

Monthly Weather Bulletin

No. 251
MARCH 2007



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Severe drought in
southern Africa- page 2



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Launch of Meteoalarm

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



For more information-
tel: +353-1-8064260
fax: +353-1-8064216
climate.enquiries@met.ie
www.met.ie/climate

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

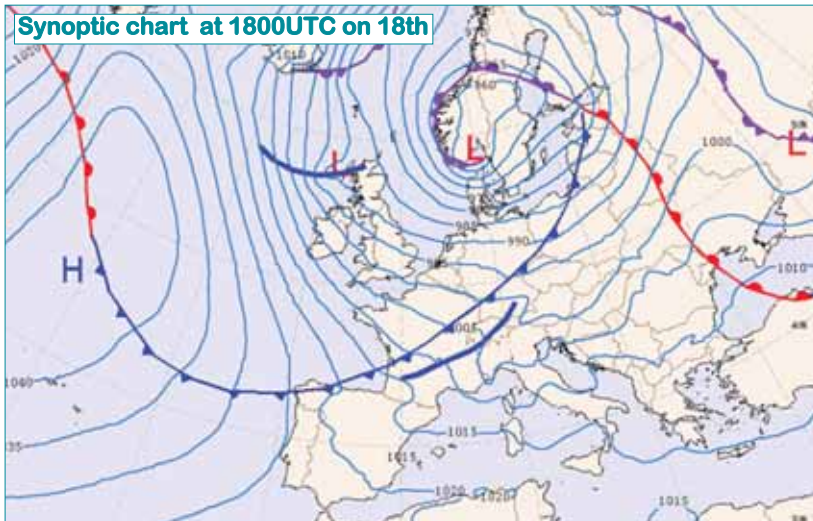


Although there was a short spell of wintry weather around mid-month, most of March was mild and sunny. Both mean air temperatures and sunshine totals for the month were well above normal in the north and northwest.
(picture Peter Lennon)

Mild overall despite frequent ground frost; sunny with near normal rainfall

The weather during most of March was mild, but there were also short colder spells with wintry showers of hail and snow. Clear conditions on many days brought sunshine totals for the month above normal, but also allowed frequent ground frost to develop, particularly at inland stations. Mean monthly air temperatures were above normal everywhere, especially in the west, but while mean maximum temperatures for the month were around a degree higher than normal everywhere, mean minimum values were below normal in the east and

midlands. There was a total of between 15 and 24 ground frosts at most inland stations compared with between 12 and 14 in an average March; more than 20 ground frosts were measured at several inland stations in the south. At Kilkenny, the mean minimum temperature for the month of 2.2°C was its lowest for March since 1987. Rainfall totals for the month were close to normal generally, with percentage of normal values between 70% at Malin Head and 112% at Kilkenny. Most rain fell during the early part of the month, with many stations recording their



Above- A cold front moving southwards over the country during the 17th and 18th brought a sharp decline in temperatures, with wintry showers following in a strong northerly airstream.

wettest day on either the 5th or 11th. There were between 12 and 18 wetdays during the month over most of the country (days with 1mm or more rainfall), close to normal for March, but only 9 wetdays were recorded in parts of the east and southeast. It was a sunny month everywhere, with sunshine totals between 15% and 45%

higher than normal generally. The period between the 24th and 31st was particularly sunny, especially over the western half of the country. Shannon Airport's value of 11 hours on the 29th was the highest daily sunshine for March at the station since 1970.

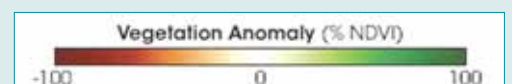
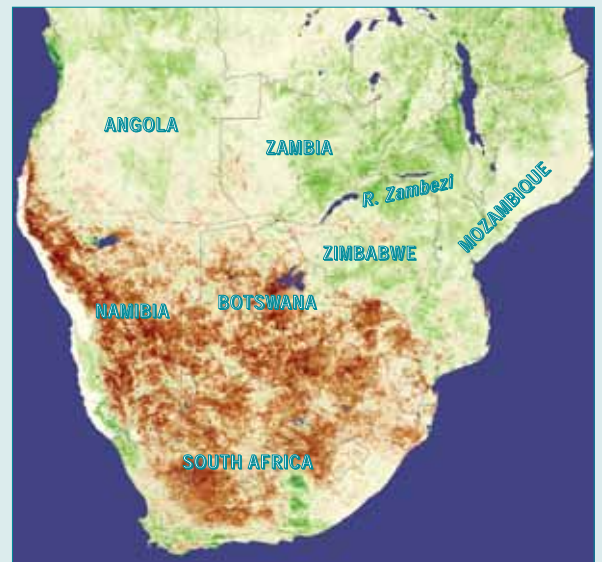
1st to 17th: Frontal systems associated with areas of low pressure passing close to the country brought frequent spells of rain or showers, with heaviest falls in the west and south. The 2nd, 4th/5th and 11th were particularly wet. Southwesterly winds were strong at times, with gale gusts at all stations on the 4th and 5th. Most of this period was dull, but there was also fine weather on some days with showers. Temperatures were above normal throughout, but ground frost was widespread on some nights.

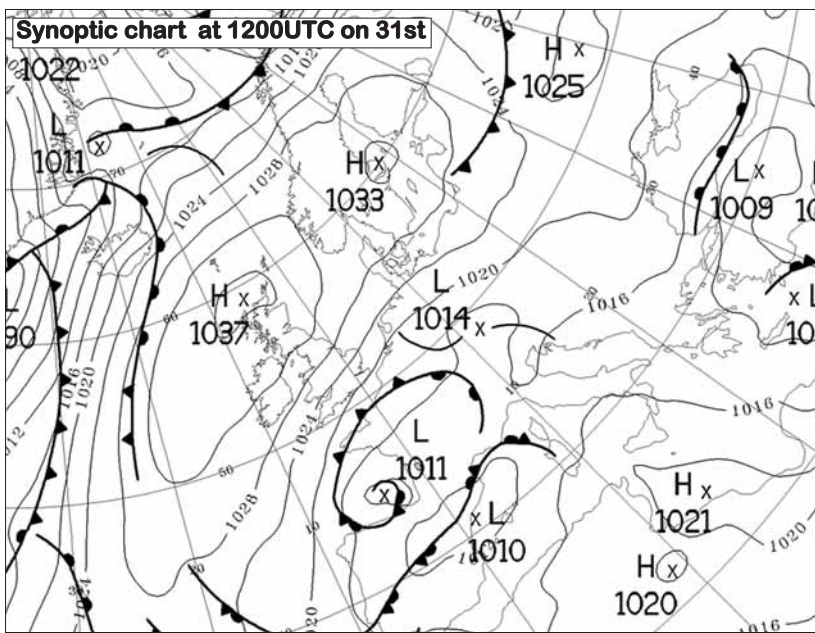
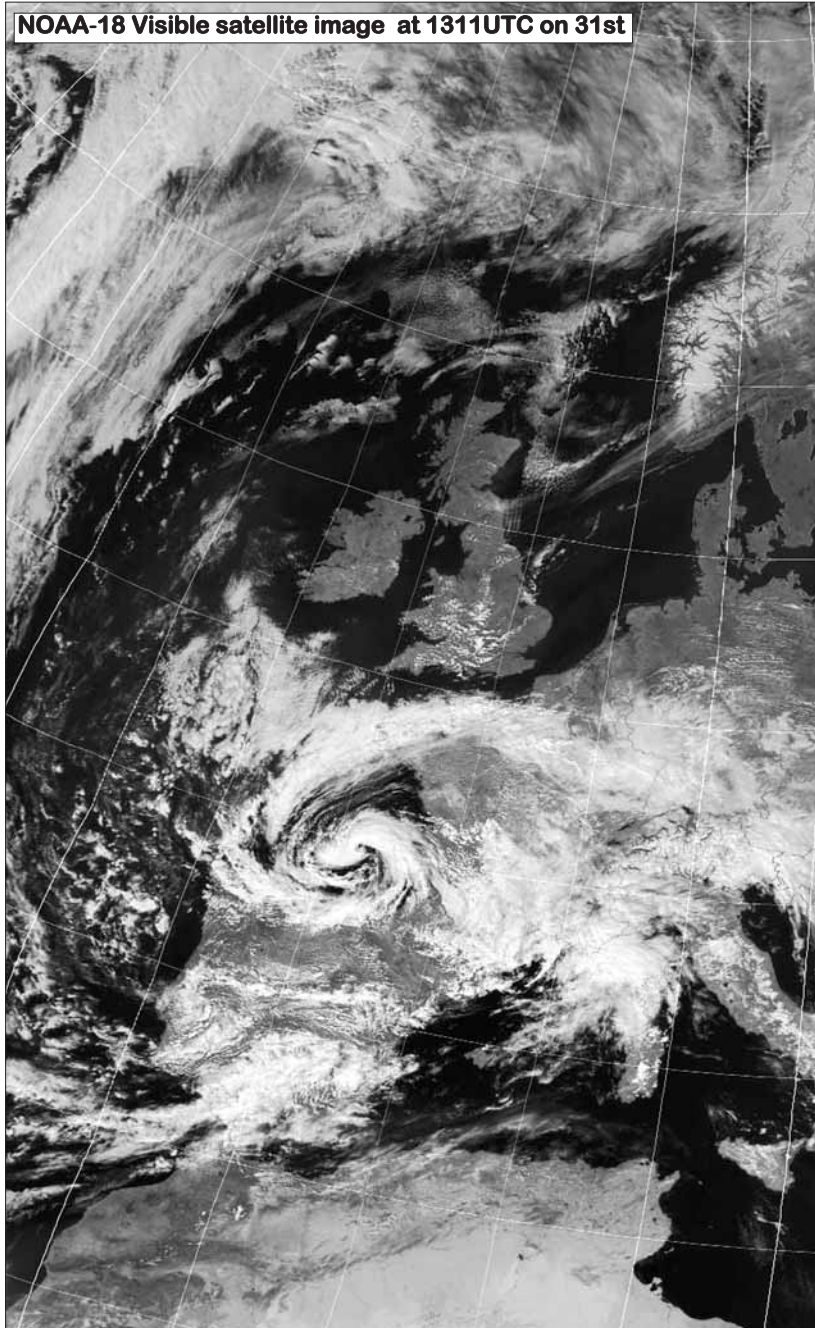
18th to 21st: Cold fronts moving eastwards over Ireland late on the 17th

Severe drought over southern Africa

Unusually hot and dry weather has been recorded over southern Africa between January and March of this year. A severe drought has followed near-record temperatures and a lack of rainfall, causing extensive crop damage, particularly in western crop areas. In South Africa, the anticipated yield from the corn crop dropped from ten million tons in December to six million tons in April, as planted crops wilted and the soil was too dry for sowing. The last drought of this magnitude over the area occurred in 1992. The impact of the drought on vegetation throughout southern Africa is illustrated in the image below. This shows vegetation conditions in March 2007 compared to average conditions for March between 1999 and 2006, as measured by the SPOT satellite. The method used is the normalised difference vegetation index (NDVI), a value calculated from the reflected solar radiation in the near-infrared and red wavelength bands; values vary with absorption of red light by plant chlorophyll and the reflection of infrared radiation by water-filled leaf cells. Brown areas show where plants were less thick or where fewer than normal plants were growing, while green areas indicate that vegetation was thicker and more lush than usual. The prevalence of brown colours indicates that plants were growing poorly throughout the southern region because of drought. In contrast, green dominates in Zambia, Zimbabwe, and Mozambique along the top edge of the image, where heavy rains persisted during January and February. Some of the most severe flooding occurred along the Zambezi River, which is located in the green area along Zimbabwe's northern border.

(image courtesy NASA Earth Observatory)





introduced an arctic airstream, bringing strong northwesterly or northerly winds and much colder conditions. In Dublin the annual St. Patrick's Festival fireworks display on the 18th was cancelled due to high winds and a one metre swell on the river Liffey (*see chart page 2*), as barges used to rig the fireworks could not operate safely. Frequent heavy and wintry showers at first became lighter and more isolated by the 20th; snow accumulated in some midland, western and upland areas before milder air became established late on the 21st. Daytime temperatures fell well below normal, while ground frost was widespread and severe in some places on the 21st.

