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## Monthly Weather Bulletin February 2010

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# Monthly Weather Bulletin

No. 286

FEBRUARY 2010



The very cold weather of previous months continued during February, with severe frost and snow at times- this image was taken in the Comeragh Mountains, Co. Waterford, on the 8th. (picture courtesy Liam Dunne)

## COLDEST FEBRUARY SINCE 1986; DRY AND VERY SUNNY

February was the third successive month with mean temperatures well below normal. After a relatively mild start, the weather pattern reverted to that of much of the previous winter months, with an airstream of Arctic origin bringing widespread frosts and spells of sleet or snow at times. Mean air temperatures this month were around two degrees below normal and it was the coldest February everywhere since 1986. Mean minimum temperatures of between  $-1^{\circ}\text{C}$  and  $+2^{\circ}\text{C}$  were between two and three degrees below normal and they were the lowest for February in some places for over 40 years. Air frost was very frequent from the 9th onwards and was severe at times; there were between 17 and 21 air frosts during the month at inland stations compared with the normal range for February in these areas of between five and nine.

Rainfall totals for the month were below normal almost everywhere and were only around half of the normal for February in many places. The heaviest falls at most stations were during the first week, particularly on the 4th. Much of the



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*Another very sunny month in south*

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*Very cold winter over northern Europe*

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



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

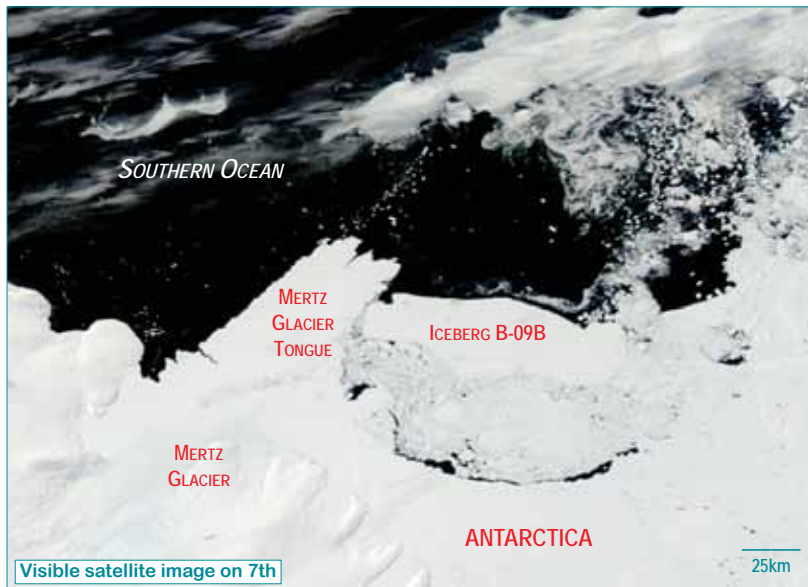
precipitation during the second half of the month was wintry in nature, with some accumulation of snow in northern and upland areas. There was a total of between 7 and 12 wetdays generally

(days with 1mm or more rainfall), compared with the normal range for February of between 12 and 15 wetdays. Sunshine totals varied widely; while it was relatively dull in the east, sunshine totals were again well above normal at some western and southern stations, for the fourth successive month. The period around mid-month was particularly sunny and it was the sunniest February for over 40 years in the south and southwest.

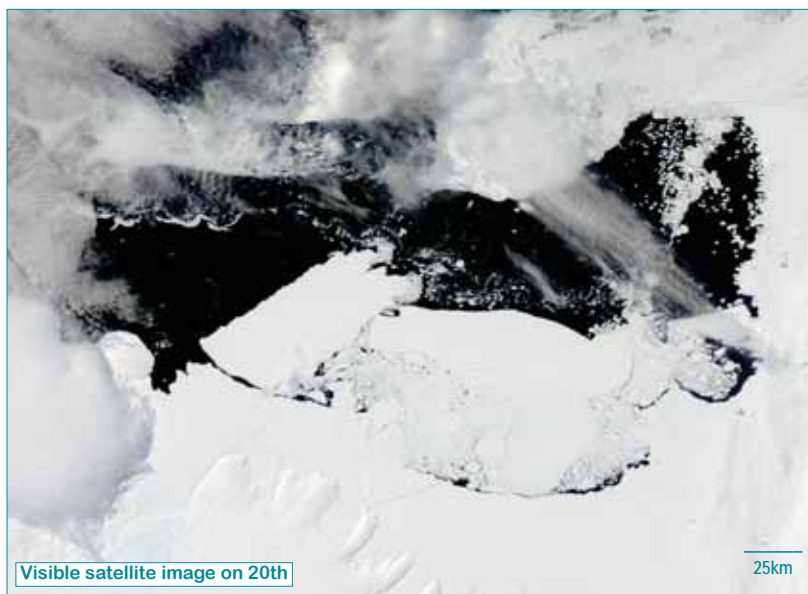
**1st to 6th:** Frontal systems moved across Ireland, bringing spells of rain or showers; these were heaviest over the south of the country on the 4th and 5th. This period was mild and generally cloudy, with daytime temperatures slightly above normal and little air frost. Winds were variable in direction, strongest on the 4th and 5th.

