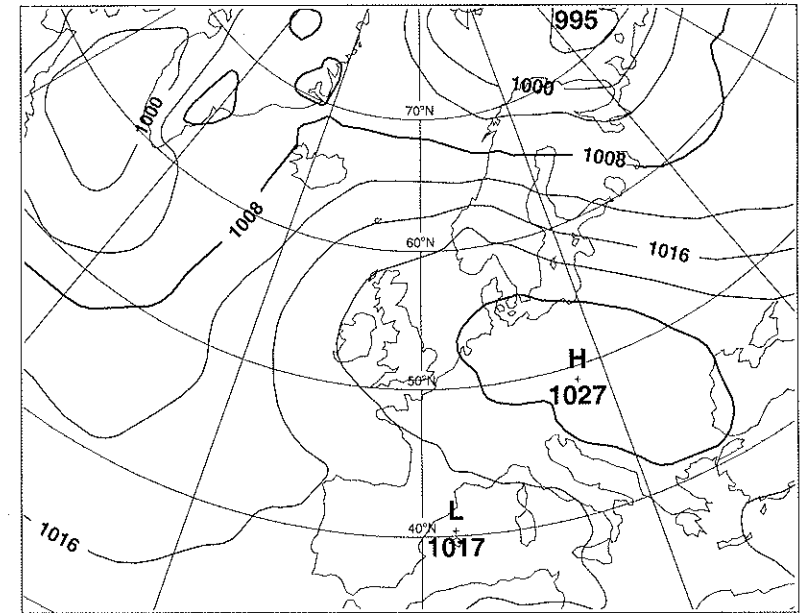
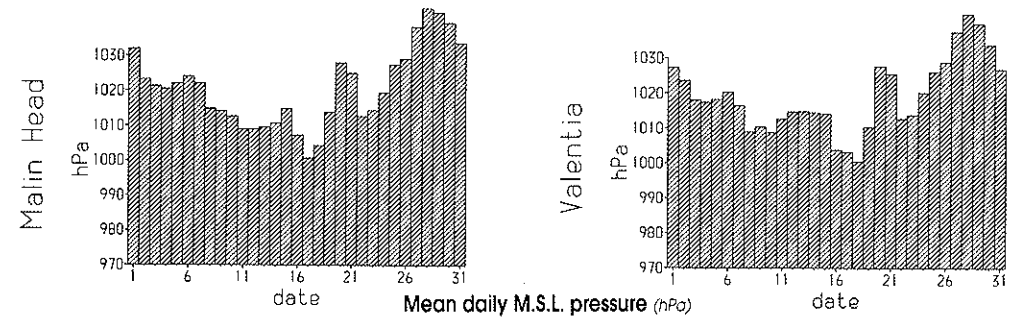
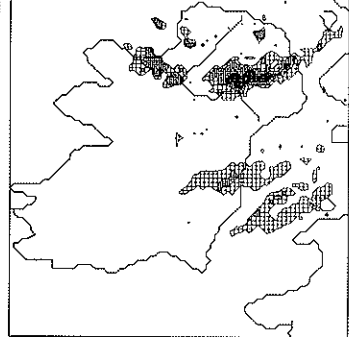
Mean wind speeds for the month were the lowest on record for January at

several stations. Mean values of between 5 and 10 knots (6 to 12 m.p.h.) generally were only half of normal and some stations recorded no gale gusts during the month. The highest gust of the month was 48 knots (55 m.p.h.), recorded at Rosslare on the 1st, Valentia on the 10th and Belmullet on the 13th. Snow was widespread during the first 9 days of the month and there were hail showers between the 1st and 5th and on the 18th. Fog was fairly widespread on several days, especially on the 2nd and in the periods 20th to 21st and 25th to 27th.

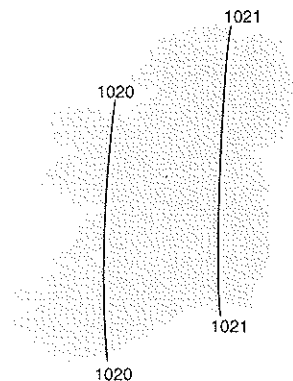


Below and Right
Bands of snow moved southwards over Ireland in a northerly airstream on the 2nd.
(Satellite picture Dundee University)

Radar plot at 6Z on 2 Jan 1997 Opt= IRL



the above map is based on means of 1200 UTC values



MEAN ATMOSPHERIC PRESSURE

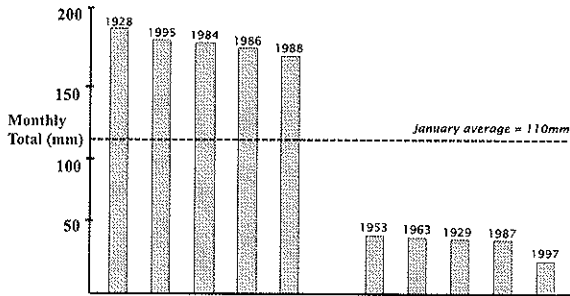
Mean sea level pressure values for the month were exceptionally high, ranging from 8hPa to 10hPa above normal in most places. Pressure values were high across the country during most of the month, particularly during the first and last weeks. Pressure rose above 1040hPa everywhere on the 28th and 29th, with Casement Aerodrome measuring the highest pressure of the month, 1045hPa on the 28th. The only period when pressure values dipped below 1000hPa was between the 16th and 18th; Belmullet recorded the lowest pressure of the month, 996.2hPa on the 17th.

Driest on record in places

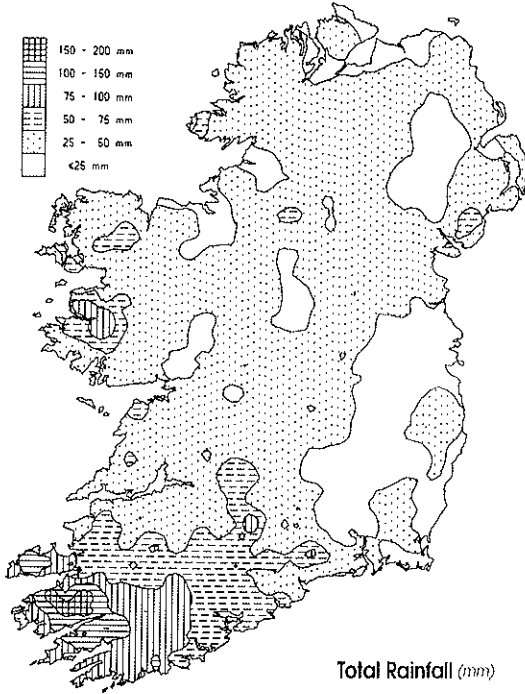
There was less than half the normal monthly rainfall almost everywhere, with percentage of normal values ranging from 13% at Ballyshannon, Co. Donegal, to 72% at Sherkin Island, Co. Cork. It was the driest January on record at a number of stations, most notably at Malin Head, where the total of 22mm made it the driest January there in over 100 years of record (*see below*). Casement Aerodrome's monthly total of 11mm was the lowest at any station for January since 1964. This very dry weather extended back into December in most places; Birr recorded a partial drought (a period of 29 or more days the mean daily rainfall of which does not exceed 0.2mm) between December 19th and January 16th.

The only fairly heavy falls in January were on the 2nd, 10th and especially in the period 16th to 18th, when some fairly heavy falls were recorded in the south. Sherkin Island recorded almost 50mm, or over half its monthly

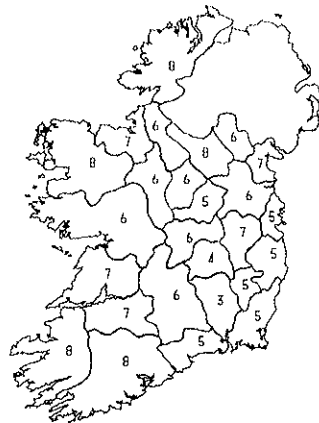
total, during this period; the daily fall there of 23.6mm on the 16th was the highest of the month. There were between 4 and 8 wetdays during the month in most places (days with 1.0mm or more of rainfall), but only 2 such days at Casement Aerodrome.