22nd to 31st: Pressure rose over the country, as an anticyclone lay to the southwest and later to the northeast of Ireland. The weather during this period was mostly dry and sunny, apart from some light rain or wintry showers in places on the 28th and 29th. Daytime temperatures recovered to near or above normal values, but ground frost was widespread under clear skies at night. Light variable or northerly winds at first became east to northeasterly later in the period.

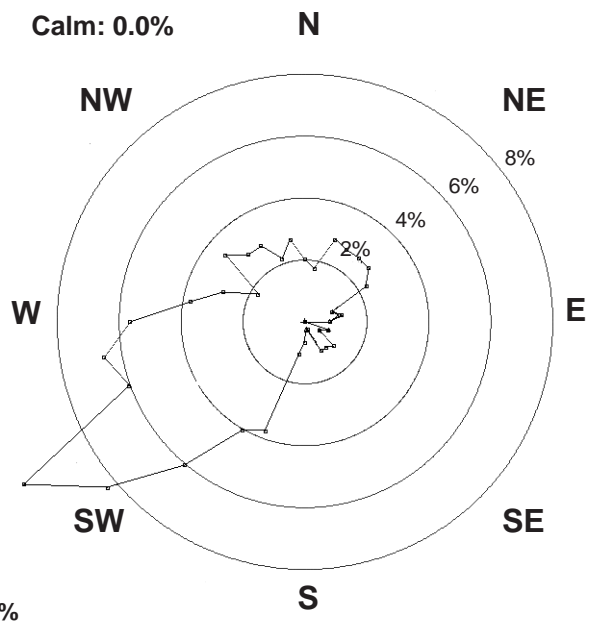
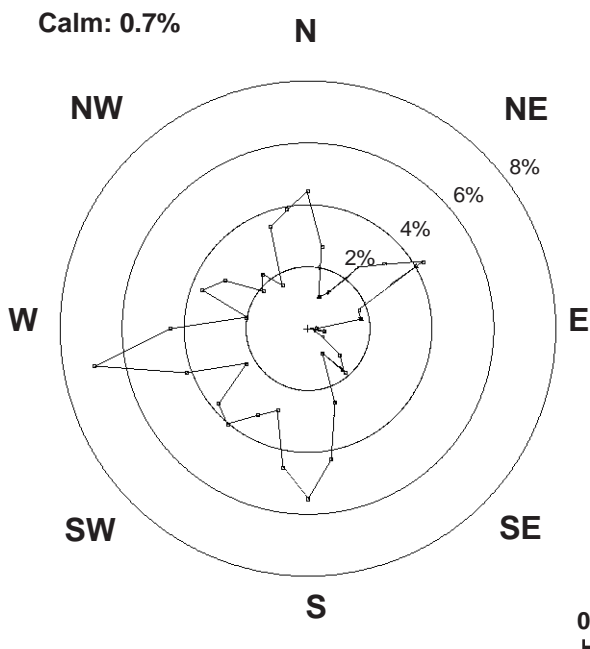
Wind and elements: Mean windspeeds for the month of between 8 and 14 knots generally (*15 and 26km/hr*) were close to normal for March. Winds during the final third were lighter than earlier in the month. At most stations the strongest winds were recorded in the periods 4th/5th and 18th/19th. The highest gust, 71 knots (*131 km/hr*), was measured at Belmullet on the 4th. There was thunderstorm activity on the 4th, 6th, 9th, 18th/19th and 29th. Hail showers were most frequent on the 9th, in the period 18th to 20th and on the 29th; there were widespread snow showers also between the 18th and 20th. Fog was widespread and dense in places in the period 26th to 28th.

Left - The month ended with an intense anticyclone centred close to Ireland, giving fine and dry conditions over the country. The anticyclone forced Atlantic depressions to track further southwards, bringing disturbed weather over southern France and the Iberian Peninsula, where some falls of heavy rain were recorded.

County / Station	WIND (KNOTS)										ELEMENTS				
	Mean speed	Max. 10-min. mean dir.	Max. 10-min. mean speed	Max. 10-min. mean date/hour	Max. Gust dir.	Max. Gust speed	Max. Gust date/time	Days with gales	Days with gale gusts	Hours with gale gusts	Snow	Snow Lying	Hail	Thunder	Fog
CO. CLARE SHANNON AIRPORT	10.1	300°	38	18/13	310°	59	18/1225	2	6	71	0	0	5	0	3
CO. CORK CORK AIRPORT	10.4	130°	34	4/08	200°	55	5/1442	2	6	62	2	0	4	0	4
		210°	34	5/20											
CO. DONEGAL MALIN HEAD	17.9	350°	51	18/24	290°	67	18/0413	7	19	241	4	0	7	0	2
					350°	67	19/0944								
CO. DUBLIN CASEMENT AERODROME	11.3	200°	37	5/18	200°	52	5/1644	1	10	78	3	0	3	0	2
DUBLIN AIRPORT	12.3	260°	37	17/22	340°	54	19/0116	1	8	67	2	0	0	0	3
CO. KERRY VALENTIA OBSERVATORY	9.5	210°	34	4/13	320°	57	18/1951	1	7	86	1	0	4	0	0
CO. KILKENNY KILKENNY	7.7	210°	31	5/16	350°	47	19/0310	0	5	30	n/a	1	---	n/a	---
CO. MAYO BELMULLET	13.7	220°	46	4/16	210°	71	4/1405	6	16	189	2	0	12	0	0
KNOCK AIRPORT	10.5	190°	34	4/15	200°	56	4/1432	2	10	93	3	1	6	0	8
		340°	34	19/03											
CO. MONAGHAN CLONES	8.9	130°	30	4/11	290°	49	18/0329	0	7	48	n/a	1	---	n/a	---
CO. OFFALY BIRR	7.9	130°	29	4/10	140°	45	4/0717	0	5	24	n/a	1	---	n/a	---
CO. WESTMEATH MULLINGAR II	7.5	130°	23	4/09	350°	43	19/0050	0	5	21	n/a	1	---	n/a	---
		190°	23	5/16											
CO. WEXFORD ROSSLARE	11.6	210°	33	5/21	210°	55	5/2055	0	11	82	1	0	1	0	1

Valentia Observatory

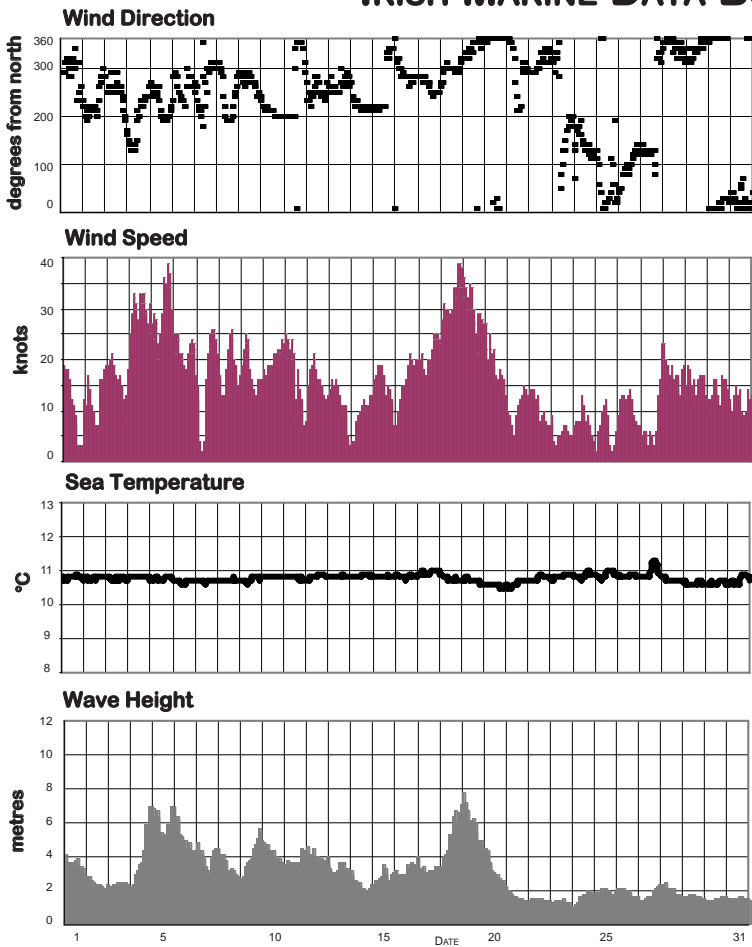
Dublin Airport



0 1 2 3 4%

FREQUENCY OF WIND DIRECTION

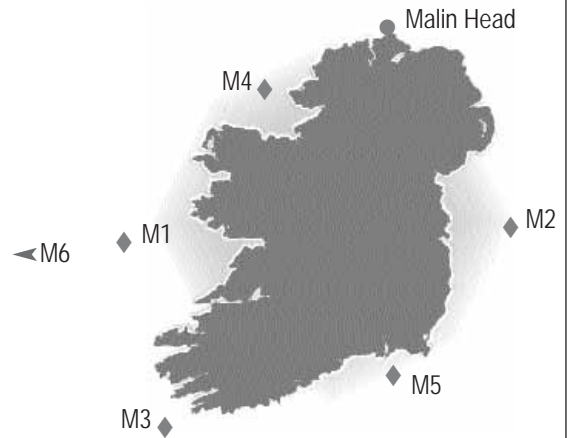
MARINE OBSERVATIONS FROM IRISH MARINE DATA BUOY NETWORK



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

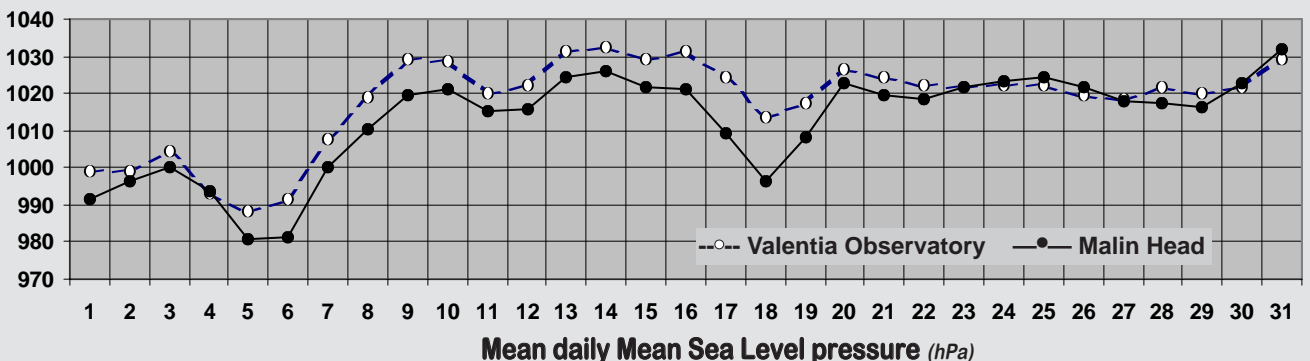
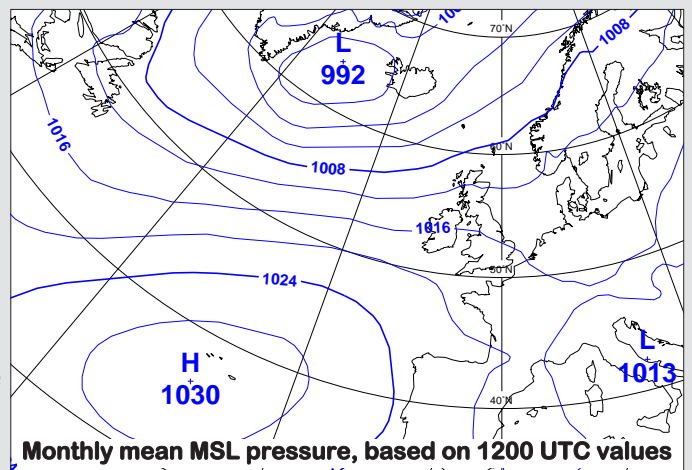
Buoy	Sea surface temp. (°C)	Mean wind speed (knots)	Max. 10-min wind (knots)	Mean wave height (m.)	Max. wave height (m.)
M1		not available	not available		
M2	8.7	17.6	41	1.4	5.2
M3	10.8	15.5	39	3.0	7.8
M4	8.7	16.3	40	3.9	10.8
M5	9.4	16.7	38	2.3	7.6
M6	10.9	16.9	48	4.7	11.7
Malin Head	8.6	(1.6°C above normal)			