**7th to 14th:** An anticyclone to the north of Ireland moved slowly southwards across the country, bringing mainly dry but much colder weather. A few light showers affected coastal stations, but mainly clear conditions brought long sunny spells on most days, with widespread and occasionally severe frost developing. Winds were light easterly, backing northerly.

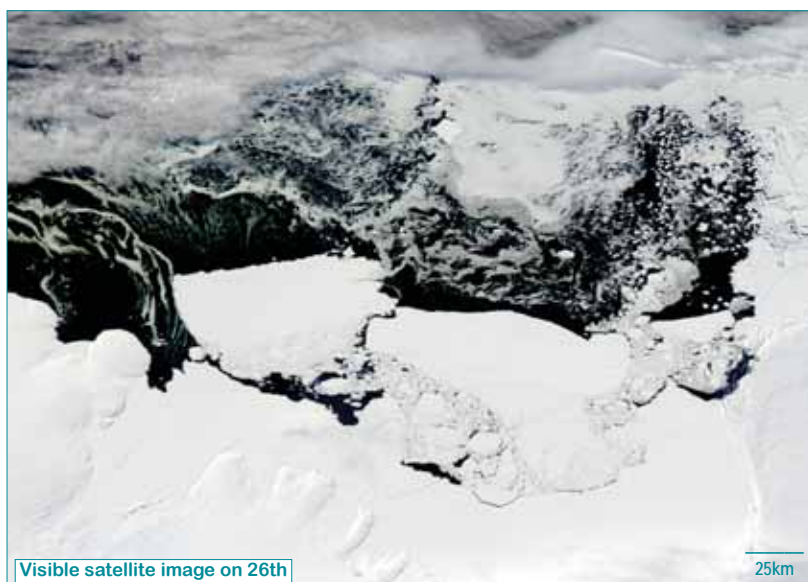
**15th to 28th:** Slow-moving depressions brought spells of rain, sleet or snow at times, while temperatures remained below normal. Precipitation amounts were generally small, however, apart from the 23rd/24th and the 26th in northern areas, and there was little accumulation of snow except on higher ground. Frost and fog developed on most nights, and frost was again severe in places. East to northeasterly winds at first backed westerly later,



Visible satellite image on 7th



Visible satellite image on 20th



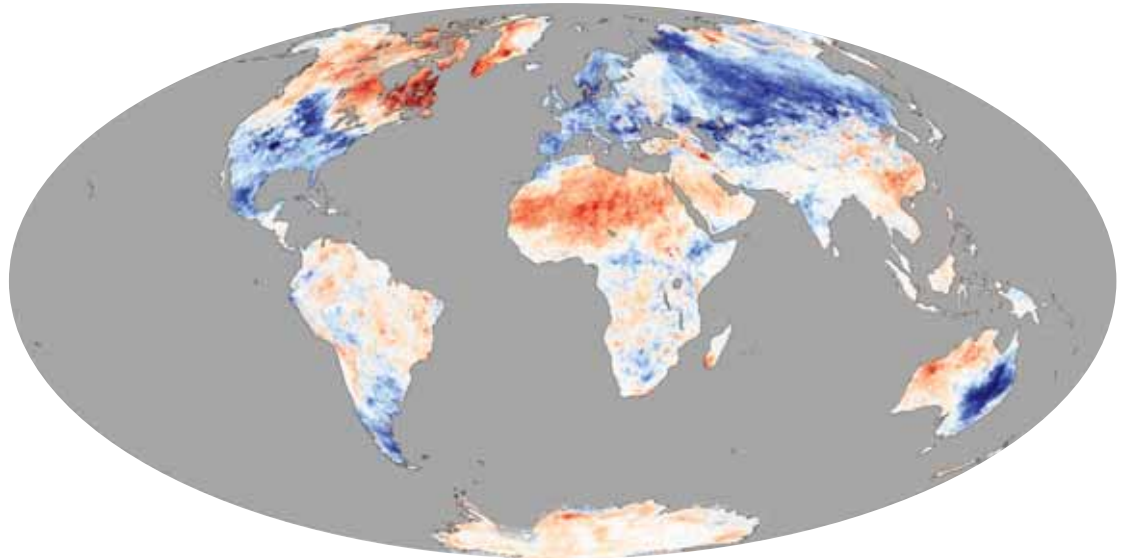
Visible satellite image on 26th

#### Left

After lingering near the Mertz Glacier in eastern Antarctica for several years, the massive iceberg known as B-09B collided with the glacier tongue in mid-February, breaking it off from the rest of the glacier, to form a new iceberg of almost equal size, measuring 78 by 39 kilometers and with a mass of between 700 and 800 billion tons. The glacier tongue had previously contributed to keeping a section of the ocean free of ice, an area known as a polynya. The polynya provided a significant feeding site for wildlife such as penguins; the shorter tongue may not protect the area from sea ice, reducing or even eliminating the polynya and the access to food it provided. The images shown here are all from the Moderate Resolution Imaging Spectroradiometer (MODIS) sensor on NASA's Aqua satellite, showing the iceberg and glacier tongue immediately before and after the collision. (Images courtesy NOAA Earth Observatory)