Above - Wettest and driest Januaries at Malin Head this century



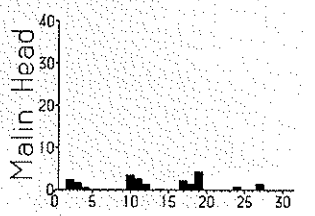
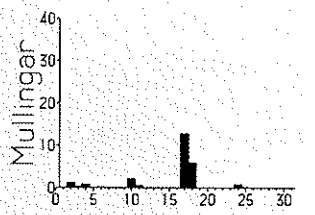
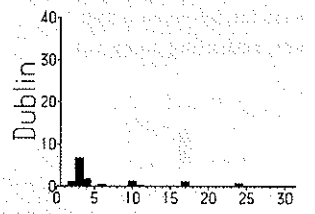
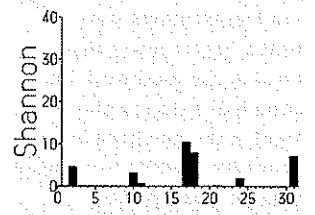
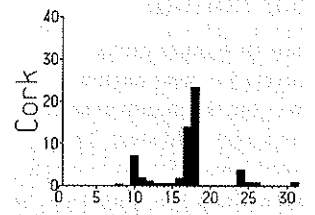
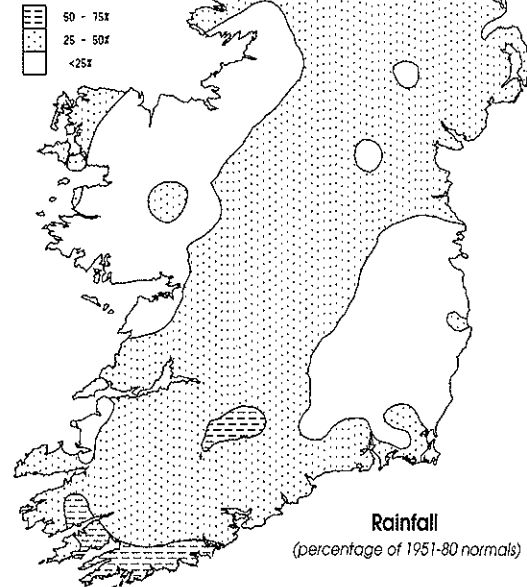
Below - The number of wetdays - days with 1mm or more of rain - in each county during January 1997



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	29	30	31	
Carlow	1	1	1	-	-	-	-	-	5	-	-	-	-	-	6	1	-	-	-	-	-	-	1	1	-	-	-	-	-	3	...	20
Cavan	1	1	1	-	-	-	-	-	4	1	1	-	-	-	6	4	6	-	-	-	-	3	1	-	-	-	-	-	2	...	31	
Clare	1	3	-	-	-	-	-	-	3	-	-	-	-	-	9	4	5	-	-	-	-	2	-	-	-	-	-	-	7	...	34	
Cork	-	-	-	-	-	-	-	-	1	7	1	1	1	1	-	12	10	8	-	-	-	3	1	-	-	-	-	-	3	...	49	
Donegal	2	-	1	-	-	-	-	-	5	3	1	-	-	-	2	1	2	2	-	-	-	2	-	1	-	-	-	-	-	...	22	
Dublin	1	3	8	1	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	2	...	20	
Galway	2	-	-	-	-	-	-	-	7	-	-	-	-	-	1	2	4	7	-	-	-	1	-	-	-	-	-	-	5	...	25	
Kerry	-	1	-	-	-	-	-	-	2	2	1	1	-	-	10	10	9	-	-	-	-	3	1	-	-	-	-	-	4	...	44	
Kildare	1	5	5	5	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	-	2	-	-	-	-	-	3	...	16		
Kilkenny	-	-	-	-	-	-	-	-	4	-	-	-	-	-	9	1	-	-	-	-	-	-	1	-	-	-	-	2	...	17		
Laois	-	1	1	-	-	-	-	-	4	-	-	-	-	-	16	5	1	-	-	-	-	1	1	-	-	-	-	3	...	33		
L Leitrim	1	-	-	-	-	-	-	-	3	1	1	1	-	-	2	7	-	-	-	-	-	1	1	-	-	-	-	1	...	21		
Limerick	-	2	-	-	-	-	-	-	1	5	-	-	-	-	11	4	6	-	-	-	-	2	-	-	-	-	-	6	...	37		
Longford	-	3	-	-	-	-	-	-	4	-	-	-	-	-	7	6	2	-	-	-	-	1	-	-	-	-	-	2	...	26		
Louth	2	1	8	1	-	-	-	-	6	1	-	-	-	-	16	2	-	-	-	-	-	-	-	-	-	-	-	2	...	39		
Mayo	1	-	-	-	-	-	-	-	3	3	1	1	2	-	2	1	3	1	-	-	1	3	-	1	-	-	-	2	...	25		
Meath	2	1	4	1	-	-	-	-	4	-	-	-	-	-	10	1	-	-	-	-	-	-	-	-	-	-	-	3	...	26		
Monaghan	2	2	-	-	-	-	-	-	5	-	1	-	-	-	6	3	-	-	-	-	-	1	-	-	-	-	-	1	...	29		
Offaly	-	1	1	1	-	-	-	-	2	-	-	-	-	-	16	4	4	-	-	-	-	-	1	-	-	-	-	5	...	35		
Roscommon	2	-	-	-	-	-	-	-	5	-	-	-	-	-	4	5	12	-	-	-	-	1	-	-	-	-	-	4	...	33		
Sligo	2	-	-	-	-	-	-	-	3	1	2	1	1	-	1	2	3	-	-	-	-	2	-	-	-	-	-	1	...	19		
Tipperary	-	-	-	-	-	-	-	-	6	-	-	-	-	-	14	7	2	-	-	-	-	2	1	-	-	-	-	3	...	35		
Waterford	1	-	-	-	-	-	-	-	12	1	1	-	-	-	10	2	1	-	-	-	-	1	1	-	-	-	-	3	...	34		
Westmeath	1	1	1	-	-	-	-	-	7	-	-	-	-	-	10	10	1	-	-	-	-	-	-	-	-	-	-	4	...	32		
Wexford	1	1	-	-	-	-	-	-	8	1	-	-	-	-	4	-	-	-	-	-	-	1	2	-	-	-	-	3	...	22		
Wicklow	1	1	4	-	-	-	-	-	4	1	-	-	-	-	3	1	-	-	-	-	-	1	1	-	-	-	-	2	...	19		
MEAN	1	1	1	-	-	-	-	-	4	1	-	-	-	-	7	4	3	-	-	-	-	1	1	-	-	-	-	3	...	27		

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.



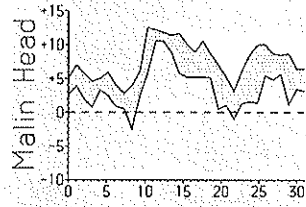
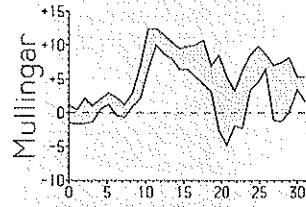
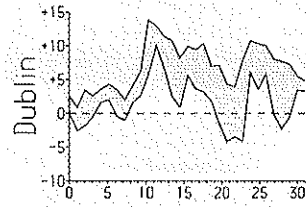
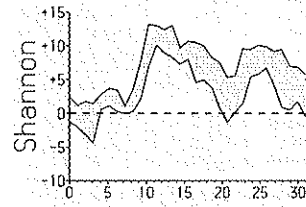
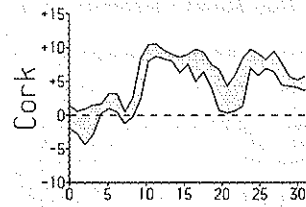
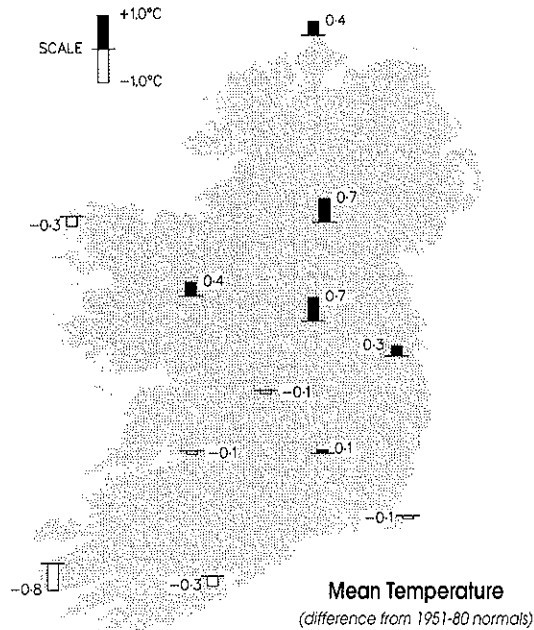
Daily rainfall amounts (millimetres)

Mean temperatures near normal

Mean air temperatures recovered to near normal values for the month overall after a very cold start. They ranged from 3.9°C at Fethard (Parsonshill), Co. Tipperary, to 5.9°C at both Rosslare and Sherkin Island, Co. Cork. Mean temperatures were almost a degree lower than normal in the southwest, but around half a degree above normal in the northern half of the country. Despite being near normal in many places, however, mean temperatures at most stations were the lowest for between 6 and 10 years, reflecting some very

mild weather during January in recent years.

The spell of very cold weather which began in December extended well into January. Air temperatures struggled to rise above freezing in most places during the first 8 days of the month; Valentia Observatory recorded its lowest January air temperature since 1958 during this spell, -6.8°C on the 3rd, the lowest of any station during the month. On the same day it recorded its lowest grass minimum temperature for January in over 50 years of record, -10.2°C. The lowest grass minimum of the month, -11.9°C, was recorded at Mount Russell, Co. Limerick, also on the 3rd.



