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Monthly Weather Bulletin December 1999

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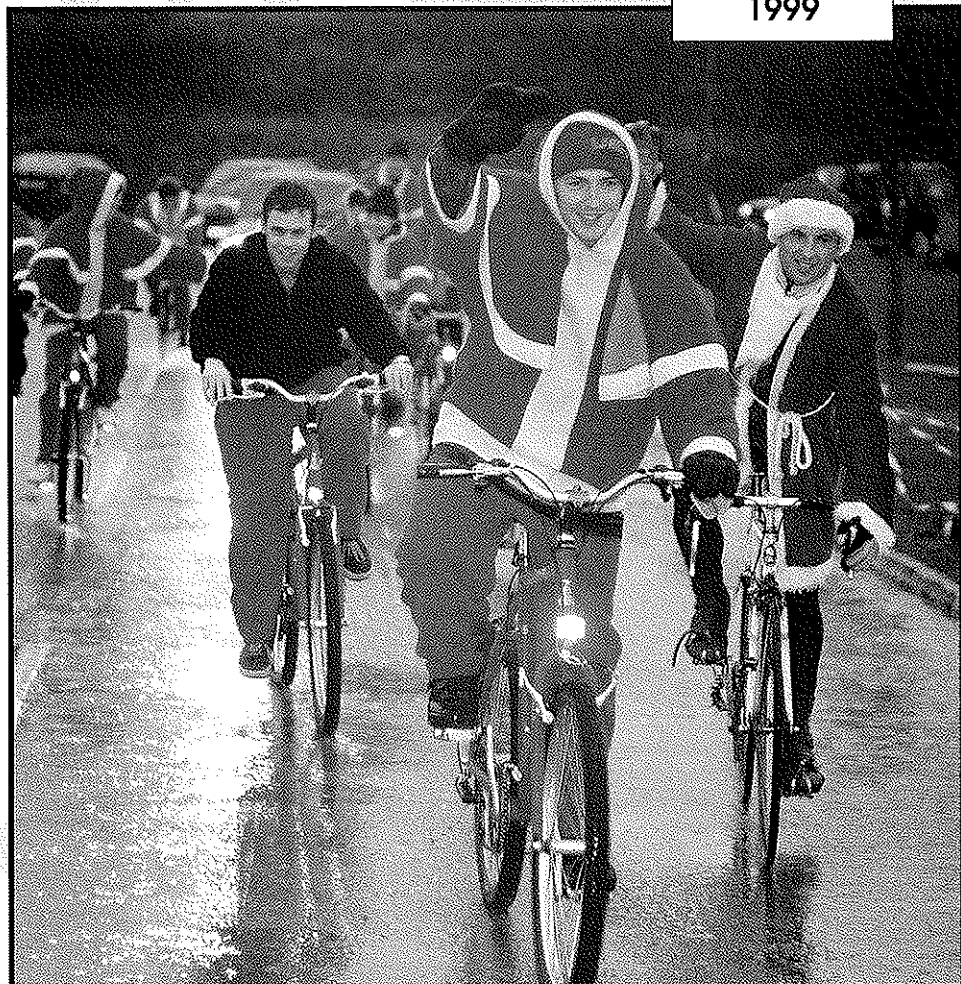


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Monthly Weather Bulletin

DECEMBER
1999



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COLD AND VERY WET, BUT ABOVE NORMAL SUNSHINE

Above
Over twice the normal December rainfall in many parts of the west and southwest brought extensive flooding, as here near Beaufort where the River Laune overflowed.
(picture: MacMonagles)

December was a wet month everywhere with over twice the normal rainfall in places; this rain was often accompanied by strong winds. For only the second time this year, mean air temperatures for the month were below normal, despite a relatively mild first week. Sunshine was above normal at most stations, but a notable exception was Belmullet, where only half the normal sunshine for the month was recorded. For the third successive year, some severe weather over the Christmas period disrupted communication and power supplies, as high winds, heavy rain and thunderstorms affected many parts of the country.

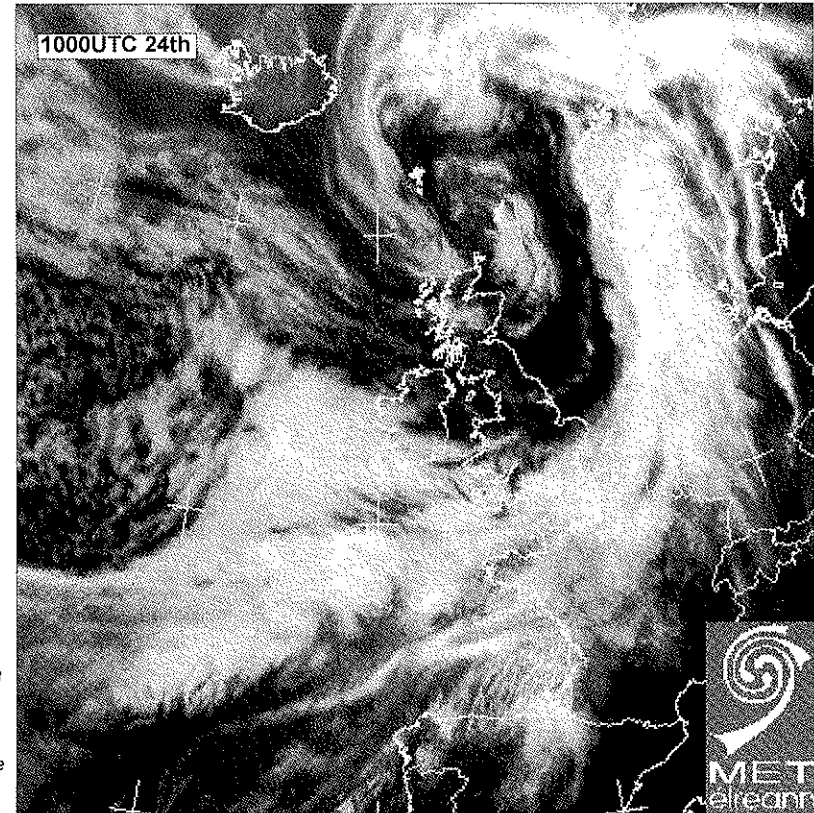
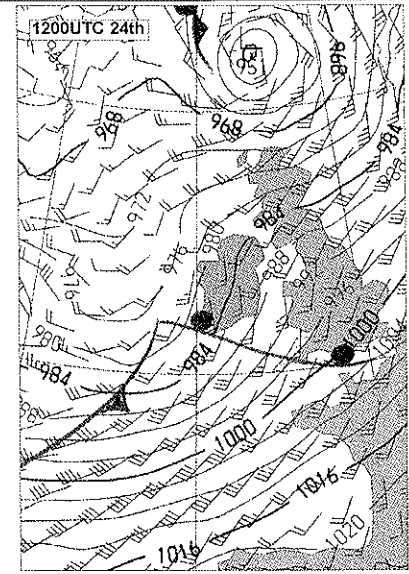
A westerly airstream at the start of the month brought some heavy showers over

the northern half of the country, some with hail. Late on the 2nd a deep depression approached the northwest coast, bringing heavy rain to northern areas with winds reaching gale force early on the 3rd, but then clearing to much colder weather with wintry showers of hail or sleet. The 4th continued cold with wintry showers as winds veered to a northwesterly direction. Milder conditions returned on the 5th, with a warm front spreading light rain northwards, accompanied by moderate southwesterly winds; its associated cold front moved southwards over the country on the 6th, bringing heavy rain in places. There were wintry showers in the north and west on the 7th, before a deep depression moving close to the north coast spread heavy rain

Cover
Seasonally-clad cyclists braved the elements on the 18th to take part in a Dublin to Cork charity cycle.
(picture: The Examiner)

early on the 8th, with winds reaching strong gale force in the north. A cool, showery day on the 9th was followed by milder but very wet weather on the 10th and 11th as another depression passed close to the north coast. Wintry showers in the north and west on the 12th and 13th were heavy or thundery, but eastern areas were mainly dry. A ridge of high pressure over the country on the 14th and 15th brought a short drier interlude, but it was cold in a light northerly airstream.

A dry start on the 16th gave way to strong southwesterly winds with heavy rain moving southwards; this band of rain became almost stationary over Munster on the 17th and 18th, giving very heavy falls here, while further north it was showery and much colder. The



Above and right
Heavy rain associated with a depression over Scotland cleared early on the 24th, before another rapidly-deepening depression crossed the country later in the day, giving some severe gusts in eastern areas in particular.

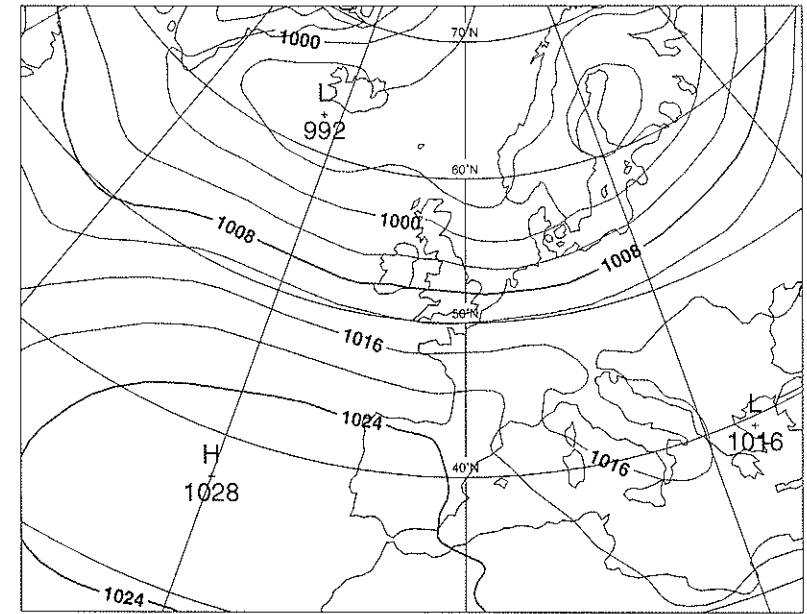
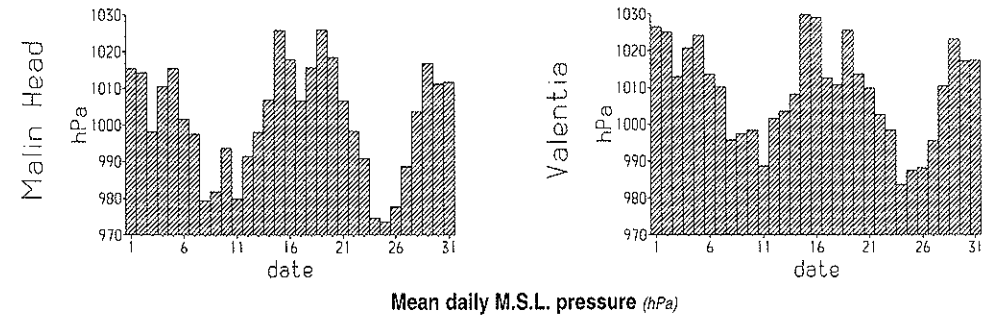