**Right**

Despite cold conditions over much of Europe and central Asia, February was the sixth warmest on record globally, according to NOAA's National Climatic Data Centre, whose records extend back to 1880. February land temperatures in the southern hemisphere were the highest on record, but the relatively low northern hemisphere values were due in part to the much-above average amount of snow on the ground. February 2010 snow cover in the northern hemisphere was the 3rd highest in the 44-year snow cover record.

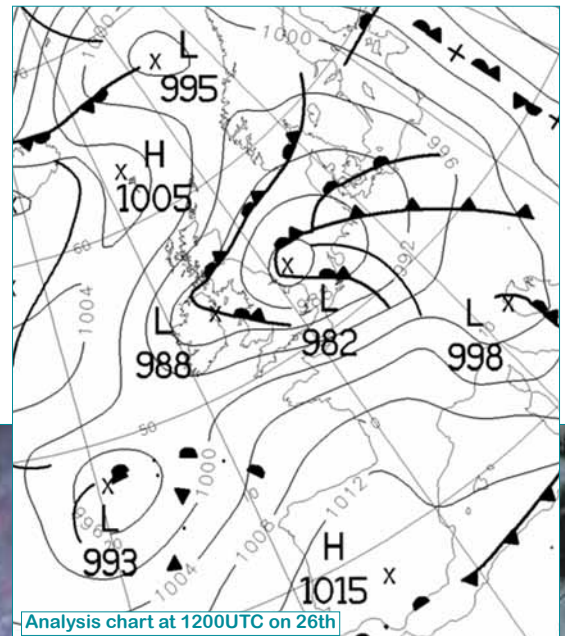


-12      -6      0      +6      +12  
 FEBRUARY SURFACE TEMPERATURE ANOMALY FOR LAND AREAS (°C)

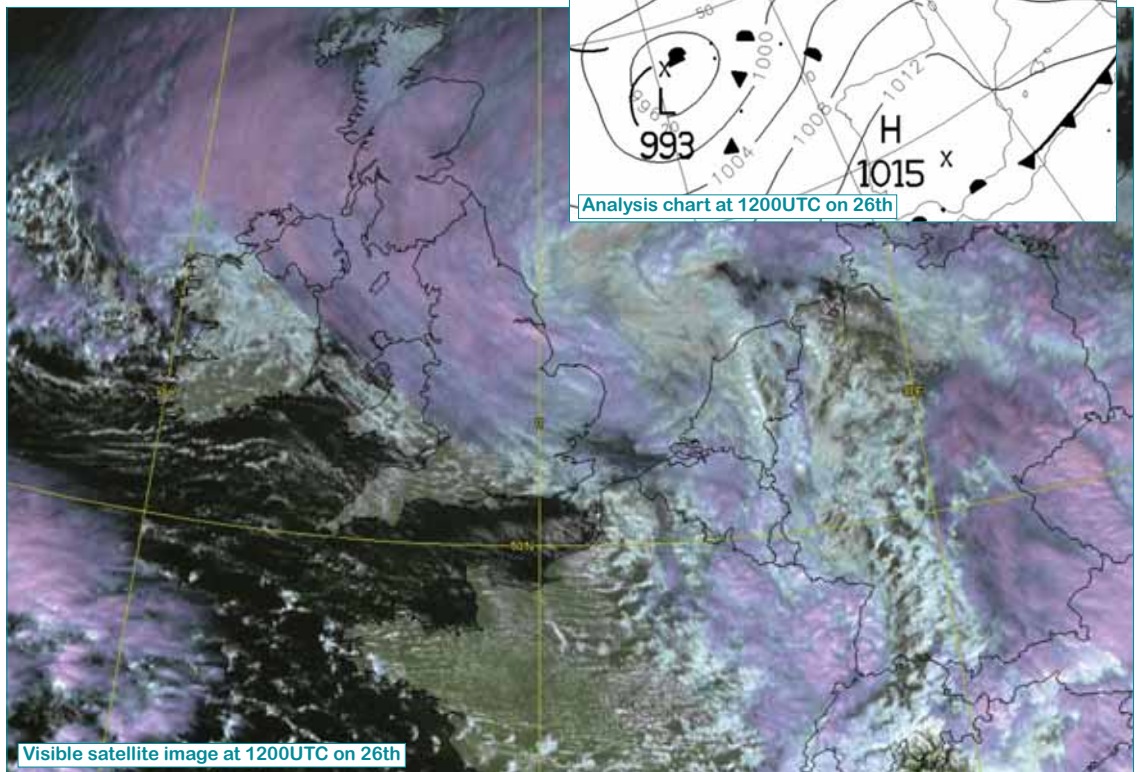
generally light to moderate in strength.