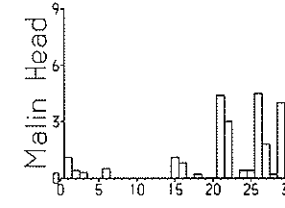
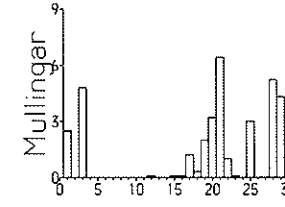
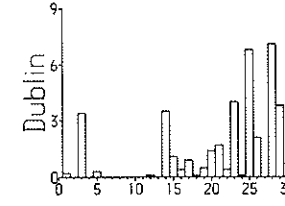
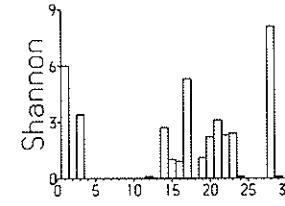
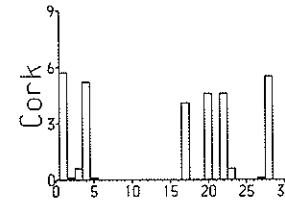
Daily maximum and minimum temperatures (°C)

Very dull in southeastern half

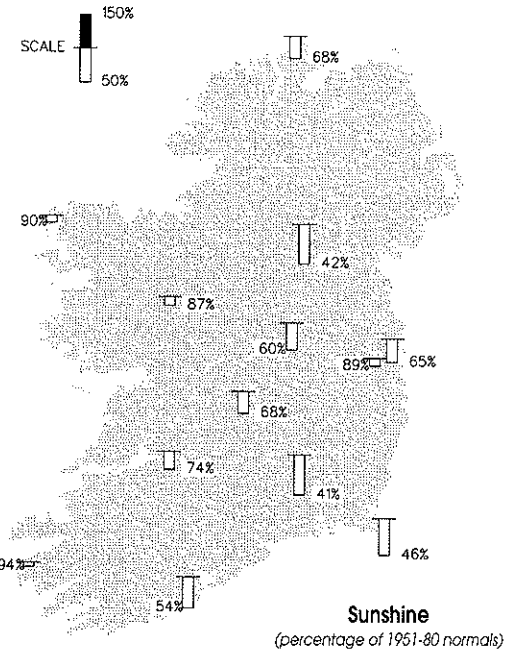
Mean daily sunshine for the month was below normal everywhere, ranging from 34% of normal at Clonroche, Co. Wexford to 94% at Valentia Observatory. The mean value was less than 1 hour in some places, mainly in the southeast of the country, equivalent to only around 10% of possible sunshine for the month. Clones had its dulllest January since 1964 while the mean daily sunshine of 0.7 hours at Kilkenny was its lowest for January since recording began there in 1957.

Although high pressure for much of the month kept the weather

dry, there was normally a lot of cloud around also. Even at Valentia, where sunshine for the month was near normal, there were 14 days during the month without any sunshine. Most stations had 16 or 17 sunless days, the period between the 4th and 16th being particularly dull. At Cork Airport, for example, there was no sunshine recorded between the 6th and 16th. In contrast, the 28th was a very sunny day in most places; Shannon Airport measured 8.1 hours sunshine on this day, the highest daily total of the month and its sunniest January day on record. Belmullet had its sunniest January day for 32 years when it measured 7.9 hours on the 29th.

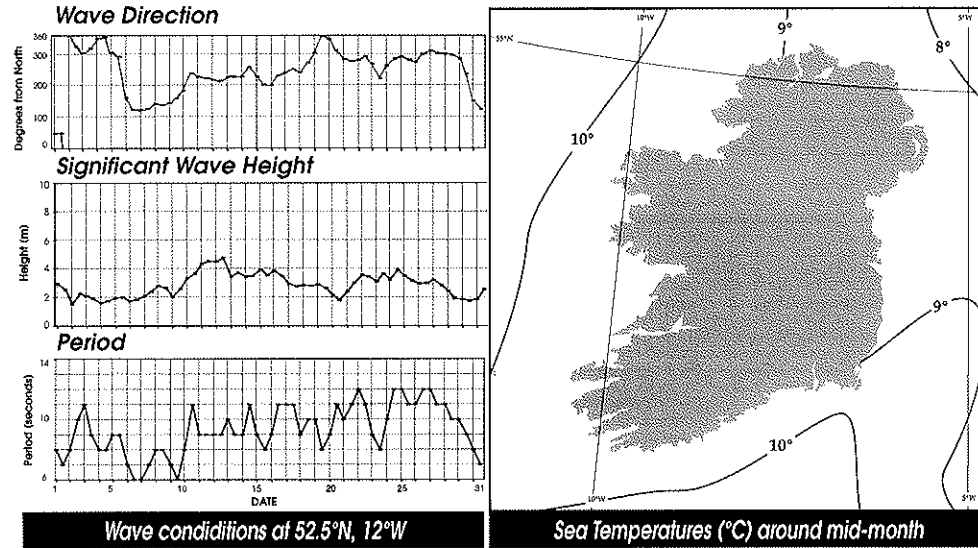


Daily sunshine amounts (hours)

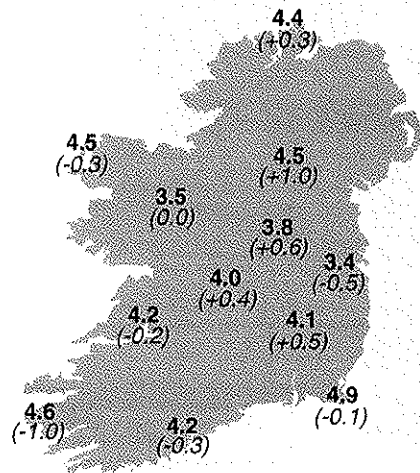


SEA TEMPERATURES

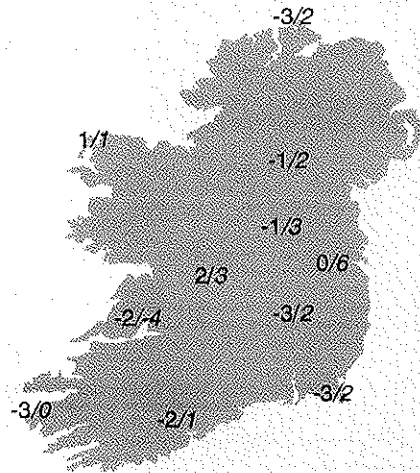
Sea temperatures varied little throughout the month, ranging from around 10°C off the west and southwest coasts to 8°C in the northeast. They were close to normal around most coasts but were around a degree above normal in the Irish Sea. At Malin Head, the mean sea temperature of 7.7°C was slightly higher than normal.



Mean 10cm Soil Temperatures (°C) at 0900Z
(difference from 1961-90 normals in brackets)