19th was dry and cold everywhere, but heavy rain reached the southwest early on the 20th, marking the beginning of a spell of very wet and windy weather over the Christmas period. The heaviest falls were in the west and southwest, where flooding became widespread. A series of depressions moved over or close to Ireland during this period, one of which deepened rapidly as it crossed the centre of the country during the afternoon of the 24th. As it cleared eastwards, winds settled into a cold westerly direction, giving frequent wintry showers, many with thunder in the west and south. Widespread snow showers gave a covering of snow and a white Christmas in places on the 25th. Between the 26th and 28th, winds veered to a northwesterly direction and it remained very cold; wintry showers, thundery in places on the 26th, became confined to Atlantic coasts by the 28th and frost became widespread as winds

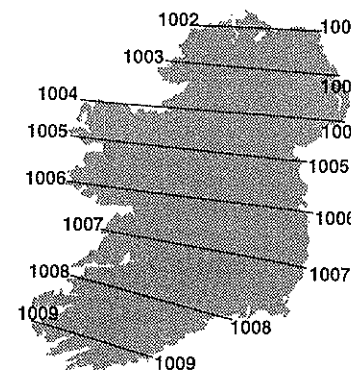
eased. After a frosty start on the 29th, a band of rain moved eastwards later in the day, bringing a significant rise in temperature. The end of the month was mild but frontal troughs brought rain on both the 30th and 31st.

Mean windspeeds for the month were above normal everywhere; they were between 9 and 14 knots (10 and 16m.p.h.) at most stations and between 18 and 21 knots (21 and 24m.p.h.) at Belmullet and Malin Head, the highest for December for between 5 and 16 years. Belmullet recorded the highest gust, 74 knots (85 m.p.h.), on the 23rd. Gusts in excess of 70 knots were also measured in the north on the 8th and in the east on the 24th. Hail and snow showers were widespread in the periods 3rd to 4th, 12th to 14th and 25th to 28th and were accompanied by thunder at times, especially on the 25th and 26th. Fog was infrequent given the windy nature of the month.

Below
Persistent heavy rain caused some significant damage in county Kerry; a major landslide occurred on Killarney golf course, while roads were partly washed away on the Dingle Peninsula. (picture: MacMonagles)



the above map is based on means of 1200 UTC values



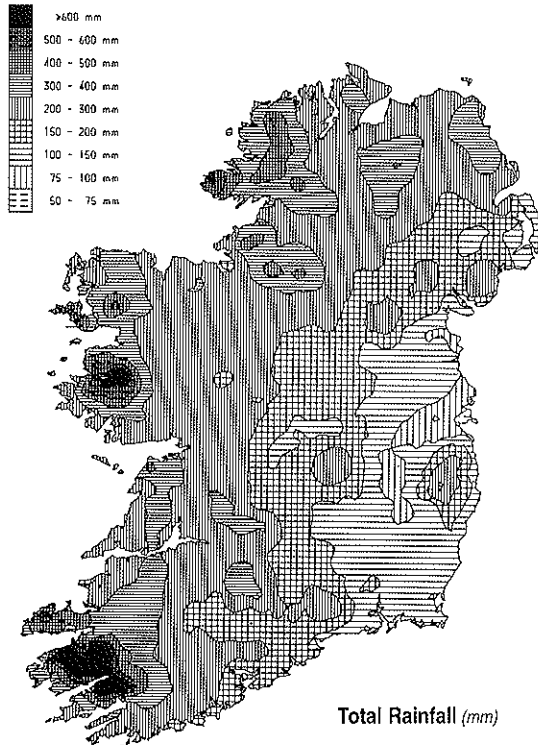
MEAN ATMOSPHERIC PRESSURE

Mean sea level pressure values for the month were well below normal for December, especially in the north; they varied between 1009hPa in the southwest and 1002hPa in the north, where they were 9hPa below normal. There were two spells of low pressure during the month, in the periods 8th to 12th and 23rd to 27th. Pressure fell rapidly on the 24th as a depression deepened while crossing the country. Dublin Airport measured a fall of 30hPa within 8 hours on this day, reaching a minimum of 959.7hPa, the lowest pressure of the month and the lowest value for any month at the station since January 1990. The month's highest pressure, 1034.5hPa, was recorded at Valentia Observatory on the 15th.

Wettest on record in parts of north and west

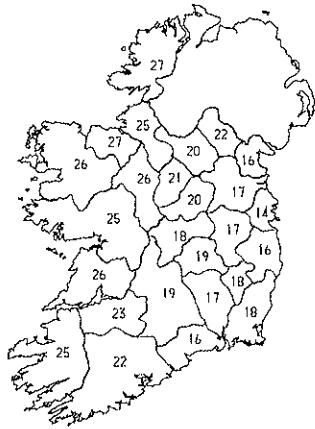
December was exceptionally wet in the northwestern half of the country, but totals were close to normal in the east and southeast; they ranged from 82mm at Dublin Airport to 545mm at Maam Valley (Co. Galway). Percentage of normal values varied between 94% at Dublin (Phoenix Park) and 250% at Ballyshannon, Co. Donegal. It was the wettest December on record at many stations in the west and north, including Belmullet and Malin Head (see table below), while it was the wettest of any month at a few stations with records stretching back over 40 years.

Over most of the country rain was measured on all but 3 or 4 days during the month, with heavy falls on several days, notably the 8th, 10th and in the periods 16th to 18th and 20th to 24th. There were between 13 and 20 wetdays during the month in Leinster (days with 1.0mm or more of rainfall), but 25 or more such days in Connacht and Ulster. Maam Valley measured the highest daily fall of the month, 59.3mm on the 16th.

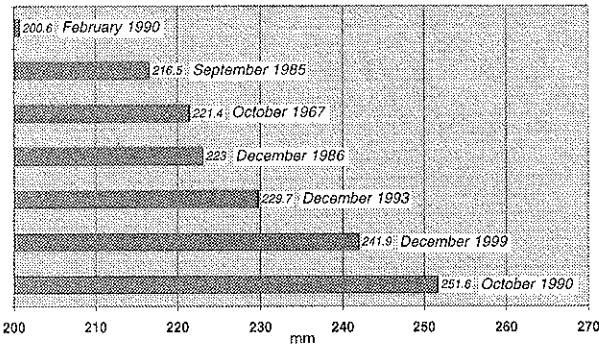


Total Rainfall (mm)

Below
The number of wetdays - days with 1mm or more rainfall - in each county



Wettest months of the century at Malin Head

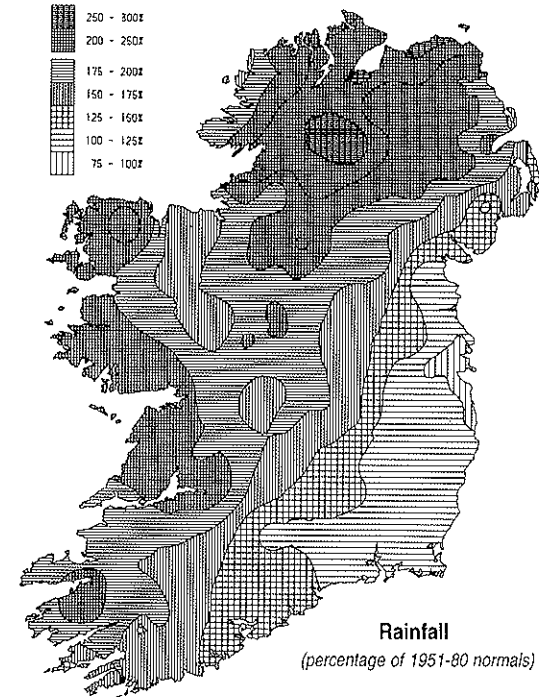


Above
The last month of the century at Malin Head was also its second wettest. The chart above shows that almost all the wettest months of the 1900s were during the last 15 years.

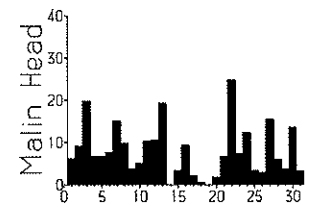
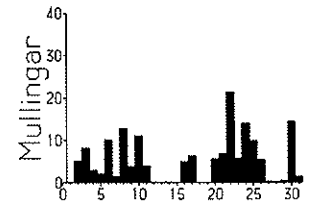
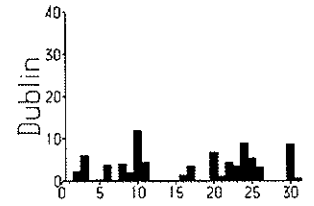
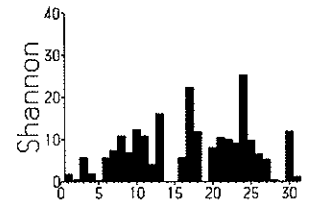
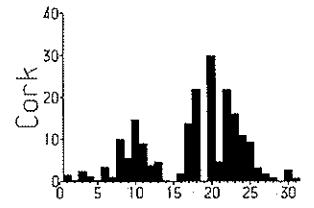
DAILY RAINFALL EXPRESSED AS % OF MONTHLY NORMAL