**Wind and elements:** Mean windspeeds for the month of between 4 and 11 knots (7 and 20km/h) were below normal everywhere and were the lowest for February for at least 30 years in most places. Many inland stations measured no gale gusts; the month's highest gust of 47 knots (87km/h) was observed at Malin Head on the 26th. Snow was recorded on most days between the 15th and 28th and was widespread on the 18th and 20th, while most hail was recorded at coastal stations in the periods 18th to 19th and 25th to 27th.

Fog was widespread in the period 3rd to 7th and at times during the second half of the month.



Analysis chart at 1200UTC on 26th



Visible satellite image at 1200UTC on 26th

**Right**

The month ended with a weather pattern typical of much of the winter, with a cold northeasterly airflow over Ireland on the 26th. Southern areas were mainly dry, but elsewhere there were spells of rain or snow, with heavy falls in northern and northwestern areas bringing some accumulation of snow in places.

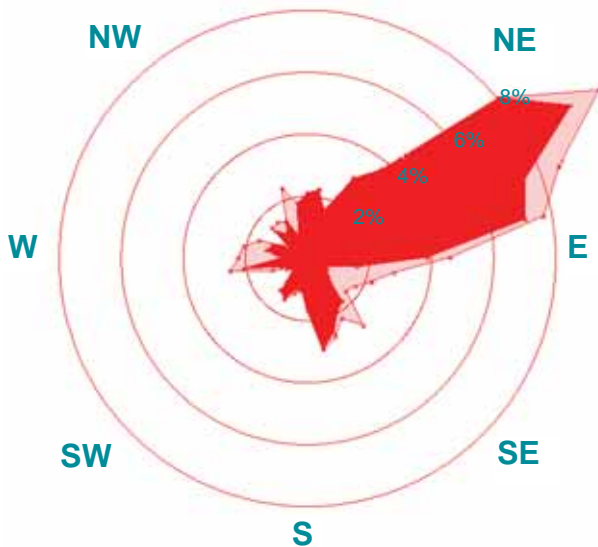
(satellite image courtesy Wokingham Weather, www.woksat.info/wwp2.html)

County / Station	WIND (KNOTS)						ELEMENTS							
	Mean speed	Max. dir.	10-min. speed	mean date/hour	Max. dir.	Gust speed date/time	Days with gales	gale gusts	Hours with gale gusts	Snow	Snow Lying	Hail	Thunder	Fog
<b>CO. CARLOW</b> CARLOW (OAK PARK)	5.0	250°	22	26/12	240°	34 26/1252	0	1	2					
<b>CO. CAVAN</b> BALLYHAISE	4.3	130°	16	4/18	120°	27 4/1825	0	0	0					
<b>CO. CLARE</b> SHANNON AIRPORT	6.5	250°	24	26/11	260°	33 26/1013	0	0	0	3	0	0	0	8
<b>CO. CORK</b> ROCHE'S POINT	10.1	150°	28	4/15	150°	38 4/1543	0	3	10					
CORK AIRPORT	8.8	140°	30	4/15	150°	41 4/1430	0	2	6	1	0	0	0	8
<b>CO. DONEGAL</b> MALIN HEAD	11.4	050°	36	24/09	070°	47 26/1254	2	8	60					
		070°	36	26/14										
<b>CO. DUBLIN</b> DUBLIN AIRPORT	8.4	140°	25	4/23	140°	35 4/2241	0	1	1	4	1	5	0	6
CASEMENT AERODROME	6.5	150°	23	4/16	150°	34 4/1529	0	1	1	6	3	3	0	5
<b>CO. KERRY</b> VALENTIA OBSERVATORY	6.0	270°	22	26/11	110°	38 7/1101	0	2	5	1	0	1	0	0
<b>CO. MAYO</b> BELMULLET	7.3	030°	27	25/21	030°	43 25/2259	0	6	23	8	0	6	0	1
KNOCK AIRPORT	6.8	310°	21	28/14	310°	32 28/1315	0	0	0	7	3	3	0	15
<b>CO. TIPPERARY</b> GURTEEN	5.8	150°	19	4/17	150°	28 4/1529	0	0	0					
					250°	28 26/1113								
<b>CO. WESTMEATH</b> MULLINGAR	4.1	130°	16	4/18	130°	24 4/1655	0	0	0					
<b>CO. WEXFORD</b> JOHNSTOWN CASTLE	5.9	100°	17	23/10	150°	29 4/1951	0	0	0					