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



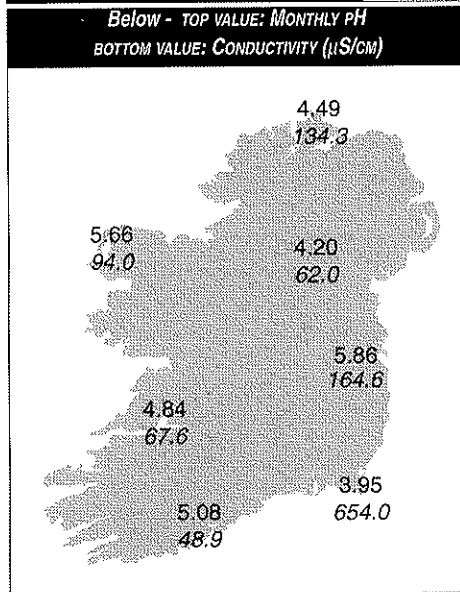
Station	period	RAINFALL				TEMPERATURE										SUNSHINE							
		amount	% of average	rain days	wet days	mean max.	mean min.	mean daily	diff. from average	lowest min.	date	days with air frost	degree days > 4.4°C	degree days > 10.0°C	lowest "grass-min."	date	days with ground frost	mean 10cm at 0900h	mean 30cm at 0900h	total no. of hours	% of average	mean wind speed (ms) 2m a.g.l.	P.E. (Penman) (mm)
Co. Cork Fermoy	1-10	6.4	-	1	1	3.3	-0.9	1.2	-	-4.9	3	7	2	0	-10.0	3	8	2.2	3.6	2.4	-	2.5	-
	11-20	35.8	-	6	4	10.2	6.1	8.2	-	2.7	20	0	38	2	-0.5	20	1	7.3	7.0	9.6	-	2.6	-
	21-end	6.3	-	4	2	7.7	2.2	5.0	-	-3.7	21	3	18	0	-6.1	21	5	5.9	6.5	9.6	-	2.0	-
	month	48.5	43	11	7	7.1	2.4	4.8	0.1	-4.9	3	10	59	2	-10.0	3	14	5.2	5.7	21.6	47	2.4	1
Co. Donegal Letterkenny	1-10	9.3	-	4	2	3.7	-0.7	1.5	-	-2.2	9	7	1	0	-	-	-	-	-	-	-	-	-
	11-20	15.2	-	6	4	10.5	6.4	8.5	-	1.4	20	0	42	4	-	-	-	-	-	-	-	-	-
	21-end	2.8	-	4	1	7.4	0.2	3.8	-	-2.5	25	7	13	1	-	-	-	-	-	-	-	-	-
	month	27.3	-	14	7	7.2	1.9	4.6	-	-2.5	25	14	56	5	-	-	-	-	-	-	-	-	-
Co. Kerry Ardfert	1-10	12.1	-	3	3	2.4	-3.0	-0.3	-	-6.4	4	10	3	1	-9.1	1	10	-	-	-	-	-	-
	11-20	20.9	-	3	3	10.3	6.0	8.2	-	-1.4	20	1	41	6	-4.4	20	2	-	-	-	-	-	-
	21-end	11.1	-	4	2	8.1	2.0	5.1	-	-1.0	21	2	16	0	-3.7	21	7	-	-	-	-	-	-
	month	44.1	-	10	8	7.0	1.7	4.4	-	-6.4	4	13	59	7	-9.1	1	19	-	-	-	-	-	-
Co. Leitrim Ballinamore	1-10	4.8	-	3	1	3.7	-0.9	1.4	-	-3.5	2	8	2	0	-4.9	2	8	2.3	3.3	7.2	-	2.1	-
	11-20	25.7	-	8	6	9.4	6.0	7.7	-	2.6	20	0	34	2	0.0	19	0	6.5	6.1	2.7	-	2.3	-
	21-end	5.2	-	4	3	6.7	0.1	3.4	-	-4.4	28	7	9	0	-5.9	28	6	4.8	5.5	8.7	-	1.2	-
	month	35.7	30	15	10	6.6	1.7	4.2	0.5	-4.4	28	15	45	2	-5.9	28	14	4.5	5.0	18.6	39	1.9	0
Co. Louth Ardee	1-10	18.7	-	6	3	4.6	-0.4	2.1	-	-3.7	4	4	3	0	-9.2	4	10	2.0	2.7	-	-	-	-
	11-20	17.4	-	5	2	11.2	6.0	8.6	-	1.9	20	0	43	5	-3.2	20	2	6.3	5.8	-	-	-	-
	21-end	1.7	-	3	1	7.3	-0.2	3.6	-	-3.7	23	5	11	0	-8.9	23	7	3.8	4.4	-	-	-	-
	month	37.8	43	14	6	7.7	1.7	4.7	-	-3.7	23	9	57	5	-9.2	4	19	4.0	4.3	-	-	-	-
Co. Waterford Dungarvan	1-10	11.9	-	3	1	4.3	-0.5	1.9	-	-3.9	3	6	3	0	-6.5	3	7	-	3.4	0.5	-	2.1	-
	11-20	21.5	-	7	4	10.1	6.6	8.4	-	1.0	20	0	40	2	-1.5	20	1	7.2	7.9	-	-	2.6	-
	21-end	9.6	-	4	3	8.3	2.2	5.3	-	-4.2	23	4	20	0	-5.6	23	5	-	6.5	8.8	-	1.3	-
	month	43.0	-	14	8	7.6	2.7	5.2	-	-4.2	23	10	64	3	-6.5	3	13	-	5.7	17.2	-	2.0	0
Co. Wexford Johnstown Castle	1-10	11.0	-	4	1	4.2	-0.1	2.1	-	-2.6	3	6	3	0	-3.0	3	7	1.6	3.1	4.2	-	1.6	-
	11-20	8.1	-	7	3	9.8	6.5	8.2	-	3.9	11	0	38	1	2.5	11	0	7.0	6.9	6.0	-	1.9	-
	21-end	10.5	-	5	3	7.6	2.7	5.2	-	-1.7	23	1	16	0	-3.0	23	5	4.7	6.0	11.1	-	0.8	-
	month	29.6	27	16	7	7.2	3.0	5.1	0.0	-2.6	3	7	57	1	-3.0	23	12	4.4	5.4	21.3	37	1.4	0

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

County/Station	Period	P.E. (mm)		Soil Moisture (mm)		
		Amount	Deficit	Deficit	Accumulated	Surplus
Co. Dublin Kinsealy	1-10	0.0	-	0	-	9
	11-20	4.1	3	3	-	-
	21-end	0.0	-	2	-	1
	month	4.1	-	-	-	-
Co. Kerry Valentia Obs.	1-10	7.9	-	0	-	3
	11-20	2.2	-	0	-	50
	21-end	6.9	-	0	-	3
	month	17.0	-	-	-	-
Co. Leitrim Ballinamore	1-10	0.0	-	0	-	5
	11-20	-	-	not available	-	-
	21-end	1.5	-	0	-	4
	month	-	-	-	-	-
Co. Wexford Johnstown Castle	1-10	8.2	-	3	-	3
	11-20	0.0	-	0	-	8
	21-end	7.2	-	0	-	5
	month	15.4	-	-	-	-

SEE BACK PAGE FOR NOTES ON THE DATA

County/Station	GLOBAL SOLAR RADIATION (MJ/sq. m.)			total for month	P.E. (Penman) (mm)
	10-day totals 1-10	11-20	21-end		
Co. Donegal Malin Head	7.27	11.24	30.07	48.58	12
Co. Dublin Dublin Airport	9.98	17.96	29.94	57.88	0
Co. Kerry Valentia Obs.	20.48	19.66	25.91	66.05	8
Co. Kilkenny Kilkenny	14.64	16.12	23.31	54.07	1
Co. Mayo Belmullet	14.68	15.19	30.74	60.61	5
Co. Monaghan Clones	12.03	12.28	20.36	44.67	1
Co. Offaly Birr	17.12	17.81	n/a	n/a	0

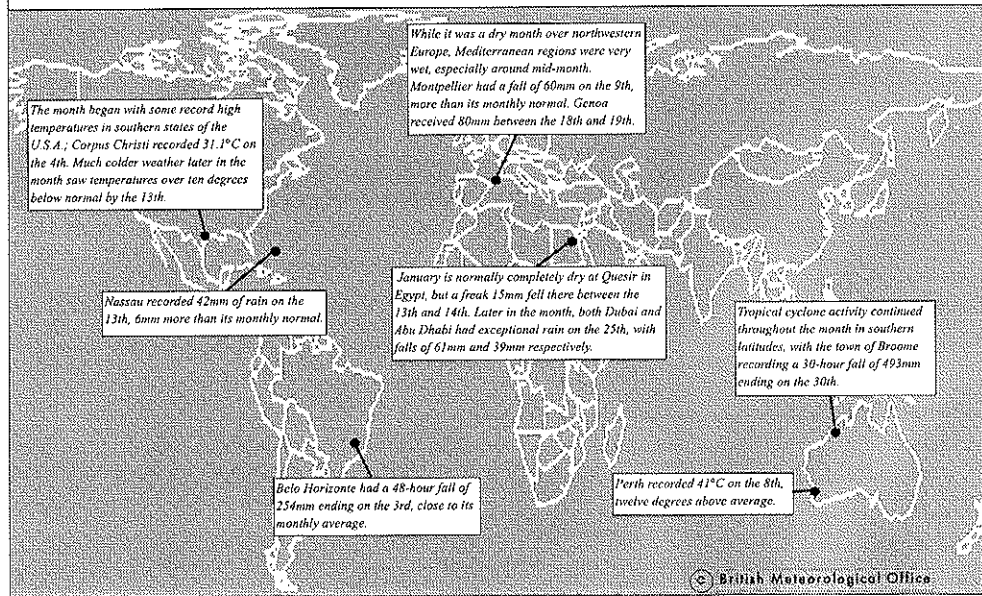


SEE BACK PAGE FOR NOTES ON THE DATA
A FEATURE GIVING THE BACKGROUND TO THE DATA
APPEARS IN THE JULY 1996 BULLETIN.

Right - DAILY PRECIPITATION AND AIR DATA AT
VALENTIA OBSERVATORY

date	PRECIPITATION			AIR		
	rainfall (mm)	pH	electrical conductivity ($\mu\text{S}/\text{cm}$)	NO ₂ -N ($\mu\text{gS}/\text{m}^3$)	SO ₂ -S ($\mu\text{gS}/\text{m}^3$)	SO ₄ -S ($\mu\text{gS}/\text{m}^3$)
1	0.0			1.4	1.92	0.84
2	5.2			0.1	2.48	0.79
3	t			4.3	2.35	1.33
4	t			2.1	1.30	1.37
5	0.0			1.3	1.34	1.36
6	0.0			1.5	1.49	2.07
7	0.0			2.3	1.91	2.38
8	0.0			3.0	2.98	2.66
9	3.7	6.72	45.1	1.6	0.99	3.06
10	3.2	5.26	24.6	1.0	0.31	0.41
11	0.3			0.3	0.16	0.61
12	2.5	4.11	103.7	0.4	0.18	1.03
13	0.7	4.87	145.0	0.5	0.25	1.01
14	0.9	4.00	129.9	0.7	0.23	0.61
15	Tr			0.4	0.37	1.11
16	20.3	4.85	15.6	0.8	0.62	0.70
17	11.1	5.13	18.2	0.8	0.34	0.27
18	12.0	5.15	17.2	0.5	0.02	0.44
19	t			1.4	1.53	1.37
20	t			2.9	2.07	0.89
21	0.0			1.7	1.23	1.63
22	0.1			1.3	0.62	1.20
23	6.1	6.45	42.2	0.7	0.32	0.47
24	0.3			1.0	1.63	0.37
25	0.2			0.6	0.23	0.92
26	t			1.8	0.71	1.22
27	t			2.5	2.47	1.21
28	t			2.5	1.96	1.26
29	0.0			2.2	1.32	1.77
30	0.0			2.5	0.85	2.15
31	2.2	4.82	28.4	4.5	0.56	1.58

SUMMARY OF SIGNIFICANT WEATHER WORLDWIDE DURING JANUARY 1997



STUDYING ATLANTIC DEPRESSIONS THROUGH FASTEX EXPERIMENT

Throughout the months of January and February 1997, an international study has been attempting to get a better understanding of the formation and development of Atlantic storms. It is hoped that an increased knowledge of the dynamics, cloud systems and air-sea interactions associated with the development and movement of these depressions will lead to improved weather forecasts, particularly for countries such as Ireland, which lie in the path of around 100 such depressions every year. This FASTEX experiment (*Fronts and Atlantic Storm Tracks EXperiment*) involves the combined efforts of the UK Met Office, Meteo France, a number of U.S. institutions and also Met Eireann, which is providing forecasts, meteorological support and communication systems in accomodation provided by Aer Rianta at Shannon Airport, the operational headquarters of the experiment.