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	-	3	-	-	-	-	4	-	3	7	-	-	-	-	-	4	3	5	-	13	6	9	8	17	6	2	-	13	2	-	...	106	
Cavan	3	20	7	1	8	5	5	20	3	10	2	2	-	-	14	-	-	10	29	4	6	16	6	2	1	-	15	2	2	...	195		
Clare	1	7	2	-	6	8	9	8	4	14	3	6	6	-	-	18	8	8	-	7	21	3	10	24	10	4	3	14	1	2	...	208	
Cork	-	2	1	-	1	3	6	4	5	14	5	5	2	-	-	8	16	14	-	15	15	2	10	13	3	3	3	1	1	...	155		
Donegal	4	21	6	1	11	7	6	16	4	8	8	10	4	1	3	14	-	-	8	16	6	9	10	5	7	10	4	12	1	2	...	236	
Dublin	-	10	1	-	-	4	3	4	1	12	3	-	-	-	-	-	6	1	-	-	4	2	5	9	12	5	-	-	13	1	...	95	
Galway	1	14	3	-	10	8	9	11	5	12	1	1	-	-	-	16	3	4	-	6	10	5	10	17	7	2	1	-	14	1	...	191	
Kerry	-	3	1	-	1	4	6	4	3	16	7	7	4	-	-	15	13	12	2	24	25	4	15	16	3	4	5	1	5	1	...	193	
Kildare	-	8	-	-	1	7	6	4	2	13	2	-	-	-	-	8	3	-	-	7	5	6	10	13	5	-	-	17	2	-	...	119	
Kilkenny	-	3	-	-	-	2	6	4	3	6	1	-	-	-	-	5	8	10	-	16	7	3	16	21	6	2	-	12	1	-	...	126	
Laois	-	4	-	-	-	1	9	5	10	5	13	1	1	-	-	10	6	-	14	20	1	9	23	10	3	-	-	12	1	-	...	164	
Leitrim	5	25	8	2	6	4	6	20	6	8	3	5	1	-	-	2	14	-	-	6	26	1	10	14	7	4	5	2	13	1	...	205	
Limerick	1	3	1	-	-	2	11	9	9	9	24	5	8	8	-	-	20	11	10	-	8	20	1	12	25	15	3	2	-	15	1	...	235
Longford	-	12	3	1	9	3	4	15	2	8	1	2	-	-	-	14	-	-	-	6	31	3	6	23	6	1	1	-	16	2	...	170	
Louth	1	16	5	1	4	6	4	10	-	12	2	-	-	-	-	5	-	-	-	10	10	2	3	15	2	-	-	13	1	1	...	123	
Mayo	2	18	4	1	9	5	8	15	10	8	3	2	2	2	-	18	-	-	-	7	19	6	18	13	9	4	3	2	15	1	...	206	
Meath	-	10	3	1	4	5	5	8	-	13	8	1	-	-	-	6	-	-	-	11	5	12	16	4	-	-	-	15	2	-	...	132	
Monaghan	3	23	6	-	8	3	5	21	1	9	4	2	-	-	-	9	-	-	-	8	24	4	7	23	8	3	1	-	12	2	...	186	
Offaly	-	10	-	-	1	2	7	7	10	4	14	1	1	-	-	11	7	5	-	7	22	2	12	20	11	3	-	14	1	-	...	172	
Roscommon	1	20	2	3	5	4	8	13	9	11	2	1	-	-	-	2	13	-	-	8	32	1	9	21	9	2	1	14	1	...	196		
Sligo	1	18	2	2	5	4	8	15	11	8	4	2	1	-	-	1	11	-	-	5	18	2	10	10	7	3	2	14	1	...	169		
Tipperary	1	4	1	-	3	8	6	9	3	9	3	4	2	-	-	12	7	10	-	12	13	1	9	17	10	2	3	3	6	...	157		
Waterford	-	2	1	-	1	1	5	1	3	7	1	4	1	-	-	8	7	9	-	19	12	5	10	11	4	1	-	4	1	...	113		
Westmeath	-	12	1	3	5	8	7	9	3	13	1	1	-	-	-	11	-	-	-	9	24	2	7	16	12	1	-	13	2	...	161		
Wexford	-	2	-	-	1	1	5	-	1	7	1	3	1	-	-	5	9	11	-	21	7	6	10	13	3	-	-	7	1	...	115		
Wicklow	-	6	-	-	1	3	5	2	2	8	1	-	-	-	-	2	6	2	2	-	17	7	10	8	15	4	1	-	10	2	...	114	
MEAN	1	13	2	3	4	5	6	9	4	11	3	3	1	-	-	11	4	4	-	10	17	4	10	17	7	2	2	1	12	1	...	164	

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, 5% of the average monthly rainfall in Co. Carlow fell on the 2nd.



Rainfall
(percentage of 1951-80 normals)



Daily rainfall amounts (hours)

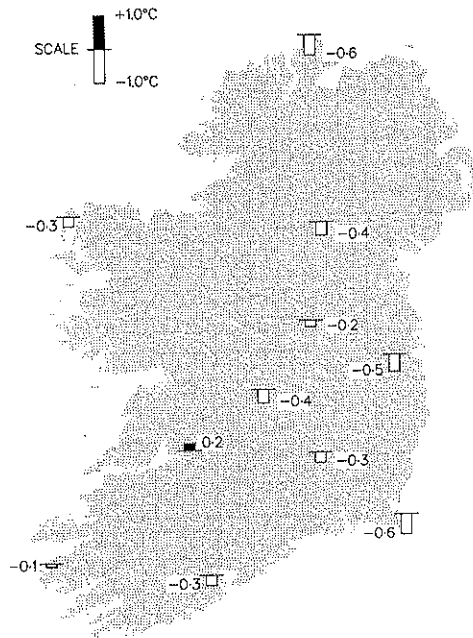
TEMPERATURE

Mean temperatures a little below normal generally

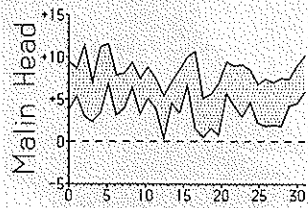
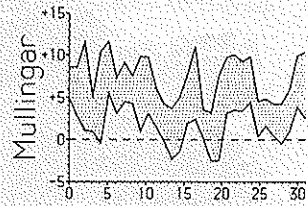
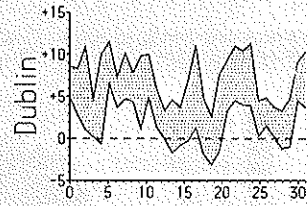
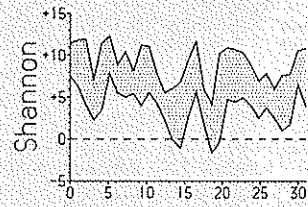
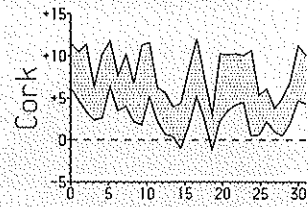
Mean air temperatures for the month were around half a degree below normal over most of the country, but they were normal or a little above at a few stations in the west and southwest. Means ranged from 3.9°C at Connaught Airport to 7.9°C at Sherkin Island, Co. Cork. It was only the second month this year that was colder than the average.

At many stations mean maxima were close to normal but mean minima were around a degree below normal, reflecting the number of cold nights during the

month. Kilkenny had a total of 26 ground frosts during the month compared with its usual number of 17. Ground frost was widespread and severe in places in the period 13th to 16th and on the 19th and 28th. Birr recorded the lowest air temperature of the month, -4.5°C on the 19th, while Kilkenny recorded the lowest grass minimum temperature on the same day, -11.9°C. Mullingar's grass minimum temperature of -9.2°C, also on the 19th, was its lowest such temperature for December since 1981. The mildest weather of the month was at the beginning and end; Dublin (Merriion Square) measured the highest temperature of the month, 13.1°C on the 6th.



Mean Temperature
(difference from 1951-80 normals)



Daily maximum and minimum temperatures (°C)

SUNSHINE

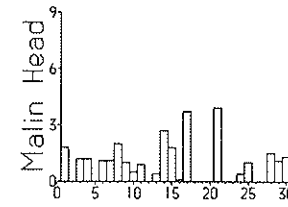
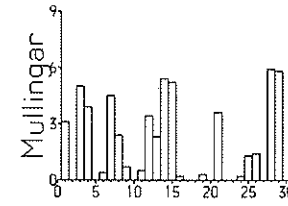
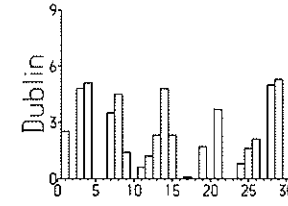
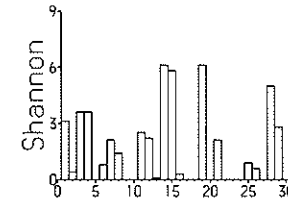
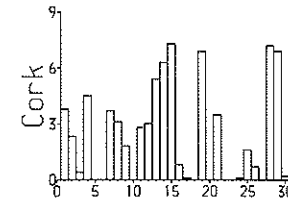
Sunny in southeast but very dull in northwest

As with rainfall totals, there was a wide variation in sunshine totals between the southeast and northwest of the country; they ranged from just 18 hours at Belmullet to 73 hours at John F. Kennedy Park (Ballysop), Co. Wexford. While it was the dullist December for 6 years at both Malin Head and Belmullet, it was the sunniest for between 29 and 34 years in the south and southeast.

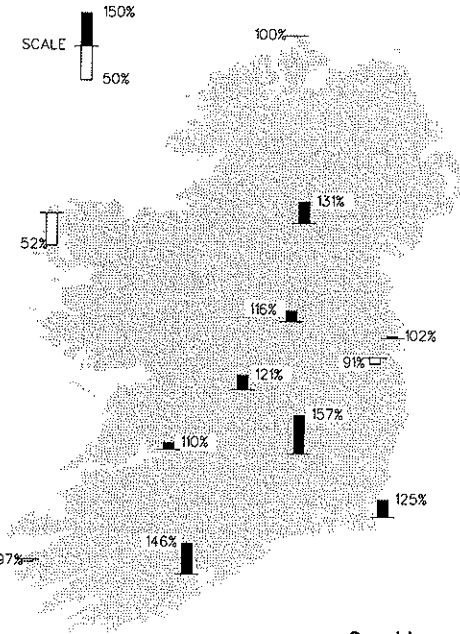
Despite being a wet month, sunshine was above normal in

most places, with percentage of normal values between 52% at Belmullet and 160% at John F. Kennedy Park. Typically for December, there were several days without any sunshine but there were also days with 5 or more hours sunshine recorded during the periods 3rd to 4th, 14th to 15th and 28th to 29th. The highest daily sunshine of the month, 7.4 hours, was measured at Ballincurrig (Peafield), Co. Cork, on the 28th; Kilkenny's daily value of 7.1 hours on the 19th was its highest for December since 1980.

Global solar radiation values were between 87% of normal at Belmullet and 118% of normal at Dublin Airport.