Valentia Observatory

Calm: 1.3%

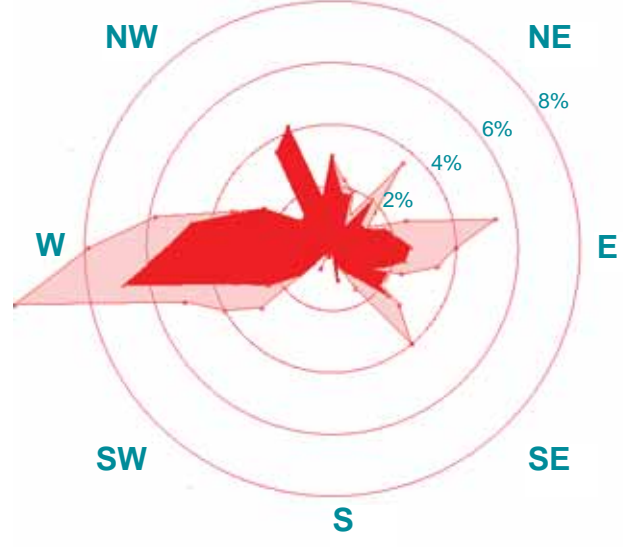
N



Dublin Airport

Calm: 0.3%

N

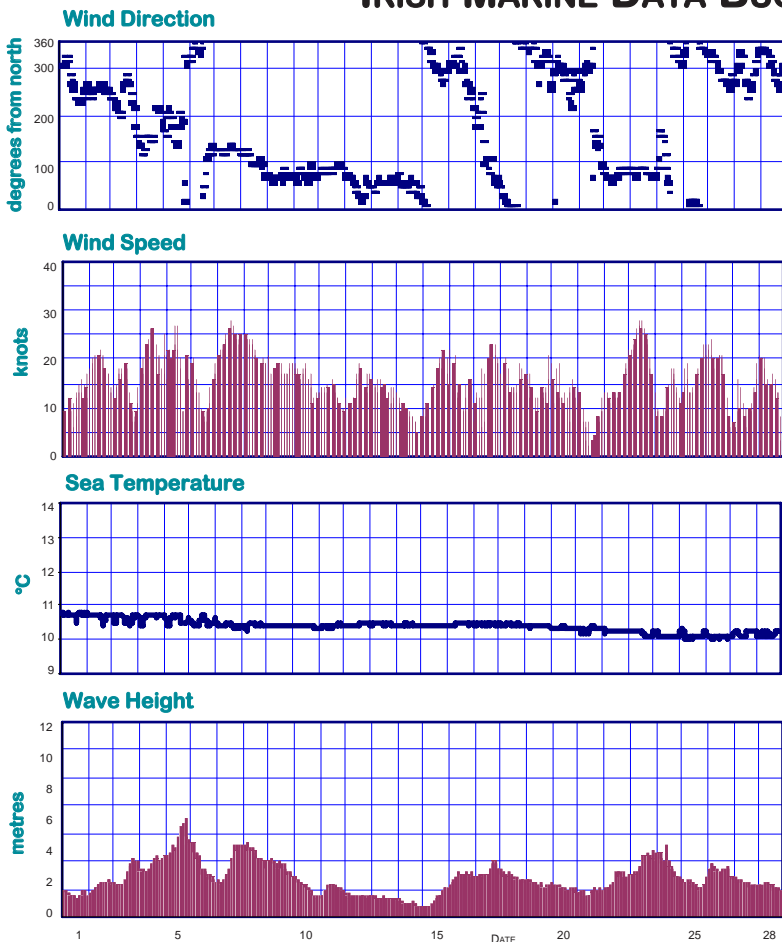


1-10 knots

>10 knots

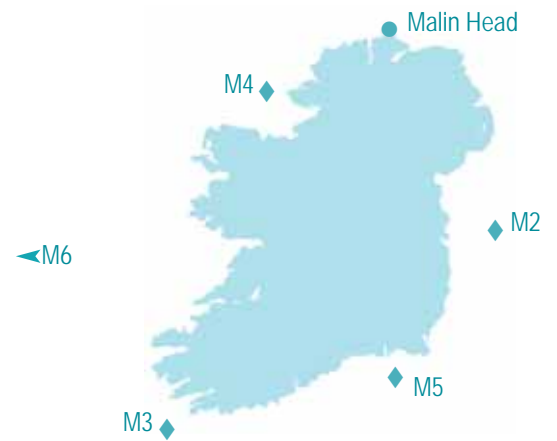
PERCENTAGE FREQUENCY OF WIND DIRECTION

### MARINE OBSERVATIONS FROM IRISH MARINE DATA BUOY NETWORK



Buoy	Sea surface temp. (°C)	Mean wind speed (knots)	Max. 10-min wind (knots)	Mean wave height (m.)	Max. wave height (m.)
M2	7.9	14.3	27	1.1	2.9
M3	10.4	15.1	28	2.8	7.1
M4	9.8	n/a	n/a	2.8	7.5
M5	not available				
M6	10.8	17.3	34	3.4	7.1
Malin Head	6.4				