A wide range of transport and equipment has been assembled to successfully conduct the experiment, which is costing £10 million. A number of research ships and aircraft are conducting regular trips into the western Atlantic, equipped with Doppler radar systems and radiosondes (large hydrogen filled balloons carrying a range of atmospheric measurement and communication equipment), while weather buoys have been launched at sea. Valentia Observatory has been making much more frequent radiosonde ascents than normal for the duration of the experiment. Satellite communications transmit the data received on to the Global Telecommunications System, from which they can be input into computerised weather prediction models. A large international team of meteorologists and research scientists based in Shannon will work on interpreting the data from the experiment.



Left
The U.S. Research Vessel "Knorr", berthed in Cork before departing for the mid-Atlantic to take part in the FASTEX experiment

Above
Drifting weather buoys on board R.V. Knorr, deployed during FASTEX (pictures Aidan Kelly)

Wednesday 1st: Cold with easterly winds at first but winds turning northeast to northerly during the later part of the day. Some wintry showers, mostly in Leinster, but activity less than yesterday. The west and southwest had the best of the sunshine. Frost was widespread at first and after dark.

Rainfall: nil to 1mm

Temperature: max. 1°C to 5°C, min. -4°C to 3°C inland; ground frost down to -7°C in Belmullet
Sunshine: trace to 3 hours generally, 4 to 6 hours in the west and southeast

Thursday 2nd: A trough moving southwards gave a spell of snow or sleet today except in parts of east Munster and southeast Leinster. Behind it there was a slack northeasterly flow in which fog developed during the evening. Very cold with frost early and after dark.

Rainfall: nil to 5mm

Temperature: max. zero to 7°C, min. -4°C to 4°C; ground frost down to -9°C in Kilkenny
Sunshine: nil to 2 hours

Friday 3rd: Snow and hail showers today, mainly in east Ulster and Leinster, but only the southwest escaped entirely. Frosty start with fog in places but a slight increase in the cold northeasterly winds cleared it during the late morning. Frost returning about dark except on coasts with onshore winds.

Rainfall: nil to 3 hours generally, 7mm at Dublin Airport

Temperature: max. 1°C to 6°C, min. -4°C to 2°C generally, down to -7°C at Shannon Airport; ground frost down to -10°C at Valentia Observatory
Sunshine: nil to 5 hours

Saturday 4th: Band of snow showers moving westwards overnight but died out during the morning before reaching the southwest. Much less shower activity during the afternoon and evening. Cold northeasterly continues but less frosty in the eastern half of the country. Cloudier today with only west Munster having significant sunshine.

Rainfall: nil to 2mm generally, 5mm at Casement Aerodrome

Temperature: max. zero to 5°C, min. -4°C to 1°C; ground frost down to -10°C in Birr
Sunshine: nil to 2 hours generally, 5 to 6 hours in the southwest

Sunday 5th: Cold northeasterly continuing but only a few wintry showers here and there. Less frost overnight, especially in the eastern half of the country. Afternoon temperatures a little higher than of late and less frost this evening because of the generally cloudy conditions.

Rainfall: nil

Temperature: max. 1°C to 5°C, min. -1°C to 3°C; ground frost down to -7°C in Belmullet
Sunshine: nil or trace generally, 3 hours in Valentia

Monday 6th: Cold and cloudy conditions today but mostly dry although a few light snow showers did occur, chiefly in Leinster. Some air frost in the west and northwest early. Easterly winds were mostly light but moderate at times near the south and southeast coast.

Rainfall: nil to 1mm

Temperature: max. 2°C to 6°C, min. -2°C to 4°C; ground frost down to -7°C in Belmullet
Sunshine: nil to 1 hour

Tuesday 7th: Continuing cold with light easterly winds which increased to moderate occasionally fresh near the south and southeast coasts. Dull and mostly dry but again a few light wintry showers in Munster and Leinster. In the early hours there was only slight ground frost in places but during the evening ground frost was more widespread and there was some slight air frost in places.

Rainfall: nil

Temperature: max. 1°C to 5°C, min. -1°C to 1°C inland, up to 3°C coastal; ground frost down to -3°C in Belmullet
Sunshine: nil to 1 hour

Wednesday 8th: Slight air frost in places and widespread ground frost at first. Afternoon temperatures lower than in recent days and ground frost returning after dark except in some coastal districts. Continuing cloudy but dry apart from a few showers of snow or sleet mainly in Munster and south Leinster. Winds light to moderate easterly but fresh for a time near the south coast.

Rainfall: nil or trace

Temperature: max. -1°C to 3°C, min. -2°C to 1°C; ground frost down to -4°C in Belmullet
Sunshine: nil or trace

Thursday 9th: Dull cold day with light easterly winds. Dry apart from a few light wintry showers here and there. Frost early especially in the north and west but very little frost this evening. Winds turning more southeasterly very late in the day.

Rainfall: nil

Temperature: max. 1°C to 5°C, min. -1°C to 2°C generally, down to -3°C coastal; ground frost down to -8°C in Belmullet
Sunshine: nil

Friday 10th: A day of transition as milder air made its way slowly northwards. There were spells of rain, with sleet for a time in some areas during the morning and afternoon. Southeasterly winds were moderate to fresh and strong in some coastal districts for a time before turning more southerly and decreasing. Dull today and cold at first, the highest temperatures being recorded late in the day.

Rainfall: trace to 5mm generally, up to 7mm at Cork Airport

Temperature: max. 5°C to 12°C, min. 1°C to 3°C inland, up to 5°C coastal; ground frost down to -1°C in Belmullet
Sunshine: nil or trace

Saturday 11th: Mild today with moderate to fresh southerly to southwesterly winds, strong and gusty near coasts in Connaught and Ulster. Drizzle or rain overnight but good dry spells, particularly in the midlands and east. Hill and coastal fog and drizzle affected the south, west and northwest coasts at times.

Rainfall: nil to 4mm

Temperature: max. 10°C to 14°C, min. 5°C to 8°C inland, up to 11°C coastal
Sunshine: nil

Sunday 12th: Mild southwesterly winds were again moderate to fresh and strong near the north and west coasts. Many areas had a largely dry day. There was less hill and coastal fog or drizzle near coasts in the northwest, west and south but it did affect many of these areas during the evening.

Rainfall: nil to 3mm generally, 8mm in Belmullet

Temperature: max. 10°C to 13°C, min. 9°C to 11°C
Sunshine: nil or trace

Monday 13th: A front gave spells of rain in many parts of Ulster and north Connaught overnight and during the morning but the fronts then moved away northwards. Other areas had largely dry conditions but south and west facing coastal areas had drizzly or foggy conditions at times. Southwesterly winds were fresh or strong at first but decreased to moderate occasionally fresh. Temperatures not quite as high as in recent days but still above normal.

Rainfall: nil or 1mm

Temperature: max. 10°C to 12°C, min. 7°C to 9°C inland, up to 11°C coastal
Sunshine: nil to 1 hour

Tuesday 14th: Southwesterly windflow continuing with winds decreasing light to moderate. Most areas again essentially dry but the south, west and northwest coasts had drizzle at times, with more significant rain for a time on the west coast. Temperatures above normal.

Rainfall: nil to 2mm generally, 7mm in Belmullet

Temperature: max. 9°C to 13°C, min. 3°C to 10°C; ground frost down to -1°C at Dublin Airport
Sunshine: nil to 1 hour generally, 3 hours at Shannon Airport and 3 to 4 hours at Baldonnel and Dublin Airports

Wednesday 15th: Some drizzle and fog overnight clearing during the morning. Dry for much of the day as less humid air made its way northwards in a light to moderate south to southeasterly airflow. Drizzle tending to return late in the day to southern and eastern coastal districts. Temperatures ranging from near normal in the south to above normal in the north. Ground frost for a time in the evening in a few places where cloud broke.

Rainfall: nil to 1mm

Temperature: max. 8°C to 12°C, min. 1°C to 7°C inland, up to 9°C coastal; ground frost down to -3°C at Casement Aerodrome
Sunshine: nil to 1 hour generally, 3 hours at Casement Aerodrome

Thursday 16th: South to southeasterly winds today, mostly light to moderate, but fresh at times near the south and west coasts. Some slight rain and mist patches here and there but generally dry with a few places having sunny spells. Rain in the southwest in the evening affected much of west Munster and the west coast of Connaught by midnight. Temperatures normal or above.