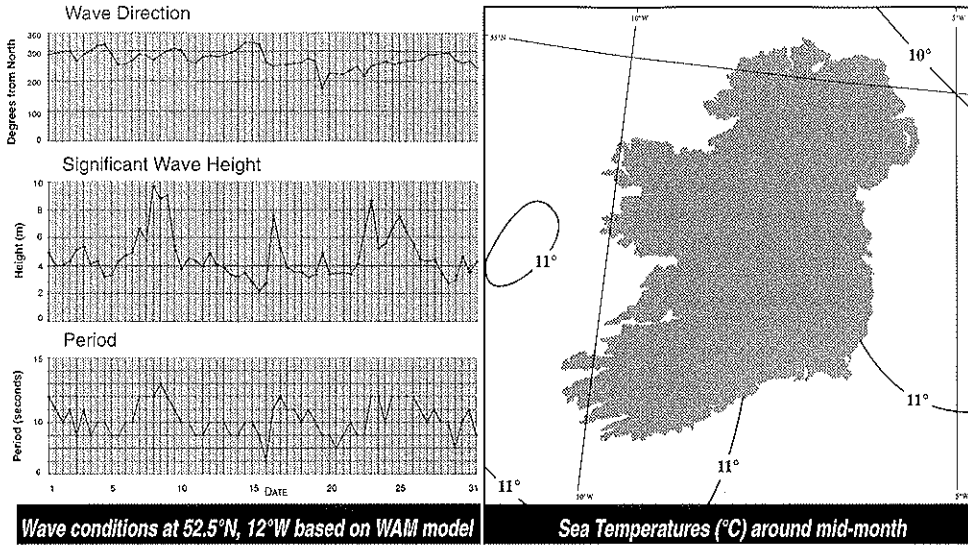
Daily sunshine amounts (hours)



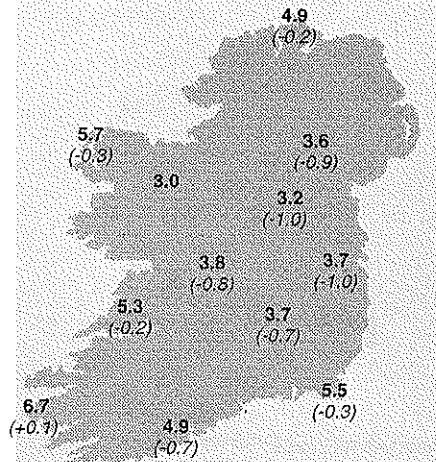
Sunshine
(percentage of 1951-80 normals)

SEA TEMPERATURES

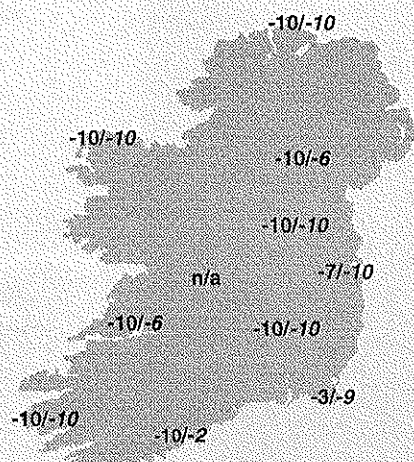
Sea temperatures fell by almost two degrees during December but they remained a degree above normal for this time of year. Mean sea temperatures around mid-month ranged from close to 10°C off northern coasts to 11°C in the south. At Malin Head the mean sea temperature for the month was 9.3°C, almost a degree above 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)



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°F	degree days > 10°F	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 (kts) (h.g.)	P.E. (Penman) (mm)	
Co. Cork	Ferry	1-10	32.6	-	8	5	9.9	3.4	6.7	-	-0.6	5	1	27	2	-3.5	5	3	6.5	8.0	15.0	-	4.2	-
		11-20	50.4	-	7	7	7.9	-0.1	3.9	-	-3.8	19	5	12	1	-7.4	20	7	4.8	6.1	25.0	-	2.9	-
		21-end month	62.1	-	9	7	8.8	1.6	5.2	-	-2.5	29	1	21	1	-6.2	29	7	4.5	5.6	16.5	-	3.8	-
			145.1	128	24	19	8.9	1.7	5.3	-0.6	-3.8	19	7	59	5	-7.4	20	17	5.2	6.5	56.5	138	3.7	0
Co. Donegal	Letterkenny	1-10	127.9	-	10	10	9.1	3.4	6.3	-	1.0	5	0	22	2	-	-	-	-	-	-	-	-	-
		11-20	69.8	-	8	7	6.7	1.2	4.0	-	-1.1	14	4	9	0	-	-	-	-	-	-	-	-	-
		21-end month	96.6	-	11	10	6.9	2.3	4.6	-	-0.2	28	1	12	0	-	-	-	-	-	-	-	-	-
			294.3	-	29	27	7.6	2.3	5.0	-	-1.1	14	5	43	2	-	-	-	-	-	-	-	-	-
Co. Kerry	Ardfert	1-10	46.6	-	10	8	9.8	5.3	7.6	-	2.3	5	0	32	2	-2.2	5	1	-	-	11.0	-	4.2	-
		11-20	94.6	-	10	7	8.0	1.1	4.6	-	-3.7	15	4	15	1	-6.9	15	6	-	-	13.7	-	-	-
		21-end month	97.9	-	11	9	8.8	3.6	6.2	-	0.9	29	0	24	1	-2.2	29	4	-	-	10.5	-	-	-
			239.1	-	31	24	8.9	3.3	6.1	-	-3.7	15	4	72	4	-6.9	15	11	-	-	35.2	-	-	-
Co. Leitrim	Ballinamore	1-10	121.9	-	10	10	8.4	2.4	5.4	-	0.0	4	0	17	1	-6.0	7	7	5.0	6.9	13.6	-	3.9	-
		11-20	47.3	-	9	7	5.9	-0.8	2.6	-	-2.6	19	7	6	0	-7.2	19	8	3.2	5.4	9.2	-	2.2	-
		21-end month	123.5	-	11	10	7.0	1.6	4.3	-	-0.5	28	1	13	0	-1.5	21	2	3.6	5.1	11.8	-	2.8	-
			292.7	230	30	27	7.1	1.1	4.1	-0.7	-2.6	19	8	35	1	-7.2	19	17	3.9	5.8	34.6	97	3.0	0
Co. Louth	Ardee	1-10	42.2	-	10	7	9.2	2.7	6.0	-	-0.1	5	1	21	1	-4.2	5	6	5.3	6.7	-	-	-	-
		11-20	16.0	-	5	2	6.0	-1.1	2.5	-	-4.3	19	7	6	0	-11.1	19	9	3.7	4.8	-	-	-	-
		21-end month	32.4	-	8	5	8.1	1.7	4.9	-	-1.6	28	2	18	1	-6.0	28	8	3.8	4.6	-	-	-	-
			90.6	101	23	14	7.8	1.2	4.5	-	-4.3	19	10	45	2	-11.1	19	23	4.3	5.4	-	-	-	-
Co. Waterford	Dungarvan	1-10	29.5	-	9	6	10.3	3.8	7.1	-	0.4	5	0	29	3	-1.6	5	3	-	8.3	18.1	-	3.3	-
		11-20	69.5	-	8	5	8.5	1.2	4.9	-	-3.0	20	3	16	2	-4.5	20	6	-	6.5	28.0	-	2.2	-
		21-end month	57.3	-	10	6	9.0	2.1	5.6	-	-0.6	28	2	23	2	-3.6	28	7	-	6.1	18.7	-	2.9	-
			156.3	-	27	17	9.3	2.3	5.8	-	-3.0	20	5	68	6	-4.5	20	16	-	7.0	64.8	-	2.8	0
Co. Wexford	Johnstown Castle	1-10	15.2	-	7	3	10.0	3.8	6.9	-	1.0	4	0	28	2	-0.7	5	3	5.9	7.3	17.3	-	1.8	-
		11-20	59.8	-	9	6	7.8	1.3	4.6	-	-1.3	19	4	13	1	-2.3	20	5	3.8	5.5	24.4	-	1.3	-
		21-end month	52.0	-	9	8	8.4	2.7	5.6	-	-0.5	28	1	20	1	-2.9	28	5	4.4	5.4	19.8	-	1.5	-
			127.0	114	25	17	8.7	2.6	5.7	-0.6	-1.3	19	5	61	3	-2.9	28	13	4.7	6.1	61.5	118	1.5	0

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

County/Station	Period	P.E. (mm)		Soil Moisture (mm)	
		Amount	Deficit	Accumulated Deficit	Surplus
Co. Dublin	1-10	10.0	-	0	21
	11-20	0.4	-	0	15
	21-end month			not available	
Co. Kerry	1-10	14.8	-	0	25
	11-20	9.8	-	0	118
	21-end month	0.1	-	0	134
24.7					
Co. Leitrim	1-10			not available	
	11-20	12.4	-	0	35
	21-end month			not available	
Co. Wexford	1-10	6.6	-	0	20
	11-20	11.0	-	0	7
	21-end month	4.5	-	0	22
22.1					

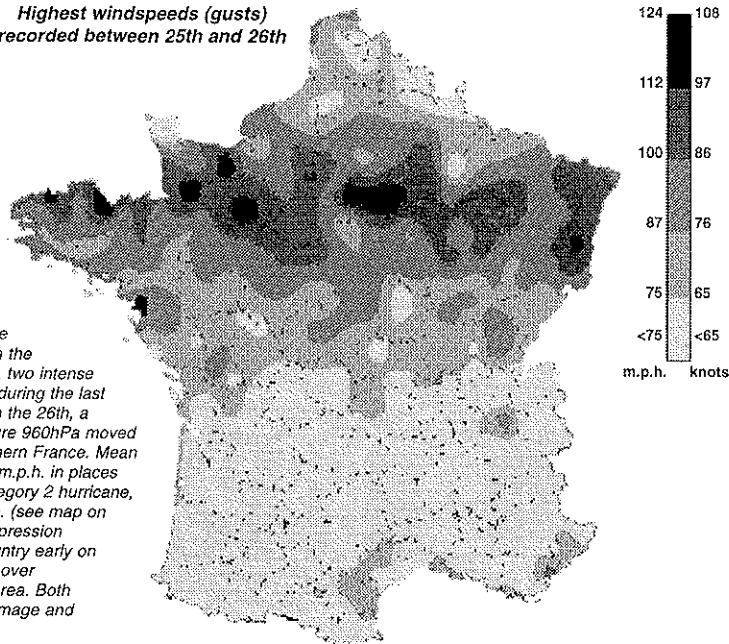
SEE BACK PAGE FOR NOTES ON THE DATA

County/Station	GLOBAL SOLAR RADIATION (MJ/sq. m.)			P.E. (Penman) (mm)
	10-day totals	total for month	total for month (mm)	
Co. Donegal	1-10	12.43	12.28	16
	11-20	13.90	38.61	
	21-end month	12.82		
Co. Dublin	1-10	18.68	60.81	9
	11-20	22.62		
	21-end month	19.51		
Co. Kerry	1-10	n/a	n/a	17
	11-20	16.87		
	21-end month			
Co. Kilkenny	1-10	21.76	64.77	0
	11-20	22.72		
	21-end month	20.29		
Co. Mayo	1-10	12.58	39.07	19
	11-20	13.80		
	21-end month	12.69		
Co. Monaghan	1-10	16.27	49.01	2
	11-20	16.87		
	21-end month	15.87		
Co. Offaly	1-10	17.04	57.12	1
	11-20	20.40		
	21-end month	19.68		