Summary of Mean Monthly Values

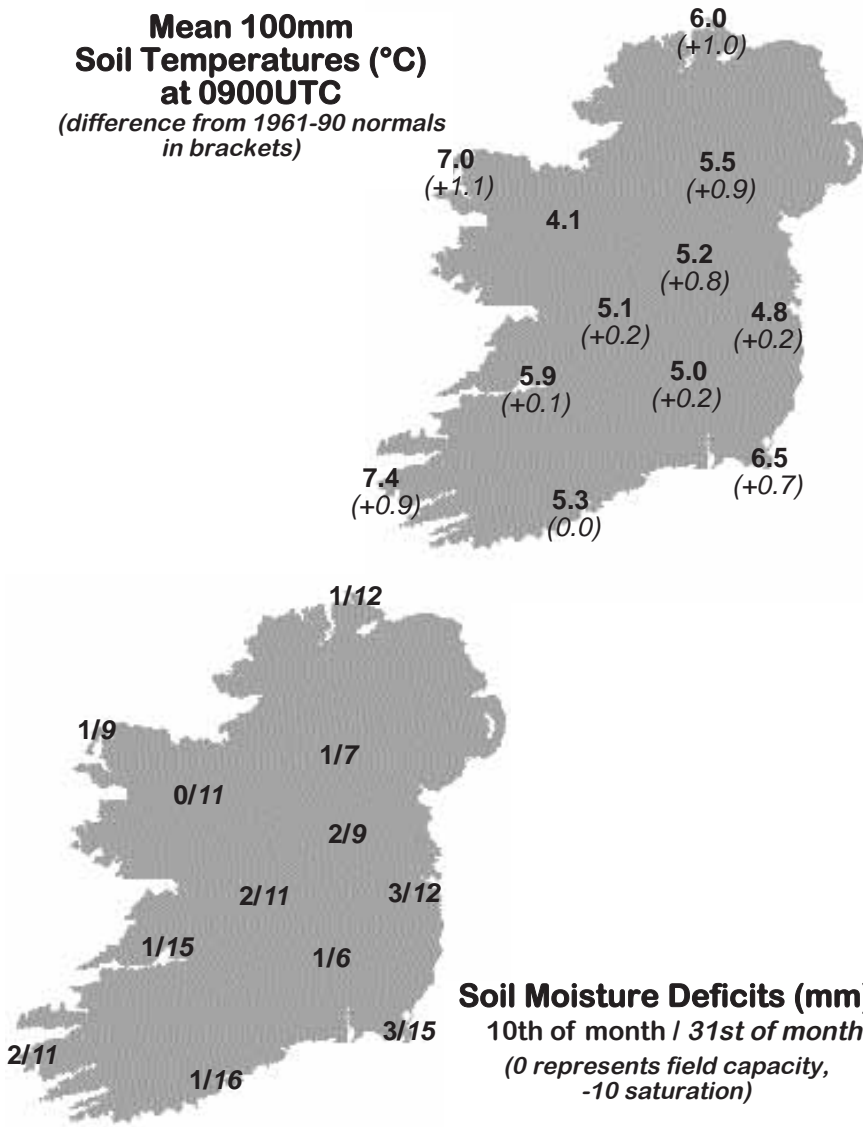


MEAN ATMOSPHERIC PRESSURE

Mean sea level pressure values for the month ranged from 1014hPa in the north to 1018hPa in the southwest, around 4hPa above normal for March everywhere. Pressure was well below normal during the first week, however, as a series of depressions passed close to Ireland. The lowest pressure of the month, 970.1hPa, was measured at Belmullet on the 5th. Pressure rose above normal for almost all of the remainder of the month, with the highest value, 1036.5hPa, recorded at Malin Head on the 31st.



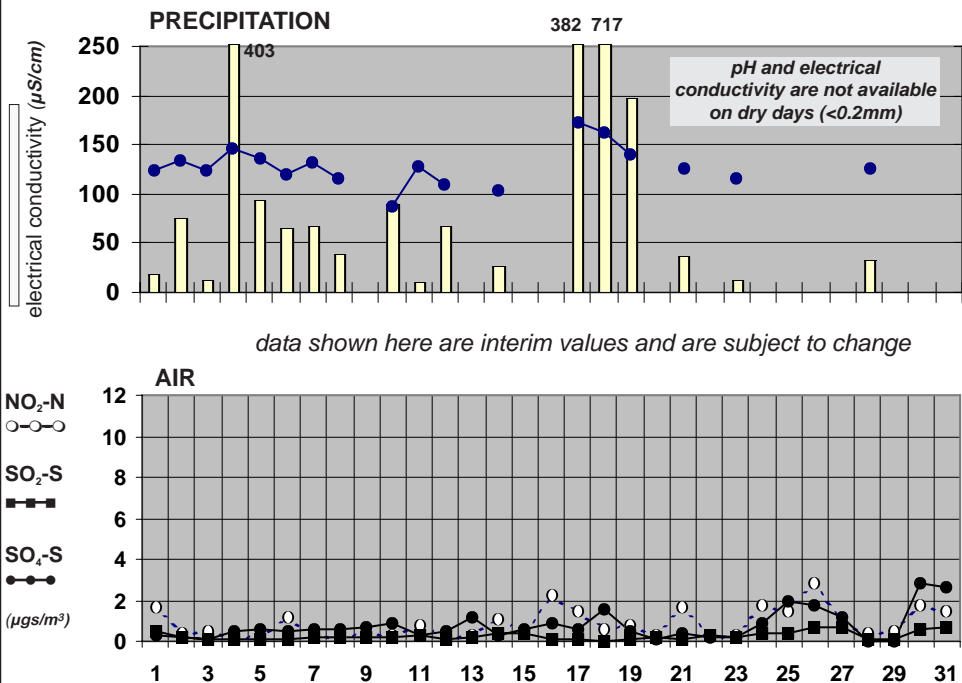
Mean 100mm Soil Temperatures (°C) at 0900UTC
(difference from 1961-90 normals in brackets)



Soil Temperatures at 0900UTC

County/ Station	°C		
	100mm	200mm	300mm
CO. CLARE			
SHANNON AIRPORT	5.9	6.6	7.6
CARRON	6.8		7.5
CO. CORK			
FERMOY (MOORE PARK)	6.4	6.9	7.4
CORK AIRPORT	5.3	6.2	7.7
SHERKIN ISLAND	8.1		9.2
BALLINCURRIG (PEAFIELD)	5.2	6.2	7.2
CO. DONEGAL			
MALIN HEAD	6.0	6.9	7.8
CO. DUBLIN			
DUBLIN AIRPORT	4.8	5.6	6.6
CASEMENT AERODROME	4.8	5.8	6.8
CO. KERRY			
VALENTIA OBSERVATORY	7.4	8.3	9.3
CO. KILKENNY			
KILKENNY	5.0	6.1	7.1
CO. LIMERICK			
MOUNT RUSSELL	5.5	6.3	
CO. LOUTH			
ARDEE (BOHARNAMOE)	5.6	5.9	6.2
CO. MAYO			
BELMULLET	7.0	8.1	9.0
STRAIDE	5.9		
KNOCK AIRPORT	4.1	5.3	6.2
CO. MEATH			
WARRENTOWN	4.8	5.9	6.8
CO. MONAGHAN			
CLONES	5.5	6.1	6.7
CO. OFFALY			
BIRR	5.1	6.4	7.6
CO. TIPPERARY			
FETHARD (PARSONSHILL)	5.1	6.1	
CO. WATERFORD			
DUNGARVAN (CARRIGLEA)		6.5	7.3
CO. WESTMEATH			
MULLINGAR II	5.2	6.0	7.0
CO. WEXFORD			
JOHNSTOWN CASTLE	6.1	6.7	7.1
ROSSLARE	6.5	7.3	8.1
JOHN F. KENNEDY PARK	6.3	7.0	8.5
CLONROCHE (KNOXTOWN)	5.7	6.3	7.2

Chemical Analysis of Precipitation and Air Samples at Valentia Observatory



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

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

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

10-DAY VALUES FOR SELECTED AGROMETEOROLOGICAL STATIONS		RAINFALL				TEMPERATURE												SUNSHINE			
Station	period	amount	% of average	rain days	wet days	mean max.	mean min.	mean daily	diff. from average	lowest min.	date	days with air frost	degree days > 4°C	degree days > 10°C	lowest "grass-min."	date	days with ground frost	mean 10cm at 0900h	mean 30cm at 0900h	total no. of hours	% of average
Cavan (Loreto)	11-20	35.6	-	9	6	10.2	3.2	6.7	-	-0.4	19	1	29	3	-2.1	16	4	-	-	36.7	-
	21-end	9.1	-	5	3	11.3	0.5	5.9	-	-2.9	21	5	29	4	-4.2	25	6	-	-	42.6	-
	month	85.4	-	23	16	10.8	1.9	6.4	-	-2.9	21	7	86	9	-4.5	2	14	-	-	111.0	-
Co. Cork	1-10	63.4	-	9	7	10.9	2.2	6.6	-	-0.5	2	2	27	3	-6.2	2	9	5.9	7.1	33.0	-
Fermoy	11-20	26.4	-	5	3	10.6	3.1	6.9	-	-1.1	16	1	31	3	-5.9	16	7	6.4	7.5	42.2	-
	21-end	3.1	-	2	2	11.9	2.9	7.4	-	-1.0	21	1	38	5	-6.0	21	7	6.8	7.7	55.6	-
	month	92.9	118	16	12	11.2	2.7	7.0	0.6	-1.1	16	4	96	11	-6.2	2	23	6.4	7.4	130.8	131
Co. Donegal	1-10	69.3	-	10	10	10.6	1.8	6.2	-	-1.0	4	1	25	2	-2.2	2	5	-	-	-	-
Glenties	11-20	38.5	-	9	9	10.0	4.4	7.2	-	1.1	20	0	31	2	-1.9	16	4	-	-	-	-
	21-end	15.2	-	4	3	12.8	1.8	7.3	-	-1.6	21	3	40	8	-4.2	27	8	-	-	-	-
	month	123.0	93	23	22	11.2	2.6	6.9	1.1	-1.6	21	4	95	12	-4.2	27	17	-	-	-	-
Co. Kerry	1-10	56.7	-	9	8	11.7	4.2	8.0	-	2.7	2	0	37	4	-4.6	2	8	-	-	34.5	-
Ardfert	11-20	30.3	-	7	4	11.2	5.3	8.3	-	2.2	19	0	40	4	-5.1	20	7	-	-	37.9	-
	21-end	8.4	-	2	2	13.3	2.9	8.1	-	0.9	27	0	46	10	-6.1	27	9	-	-	53.7	-
	month	95.4	-	18	14	12.1	4.1	8.1	1.0	0.9	27	0	123	18	-6.1	27	24	-	-	126.1	-
Co. Louth	1-10	20.6	-	9	7	10.3	1.4	5.9	-	-3.0	8	2	22	1	-3.8	8	7	5.8	6.0	-	-
Ardee	11-20	19.6	-	4	4	10.0	3.1	6.6	-	-1.0	16	1	27	3	-2.5	16	3	5.6	6.5	-	-
	21-end	5.5	-	2	2	10.7	1.5	6.1	-	-2.3	21	2	27	3	-3.7	28	8	5.4	6.2	-	-
	month	45.7	73	15	13	10.3	2.0	6.2	0.4	-3.0	8	5	76	7	-3.8	8	18	5.6	6.2	-	-
Co. Waterford	1-10	75.7	-	8	7	11.5	2.5	7.0	-	-1.2	2	2	31	4	-2.2	2	3	-	6.7	36.9	-
Dungarvan	11-20	11.2	-	4	3	11.1	3.3	7.2	-	-0.3	16	1	33	5	-1.5	20	4	-	7.6	41.5	-
	21-end	1.8	-	2	1	12.3	3.7	8.0	-	-2.5	21	1	44	7	-3.5	21	3	-	7.6	54.8	-
	month	88.7	-	14	11	11.7	3.2	7.5	0.7	-2.5	21	4	108	15	-3.5	21	10	-	7.3	133.2	126
Co. Wexford	1-10	58.7	-	7	5	11.0	3.3	7.2	-	0.7	2	0	30	2	-3.9	2	7	5.3	6.5	-	-
Johnstown Castle	11-20	3.6	-	4	1	10.7	4.2	7.5	-	1.0	19	0	33	4	-1.8	20	4	6.4	7.5	-	-
	21-end	6.7	-	3	3	10.5	3.9	7.2	-	0.2	21	0	33	2	-3.0	21	5	6.6	7.3	-	-
	month	69.0	87	14	9	10.7	3.8	7.3	0.9	0.2	21	0	97	8	-3.9	2	16	6.1	7.1	n/a	-