Rainfall: nil to 2mm, 16mm at Valentia Observatory

Temperature: max. 9°C to 12°C, min. 4°C to 8°C
Sunshine: nil to 4 hours

Friday 17th: Rainbelt over the southwest moved slowly northwards to clear the northeast about mid-afternoon; amounts of rain were highly variable, with parts of the east and southeast escaping lightly. Behind the rainbelt the weather brightened, southeasterly winds veered southwesterly and decreased light to moderate and it was mainly dry. Some mist and fog patches formed in the evening. Temperatures about or above normal today. Cool in the evening.

Rainfall: 1mm to 3mm in the east and northwest, 5mm to 14mm in the southwest

Temperature: max. 8°C to 11°C, min. 3°C to 7°C; ground frost down to -3°C in Kilkenny
Sunshine: nil to 5 hours

Saturday 18th: Southeasterly winds increased to moderate and fresh at times on exposed coasts. Slight ground frost here and there in the very early hours but cloudy conditions with rain at times spread up from the southwest; again the east and southeast escaped lightly. Afternoon temperatures similar to yesterdays. Becoming cool in the evening as winds turned easterly.

Rainfall: nil to 2mm in the east and southeast, 6mm to 9mm elsewhere, up to 24mm in the southwest

Temperature: max. 8°C to 11°C, min. 3°C to 6°C inland, up to 8°C coastal; ground frost down to -1°C in Kilkenny
Sunshine: nil to 1 hour

Sunday 19th: Some patches of fog and slight ground frost in the north and northwest at first. Little or no rain today except in west Ulster and north Connaught. East to northeast winds decreased gradually today but it was cooler than of late.

Rainfall: nil to 4mm

Temperature: max. 7°C to 9°C, min. 2°C to 4°C inland, up to 7°C coastal; ground frost down to -2°C at Shannon Airport
Sunshine: nil to 2 hours generally, 5 hours at Valentia Observatory

Monday 20th: Slight ground frost and some mist patches early. Fog in a few places this morning and more widespread fog and frost this evening. Light northeasterly winds became variable as a cell of high pressure moved eastwards across the country. Dry today with variable sunshine. Temperatures below or near normal in the afternoon.

Rainfall: nil

Temperature: max. 7°C to 11°C, min. -2°C to 2°C inland, up to 5°C coastal; ground frost down to -9°C in Kilkenny

Sunshine: nil to 4 hours generally, 5 to 7 hours in the southwest

Tuesday 21st: Frosty start with a good deal of fog which thinned out during the forenoon. Dry day with light winds and very variable sunshine. Fortunately cloud increased during the evening and while there was some ground frost in places and local mist, it largely prevented the development of fog and air frost.

Rainfall: nil or trace

Temperature: max. 3°C to 9°C, min. -6°C to zero inland, up to 4°C coastal; ground frost down to -1°C in Kilkenny

Sunshine: nil to 2 hours in the southeast, 3 to 6 hours elsewhere, nil at Connaught Airport

Wednesday 22nd: Ridge conditions generally with a light southerly windflow over the west today. Some frost overnight and this morning mainly in the west and northwest. Generally, dry conditions but some spots of rain or sleet near the east coast and mist patches in places. Frost and some fog developing during the evening except in parts of southwest and west.

Rainfall: nil to 1mm

Temperature: max. 2°C to 7°C, min. -4°C to 1°C inland, up to 3°C coastal; ground frost down to -10°C in Clones

Sunshine: 2 to 4 hours in the southwest, 5 to 10 hours elsewhere

Thursday 23rd: Frost especially in the midlands and east, cleared during the forenoon. Another mostly dry day but a few showers near the south and west coasts. Southerly winds were light at first but increased in the later part of day, becoming fresh or strong near the west and northwest coasts towards midnight. Temperatures rose gradually during the day and were still rising after dark.

Rainfall: nil to 2mm

Temperature: max. 5°C to 10°C, min. -5°C to 2°C inland, up to 7°C coastal; ground frost down to -10°C in Kilkenny

Sunshine: nil to 4 hours

Friday 24th: Cold front gave rain in the north and west early but it weakened as it became slow-moving over the east and south in the afternoon giving these areas dull and drizzly conditions. In Ulster and Connaught

conditions brightened and it became dry but frost and fog developed in places after dark. Moderate to fresh southerly winds becoming light and variable. Temperatures normal or a little above.

Rainfall: nil to 4mm generally, 6mm at Valentia Observatory

Temperature: max. 7°C to 11°C, min. 1°C to 9°C; ground frost down to -4°C in Belmullet
Sunshine: nil to 2 hours

Saturday 25th: Frost in the north in the very early hours but as the front moved back northwards it became generally drizzly and foggy. Fog cleared in the forenoon as southeasterly winds picked up a little. The afternoon and evening were dry apart from occasional drizzle near the south and southwest coasts. Good sunny spells developed in parts of the east and northeast and these areas had ground frost for a time after dark. However, temperatures were mostly normal or a little above.

Rainfall: nil to 1mm

Temperature: max. 8°C to 12°C, min. 3°C to 8°C generally, down to 1°C coastal; ground frost down to -5°C in Belmullet

Sunshine: nil or trace in the west, 1 to 3 hours in the midlands, 7 hours in the east

Sunday 26th: Pressure fairly high today with slack southeasterly winds becoming variable. Fog early cleared during the morning but mist was more persistent. Dry apart from a little drizzle in places. Sunshine amounts variable but small in most areas. Temperatures normal or a bit above.

Rainfall: nil to 1mm

Temperature: max. 8°C to 11°C, min. 5°C to 8°C; ground frost down to -2°C in Clones
Sunshine: nil to 3 hours generally, 5 hours in Malin Head

Monday 27th: Fog in some areas cleared by about noon. A misty start with a little light rain in places. With pressure high and rising, brighter fresher weather spread gradually southwards, but did not reach parts of Munster and southeast Leinster until late. Light variable winds. Afternoon temperatures normal or a little above. Some frost developing after dark where cloud broke.

Rainfall: nil to 2mm

Temperature: max. 7°C to 11°C, min. -1°C to 7°C; ground frost down to -8°C in Mullingar
Sunshine: nil to 2 hours generally, 5 hours at Valentia Observatory

Tuesday 28th: Frosty at first with fog in places but clearing during the forenoon. Dry day with most areas having good sunny spells. Light variable winds as the anticyclone drifted slowly eastwards. Cloud increasing after dark but some areas had frost.

Rainfall: nil

Temperature: max. 8°C to 11°C, min. -3°C to 6°C; ground frost down to -9°C in Birr
Sunshine: trace to 1 hour in the northwest, 3 to 8 hours elsewhere

Sunday 29th: Frost in quite a number of places at first this morning cleared quickly. It was a dry day with persistent haze in some areas and highly variable amounts of sunshine. Light easterly or variable winds but moderate near the south coast. Maximum temperatures a little below normal generally but normal or a little above in the sunnier areas. Not much frost after dark except in parts of the northwest.

Rainfall: nil

Temperature: max. 5°C to 10°C, min. -2°C to 4°C; ground frost down to -7°C in Kilkenny
Sunshine: nil to 1 hour in the south, 4 to 8 hours elsewhere

Monday 30th: Cold, hazy dry day. Easterly winds were light occasionally moderate generally but were fresh near the south coast. Very little frost but it did affect a few places where the cloud broke both very early and after dark. Little or no sun.

Rainfall: nil

Temperature: max. 3°C to 8°C, min. -1°C to 5°C; ground frost down to -8°C in Kilkenny
Sunshine: nil to 1 hour

Tuesday 31st: Frost here and there at first this morning. Dry hazy conditions for much of the day but rain in west Munster this evening. Easterly winds turned southeasterly today and gradually increased to moderate and were fresh near the coast of Munster. Still cold but some areas in Ulster, Connaught and north Leinster had good sunny spells.