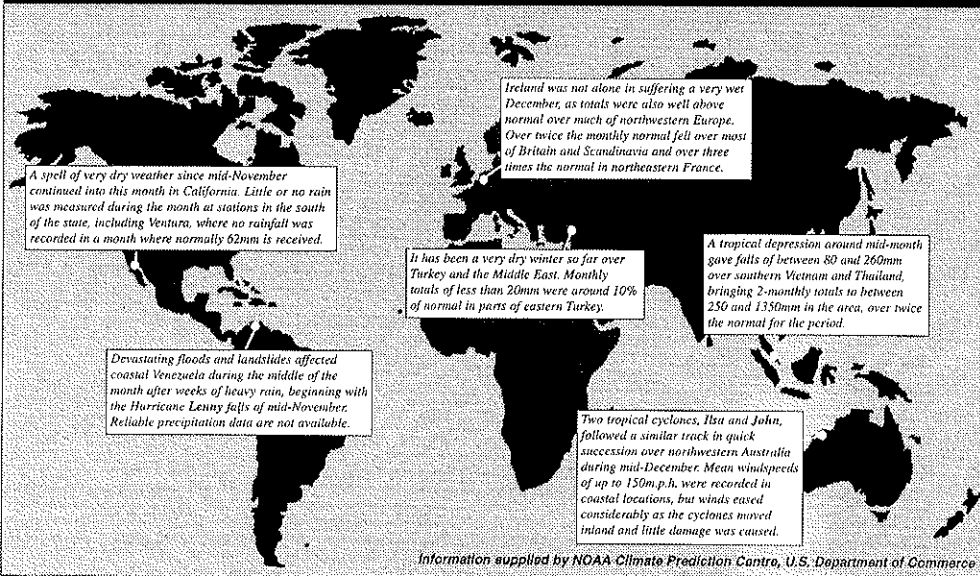
Highest windspeeds (gusts) recorded between 25th and 26th

Storms and heavy rain over the Christmas period in many parts of western Europe caused significant damage and a number of deaths. For the second successive month, France suffered exceptionally severe weather; after the flooding in the southwest in mid-November, two intense storms crossed the country during the last week of this month. Early on the 26th, a depression of central pressure 960hPa moved quickly eastwards over northern France. Mean windspeeds of close to 100 m.p.h. in places were the equivalent of a category 2 hurricane, with gusts of up to 120m.p.h. (see map on right). Another very deep depression crossed the south of the country early on the 28th, with winds gusting over 100m.p.h. in the Bordeaux area. Both storms caused extensive damage and widespread power cuts.

(Data from Météo France)



SUMMARY OF SIGNIFICANT WEATHER WORLDWIDE DURING DECEMBER



Information supplied by NOAA Climate Prediction Centre, U.S. Department of Commerce

Mild and mostly wet; sunshine near normal

Mean annual air temperatures were above normal for the sixth successive year; they varied between 8.8°C at Connaught Airport and 11.4°C at Shannon Airport. Although close to a degree above normal everywhere, at no station was it as warm as the record-breaking year of 1997. June and December were the only months during the year that were cooler than the 1961 to 1990 normal. February and July were the warmest relative to normal, with mean air temperatures up to two degrees higher than the average. Kilkenny recorded the highest air temperature of the year, 27.4°C on July 31st. The lowest air temperature, -6.7°C, was recorded at Clones on January 11th, while Kilkenny measured the lowest grass minimum temperature, -11.9°C on December 19th. Rainfall totals for the year varied more widely than usual across the country, between 715mm at Dublin Airport and 1774mm at Valentia Observatory; while it was the driest year since 1975 at Rosslare, it was the second wettest year of the century at Malin Head. Totals were well above normal in the southwest, west and north but it was a relatively dry year in the southeast, with percentage of normal values between 84% at Rosslare and 127% at Malin Head. April, September and December were very wet months at most stations and it was the wettest September and December on record in places. In between, the period between May and July was very dry except in the northwest; less than 100mm was recorded in parts of the south for this 3-month period. The heaviest daily falls in most places were recorded during late August or September; close to 100mm was recorded between August 22nd and 24th at several Cork stations. Sunshine totals for the year were near or slightly higher than normal in the eastern half of the country but below normal in the west. They ranged from 1097 hours at Birr to 1683 hours at Rosslare, with percentage of normal values between 90% of normal at both Belmullet and Birr and 107% at Clones. May and June were very dull months despite being dry, but July was sunny, especially in the north. The highest daily sunshine, 15.3 hours, was recorded at Malin Head on July 26th. Mean windspeeds for the year were the highest for between 5 and 15 years at many stations, while Kilkenny's mean of 7.8 knots was the highest in its 42-year record. Malin Head recorded the highest gust of the year, 83 knots (96 m.p.h.) on January 4th.

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																	
SHANNON AIRPORT	1095.9	118	26.9 12 May	11.4	+1.3	26.0	-3.4	3.19	92	14.4 27 Jul	252	3	13	17	8	22	71
CO. CORK																	
CORK AIRPORT	1177.1	99	49.6 22 Aug	10.5	+1.1	24.7	-3.6	3.75	99	14.6 27 Jul	225	10	11	6	3	93	85
CO. DONEGAL																	
MALIN HEAD	1342.0	127	30.5 28 Nov	10.1	+0.8	23.6	-1.0	3.41	100	15.3 26 Jul	270	19	3	61	11	7	207
CO. DUBLIN																	
DUBLIN AIRPORT	714.7		35.7 5 Aug	9.9		25.6	-5.1	3.87	99	15.1 25 Jun	231	14	30	5	3	32	81
CASEMOUNT AIRCRODROME	792.9	111	45.0 20 Sep	10.2	+0.9	26.7	-6.2	3.66	101	14.4 25 Jun	211	8	27	8	6	13	93
CO. KERRY																	
VALENTIA OBSERVATORY	1774.0	124	54.0 8 Sep	11.3	+0.9	23.6	-3.4	3.25	96	14.1 25 Jun	279	2	6	25	3	11	97
CO. KILKENNY																	
KILKENNY	864.6	105	34.1 6 Sep	10.3	+1.0	27.4	-6.0	3.71	106	14.9 27 Jul	243	n/a	38	---	n/a	---	48
CO. MAYO																	
BELMULLETT	1377.9	121	42.0 4 Nov	10.9	+1.3	24.4	-2.8	3.15	90	14.8 26 Jul	280	17	3	57	9	10	167
CONNAUGHT AIRPORT	1655.2		40.8 28 Nov	8.8		25.3	-3.4	3.15		14.8 25 Jun	277	26	26	22	7	136	98
CO. MONAGHAN																	
CLONES	1142.8	123	29.9 28 Nov	9.9	+1.1	27.0	-6.7	3.41	107	14.7 26 Jul	256	n/a	28	---	n/a	---	53
CO. OFFALY																	
BIRR	895.1	111	25.0 20 Sep	10.3	+1.0	26.7	-5.3	3.01	90	14.4 28 Jul	235	n/a	26	---	n/a	---	38
CO. WESTMEATH																	
MULLINGAR II	1054.4	113	33.0 20 Sep	9.9	+1.1	26.9	-5.7	3.69	105	14.7 28 Jul	269	n/a	26	---	n/a	---	35
CO. WEXFORD																	
ROSSLARE	736.9	84	32.0 18 Aug	11.2	+1.1	22.2	-0.9	4.61	106	15.1 25 Jun	200	0	4	7	3	32	96

Wednesday 1st: Rain or drizzle in Munster and south Leinster cleared quickly. Sunny spells today and scattered showers mostly in the north and west where some were of hail. Moderate or fresh westerly winds. Afternoon temperatures normal or a bit below normal.

Rainfall: nil to 2mm generally, 3mm to 6mm in the northwest

Temperature: max. 8°C to 13°C, min. 4°C to 8°C; ground temperatures down to -2°C in Kilkenny

Sunshine: 1 to 5 hours

Thursday 2nd: A fresh and blustery westerly wind gave mostly cloudy conditions with scattered showers. Late in the day there was rain, some of it heavy, near the north and west coasts as winds backed southwesterly. Normal temperatures.

Rainfall: nil to 5mm generally, 9mm to 15mm in the northwest

Temperature: max. 8°C to 12°C min. 2°C to 6°C inland, up to 8°C coastal; ground temperatures down to -3°C in Kilkenny

Sunshine: nil to 2 hours

Friday 3rd: Very strong and gusty southwesterly with spells of rain was followed by a cold westerly with sunny spells and scattered but wintry showers this morning. As the fresh and blustery winds decreased this evening ground frost developed especially in the midlands, east and south as skies cleared.

Rainfall: 1mm to 3mm in the south, 4mm to 8mm generally, 9mm to 15mm in the northwest, 20mm in Malin Head

Temperature: max. 11°C to 12°C, min. -1°C to 5°C; ground temperatures down to -4°C in Kilkenny

Sunshine: trace to 5 hours

Saturday 4th: Ground frost at first, especially in the south and east. Cold today with sunny spells and also wintry showers, mainly in Ulster, Connaught and north Leinster. Moderate westerly or northwesterly winds, fresh and blustery near showers and strong near coasts in Ulster and north Connaught. Ground frost this evening in many areas.

Rainfall: nil to 3mm generally, 6mm to 7mm in the northwest

Temperature: max. 5°C to 8°C, min. zero to 2°C inland, up to 4°C coastal; ground temperatures down to -7°C in Kilkenny

Sunshine: 1 hour in the northwest, 4 to 7 hours elsewhere

Sunday 5th: Frost cleared from the west overnight and this morning as cloudy conditions with light rain at times spread eastwards. Southwesterly winds increased gradually to become fresh or strong this evening. Above normal temperatures this afternoon.

Rainfall: nil to 2mm generally, 4mm to 7mm in the northwest

Temperature: max. 10°C to 12°C, min. -2°C to 5°C; ground temperatures down to -9°C in Kilkenny

Sunshine: nil

Monday 6th: Mild, dull start with occasional light rain which became persistent and locally heavy as a cold front moved southwards in the afternoon to clear the southeast just after dark. Behind the rainbelt it became cooler, fresher and brighter with scattered showers, mostly in the north and west. Fresh or strong southwesterly winds veered westerly and decreased to moderate but fresh near the north and west coasts.