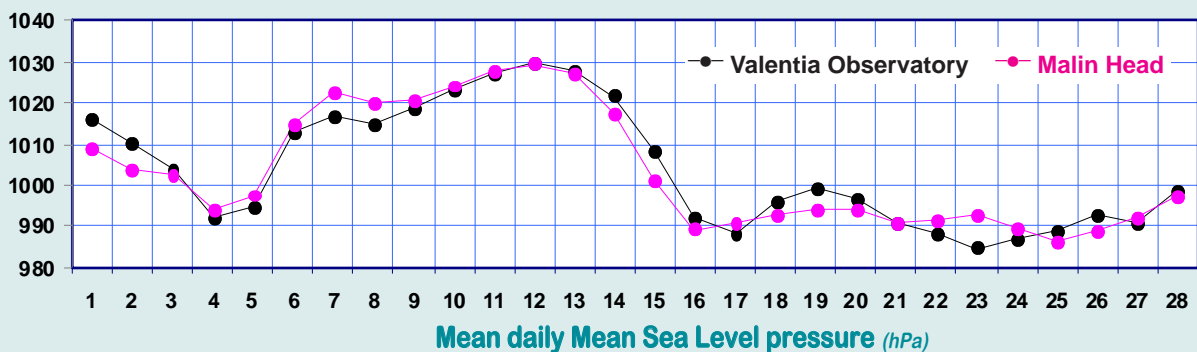
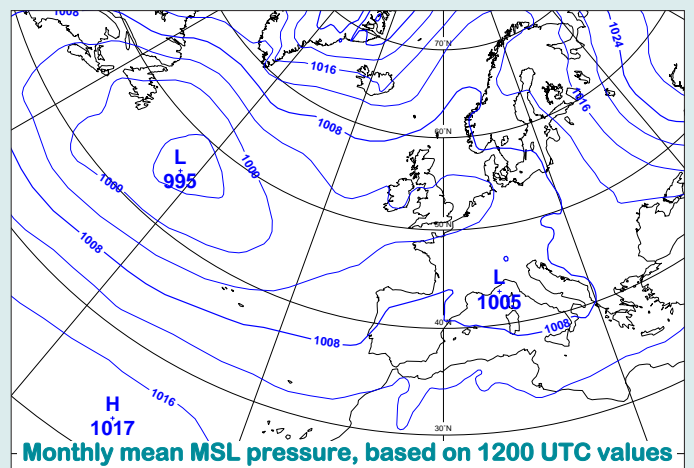
#### Summary of Mean Monthly Values