Rainfall: nil to 2mm generally, 6mm at Shannon Airport

Temperature: max. 3°C to 8°C, min. -2°C to 4°C inland, up to 6°C coastal; ground frost down to -9°C in Birr and Kilkenny

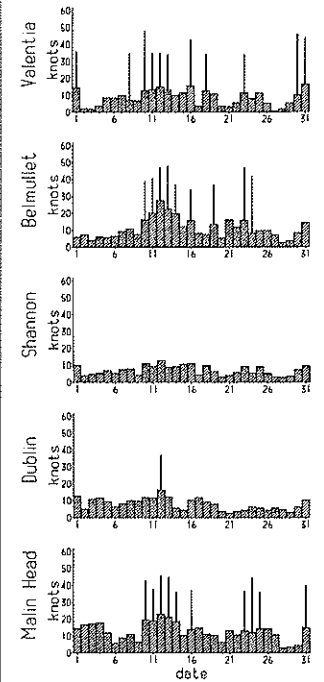
Sunshine: nil or trace generally, 4 to 5 hours in the northwest and 6 hours at Dublin Airport

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)			not available			
CO. CLARE						
SHANNON AIRPORT	7.5	2.5	5.0 -0.1	13.2 11	-4.3 4	-7.5 5
CARRON	6.3	1.7	4.0	12.9 12	-3.4 4	-9.0 4
CO. CORK						
FERMOY (MOORE PARK)	7.1	2.4	4.8 0.1	12.0 12	-4.9 3	-10.0 3
CORK AIRPORT	6.4	3.0	4.7 -0.3	10.5 12	-4.4 3	-7.2 4
SHERKIN ISLAND	7.6	4.2	5.9 -0.7	10.6 17	-4.5 3	-5.6 4
CO. DONEGAL						
MALIN HEAD	7.8	3.5	5.7 0.4	12.5 11	-2.4 9	-5.4 9
BALLYSHANNON (CATHLEEN'S FALL)	7.2	2.5	4.9 0.4	13.8 12	-1.8 28	
LETTERKENNY (MAGHERENAN)	7.2	1.9	4.6	13.0 12	-2.5 25	
CO. DUBLIN						
DUBLIN (PHOENIX PARK)	7.6	1.5	4.6 0.1	14.3 11	-4.7 21	-9.2 23
DUBLIN AIRPORT	7.1	1.4	4.3	13.8 11	-4.2 21	-6.7 23
CASEMENT AERODROME	7.3	2.0	4.7 0.3	13.8 11	-3.8 21	-7.7 23
DUBLIN (MERRION SQUARE)	7.7	3.6	5.7 0.0	15.2 11	-1.3 3	
CO. GALWAY						
GALWAY (UNIV. COLL.)	7.4	2.6	5.0 0.1	13.5 12	-3.0 1 2	-7.8 4
MAAM VALLEY	7.9	3.2	5.6	13.4 12	-0.7 3	-4.9 29
CONNEMARA NATIONAL PARK	7.5	2.4	5.0	11.5 11	-3.5 3	
BALLYGAR	6.7	2.2	4.5	13.5 12	-3.5 2	-7.1 2
CO. KERRY						
VALENTIA OBSERVATORY	8.1	3.4	5.8 -0.8	12.1 12	-6.8 4	-10.2 3 4
ARDFERT (LISCAHANE)	7.0	1.7	4.4	13.9 11	-6.4 4	-9.1 1
CO. KILKENNY						
KILKENNY	6.9	1.6	4.3 0.1	12.9 11	-5.6 21	-11.1 21
CO. LEITRIM						
BALLINAMORE	6.6	1.7	4.2 0.5	12.0 12	-4.4 28	-5.9 28
CO. LIMERICK						
MOUNT RUSSELL	6.1	2.0	4.1	12.0 11	-6.7 3	-11.9 3
CO. LOUTH						
ARDEE (BOHARNAMOE)	7.7	1.7	4.7	14.4 12	-3.7 4 23	-9.2 4
CO. MAYO						
CLAREMORRIS	7.1	1.7	4.4 0.4	12.5 12	-3.6 1	-8.6 1
BELMULLET	8.0	2.7	5.4 -0.3	12.1 12	-2.7 9	-8.3 9
STRAIDE	7.2	1.5	4.4	12.3 12	-5.0 2	-9.0 1
CO. MEATH						
WARRENSTOWN	6.9	2.4	4.7 0.7	12.2 11	-2.9 21 22	-8.5 21
CO. MONAGHAN						
CLONES	6.6	2.3	4.5 0.7	12.8 12	-2.1 28	-10.1 23
CO. OFFALY						
BIRR	6.7	1.9	4.3 -0.1	13.2 11	-3.3 28	-10.1 4
DERRYGREENAGH	6.6	1.6	4.1 0.5	12.5 11 12	-4.0 21	-9.9 21
CO. SLIGO						
ARDTARMON	7.1	2.6	4.9	12.0 12	-1.5 1	-2.8 6 9
CO. TIPPERARY						
FETHARD (PARSONSHILL)	5.9	1.8	3.9	11.4 11	-3.9 3	-5.4 4
CO. WATERFORD						
WATERFORD (TYCOR)	7.2	2.7	5.0 -0.1	11.2 17	-4.2 3	
DUNGARVAN (CARRIGLEA)	7.6	2.7	5.2	12.1 11	-4.2 23	-6.5 3
CO. WESTMEATH						
MULLINGAR II	6.6	1.9	4.3 0.7	12.4 11 12	-4.8 21	-10.8 21
CO. WEXFORD						
JOHNSTOWN CASTLE	7.2	3.0	5.1 0.0	11.7 12	-2.6 3	-3.0 3 23
ROSSLARE	7.4	4.3	5.9 -0.1	11.5 12	-0.6 8	-4.4 23
CLONROCHE	6.4	2.4	4.4 0.0	10.9 12 17	-5.5 3	-9.5 3
JOHN F. KENNEDY PARK	6.8	3.0	4.9 0.0	11.0 12 13	-2.2 3	-4.8 3

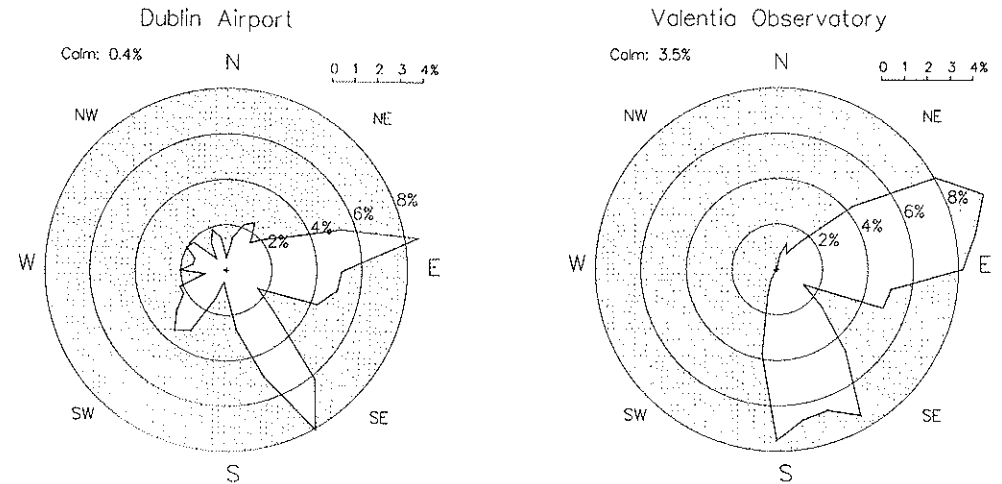
County / Station	RAINFALL (MM)			SUNSHINE (HRS)			
	Total amount	% of average	Most in a day/date	Daily mean (hrs./day)	% of average	% of possible	Most in a day/date
CO. CARLOW							
CARLOW (OAK PARK)			not available				
CO. CLARE							
SHANNON AIRPORT	37.0	40	10.4 16	1.25	74	15	8.1 28
CARRON	33.5	22	7.3 31				
CO. CORK							
FERMOY (MOORE PARK)	48.5	43	18.0 16	0.70	46	8	5.4 20
CORK AIRPORT	61.4	41	14.9 16	1.01	54	12	5.7 1
SHERKIN ISLAND	94.3	72	23.6 16	1.25	66	15	7.0 20
CO. DONEGAL							
MALIN HEAD	22.2	21	6.1 10	0.90	68	11	4.7 31
BALLYSHANNON (CATHLEEN'S FALL)	12.7	13	5.3 10	1.05	75	13	6.1 21
LETTERKENNY (MAGHERENAN)	27.3		6.7 19				
CO. DUBLIN							
DUBLIN (PHOENIX PARK)	16.2	23	6.2 3	1.03	60	13	6.2 25
DUBLIN AIRPORT	15.5		4.2 2 3	1.22	65	15	7.1 28
CASEMENT AERODROME	11.1	17	6.6 3	1.58	89	19	6.7 25
DUBLIN (MERRION SQUARE)	11.8	18	3.8 3				
CO. GALWAY							
GALWAY (UNIV. COLL.)	26.2	23	7.6 18	1.48	93	18	7.4 21
MAAM VALLEY	87.8		14.1 23				
CONNEMARA NATIONAL PARK	67.6		14.1 16				
BALLYGAR	36.9	37	9.4 18				
CO. KERRY							
VALENTIA OBSERVATORY	68.8	42	20.3 16	1.47	94	18	6.8 20
ARDFERT (LISCAHANE)	44.1		10.9 16				
CO. KILKENNY							
KILKENNY	16.6	19	8.8 16	0.72	41	9	5.1 17
CO. LEITRIM							
BALLINAMORE	35.7	30	14.1 18	0.62	40	8	4.9 3
CO. LIMERICK							
MOUNT RUSSELL	61.1		18.7 16				
CO. LOUTH							
ARDEE (BOHARNAMOE)	37.8	43	14.2 16				
CO. MAYO							
CLAREMORRIS	32.1	28	6.7 18	1.43	87	16	7.1 28
BELMULLET	44.2	37	9.7 11	1.40	90	17	7.9 29
STRAIDE	25.4		6.8 23	1.32			5.8 21 28
CO. MEATH							
WARRENSTOWN	15.6	19	5.5 16				
CO. MONAGHAN							
CLONES	26.8	30	6.0 16	0.65	42	8	5.3 3
CO. OFFALY							
BIRR	30.3	40	14.0 16	1.20	68	15	5.8 28
DERRYGREENAGH	24.4	29	10.8 16				
CO. SLIGO							
ARDTARMON	19.0		4.9 10				
CO. TIPPERARY							
FETHARD (PARSONSHILL)	21.8		10.3 16				
CO. WATERFORD							
WATERFORD (TYCOR)	37.6	34	16.7 10				
DUNGARVAN (CARRIGLEA)	43.0		14.5 16	0.55		17	6.2 28
CO. WESTMEATH							
MULLINGAR II	27.7	30	9.0 17	1.11	60	14	6.4 21
CO. WEXFORD							
JOHNSTOWN CASTLE	29.6	27	10.0 10	0.69	37	8	6.5 28
ROSSLARE	20.0	21	6.9 10	0.94	46	11	6.7 28
CLONROCHE	35.4	28	10.2 10	0.59	34	7	4.9 17 28
JOHN F. KENNEDY PARK	25.3	23	9.7 10	0.67	40	8	6.0 28