Rainfall: 1mm in the southeast, 3mm to 8mm generally, 14mm to 17mm in the midlands

Temperature: max. 11°C to 13°C, min. 5°C to 9°C; ground temperatures down to -2°C in Kilkenny

Sunshine: nil to 1 hour

Tuesday 7th: Bright spells and scattered showers, a few of hail. Moderate to fresh and blustery westerly or southwesterly winds, strong near northern and western coasts. A bit cold with ground frost in places this evening.

Rainfall: trace to 3mm generally, 5mm to 7mm in the west, 15mm in Malin Head

Temperature: max. 5°C to 10°C, min. -3°C to 7°C; ground temperatures down to -2°C in Kilkenny

Sunshine: 1 to 5 hours

Wednesday 8th: Ground frost cleared quickly as rain spread across the country during the night. A cold front brought a clearance to cold but strong conditions with thundery activity in parts of the northwest. Winds increased fresh or heavy southwesterly overnight and strong to gale force and gusty during the day with some severe gusts especially near the north and west coasts.

Rainfall: 4mm to 6mm in the east, 9mm to 13mm generally, 20mm to 21mm in the northwest

Temperature: max. 8°C to 11°C, min. 3°C to 5°C inland, up to 7°C coastal; ground temperatures down to -2°C in Kilkenny

Sunshine: nil to 5 hours

Thursday 9th: As winds turned westerly to northwesterly today conditions were mostly cloudy, showery and cool. Winds were fresh to strong and gusty but decreased in the evening.

Rainfall: nil to 2mm in the east, 4mm to 9mm generally, 12mm in Belmullet and 23mm at Connaught Airport

Temperature: max. 6°C to 9°C, min. 2°C to 6°C; ground temperatures down to zero at Cork Airport

Sunshine: nil to 2 hours

Friday 10th: A cool night with slight ground frost in sheltered places but mostly dry with a moderate westerly wind. Rain reached the southwest in the early morning and spread gradually northeastwards but parts of Ulster remained dry until about mid-afternoon. Light or moderate southeasterly winds ahead of the rainbelt turned southwesterly during the evening and increased moderate to fresh but it remained cloudy with rain at times.

Rainfall: 3mm to 6mm in the northwest and southeast, 8mm to 15mm elsewhere, 19mm in Valentia

Temperature: max. 6°C to 13°C, min. 1°C to 5°C; ground temperatures down to -3°C in Kilkenny

Sunshine: nil to 1 hour

Saturday 11th: Showery today with longer spells of rain in places and perhaps isolated thunderstorms; also some sunny spells mainly in the south and southeast. Moderate to fresh southwesterly winds veering westerly but strong and gusty at times near showers. Temperatures normal or a little above.

Rainfall: 2mm to 7mm generally, 9mm to 11mm in the southwest, 10mm in Malin Head

Temperature: max. 8°C to 12°C, min. 3°C to 7°C; ground temperatures down to -3°C in Kilkenny

Sunshine: trace to 3 hours

Sunday 12th: Rather cold with bright spells and scattered wintry showers. Moderate to fresh westerly to northwesterly winds backing southwesterly and decreasing late today. Slight ground frost in sheltered areas early and more widespread ground frost after dark.

Rainfall: nil to 4mm generally, 11mm to 12mm in the extreme west

Temperature: max. 5°C to 8°C, min. 1°C to 5°C; ground temperatures down to -6°C in Kilkenny

Sunshine: nil to 4 hours

Monday 13th: There was heavy shower activity near the north coast overnight. A minor wave gave rain or sleet for a time late in the night and early this morning as it moved eastwards across Munster and southeast Leinster. Otherwise it was a cold day with bright spells and scattered wintry showers. Frost in many areas early and late.

Rainfall: nil to 5mm generally, 14mm to 19mm in the extreme west

Temperature: max. 2°C to 7°C, min. -2°C to 2°C; ground temperatures down to -9°C in Kilkenny

Sunshine: trace to 5 hours

Tuesday 14th: A cold day with well-scattered but wintry showers and bright spells. Light westerly to northwesterly winds veering northerly light to moderate and fresh near northern, northwestern and eastern coasts. Frost at first and again after dark except in some coastal districts.

Rainfall: nil to 5mm

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

Sunshine: 1 hour in the extreme west, 3 to 7 hours generally

Wednesday 15th: Frost at first and again this evening. A few wintry showers today, mostly near north and west-facing coasts but dry in many places with bright spells. Light to moderate northerly or northwesterly winds backed slowly westerly. Cold.

Rainfall: nil to 3mm

Temperature: max. 4°C to 9°C, min. -3°C to zero inland, 2°C to 3°C coastal; ground temperatures down to -9°C in Birr

Sunshine: 1 to 3 hours in the east and northwest, 4 to 7 hours elsewhere

Thursday 16th: Overnight frost cleared this morning as southwesterly winds increased slowly. Good dry spells and just a few showers for much of the day. Itain spread from the Atlantic after dark and winds became fresh to strong and blustery with gales near northern and northwestern coasts. Cold at first but temperatures rising steadily during the day.

Rainfall: 1mm to 2mm in the east, 5mm to 7mm in the midlands, 9mm to 15mm in the west

Temperature: max. 7°C to 11°C, min. -3°C to 3°C inland, up to 7°C coastal; ground temperatures down to -10°C in Kilkenny

Sunshine: nil to 2 hours

Friday 17th: A dull start with spells of rain and strong southwesterly or westerly winds. A clearance to brighter and mainly dry conditions spread from the north during the morning and early afternoon to all but areas near the south coast of Munster as winds became light northwesterly. Rain spread back into Munster and southeast Leinster during the evening as winds became variable and then southeasterly. Frost in the north during the evening.

Rainfall: 1mm to 7mm in the north and east, 10mm to 15mm in the southeast, 19mm to 22mm in the southwest

Temperature: max. 10°C to 12°C, min. 1°C to 6°C inland, up to 9°C coastal; ground temperatures down to -4°C at Dublin Airport

Sunshine: nil to 4 hours

Saturday 18th: Frost in Ulster and north Leinster at first and rain or sleet in Munster and southeast Leinster; rain or sleet eased off during the morning except in the southwest but spread back northwards during the afternoon into Munster and south Leinster before clearing southwards late in the evening. Frost after dark in Ulster, Connaught and north Leinster.

Rainfall: nil to 1mm in the east and northwest, 8mm to 16mm in the south, 22mm at Cork Airport and 40mm in Valentia

Temperature: max. 2°C to 11°C, min. -2°C to 3°C inland, up to 5°C coastal; ground temperatures down to -7°C in Clones and Dublin Airport

Sunshine: nil or trace

Sunday 19th: Frosty with some fog at first. A dry, cold day with variable amounts of sunshine. Frost returning after dark except on western and southwestern coasts.

Rainfall: nil or trace

Temperature: max. 3°C to 7°C, min. -5°C to -1°C inland, 1°C to 2°C coastal; ground temperatures down to -12°C in Kilkenny

Sunshine: nil to 2 hours in the east and northwest, 6 to 7 hours elsewhere

Monday 20th: Frosty early but clearing from the west overnight and early this morning. A dry, cold start. Outbreaks of rain in the southwest in the early morning spread gradually northeastwards to all parts. Falls were of sleet in places at first and rain was heavy at times chiefly in the afternoon and evening. Southeasterly winds increased slowly fresh to strong and gusty.

Rainfall: 2mm to 9mm generally, 14mm to 15mm in the southeast, 30mm at Cork Airport and 31mm in Valentia

Temperature: max. 7°C to 12°C, min. -4°C to 2°C inland, up to 6°C coastal; ground temperatures down to -7°C in Birr and Mullingar

Sunshine: nil

Tuesday 21st: Rain cleared from the west overnight and cloud broke allowing ground frost to develop in places. A dry, cool, bright start. Rain on the west coast in the afternoon spread slowly inland after dark and was just reaching the east coast at the end of the day. Light to moderate southwesterly winds backed southerly moderate to fresh and blustery. Temperatures rising slowly but steadily during the day.

Rainfall: 1mm to 5mm in the east and southeast, 7mm to 14mm elsewhere, 21mm in Belmullet

Temperature: max. 8°C to 12°C, min. zero to 5°C inland, 6°C to 7°C coastal; ground temperatures down to -7°C in Kilkenny

Sunshine: trace to 5 hours

Wednesday 22nd: Heavy rain in the southwest and west overnight spread gradually eastwards this morning. Showery conditions in the afternoon with some heavy and prolonged near northern and northwestern coasts. Clear spells and occasional wintry showers in the evening. Fresh or strong southerly winds early veered southwesterly light increasing to moderate. Normal temperatures this afternoon becoming cool during the evening.

Rainfall: 4mm to 10mm in the east and southeast, 15mm to 25mm elsewhere, 28mm at Connaught Airport

Temperature: max. 8°C to 11°C, min. 2°C to 6°C; ground temperatures down to -4°C in Kilkenny

Sunshine: nil or trace

Thursday 23rd: Slight ground frost in sheltered areas cleared quickly. A dry start but as southwesterly winds backed southerly and increased steadily strong to gale force, rain spread from west and was heavy for a time. Brighter conditions with well scattered but locally thundery showers followed during the evening. Afternoon temperatures well up to normal.

Rainfall: 4mm to 10mm in the east and southeast, 16mm at Cork Airport, 18mm to 23mm in the west

Temperature: max. 8°C to 11°C, min. 2°C to 5°C inland, up to 7°C coastal; ground temperatures down to -4°C in Kilkenny

Sunshine: nil or trace

Friday 24th: A blustery southwesterly overnight gave scattered showers heavy or thundery in some coastal areas. Rain, some of it heavy in the southwest towards noon, spread to all parts and there were violent gusts in parts of the east and southeast. A strong showery westerly followed during the evening.

Rainfall: 9mm to 15mm in the east and southeast, 16mm to 22mm elsewhere, 25mm to 27mm in the southwest

Temperature: max. 6°C to 12°C, min. 1°C to 4°C inland, up to 7°C coastal; ground temperatures down to -1°C in Kilkenny

Sunshine: nil to 1 hour

Saturday 25th: Cold with wintry showers of sleet, snow or hail as well as rain and isolated thunderstorms. Fresh and gusty westerly or southwesterly winds.

Rainfall: 1mm to 5mm in the east and northwest, 9mm to 10mm elsewhere

Temperature: max. 4°C to 8°C, min. zero to 3°C; ground temperatures down to -2°C in Kilkenny and Dublin Airport

Sunshine: 1 to 4 hours

Sunday 26th: Continuing cold with bright spells and scattered showers of rain, sleet, hail and a few of snow with thunder in parts of the west and southwest. Moderate but blustery westerly winds. Ground frost in sheltered areas early and late.