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

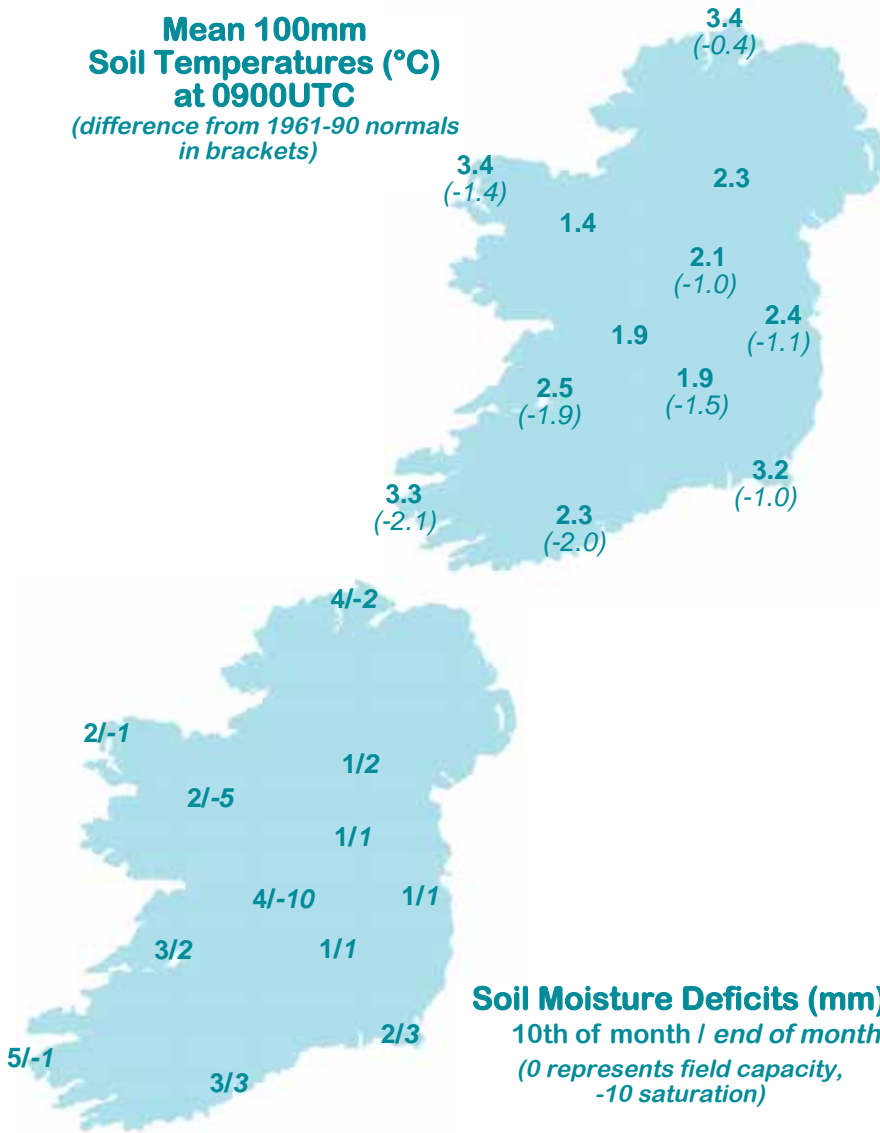
### MEAN ATMOSPHERIC PRESSURE

There was very little variation in mean sea level pressure values for the month; average values were close to 1004hPa everywhere. This value is around 8hPa below normal for February. Pressure was close to or a little higher than normal during the first half of the month, but fell well below normal during the second half. The month's highest pressure of 1032.1hPa was recorded at Belmullet on the 12th, while the lowest pressure value of 980.5hPa was measured at Roche's Point on the 23rd.



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

(difference from 1961-90 normals in brackets)



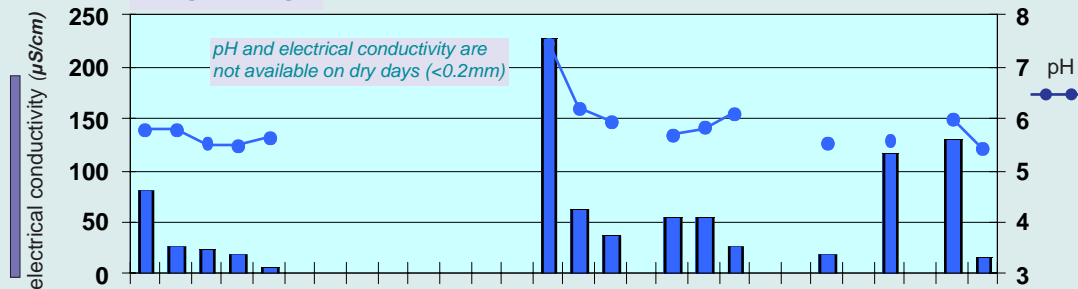
**Soil Moisture Deficits (mm)**  
10th of month / end of month  
(0 represents field capacity, -10 saturation)

**Soil Temperatures at 0900UTC**

County/ Station	°C		
	100mm	200mm	300mm
<b>CO. CARLOW</b>			
CARLOW (OAK PARK)	1.9	2.7	2.9
<b>CO. CAVAN</b>			
BALLYHAISE	2.3	3.1	3.6
<b>CO. CLARE</b>			
SHANNON AIRPORT	2.5	3.1	4.2
CARRON	2.6		3.4
<b>CO. CORK</b>			
ROCHE'S POINT	3.2	4.4	4.7
FERMOY (MOOREPARK)	2.6	3.2	3.7
CORK AIRPORT	2.3	3.3	4.5
SHERKIN ISLAND	4.8	5.4	5.9
BALLINCURRIG (PEAFIELD)	2.1	2.1	3.7
<b>CO. DONEGAL</b>			
MALIN HEAD	3.4	4.7	5.8
<b>CO. DUBLIN</b>			
DUBLIN (PHOENIX PARK)	2.3	3.3	3.8
DUBLIN AIRPORT	2.1	2.7	3.3
CASEMENT AERODROME	2.4	3.1	3.9
<b>CO. KERRY</b>			
VALENTIA OBSERVATORY	3.3	4.4	5.7
<b>CO. LIMERICK</b>			
MOUNT RUSSELL	2.1	2.8	
<b>CO. MAYO</b>			
BELMULLET	3.4	4.3	5.0
STRAIDE	2.2		
KNOCK AIRPORT	1.4	2.3	3.5
<b>CO. MEATH</b>			
WARRENSTOWN	1.9	2.8	2.9
<b>CO. TIPPERARY</b>			
GURTEEN	1.9	2.4	3.1
PETHARD (PARSONSHILL)	2.5	3.1	
<b>CO. WATERFORD</b>			
DUNGARVAN (CARRIGLEA)		3.1	3.6
<b>CO. WESTMEATH</b>			
MULLINGAR	2.1	2.9	3.5
<b>CO. WEXFORD</b>			
JOHNSTOWN CASTLE	3.2	3.7	3.9
JOHN F. KENNEDY PARK	2.8	3.6	4.6
CLONROCHE (KNOXTOWN)	2.9	3.5	4.0