County / Station	WEATHER — NO. OF DAYS WITH									MEAN 0900 SOIL TEMPERATURES (°C)		
	Rain days	Wet days	Air frost	Ground frost	Snow lying	Snow lying	Hail	Thunder	Fog	10cm	20cm	30cm
CO. CARLOW CARLOW (OAK PARK)					not available							
CO. CLARE SHANNON AIRPORT	8	7	8	15	2	5	0	0	6	4.2	4.9	5.4
CARRON	14	7	13	21						3.9		4.5
CO. CORK FERMOY (MOORE PARK)	12	7	10	14						5.2	5.3	5.7
CORK AIRPORT	14	8	7	12	5	0	1	0	13	4.2	4.7	5.7
SHERKIN ISLAND	17	10	5	9						5.5		6.3
CO. DONEGAL MALIN HEAD	14	8	3	11	2	0	4	0	0	4.4	5.0	6.4
BALLYSHANNON (CATHLEEN'S FALL)	12	4	10									
LETTERKENNY (MAGHERENAN)	15	7	14									
CO. DUBLIN DUBLIN (PHOENIX PARK)	12	4	12	22						4.0	5.0	5.2
DUBLIN AIRPORT	9	6	13	22	8	4	2	0	7	3.4	3.9	4.5
CASEMENT AERODROME	10	2	10	17	8	7	0	0	5			
DUBLIN (MERRION SQUARE)	9	5	5									
CO. GALWAY GALWAY (UNIV. COLL.)	11	6	10	19								
MAAM VALLEY	18	12	6	16								
CONNEMARA NATIONAL PARK	16	12	8									
BALLYGAR	23	8	11	16								
CO. KERRY VALENTIA OBSERVATORY	15	11	7	12	1	4	0	0	2	4.6	5.4	6.5
ARDPERT (LISCAHANE)	11	8	13	19								
CO. KILKENNY KILKENNY	8	3	15	18		5				4.1	4.4	5.1
CO. LEITRIM BALLINAMORE	15	10	15	14						4.5	5.0	5.0
CO. LIMERICK MOUNT RUSSELL	15	7	11	17						3.8	4.3	
CO. LOUTH ARDEE (BOHARNAMOE)	13	6	9	19						4.0	4.0	4.3
CO. MAYO CLAREMORRIS	16	10	12	15		0				3.5	4.0	4.2
BELMULLET	17	12	9	20	3	0	2	0	2	4.5	5.0	5.9
STRAIDE	15	8	13	18						3.3		
CO. MEATH WARRENSTOWN	12	5	9	23						3.2	3.6	4.1
CO. MONAGHAN CLONES	13	7	10	19		4				4.5	4.9	5.2
CO. OFFALY BIRR	8	5	13	20		6				4.0	4.6	5.2
DERRYGREENAGH	12	7	13	24								
CO. SLIGO ARDTARMON	13	7	8	16								
CO. TIPPERARY FETHARD (PARSONSHILL)	12	5	11	15						4.0	4.3	
CO. WATERFORD WATERFORD (TYCOR)	14	8	10									
DUNGARVAN (CARRIGLEA)	15	8	10	13							5.5	5.7
CO. WESTMEATH MULLINGAR II	12	5	13	19		7				3.8	4.4	4.8
CO. WEXFORD JOHNSTOWN CASTLE	18	7	7	12						4.4	5.1	5.4
ROSSLARE	13	7	4	10	5	0	0	0	3	4.9	5.6	6.9
CLONROCHE	15	9	10	15						5.0	5.4	5.4
JOHN F. KENNEDY PARK	12	4	8	13						4.7	5.0	6.1

County / Station	WIND (KTS)						Days with gales	Hours with gale gusts	Hours with gale gusts	
	Mean speed	Max. 10-min. dir.	mean speed	date/hour	Max. Gust dir.	speed				date/time
CO. CLARE SHANNON AIRPORT	7.0	180°	23	12/19	180°	30	12/1834	0	0	0
CO. CORK CORK AIRPORT	9.4	160°	21	18/11	160°	33	18/0855	0	0	0
		090°	21	30/22						
CO. DONEGAL MALIN HEAD	12.6	190°	33	24/05	210°	46	12/0544	0	10	69
CO. DUBLIN CASEMENT AERODROME	7.4	200°	30	12/23	210°	40	12/0623	0	3	14
DUBLIN AIRPORT	8.0	230°	24	12/11	230°	37	12/0800	0	1	4
CO. KERRY VALENTIA OBSERVATORY	8.4	090°	28	30/22	160°	48	10/1124	0	11	48
CO. KILKENNY KILKENNY	5.1	180°	26	12/20	180°	35	12/1947	0	1	1
CO. MAYO BELMULLET	10.9	200°	34	12/21	220°	48	13/0508	1	9	68
CO. MONAGHAN CLONES	5.3	200°	21	12/16	200°	35	13/0424	6	1	1
CO. OFFALY BIRR	3.7	170°	19	12/21	140°	33	16/1438	0	0	0
					170°	33	12/2050			
CO. WESTMEATH MULLINGAR II	4.8	150°	16	10/13	170°	28	12/2341	0	0	0
		170°	16	12/22	170°	28	18/1212			
CO. WEXFORD ROSSLARE	11.1	050°	33	1/05	050°	48	1/0440	0	5	22

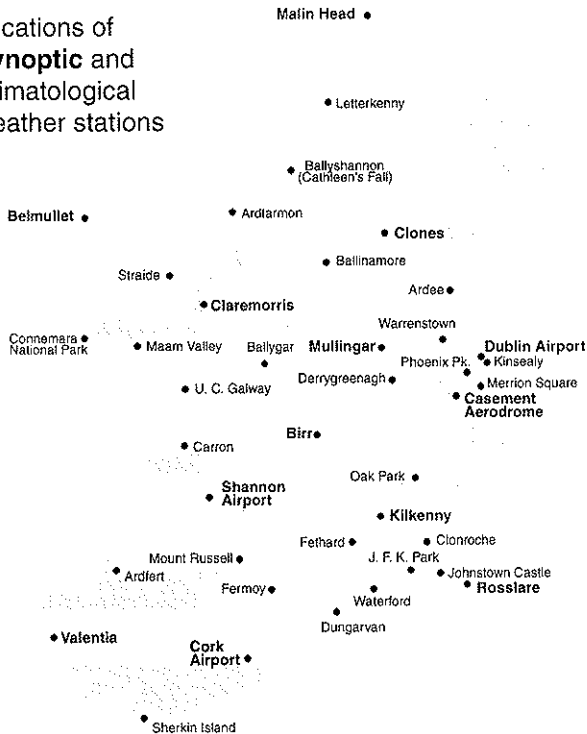


Daily mean wind speeds and maximum significant gusts (34 knots or more)



FREQUENCY OF WIND DIRECTION

Locations of Synoptic and Climatological weather stations



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NOTES ON THE TABLES

A. General

- 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.)
- All stations daily rainfall totals refer to the 24-hour period ending at 0900UTC 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.
- 'Raindays' and 'wetdays' are days during which the total rainfall is not less than 0.2mm and 1.0mm respectively.
- A 'day' for the purposes of this publication refers to the period from 0900UTC on a particular day to 0900UTC on the following day. (This is because climatological stations make their daily observations at 0900UTC.)
- 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).
- 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.)
- Mean soil and earth temperatures are based on readings taken at 0900UTC.
- 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.
- 'e' denotes that the value is calculated using one or more estimated readings.
- Data from Northern Ireland is kindly provided by the Belfast Weather Centre.

B. Agmet

- 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.
- 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.
- Degree day totals are calculated using the method set out by McVicker in the Journal of the Institution of Heating and Ventilating Engineers (Vol. 14 No. 38, Nov-Dec 1946).
- Global solar radiation values are given in MJ/sq.m. correct to two decimal places (3.6MJ=1kWh).

C. Laboratory

- Daily samples of air and precipitation are taken at Valentia Observatory at 1000UTC each day. Monthly precipitation samples at other stations are taken at 1200UTC on the 1st of each month.
- Air sample data are given in microgrammes per cubic metre, electrical conductivity in micro-Siemens per centimetre and pH in pH units.