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

County/ Station	Period	P.E. (mm)		Soil Moisture (mm)	
		Amount	Deficit	Accum'd	Deficit Surplus
Co. Kerry					
Valentia Obs.	1-10	16.0	-	0	59
	11-20	14.8	-	0	20
	21-end	13.1	6	6	-
	month	43.9			
Co. Wexford					
Johnstown Castle	1-10	16.8	-	0	44
	11-20	8.7	5	5	-
	21-end	21.7	15	20	-
	month	47.2			

MONTHLY EVAPORATION (MM) FROM CLASS A PAN

County	Station	Monthly Rainfall (mm)	Monthly Evaporation (mm)
Clare	Kilmaley	128.7	42.8
Cork	Fermoy (Moorepark)	92.9	44.4
Kerry	Valentia Observatory	111.0	53.0
Kildare	Poulaphuca	83.6	20.8
Mayo	Newport (Furnace)	113.5	24.2
Offaly	Derrygreenagh	52.8	20.5
Waterford	Dungarvan (Carriglea)	88.7	33.9
Wexford	Johnstown Castle	69.0	52.9

P.E. (Penman)

County/ Station	total for month(mm)		GLOBAL SOLAR RADIATION (MJ/sq. m.)			
			10-day totals			Total for month
			1-10	11-20	21-end	
Co. Clare	Shannon Airport	41				
Co. Cork	Cork Airport	33				
Co. Donegal	Malin Head	49	58.87	69.60	134.16	262.63
Co. Dublin	Dublin Airport	36	75.62	81.24	109.99	266.85
	Casement Aerodrome	36				
Co. Kerry	Valentia Obs.	42	63.92	83.99	145.46	293.37
Co. Kilkenny	Kilkenny	35	72.83	86.42	121.41	280.66
Co. Mayo	Belmullet	41	64.01	78.77	n/a	n/a
	Knock Airport	31				
Co. Monaghan	Clones	32	63.91	69.74	104.20	237.85
Co. Offaly	Birr	33	69.19	77.36	115.69	262.24
Co. Westmeath	Mullingar	31				
Co. Wexford	Rosslare	42				

SEE BACK PAGE OF JANUARY ISSUE FOR NOTES ON THE DATA

Thursday 1st: Showers in the west and north overnight and through the morning spread countrywide during the afternoon, dying out by evening. Long sunny spells everywhere. Frost set in during the evening. Winds were moderate, west or northwesterly for most of the day, falling light after dark.

Rainfall: nil to 3 mm, heaviest at Connacht Airport

Temperature: max. 9°C to 11°C, min. 0°C to 4°C, ground temperatures below zero at most stations, down to -7°C at Kilkenny

Sunshine: 6 to 9 hours, sunniest at Dublin Airport

Friday 2nd: Patchy rain and drizzle overnight in western areas, mostly dry elsewhere with clear spells and frost in most parts. Rain in the south spread to eastern areas by early morning, while remaining mainly dry further north. The rain continued in the south and southeast for the afternoon, with some well-scattered showers over the rest of the country. Sunny spells in the northwest, otherwise generally overcast. Winds were light, south or southwesterly.

Rainfall: 1 to 18mm, heaviest at Cork Airport, 1mm at Malin Head

Temperature: max. 8°C to 12°C, min. -2°C to 8°C, ground temperatures below zero at all stations, down to -8°C at Kilkenny

Sunshine: nil to 5 hours, sunniest at Belmullet

Saturday 3rd: Showers in the west overnight, dry elsewhere with clear spells and a widespread frost. Mainly dry, sunny weather during the morning with isolated showers in western areas. During the afternoon the showers became more widespread and heavy, but with some sunny spells also. The evening and night were clear in the north and east but cloudier elsewhere. Winds were generally light, southwesterly in direction.

Rainfall: nil to 3mm, heaviest at Malin Head, nil at Rosslare

Temperature: max. 9°C to 12°C, min. 1°C to 7°C, ground temperatures down to -5°C at Kilkenny

Sunshine: 6 to 10 hours, sunniest at Rosslare, 6 hours at Malin Head

Sunday 4th: Largely dry during the night, but rain moved into the southwest later. This rain was heavy and persistent at times and spread quickly to all parts during the morning. Clearer weather with scattered showers and sunny spells followed from the southwest in the afternoon. Most sunny spells in the southwestern quarter of the country. Light to moderate southeasterly winds at first increased strong to gale force and very gusty, reaching strong gale force 9 at times on exposed northern coasts.

Rainfall: 3 to 15mm, heaviest at Rosslare, 3mm at Malin Head

Temperature: max. 10°C to 13°C, min. 1°C to 5°C, ground temperatures down to -4°C at Dublin Airport

Sunshine: trace to 5 hours, sunniest at Shannon Airport

Monday 5th: Showers overnight, heaviest in the west. Mainly dry in the east and midlands during the morning. Rain reached the west coast by early afternoon and spread to all areas by evening, giving some very heavy falls, particularly in the south and west. Very little sunshine. Winds were south to southwesterly, strong to gale force with gusts throughout.

Rainfall: 2 to 29mm, heaviest at Valentia and Cork Airport, 2mm at Dublin Airport

Temperature: max. 9°C to 12°C, min. 1°C to 6°C, ground temperatures down to -1°C at Kilkenny

Sunshine: nil to >1 hour, sunniest at Clones and Malin Head

Tuesday 6th: It was a breezy day with scattered showers and sunny spells. Becoming cloudier in the afternoon. Afternoon temperatures were near normal. Cold inland after dark with a slight ground frost in places. Moderate to fresh and gusty southwesterly winds were strong at times on northwestern coasts. Winds eased gradually in the evening.

Rainfall: trace to 4mm, heaviest at Belmullet, trace at Clones

Temperature: max. 9°C to 12°C, min. 2°C to 7°C, ground temperatures down to -2°C at Kilkenny

Sunshine: 2 to 8 hours, sunniest at Clones, 2 hours at Cork Airport

Wednesday 7th: Showery rain moved into the southwest by late morning and spread countrywide during the day, before clearing the east coast by late evening. The rain was generally light but turned heavy in parts of Connacht and south Ulster. Sunny spells in the east and southeast. Winds were light westerly, increasing to fresh in Connacht and Munster, easing later.

Rainfall: nil to 11mm, heaviest at Connacht Airport, nil at Rosslare

Temperature: max. 8°C to 11°C, min. 0°C to 6°C, ground temperatures down to -6°C at Kilkenny

Sunshine: nil to 5 hours, sunniest at Dublin Airport, nil at Knock Airport

Thursday 8th: Mainly cloudy and dry during the morning. Rain or drizzle in western areas during the afternoon extended to all areas by evening, before clearing. A few sunny spells, mainly in the east and southeast. Some slight to sharp frost by late evening. Winds were southwesterly, light initially but becoming stronger during the day, up to gale force at times with stronger gusts.

Rainfall: 1 to 10mm, heaviest at Valentia, 1mm at Dublin Airport

Temperature: max. 10°C to 13°C, min. 0°C to 7°C, ground temperatures down to -6°C at Kilkenny

Sunshine: trace to 3 hours, sunniest at Dublin Airport

Friday 9th: Early showers continued during the morning, mainly in western and northern areas. Mostly dry and sunny weather elsewhere. The showers were more scattered during the afternoon and eventually died out by evening. Winds were westerly, moderate to strong with occasional gusts.

Rainfall: nil to 3mm, heaviest at Malin Head, nil at Rosslare

Temperature: max. 9°C to 13°C, min. 2°C to 6°C, ground temperatures down to -5°C at Kilkenny

Sunshine: 3 to 9 hours, sunniest at Kilkenny, 3 hours at Malin Head

Saturday 10th: Early drizzle in the west and northwest around dawn spread into the western half of the country during the morning and afternoon; this drizzle or light rain was patchy and generally died out by evening. Mild and mainly cloudy, but with some sunshine in the east. Winds were southwesterly, fresh to strong in the northern half of the country, moderate further south.

Rainfall: nil to trace generally, 1mm at Belmullet

Temperature: max. 10°C to 14°C, min. 3°C to 10°C, ground temperatures down to -4°C at Kilkenny

Sunshine: nil to 4 hours, sunniest at Casement Aerodrome

Sunday 11th: A dull day with no sunshine. In the west there were outbreaks of rain, heavy at times. A further band of rain reached the west coast by early afternoon and spread eastwards, giving some heavy falls. No frost. Winds were moderate southwesterly.

Rainfall: nil to 15mm, heaviest at Birr, nil at Rosslare

Temperature: max. 9°C to 12°C, min. 3°C to 9°C, no ground frost

Sunshine: nil

Monday 12th: Outbreaks of heavy rain in north Leinster at first, elsewhere there were clear spells overnight with showers affecting the west coast. A mainly dry and sunny day, with showers dying out during the afternoon as they moved eastwards. Winds were southwest to westerly, moderate to fresh.

Rainfall: nil to 3mm, heaviest at Casement Aerodrome, nil at Rosslare

Temperature: max. 10°C to 13°C, min. 3°C to 6°C, ground temperatures down to -6°C at Kilkenny

Sunshine: 7 to 10 hours, sunniest at Shannon Airport, 7 hours at Malin Head

Tuesday 13th: Outbreaks of rain moved eastwards across the country during the morning. Drier, clearer weather followed and the afternoon was mainly dry and mild with sunny spells and isolated showers. Winds were southwesterly, light to moderate, stronger at first on northwestern coasts.

Rainfall: nil to 6mm, heaviest at Knock Airport

Temperature: max. 11°C to 12°C, min. 1°C to 7°C, ground temperatures down to -7°C at Kilkenny

Sunshine: 2 to 7 hours, sunniest at Malin Head, 2 hours at Kilkenny

Wednesday 14th: A dry day in all areas. Sunny over the southern half of the country, particularly in the southeast, but overcast in the north. Light to moderate westerly winds, with gale gusts in the northwest.

Rainfall: nil

Temperature: max. 10°C to 14°C, min. -1°C to 9°C, ground temperatures down to -6°C at Kilkenny

Sunshine: nil to 3 hours generally, 9 hours at Rosslare, nil at Belmullet

Thursday 15th: Rain in northwestern counties extended countrywide during the morning, clearing the country during the late afternoon. Periods of sunshine in the western half of the country, but duller in eastern areas. Winds from a southwesterly direction early in the period, up to gale force at times, becoming much lighter during the afternoon and evening.

Rainfall: trace to 10mm, heaviest at Belmullet, trace at Rosslare

Temperature: max. 10°C to 11°C, min. -2°C to 7°C, ground temperatures below zero at all inland stations, down to -7°C at Birr

Sunshine: trace to 8 hours, sunniest at Belmullet, trace at Rosslare

Friday 16th: A dull, breezy day with outbreaks or rain and drizzle and very little sunshine. Rainfall amounts were small, with very little in southern areas. Winds were light to moderate southwesterly, increasing fresh to strong and gusty, turning northwesterly by evening.