Rainfall: 1mm to 5mm generally, 6mm to 10mm in the southwest and west

Temperature: max. 5°C to 9°C, min. zero to 4°C; ground temperatures down to -4°C in Kilkenny

Sunshine: nil to 2 hours

Monday 27th: Cold with scattered wintry showers mostly in the northwest, west and southwest where some were heavy or thundery. Light or moderate mainly westerly winds. Ground frost in places this morning and widespread ground frost this evening.

Rainfall: nil to 2mm generally, 4mm to 7mm in the west and 15mm in Malin Head

Temperature: max. 4°C to 8°C, min. zero to 3°C; ground temperatures down to -8°C in Kilkenny

Sunshine: nil or trace

Tuesday 28th: Sunny spells today especially in the south and east but cold with scattered wintry showers, mainly in the north and west. Frost in many areas at first and again after dark in a light or moderate westerly airflow.

Rainfall: nil to 1mm generally, 3mm to 6mm in the northwest

Temperature: max. 3°C to 8°C, min. -1°C to 1°C inland, up to 3°C coastal; ground temperatures down to -10°C in Kilkenny

Sunshine: 2 to 7 hours

Wednesday 29th: Frost at first especially in the midlands, east and south cleared.

Sunny spells and dry apart from occasional showers, mostly near the north and west coasts where there was rain late in the day. Light occasionally moderate westerly or northwesterly winds backed southwesterly and increased. Ground frost for a time this evening in parts of the southeast.

Rainfall: nil to 1mm generally, 2mm to 5mm in the northwest

Temperature: max. 5°C to 9°C, min. -1°C to 2°C inland, up to 4°C coastal; ground temperatures down to -7°C in Kilkenny

Sunshine: 1 to 2 hours in the northwest, 3 to 7 hours elsewhere

Thursday 30th: Mild at first with spells of rain and southwesterly winds fresh to strong and gusty for a time especially in Munster and south Leinster. A clearance spread from the north during the afternoon and the rainbelt became slow-moving near the southwest and weakened; during the evening it pushed slowly eastwards giving a little rain in Munster. With the clearance winds veered westerly and decreased.

Rainfall: 3mm at Cork Airport, 9mm to 12mm in the east and south, 13mm to 18mm elsewhere

Temperature: max. 8°C to 11°C, min. 3°C to 7°C

Sunshine: nil to 1 hour

Friday 31st: Cloudy but largely dry at first although there was a little drizzle in places. A belt of light rain moved eastwards during the afternoon and early evening; behind it skies cleared and ground frost developed. Southwesterly winds increased moderate to fresh and blustery ahead of the front but veered westerly and decreased light to moderate behind it. Afternoon temperatures well up to normal.

Rainfall: trace to 4mm

Temperature: max. 8°C to 11°C, min. 2°C to 4°C inland, up to 7°C coastal; ground temperatures down to -4°C in Kilkenny

Sunshine: nil or trace

TABLES

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County / Station	TEMPERATURE (°C)						
	Mean max.	Mean min.	Mean/ deviation from average		Highest max./date	Lowest min./date	Lowest grass min./date
CO. CLARE							
SHANNON AIRPORT	9.0	3.7	6.4	0.2	12.3 6	-1.7 19 20	-7.1 20
CARRON	8.1	n/a	n/a		11.3 6	n/a	-9.2 19
CO. CORK							
FERMOY (MOORE PARK)	8.9	1.7	5.3	-0.6	12.8 2	-3.8 19	-7.4 20
CORK AIRPORT	8.5	2.8	5.7	-0.3	12.1 17	-1.2 19	-4.5 20
SHERKIN ISLAND	10.0	5.7	7.9	0.1	12.0 6	0.4 19	-1.5 14
BALLINCURRIG (PEAFIELD)	7.8	1.6	4.7		12.0 17	-3.0 20	-6.5 20
CO. DONEGAL							
MALIN HEAD	8.2	3.3	5.8	-0.6	11.6 6	0.4 13	-1.0 18
BALLYSHANNON (CATHLEEN'S FALL)	7.9	2.9	5.4	-0.4	12.3 5	-0.2 14 19	
LETTERRKENNY (MAGHERENAN)	7.6	2.3	5.0		12.3 5	-1.1 14 20	
CO. DUBLIN							
DUBLIN (PHOENIX PARK)	7.9	1.5	4.7	-0.7	11.7 6	-3.5 20	-6.5 19 20
DUBLIN AIRPORT	7.5	1.5	4.5		11.5 6	-3.1 19	-7.2 18
CASEMENT AERODROME	7.8	1.7	4.8	-0.5	11.8 6	-4.4 19	-6.7 19
DUBLIN (MERRION SQUARE)	8.7	3.5	6.1	-0.7	13.1 6	0.2 14 19	
CO. GALWAY							
GALWAY (UNIV. COLL.)	9.1	3.3	6.2	0.0	12.2 2	-2.1 19	-8.8 14
MAAM VALLEY	9.2	4.0	6.6		12.7 2 6	0.1 20	-3.7 20
CONNEMARA NATIONAL PARK	8.7	1.8	5.3		11.6 6	-2.4 20	
BALLYGAR	7.6	2.0	4.8		12.0 6	-2.9 19	-7.0 19
CO. KERRY							
VALENTIA OBSERVATORY	10.0	5.1	7.6	-0.1	12.5 6 10	1.1 19	-3.6 15
ARDFERT (LISCAHANE)	8.9	3.3	6.1		12.1 2	-3.7 15	-6.9 15
CO. KILKENNY							
KILKENNY	8.4	1.5	5.0	-0.3	12.4 6	-3.9 20	-11.9 20
CO. LEITRIM							
BALLINAMORE	7.1	1.1	4.1	-0.7	11.5 6	-2.6 19	-7.2 19
CO. LIMERICK							
MOUNT RUSSELL	8.3	2.7	5.5		12.1 6	-3.1 19	-8.6 19
CO. LOUTH							
ARDEE (BOHANNAMOE)	7.8	1.2	4.5		11.9 6	-4.3 19	-11.1 19
CO. MAYO							
BELMULLET	8.9	4.2	6.6	-0.3	12.0 5	0.6 14	-1.5 14
STRAIDE	8.0	2.7	5.4		12.3 2 6	-2.4 19	-9.0 19
CONNAUGHT AIRPORT	6.3	1.4	3.9		10.9 2	-2.1 20	-4.1 19
CO. MEATH							
WARRENTOWN	7.3	1.9	4.6	-0.4	11.2 6	-2.5 20	-6.4 19
CO. MONAGHAN							
CLONES	7.0	1.7	4.4	-0.4	11.6 6	-1.9 19	-7.8 19
CO. OFFALY							
BIRR	8.0	1.9	5.0	-0.4	11.7 6 16	-4.5 19	-10.4 19
DERRYGREENAGH	7.3	1.2	4.3	-0.3	11.4 6	-4.0 19	-9.0 19
CO. SLIGO							
ARDTARMON	8.1	3.4	5.8		11.9 2	0.0 14	-7.0 15
CO. TIPPERARY							
FETHARD (PARSONSHILL)	7.4	0.9	4.2		11.6 6	-2.9 19	-7.6 20
CO. WATERFORD							
WATERFORD (TYCOR)	8.9	2.6	5.8	-0.3	12.6 17	-1.8 20	
DUNGARVAN (CARRIGLEA)	9.2	2.3	5.8		12.7 6	-3.0 20	-4.5 20
CO. WESTMEATH							
MULLINGAR II	7.4	1.5	4.5	-0.2	11.6 6	-2.5 19 20	-9.2 19
CO. WEXFORD							
JOHNSTOWN CASTLE	8.7	2.6	5.7	-0.6	11.4 17	-1.3 19	-2.9 28
ROSSLARE	9.2	3.7	6.5	-0.6	12.0 2 6	-0.9 14 15	-3.7 28
CLONROCHE	8.2	2.4	5.3	-0.3	11.6 16	-1.5 20	-7.5 20
JOHN F. KENNEDY PARK	8.6	2.1	5.4	-0.5	12.0 16	-1.9 20	-5.2 28