Rainfall: nil to 2mm, heaviest at Knock Airport

Temperature: max. 9°C to 11°C, min. -2°C to 7°C, ground temperatures down to -8°C at Kilkenny

Sunshine: nil to trace generally, 1 hour at Rosslare

Saturday 17th: Rain reached the west coast by dawn and spread gradually across the country through the morning and afternoon. A clearance to showers followed into the west during the evening. Mild. Some early sunshine in the south and east, cloudy further west. Winds were westerly, moderate at first, backing southwesterly and increasing fresh to strong.

Rainfall: nil to 6mm, heaviest at Knock Airport, nil at Rosslare

Temperature: max. 11°C to 12°C, min. 4°C to 9°C, no ground frost

Sunshine: nil to 5 hours, sunniest at Cork Airport

Sunday 18th: Showers became widespread during the period and many of them were wintry. Temperatures were well below normal in the strong northerly airflow. Some sunny periods also. Slight to sharp frost set in after dark. Winds were northwesterly, becoming northerly, up to gale force or even storm force in northern areas with severe gusts.

Rainfall: 1 to 12mm, heaviest at Mullingar, 1mm at Rosslare

Temperature: max. 5°C to 12°C, min. 0°C to 3°C, ground temperatures down to -1°C at Kilkenny

Sunshine: 2 to 8 hours, sunniest at Rosslare, 2 hours at Malin Head

Monday 19th: Showers of sleet or snow in many areas during the day. Long sunny periods also, but temperatures well below normal. Frost becoming widespread after dark. Winds were north to northwesterly, fresh to strong, up to strong gale in northern areas and very gusty throughout.

Rainfall: 1 to 9mm, heaviest at Valentia, 1mm at Rosslare

Temperature: max. 6°C to 9°C, min. 0°C to 3°C, ground temperatures down to -2°C at Mullingar

Sunshine: 4 to 10 hours, sunniest at Rosslare, 4 hours at Malin Head

Tuesday 20th: Scattered light showers, some with hail, spread countrywide during the afternoon, before dying out everywhere after dark. Long sunny spells everywhere. Cool. Frost set in during the evening. Winds were north or northwesterly, generally strong to gale force, easing to light by late evening.

Rainfall: nil to 2mm, heaviest at Belmullet

Temperature: max. 5°C to 9°C, min. -1°C to 3°C, ground temperatures below zero, down to -9°C at Birr

Sunshine: 5 to 9 hours, sunniest at Kilkenny, 5 hours at Belmullet

Wednesday 21st: During the morning rain moved steadily eastwards, extending to all but eastern coastal areas by noon. Some sunny spells in the east during the morning, but a dull day overall. Temperatures were closer to normal in the west, but eastern areas were still cool. Winds were light and variable.

Rainfall: 1 to 5mm, heaviest at Malin Head, 1mm at Cork Airport

Temperature: max. 7°C to 11°C, min. -4°C to 4°C, ground temperatures below zero at all inland stations, down to -11°C at Kilkenny and Birr

Sunshine: nil to 1 hour generally, 3 hours at Rosslare

Thursday 22nd: Cloud decreased during the morning in most places, but rain and drizzle persisted in eastern areas. Rain cleared most places during the afternoon; sunshine in the north, but remaining mostly cloudy in the east. Clear spells after dark with very light winds. Slight ground frost in places.

Rainfall: nil to 1mm, heaviest at Clones

Temperature: max. 10°C to 13°C, min. 4°C to 8°C, ground temperatures down to -2°C at Valentia

Sunshine: 1 to 11 hours, sunniest at Malin Head, 1 hour at Casement Aerodrome

Friday 23rd: Dry during the day with sunny spells in most areas. A little light rain or drizzle in southwestern areas during the evening, otherwise dry. Mild, with daytime temperatures near or above normal, but sharp to severe frost returned to many areas again during the evening. Light variable winds.

Rainfall: nil generally, >1mm at Valentia

Temperature: max. 9°C to 14°C, min. 2°C to 7°C, ground temperatures down to -6°C at Kilkenny

Sunshine: 1 to 10 hours, sunniest at Kilkenny, 1 hour at Valentia

Saturday 24th: A dry and clear day in all but the west of the country, where it was generally cloudy. Very sunny in many places with near normal temperatures. Slight to sharp frost except in the west. Light variable winds.

Rainfall: nil to trace

Temperature: max. 9°C to 13°C, min. -2°C to 7°C, ground temperatures down to -7°C at Dublin Airport

Sunshine: <1 to 11 hours, sunniest at Rosslare, <1 hour at Belmullet

Sunday 25th: Another dry day, with most sunshine and highest temperatures in the west and north of the country. Cloudier in parts of the east and midlands, although the east coast had a sunny afternoon. Frost again after dark. Light to moderate variable winds.

Rainfall: nil to trace

Temperature: max. 9°C to 15°C, min. -2°C to 7°C, ground temperatures down to -9°C at Birr

Sunshine: 1 to 11 hours, sunniest at Belmullet, 1 hour at Casement Aerodrome

Monday 26th: After a cold night generally it was another dry and sunny day throughout. Most sunshine was recorded in coastal regions, while parts of the midlands and west were more overcast. Widespread frost after dark. Winds were light to moderate variable.

Rainfall: nil

Temperature: max. 10°C to 15°C, min. 0°C to 8°C, ground temperatures down to -6°C at Birr

Sunshine: 1 to 11 hours, sunniest at Malin Head, 1 hour at Knock Airport

Tuesday 27th: A cold, frosty night with widespread dense fog. The fog persisted into the afternoon in some inland areas. Long spells of sunshine near coasts, while in inland areas there was a slow clearance of fog and low cloud. Warm in the west, cooler further east. Winds were light and variable.

Rainfall: nil to trace generally, <1mm at Belmullet

Temperature: max. 11°C to 15°C, min. -2°C to 6°C, ground temperatures down to -7°C at Birr

Sunshine: 3 to 10 hours, sunniest at Valentia, 3 hours at Casement Aerodrome

Wednesday 28th: Cloudy during the morning with some light showers, dying out in all but western areas by evening. Clear conditions with long sunny periods between showers in western areas. Frost returned by late evening, sharp to severe in places. Winds were light variable, fresher on southern coasts.

Rainfall: nil to 5mm, heaviest at Belmullet

Temperature: max. 9°C to 11°C, min. 0°C to 5°C, ground temperatures down to -6°C at Clones

Sunshine: 1 to 9 hours, sunniest at Belmullet, 1 hour at Casement Aerodrome

Thursday 29th: Showers in the west during the morning, with some sunny spells elsewhere, especially in the south. Rain in the east and midlands during the afternoon, with showers and sunshine elsewhere. Winds were light to moderate, north to northeasterly in direction.

Rainfall: trace to 7mm, heaviest at Kilkenny, trace at Malin Head

Temperature: max. 8°C to 11°C, min. -1°C to 4°C, ground temperatures below zero at all stations, down to -5°C at Mullingar

Sunshine: 2 to 11 hours, sunniest at Shannon Airport

Friday 30th: Mainly dry overnight, apart from a couple of hours of steady drizzle in the extreme southeast. Mostly dry for the rest of the day. Long spells of sunshine in the north, west and southwest, duller further east. Winds were light, northerly in direction throughout.

Rainfall: nil generally, 2mm at Rosslare

Temperature: max. 9°C to 13°C, min. 3°C to 8°C, ground temperatures down to -1°C at Clones and Birr

Sunshine: nil to 8 hours, sunniest at Malin Head, nil at Dublin Airport

Saturday 31st: A dry day in all areas. The northwest and north were sunniest, while clouds persisted for much of the day in parts of Leinster. Becoming warm in the afternoon sunshine in the northwest, however the onshore northeasterly breezes kept temperatures lower in the east and southeast. Winds were northeasterly, light to moderate with stronger gusts in the southeast.

Rainfall: nil

Temperature: max. 10°C to 15°C, min. 4°C to 8°C, ground temperatures down to -2°C at Clones

Sunshine: 4 to 11 hours, sunniest at Belmullet, 4 hours at Casement Aerodrome

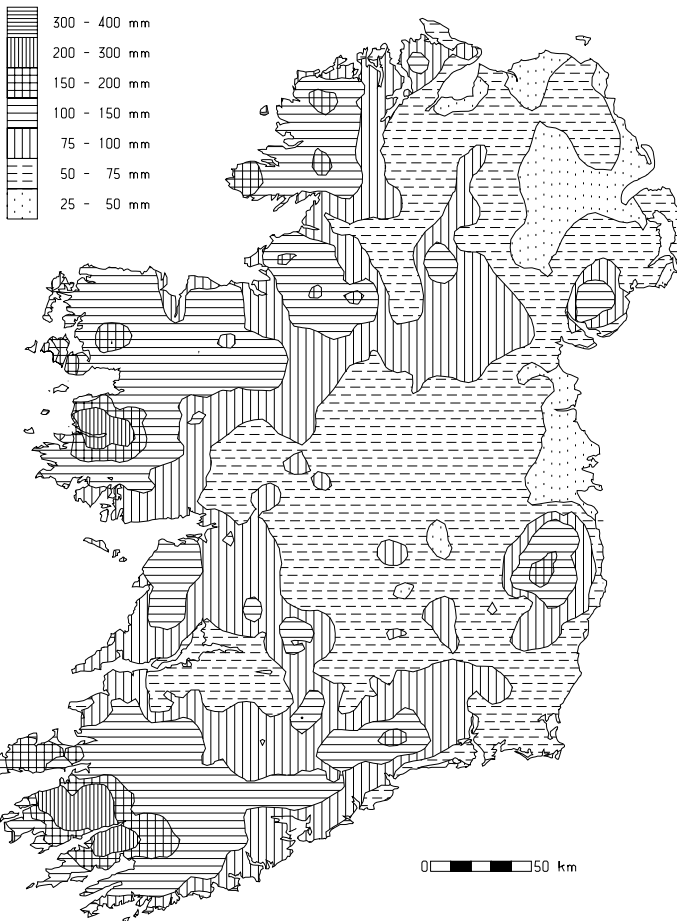
Dry in extreme north, but near normal generally

Rainfall totals for the month were within 25% of normal over almost all of the country, but percentages of normal rainfall were lowest in the extreme north. Totals ranged from 41mm at Dublin (Merrion Square) to 173mm at Maam Valley, Co. Galway, with percentage of normal values between 69% at Malin Head and 136% at Straide, Co. Mayo.

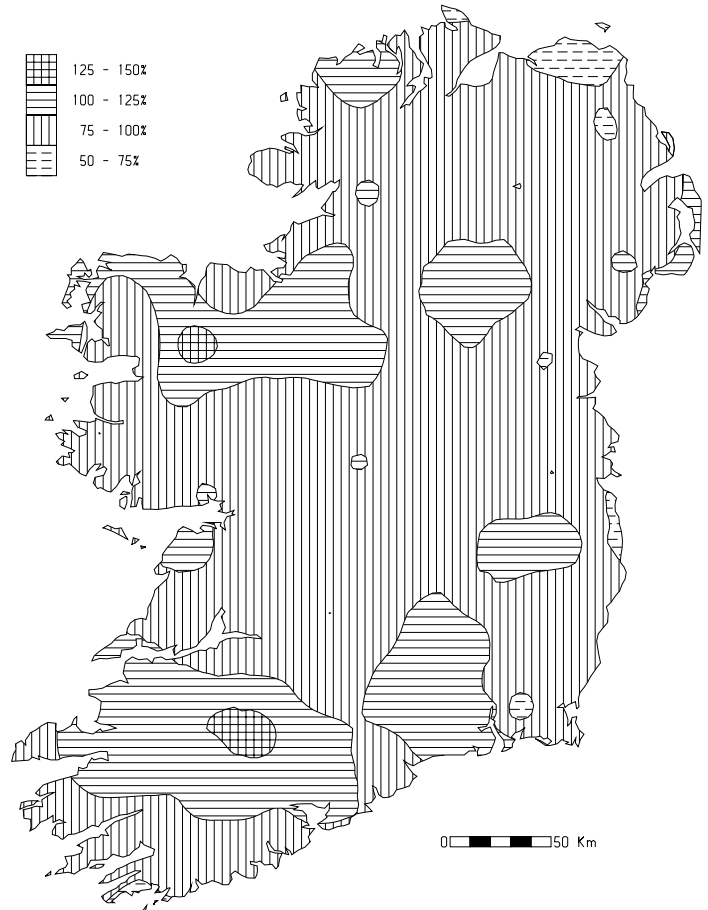
Rainfall was unevenly distributed throughout the month, with most rain falling in the periods 4th to 8th, on the 11th and in the period 17th to 19th. Rainfall amounts during the last ten days of March were small. The month's highest daily value, 43.4mm, was recorded at Maam Valley on the 5th. There were between 12 and 18 wetdays (days with 1mm or more rainfall) during the month over most of the country, close to normal for March, but only 9 wetdays were recorded at some stations in the east and southeast.