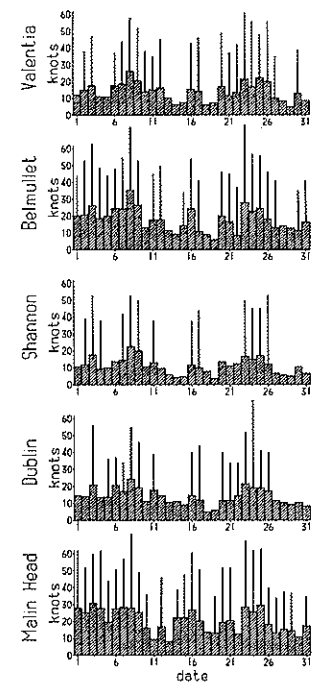
TABLES

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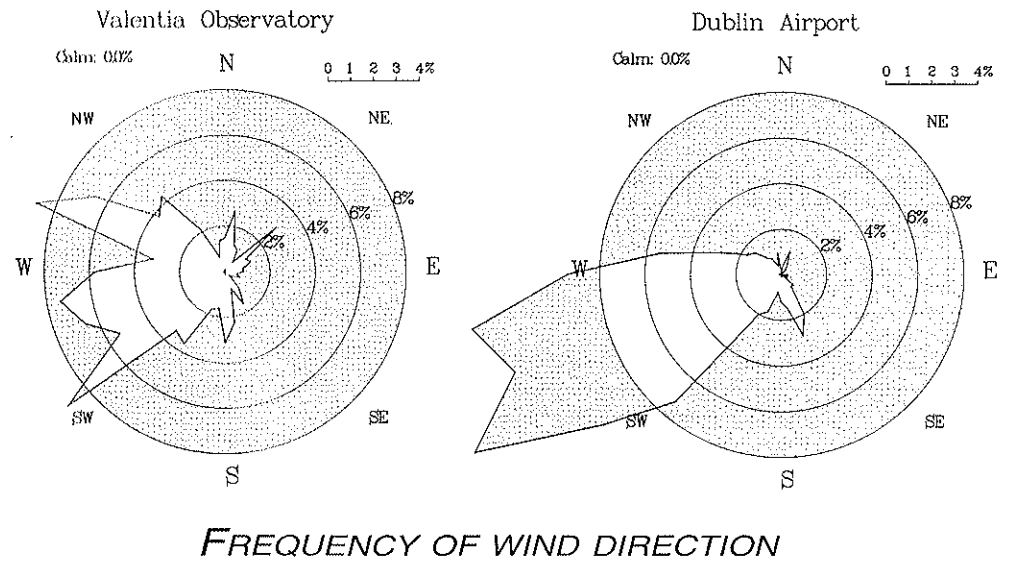
County / Station	RAINFALL (MM)				SUNSHINE (HOURS)				
	Total amount	% of average	Most in a day/date		Daily mean (hrs/day)	% of average	% of possible	Most in a day/date	
CO. CLARE									
SHANNON AIRPORT	219.5	207	24.1	24	1.60	110	21	6.1	14 19
CARRON	371.3	216	48.5	21					
CO. CORK									
FERMOY (MOORE PARK)	145.1	128	22.1	24	1.82	138	23	5.4	15
CORK AIRPORT	194.2	140	30.0	20	2.34	146	30	7.3	15
SHERKIN ISLAND	224.5	175	42.7	17	2.08	126	26	6.7	28
BALLINCURRIG (PEAFIELD)	190.4		29.2	20	2.34		14	7.4	28
CO. DONEGAL									
MALIN HEAD	241.9	216	28.0	2	0.93	100	13	3.9	21
BALLYSHANNON (CATHLEEN'S FALL)	280.2	250	32.7	2	0.74	74	10	2.9	15
LETTERRKENNY (MAGHERENAN)	294.3		28.5	8					
CO. DUBLIN									
DUBLIN (PHOENIX PARK)	79.6	94	11.5	10	1.52	96	20	4.8	4
DUBLIN AIRPORT	82.3		14.2	10	1.72	102	23	5.3	29
CASEMENT AERODROME	83.7	109	11.6	24	1.38	91	18	5.3	29
DUBLIN (MERRION SQUARE)	73.9	97	10.1	24					
CO. GALWAY									
GALWAY (UNIV. COLL.)	274.2	216	35.9	21	1.57	116	21	5.6	3 19
MAAM VALLEY	544.7		59.3	16					
CONNEMARA NATIONAL PARK	270.7		31.7	21					
BALLYGAR	221.2	203	37.5	21					
CO. KERRY									
VALENTIA OBSERVATORY	303.3	191	35.9	21	1.18	97	15	5.5	19
ARDFERT (LISCAHANE)	239.1		28.3	21	1.14		18	4.5	4
CO. KILKENNY									
KILKENNY	123.9	135	19.2	24	2.34	157	30	7.1	19
CO. LEITRIM									
BALLINAMORE	292.7	230	42.0	21	1.12	96	15	4.1	28
CO. LIMERICK									
MOUNT RUSSELL	183.4		19.5	24					
CO. LOUTH									
ARDEE (BOHANNAMOE)	90.6	101	12.5	2					
CO. MAYO									
BELMULLET	256.7	209	33.9	21	0.57	52	8	2.8	3
STRAIDE	232.2		23.3	23	1.04			4.8	29
CONNAUGHT AIRPORT	250.2		31.8	21	1.10		14	4.9	29
CO. MEATH									
WARRENTOWN	123.4	130	14.5	24					
CO. MONAGHAN									
CLONES	178.8	186	23.2	2	1.52	131	20	4.9	15 29
CO. OFFALY									
BIRR	165.8	193	21.5	24	1.71	121	22	6.3	4
DERRYGREENAGH	148.4	163	19.6	21					
CO. SLIGO									
ARDTARMON	233.1		34.7	2					
CO. TIPPERARY									
FETHARD (PARSONSHILL)	133.8		15.1	24					
CO. WATERFORD									
WATERFORD (TYCOR)	113.7	103	24.1	20					
DUNGARVAN (CARRIGLEA)	156.3		35.8	20	2.09		18	6.2	19
CO. WESTMEATH									
MULLINGAR II	157.1	160	23.3	21	1.79	116	24	5.9	28
CO. WEXFORD									
JOHNSTOWN CASTLE	127.0	114	24.1	20	1.98	118	25	6.2	4 28
ROSSLARE	118.3	121	16.9	20	2.30	125	29	6.9	28
CLONROCHE	134.1	108	28.0	20	1.78	116	23	6.6	15
JOHN F. KENNEDY PARK	125.7	113	24.1	20	2.35	160	30	6.9	15

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. CLARE												
SHANNON AIRPORT	28	24	4	11	1	0	8	3	0	5.3	6.1	6.4
CARRON	31	28								5.0		6.0
CO. CORK												
PERMOY (MOORE PARK)	24	19	7	17						5.2	5.9	6.5
CORK AIRPORT	25	22	4	16	7	0	0	0	5	4.9	5.9	7.1
SHERKIN ISLAND	27	24	0	6						7.8		8.8
BALLINCURRIG (PEAFIELD)	26	22	6	16						4.2	5.2	5.8
CO. DONEGAL												
MALIN HEAD	29	27	0	3	9	0	16	2	0	4.9	5.6	7.2
BALLYSHANNON (CATHLEEN'S FALL)	27	26	2									
LETTERKENNY (MAGHERENAN)	29	27	5									
CO. DUBLIN												
DUBLIN (PHOENIX PARK)	23	15	9	17								
DUBLIN AIRPORT	21	13	10	21	4	0	1	0	0	4.7	4.8	5.5
CASEMENT AERODROME	19	14	7	11	2	0	0	0	0	3.7	4.5	5.4
DUBLIN (MERRION SQUARE)	21	13	0									
CO. GALWAY												
GALWAY (UNIV. COLL.)	27	25	3	12								
MAAM VALLEY	30	28	0	10								
CONNEMARA NATIONAL PARK	29	28	7									
BALLYGAR	28	22	9	19								
CO. KERRY												
VALENTIA OBSERVATORY	30	26	0	5	0	0	9	1	0	6.7	7.0	7.8
ARDFERT (LISCAHANE)	31	24	4	11								
CO. KILKENNY												
KILKENNY	22	17	9	26		0				3.7	4.6	5.5
CO. LEITRIM												
BALLINAMORE	28	25	8	17						3.9	5.0	5.8
CO. LIMERICK												
MOUNT RUSSELL	28	23	4	12						4.4	5.1	
CO. LOUTH												
ARDEE (BOHARNAMOE)	23	14	10	23						4.3	5.0	5.4
CO. MAYO												
BELMULLET	28	26	0	6	8	0	13	3	0	5.7	6.4	7.3
STRAIDE	28	26	4	20						4.4		
CONNAUGHT AIRPORT	28	25	9	16	11	3	4	0	8	3.0	4.1	4.7
CO. MEATH												
WARRENSTOWN	22	17	5	19						3.8	4.4	4.8
CO. MONAGHAN												
CLONES	26	22	7	22		0				3.6	4.9	6.2
CO. OFFALY												
BIRR	24	18	8	16		0				3.8	4.7	5.5
DERRYGREENAGH	23	18	8	13								
CO. SLIGO												
ARDTARMON	27	27	0	19								
CO. TIPPERARY												
FETHARD (PARSONSHILL)	26	19	13	20						4.2	4.9	
CO. WATERFORD												
WATERFORD (TYCOR)	23	15	5									
DUNGARVAN (CARRIGLEA)	27	17	5	16						6.5	7.0	
CO. WESTMEATH												
MULLINGAR II	22	20	8	22		1				3.6	4.3	5.8
CO. WEXFORD												
JOHNSTOWN CASTLE	25	17	5	13						4.7	5.7	6.1
ROSSLARE	21	19	3	11	0	0	1	0	1	5.5	6.3	8.0
CLONROCHE	22	16	5	21						4.5	5.5	6.6
JOHN F. KENNEDY PARK	21	17	6	19						4.4	5.4	7.0

County / Station	WIND (KNOTS)									
	Mean speed	Max. 10-min. dir.	mean date/hour	Max. Gust dir.	speed date/time	Days with gales	Hours with gale gusts	Hours with gale gusts	Hours with gale gusts	Hours with gale gusts
CO. CLARE										
SHANNON AIRPORT	11.0	270°	35 3/06	260°	53 3/0515	2	13	98		
		230°	35 8/16	240°	53 8/1358					
CO. CORK										
CORK AIRPORT	12.3	190°	37 23/17	190°	59 23/1646	1	19	96		
CO. DONEGAL										
MALIN HEAD	20.5	190°	49 8/16	190°	72 8/1546	17	26	356		
CO. DUBLIN										
CASEMENT AERODROME	15.0	240°	50 24/18	210°	72 24/1745	6	16	123		
DUBLIN AIRPORT	14.0	240°	49 24/19	240°	71 24/1758	3	16	103		
CO. KERRY										
VALENTIA OBSERVATORY	13.8	250°	38 26/14	190°	61 23/1352	4	20	172		
CO. KILKENNY										
KILKENNY	9.7	190°	36 23/15	280°	56 3/0611	1	10	44		
CO. MAYO										
BELMULLET	17.9	240°	48 8/13	180°	74 23/1418	9	24	310		
		180°	48 23/15							
CONNAUGHT AIRPORT	11.9	260°	40 3/05	250°	58 3/0326	2	19	94		
CO. MONAGHAN										
CLONES	10.0	260°	35 3/06	250°	54 3/0457	1	12	45		
CO. OFFALY										
BIRR	9.1	190°	30 23/18	270°	48 3/0543	0	9	38		
CO. WESTMEATH										
MULLINGAR II	9.3	290°	29 3/06	270°	51 3/0514	0	7	36		
CO. WEXFORD										
ROSSLARE	12.0	330°	40 14/21	220°	63 24/1706	4	21	154		

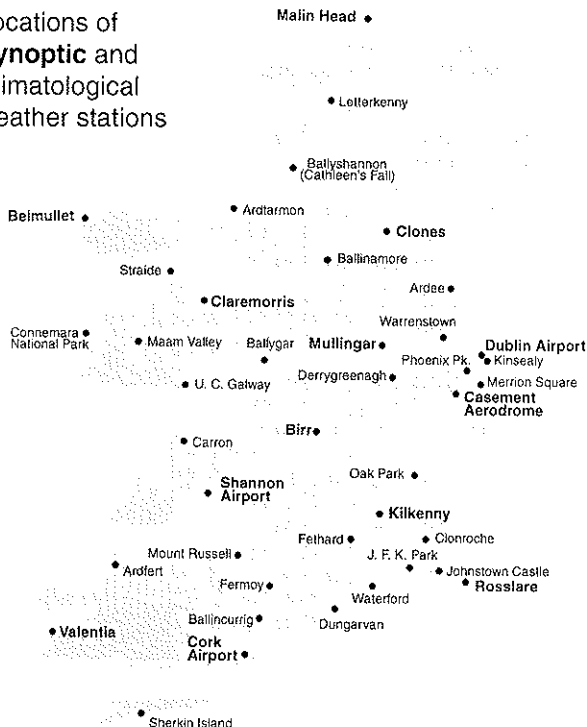


Daily mean wind speeds and maximum significant gusts (34 knots or more)



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.)
- At 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.