<i>County/ Station</i>	Total Amount (mm)	% of 1961-90 average	Most in a day / date		Number of Raindays (≥0.2mm)	Wetdays (≥1mm)
CO. CAVAN						
CAVAN (LORETO COLLEGE)	85.4		15.2	5	23	16
CO. CLARE						
SHANNON AIRPORT	62.1	87	15.1	11	18	12
CARRON	120.5	101	25.7	5	22	16
CO. CORK						
FERMOY (MOORE PARK)	92.9	118	27.5	5	16	12
CORK AIRPORT	89.3	92	28.7	5	16	12
SHERKIN ISLAND	72.2	74	16.3	5	14	12
BALLINCURRIG (PEAFIELD)	117.5		28.2	5	16	12
CO. DONEGAL						
MALIN HEAD	59.7	69	6.7	17	19	14
BALLYSHANNON (CATHLEEN'S FALL)	85.7	97	16.0	5	21	15
GLENTIES	123.0	93	18.1	5	23	22
CO. DUBLIN						
DUBLIN (PHOENIX PARK)	49.7	87	9.4	11	18	12
DUBLIN AIRPORT	62.1		15.1			
CASEMENT AERODROME	46.0	92	13.8	11	17	9
DUBLIN (MERRION SQUARE)	40.5	78	9.5	3	15	11
CO. GALWAY						
GALWAY (UNIV. COLL.)	90.2	101	20.4	5	19	15
MAAM VALLEY	173.1		43.4	5	23	19
CONNEMARA NATIONAL PARK	119.8	91	28.9	5	22	17
BALLYGAR	70.4	85	17.8	5	21	12
CO. KERRY						
VALENTIA OBSERVATORY	111.0	91	30.1	5	21	18
ARDFERT (LISCAHANE)	95.4		22.6	5	18	14
CO. KILKENNY						
KILKENNY	70.3	112	13.3	2	17	13
CO. LIMERICK						
MOUNT RUSSELL	102.3		24.7	11	20	15
CO. LOUTH						
ARDEE (BOHARNAMOE)	45.7	73	9.5	11	15	13
CO. MAYO						
BELMULLET	100.1	104	17.8	5	23	17
STRAIDE	132.0	136	29.9	5	23	18
CONNAUGHT AIRPORT	115.8		21.8	5	23	18
CO. MEATH						
WARRENSTOWN	54.8	83	12.6	11	18	13
CO. MONAGHAN						
CLONES	80.0	103	12.3	11	21	15
CO. OFFALY						
BIRR	57.7	95	15.3	11	18	13
DERRYGREENAGH	52.8	79	13.5	11	20	12
CO. SLIGO						
ARDTARMON	85.7		15.8	5	18	17
CO. TIPPERARY						
FETHARD (PARSONSHILL)	79.5		14.7	11	17	15
CO. WATERFORD						
WATERFORD (TYCOR)	89.7	111	19.9	5	15	13
DUNGARVAN (CARRIGLEA)	88.7		22.3	5	14	11
CO. WESTMEATH						
MULLINGAR II	65.3	89	12.7	18	18	13
CO. WEXFORD						
JOHNSTOWN CASTLE	69.0	87	16.4	5	14	9
ROSSLARE	58.8	88	14.3	2	10	10
JOHN F. KENNEDY PARK	81.6	103	20.0	5	13	13
CLONROCHE (KNOXTOWN)	87.1		28.7	5	14	12

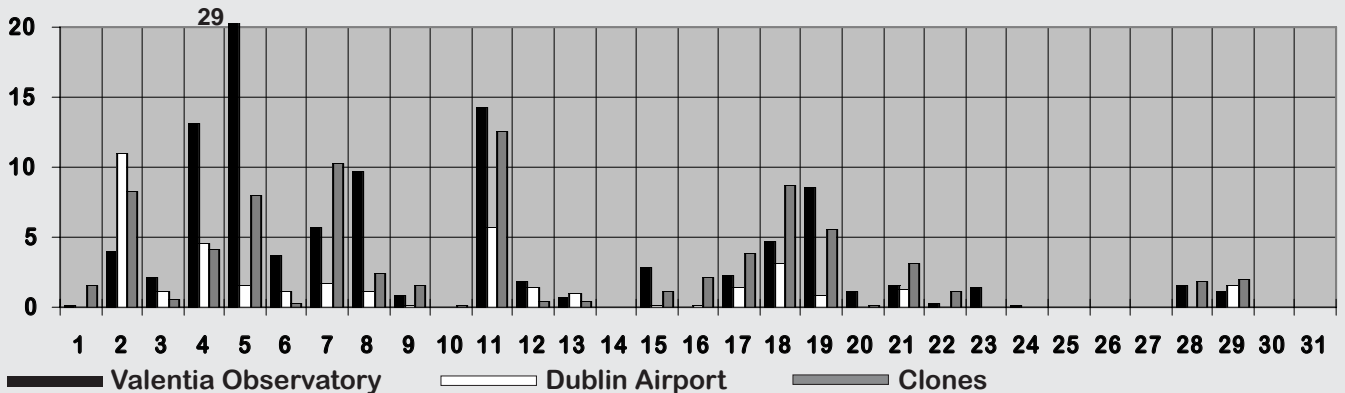
Total rainfall (mm)



Percentage of normal rainfall



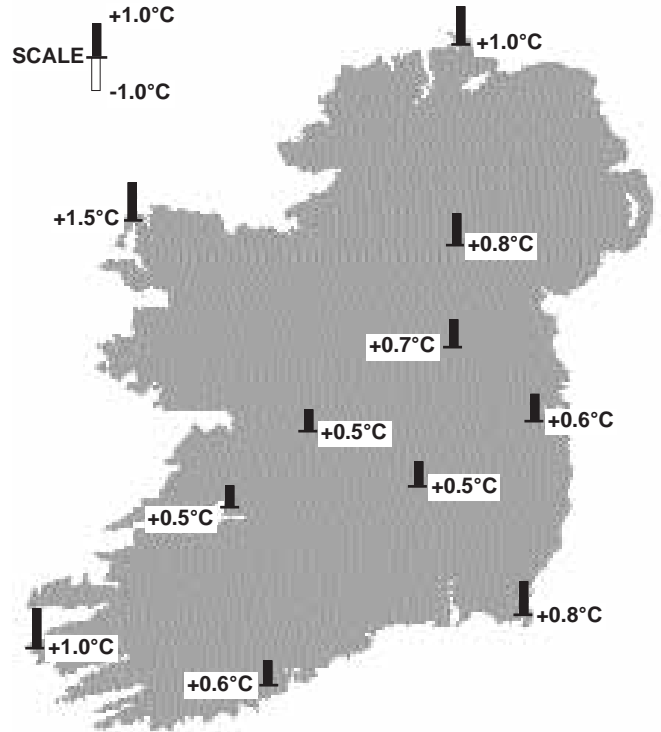
Daily 0-24h rainfall values (mm)



Mild for most of month, but more ground frost than normal

Temperatures were above normal throughout much of March, but fell below normal during the period 17th to 21st. Mean air temperatures for the month were between half a degree and one degree higher than normal generally, but a degree or more above normal near Atlantic coasts. They ranged from 5.9°C at Knock Airport to 8.9°C at Sherkin Island, Co. Cork.

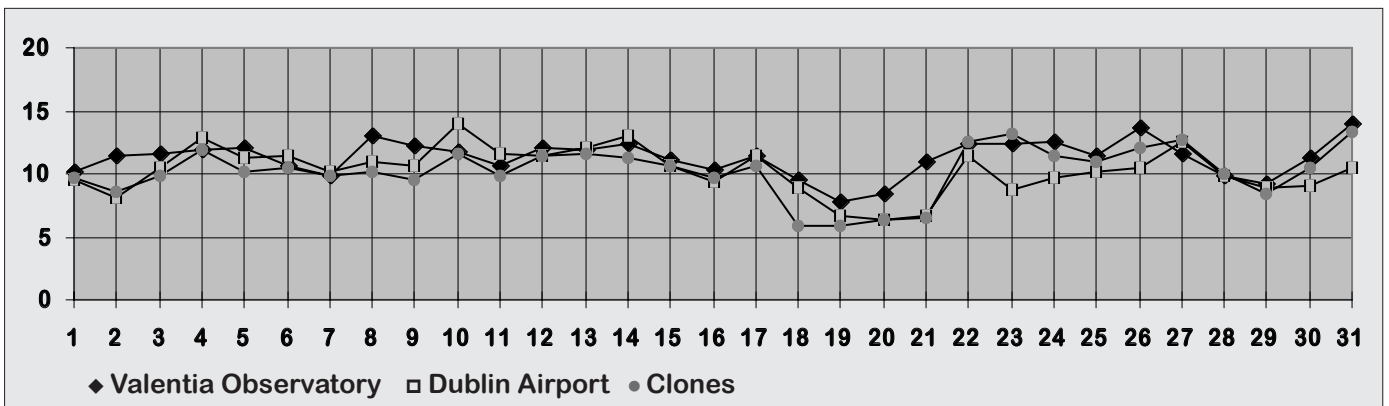
Daytime temperatures were above normal throughout almost all of the month, but they dipped close to freezing on several nights. Ground frost was much more frequent than normal; on average there are between 6 and 14 ground frosts in a normal March, but some inland stations recorded more than 20 ground frosts this month. Kilkenny's mean minimum temperature of 2.2°C was its lowest for March since 1989. The lowest air temperature of the month, -3.7°C, was measured at Casement Aerodrome on the 21st, while the lowest grass minimum value of -10.5°C was recorded at both Birr and Kilkenny, also on the 21st. The month's warmest weather was



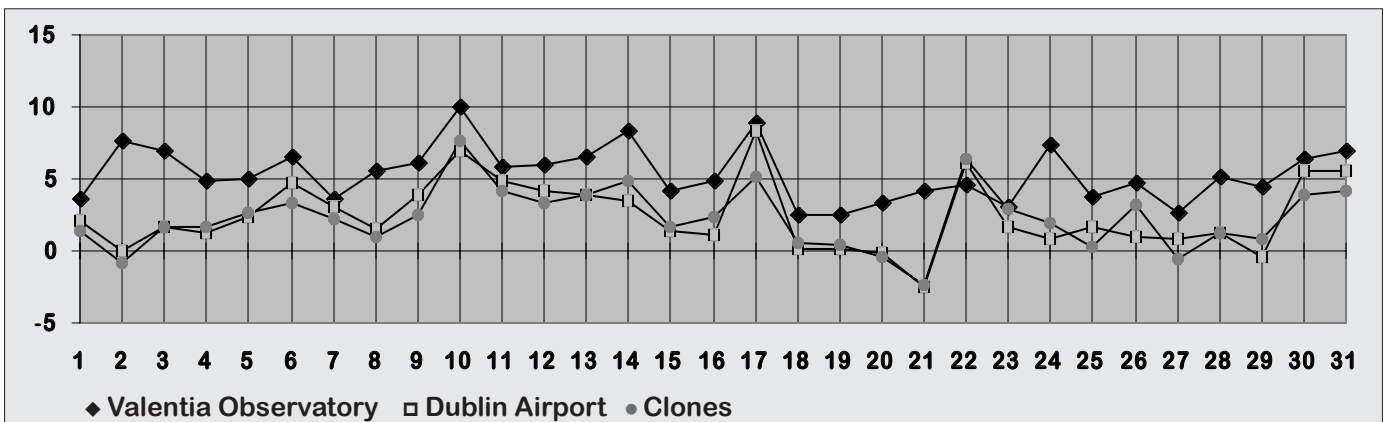
Mean Temperature
(difference from 1961-90 normals)

recorded during the last week, with the highest temperature, 16.4°C, measured at Glenties, Co. Donegal, on the 31st.

Daily 0-24h maximum temperatures (°C)



Daily 0-24h minimum temperatures (°C)



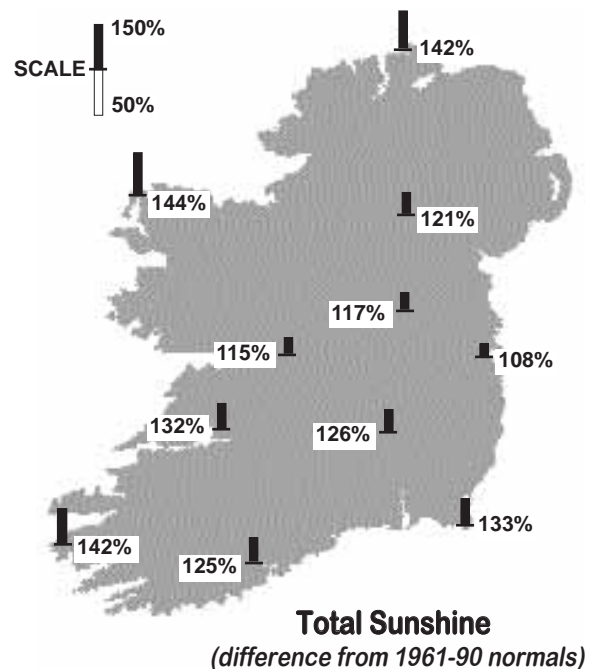
County/ Station	°C									
	Mean max.	Mean min.	Mean/ deviation from 1961-90 average		Highest max./date	Lowest min./date	Lowest grass min./date		Days with air frost ground frost	
CO. CAVAN										
CAVAN (LORETO COLLEGE)	10.8	1.9	6.4		13.7 27	-2.9 21	-4.5 2	7	14	
CO. CLARE										
SHANNON AIRPORT	11.2	4.0	7.6	0.5	13.9 14 27	-0.1 21	-4.3 21	1	15	
CARRON	10.4	3.1	6.8	1.0	14.2 27	0.3 19 21	-4.8 2 21	0	19	
CO. CORK										
FERMOY (MOORE PARK)	11.2	2.7	7.0	0.6	14.5 27	-1.1 16	-6.2 2	4	23	
CORK AIRPORT	10.3	3.4	6.9	0.6	13.5 31	0.4 19	-5.0 2	0	18	
SHERKIN ISLAND	11.7	6.0	8.9	1.3	15.4 31	2.4 21 25	-1.4 25	0	3	
BALLINCURRIG (PEAFIELD)	11.0	1.9	6.5		15.8 27	-2.0 21	-4.0 21	4	18	
CO. DONEGAL										
MALIN HEAD	10.0	4.8	7.4	1.1	12.5 10 24	0.7 21	-2.4 21	0	8	
BALLYSHANNON (CATHLEEN'S FALL)	10.9	3.9	7.4	1.3	15.1 31	0.1 21		0		
GLENTIES	11.2	2.6	6.9	1.1	16.4 31	-1.6 21	-4.2 27	4	17	
CO. DUBLIN										
DUBLIN (PHOENIX PARK)	10.7	2.7	6.7	0.5	15.0 10	-2.4 21	-6.0 21	5	19	
DUBLIN AIRPORT	10.3	2.8	6.6		14.0 10	-2.5 21	-7.3 2	2	16	
CASEMENT AERODROME	10.4	2.9	6.7	0.6	14.3 10	-3.7 21	-6.9 21	2	14	
DUBLIN (MERRION SQUARE)	10.5	5.1	7.8	0.5	14.8 10	0.3 21		0		
CO. GALWAY										
GALWAY (UNIV. COLL.)	11.6	3.7	7.7	0.8	15.8 24	0.4 21	-3.5 27	0	16	
MAAM VALLEY	11.5	4.3	7.9		15.4 31	0.2 21	-2.8 26	0	11	
CONNEMARA NATIONAL PARK	11.1	4.4	7.8		15.8 31	0.9 27		0		
BALLYGAR	11.2	2.7	7.0		14.5 13 31	-1.4 21	-3.0 21	2	13	
CO. KERRY										
VALENTIA OBSERVATORY	11.2	5.9	8.6	1.0	14.0 31	2.5 19	-2.4 16	0	9	
ARDFERT (LISCAHANE)	12.1	4.1	8.1	1.0	15.9 26	0.9 27	-6.1 27	0	24	
CO. KILKENNY										
KILKENNY	11.2	2.2	6.7	0.5	15.4 27	-3.2 21	-10.5 21	4	22	
CO. LIMERICK										
MOUNT RUSSELL	10.3	3.6	7.0							
CO. LOUTH										
ARDEE (BOHARNAMOE)	10.3	2.0	6.2	0.4	13.3 13	-3.0 8	-3.8 8	5	18	
CO. MAYO										
BELMULLET	11.4	5.4	8.4	1.5	15.1 27	2.3 21 29	-2.1 21	0	4	
STRAIDE	11.3	2.8	7.1	0.8	16.0 31	-1.0 25	-6.3 25	5	20	
KNOCK AIRPORT	9.3	2.5	5.9		13.9 31	-0.5 21	-4.1 21	2	9	
CO. MEATH										
WARRENTOWN	10.6	2.4	6.5	0.6	14.5 28	-2.3 21	-6.1 25	6	23	
CO. MONAGHAN										
CLONES	10.3	2.6	6.5	0.8	13.3 31	-2.3 21	-6.8 21	3	18	
CO. OFFALY										
BIRR	10.9	2.6	6.8	0.5	14.0 27	-3.0 21	-10.5 21	4	21	
DERRYGREENAGH	10.8	2.2	6.5	0.9	14.2 14	-2.3 21	-5.8 24	5	23	
CO. SLIGO										
ARDTARMON	11.1	4.4	7.8		14.7 31	1.4 20 21	-3.2 21	0	9	
CO. TIPPERARY										
FETHARD (PARSONSHILL)	10.3	2.7	6.5		14.1 27	-2.3 21	-5.0 21	2	15	
CO. WATERFORD										
WATERFORD (TYCOR)	11.8	4.1	8.0	1.4	15.2 27	-0.5 21		1		
DUNGARVAN (CARRIGLEA)	11.7	3.2	7.5	0.7	14.6 31	-2.5 21	-3.5 21	4	10	
CO. WESTMEATH										
MULLINGAR II	10.5	2.2	6.4	0.7	13.6 31	-2.7 21	-6.8 21	5	16	
CO. WEXFORD										
JOHNSTOWN CASTLE	10.7	3.8	7.3	0.9	14.0 12	0.2 21	-3.9 2	0	16	
ROSSLARE	10.3	5.1	7.7	0.8	12.2 9 13	1.2 19	-1.0 16 21	0	7	
JOHN F. KENNEDY PARK	11.0	3.3	7.2	0.8	14.0 27	-0.7 21	-2.2 21	1	12	
CLONROCHE (KNOXTOWN)	10.5	2.0	6.3		14.9 27	-2.1 2	-6.0 2	5	21	

County/ Station	Daily mean (hours/day)	% of average	% of possible	Most in a day/date
CO. CAVAN				
CAVAN (LORETO COLLEGE)	3.58		30	8.7 20
CO. CLARE				
SHANNON AIRPORT	4.40	132	37	11.0 29
CO. CORK				
FERMOY (MOORE PARK)	4.22	131	35	10.0 31
CORK AIRPORT	4.37	125	37	10.9 29
SHERKIN ISLAND	4.68		39	10.9 29
BALLINCURRIG (PEAFIELD)	4.56			10.3 29
CO. DONEGAL				
MALIN HEAD	4.34	142	37	10.7 22
BALLYSHANNON (CATHLEEN'S FALL)	4.64	153	39	10.2 31
CO. DUBLIN				
DUBLIN AIRPORT	4.32	122	36	10.1 24
CASEMENT AERODROME	3.51	108	29	9.8 26
CO. GALWAY				
GALWAY (UNIV. COLL.)	5.07	150	43	10.0 29
CO. KERRY				
VALENTIA OBSERVATORY	4.32	142	37	10.3 29
ARDFERT (LISCAHANE)	4.07		34	9.9 29
CO. KILKENNY				
KILKENNY	4.16	126	35	10.4 23
CO. MAYO				
BELMULLET	4.74	144	40	11.1 31
STRAIDE	4.23			10.3 31
KNOCK AIRPORT	4.17			10.7 31
CO. MONAGHAN				
CLONES	3.65	121	31	8.8 20
CO. OFFALY				
BIRR	3.64	115	31	8.7 9 12
CO. WATERFORD				
DUNGARVAN (CARRIGLEA)	4.30	126	36	10.1 9
CO. WESTMEATH				
MULLINGAR II	3.86	117	32	9.7 12
CO. WEXFORD				
JOHNSTOWN CASTLE	n/a			
ROSSLARE	5.14	133	43	11.0 24
JOHN F. KENNEDY PARK	4.69		39	9.7 31
CLONROCHE (KNOXTOWN)	4.65	140		9.2 12 20

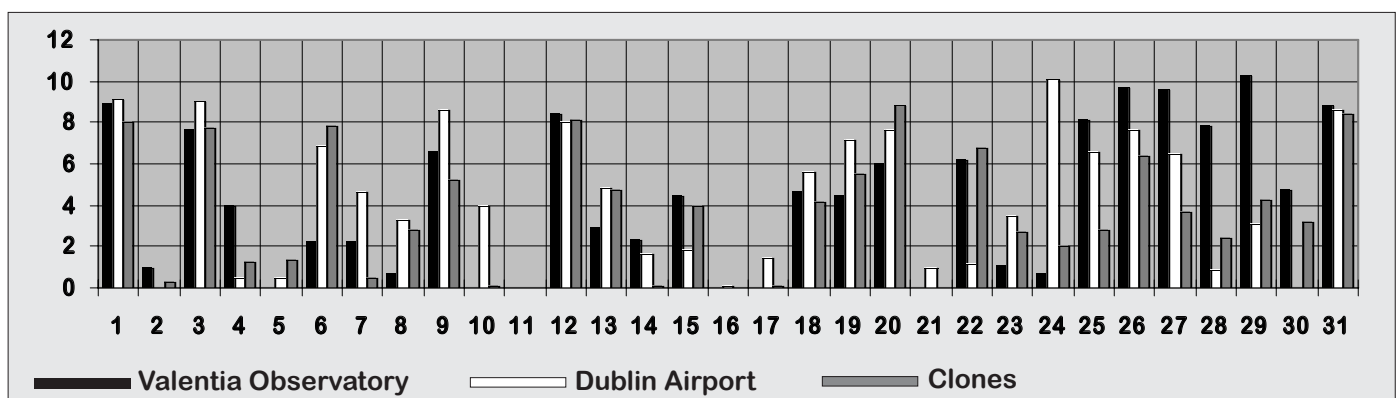
Sunnier than normal everywhere

March sunshine totals were above normal everywhere and were well above normal at Atlantic coastal stations. Totals ranged from 109 hours, representing 108% of normal, at Casement Aerodrome, to 144 hours, or 153% of normal, at Ballyshannon (Cathleen's Fall), Co. Donegal.

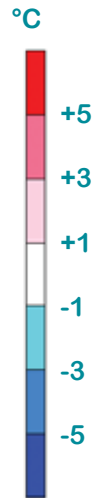
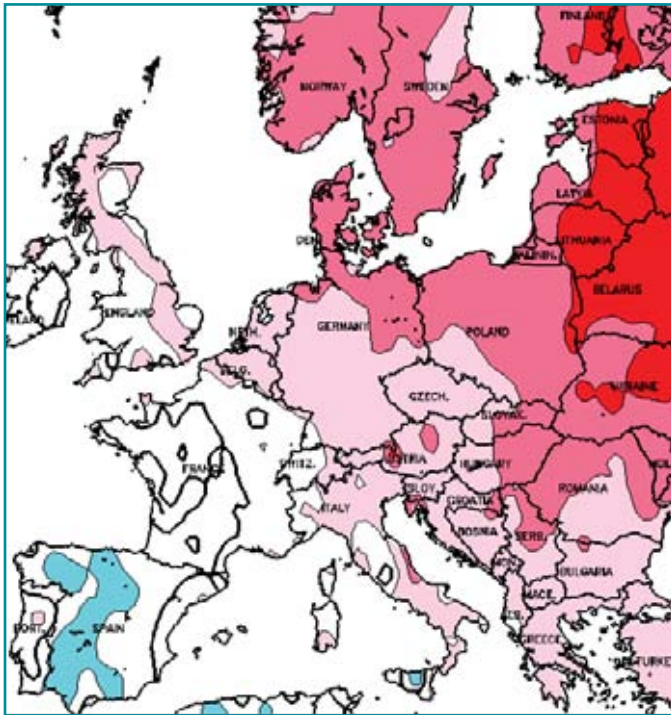
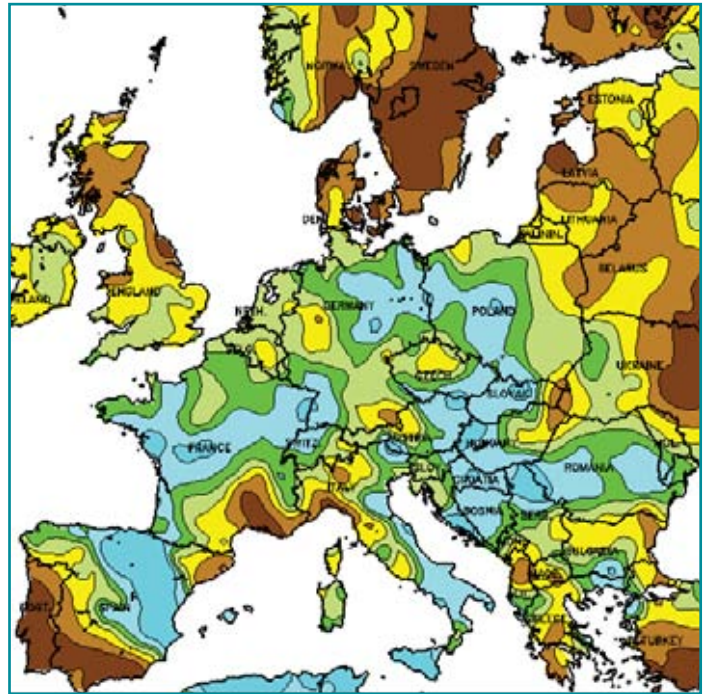
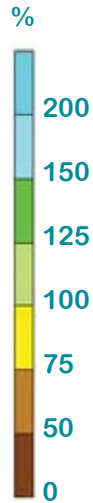
There were some individual sunny days during the first half of the month with daily values of 8 hours or more, notably on the 1st, 3rd, 9th and 12th, but by far the sunniest spell was during the last week. Belmullet recorded the highest daily sunshine, 11.1 hours on the 31st; Shannon Airport's value of 11.0 hours on the 29th was its highest March value since 1970. Global solar radiation totals ranged from 102% of normal at Birr to 119% at Malin Head.



Daily sunshine values (hours)



MARCH RAINFALL
(Percentage of 1961-1990 normal)



MARCH MEAN AIR TEMPERATURES
(difference from 1961-1990 normal)

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

There was an early start to the tornado season in the southern USA, when severe thunderstorms produced tornadoes on the 1st, killing 19 people in Alabama and Georgia. Another set of tornadoes developed in Kansas, Oklahoma and Texas on the 28th, killing 4 people.

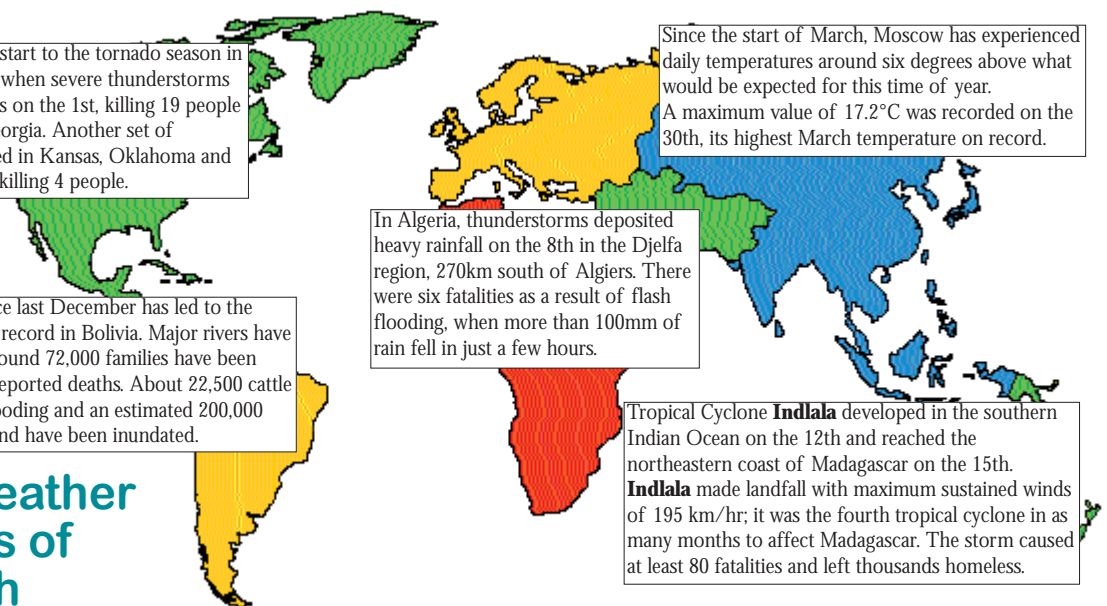
Persistent rain since last December has led to the worst flooding on record in Bolivia. Major rivers have overflowed and around 72,000 families have been affected, with 35 reported deaths. About 22,500 cattle drowned in the flooding and an estimated 200,000 hectares of cropland have been inundated.

In Algeria, thunderstorms deposited heavy rainfall on the 8th in the Djelfa region, 270km south of Algiers. There were six fatalities as a result of flash flooding, when more than 100mm of rain fell in just a few hours.

Since the start of March, Moscow has experienced daily temperatures around six degrees above what would be expected for this time of year. A maximum value of 17.2°C was recorded on the 30th, its highest March temperature on record.

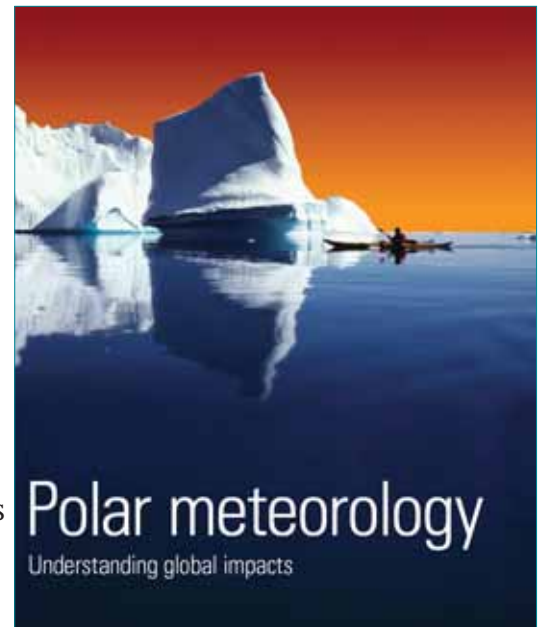
Tropical Cyclone **Indlala** developed in the southern Indian Ocean on the 12th and reached the northeastern coast of Madagascar on the 15th. **Indlala** made landfall with maximum sustained winds of 195 km/hr; it was the fourth tropical cyclone in as many months to affect Madagascar. The storm caused at least 80 fatalities and left thousands homeless.

Global weather highlights of the month



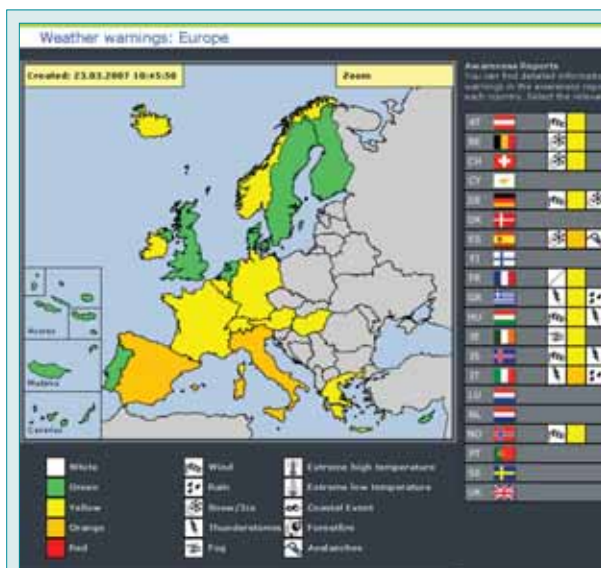
Global Impacts of Changes in Polar Climate

The theme of World Meteorological Day this year was "Polar meteorology: understanding global impacts". World Meteorological Day is held on March 23rd every year to commemorate the establishment in 1950 of the World Meteorological Organisation (WMO), which represents the national Meteorological and Hydrological Services of 187 countries worldwide. The aim of this year's theme was to highlight the advances which have been made in our understanding of the role of polar regions in the global climate system. In recent years, there has been an unprecedented level of interest in the climate and environmental conditions of the polar regions. Shrinking sea-ice, melting ice sheets, the discharge of glaciers and thawing of permafrost are all dramatic changes that have been taking place in these areas owing to an increase in global average temperature. In addition, the discovery of the Antarctic ozone hole and the high levels of aerosols reaching the Arctic have received much attention. Moreover, climate model predictions indicate that high-latitude areas will warm more than any other region over the next century as a result of increasing levels of greenhouse gases.



It is evident that the increased average rate of sea-level rise resulting from the melting of ice of land origin has significant implications for low-lying and coastal areas. The Greenland and Antarctic ice sheets contain 9 and 90 per cent, respectively, of the world's glacier ice. If both of these ice sheets melted completely, they would contribute 7m and 70m, respectively, to sea-level rise. While such a dramatic occurrence is not expected, even on a time-scale of hundreds of years or millennia, the melting of a small fraction of this ice would nonetheless have serious implications for global sea-level rise and also for ocean circulation. Ocean circulation changes affect not only global temperature, but also result in variations in salinity and organic substances in tropical areas, which may lead to a significant impact on fish stocks and the marine environment. Although the polar regions are remote from major populated areas, they are of great significance in the global climate system; changes at high latitudes can have an impact on ecosystems and human society through factors such as sea-level rise and variations in atmospheric and oceanic circulations. That is why even countries geographically far removed from the poles have a real concern regarding changes in the polar environment and are participating in International Polar Year 2007-2008. This study of polar meteorology, oceanography, glaciology and hydrology will generate comprehensive data through scientific research and observations, with the aim of developing environmental monitoring and forecasting systems, including severe weather prediction, as well as providing valuable contributions to the assessment of climate change and its impacts.

More information is available on the WMO website: www.wmo.ch/wmd



World Meteorological Day also saw the official launch of the website www.meteoalarm.eu. This site is regularly updated and provides a snapshot of where severe and potentially dangerous weather might occur in the following 48-hour period over western Europe. **Meteoalarm.eu** has been developed by Eumetnet, the European weather services network, with the support of WMO- the warnings are provided by participating national weather services. The website is easy to understand, using a combination of symbols and colour codes to represent different types and severity of weather events. The service includes a wide range of weather phenomena such as heavy rainfall with flooding, coastal storm surges and high tides, thunderstorms, extremes of heat or cold, snow and avalanches.

For the latest information from Meteoalarm visit: www.meteoalarm.eu