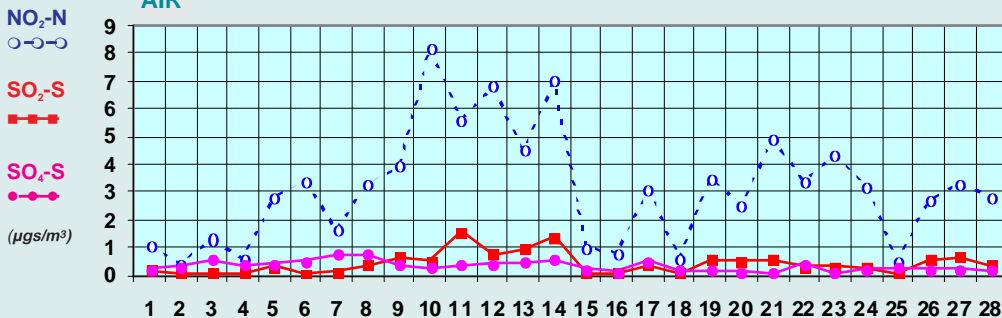
**Chemical Analysis of Precipitation and Air Samples at Valentia Observatory**

**PRECIPITATION**



data shown here are interim values and are subject to change

**AIR**



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

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

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

10-DAY VALUES FOR SELECTED AGROMETEOROLOGICAL STATIONS		RAINFALL (mm)				TEMPERATURE (°C)												SUNSHINE (HOURS)			
Station	period	amount	% of average	rain days	wet days	mean max.	mean min.	mean daily	diff. from average	lowest min.	date	days with air frost	degree days > 4.4°C	degree days > 10.0°C	lowest "grass-min."	date	days with ground frost	mean 10cm at 0900h	mean 30cm at 0900h	total no. of hours	% of average
Cavan (Loreto)	11-20	9.4	-	3	3	5.3	-2.9	1.2	-	-6.7	11	7	3	0	-9.3	11	10	-	-	22.5	-
	21-end	10.5	-	3	2	4.7	-1.2	1.8	-	-4.9	22	4	2	0	-7.6	28	6	-	-	12.8	-
	month	43.9	-	11	9	5.6	-1.2	2.2	-	-6.7	11	14	13	0	-9.3	11	24	-	-	58.4	-
<b>Co. Cork</b>	1-10	34.7	-	4	4	7.6	1.0	4.3	-	-3.1	10	3	11	0	-3.8	1	4	3.7	4.8	17.8	-
Ballincurrag	11-20	3.6	-	3	3	6.7	-2.2	2.3	-	-4.0	11	10	6	0	-4.5	11	10	1.1	3.2	57.6	-
(Peafield)	21-end	12.5	-	4	2	7.1	-1.8	2.7	-	-4.6	22	6	6	0	-4.8	22	7	1.3	3.0	45.2	-
	month	50.8	-	11	9	7.1	-1.0	3.1	-	-4.6	22	19	23	0	-4.8	22	21	2.1	3.7	120.6	-
<b>Co. Donegal</b>	1-10	26.0	-	4	4	7.6	0.3	4.0	-	-3.5	10	5	10	0	-3.9	10	7	-	-	-	-
Glenties	11-20	21.5	-	5	4	6.4	-2.6	1.9	-	-5.9	11	9	5	0	-6.4	12	10	-	-	-	-
	21-end	12.3	-	3	2	5.9	-1.1	2.4	-	-4.2	21	4	3	0	-5.1	23	4	-	-	-	-
	month	59.8	53	12	10	6.7	-1.1	2.8	-1.5	-5.9	11	18	18	0	-6.4	12	21	-	-	-	-
<b>Co. Kerry</b>	1-10	27.6	-	5	4	8.4	1.4	4.9	-	-3.9	10	2	15	0	-6.5	10	7	-	-	16.4	-
Ardfert	11-20	23.1	-	6	6	7.5	-2.2	2.7	-	-4.7	11	8	8	0	-7.4	11	10	-	-	41.2	-
	21-end	7.1	-	4	3	7.5	-1.2	3.2	-	-3.5	22	5	8	1	-5.8	22	8	-	-	39.6	-
	month	57.8	-	15	13	7.8	-0.6	3.6	-2.2	-4.7	11	15	31	1	-7.4	11	25	-	-	97.2	-
<b>Co. Monaghan</b>	1-10	23.0	-	5	5	7.0	0.5	3.8	-	-4.0	10	3	8	0	-6.1	10	8	-	-	-	-
Carrickmacross	11-20	4.3	-	4	2	5.5	-2.6	1.5	-	-6.6	11	9	4	0	-8.2	11	10	-	-	-	-
	21-end	13.2	-	3	3	5.0	-1.3	1.9	-	-4.2	22	4	2	0	-5.6	22	8	-	-	-	-
	month	40.5	57	12	10	5.9	-1.2	2.4	-	-6.6	11	16	14	0	-8.2	11	26	-	-	-	-
<b>Co. Waterford</b>	1-10	27.8	-	5	4	8.5	1.2	4.9	-	-4.0	1	2	15	1	-4.6	10	5	-	4.4	24.1	-
Dungarvan	11-20	3.5	-	3	2	7.2	-0.8	3.2	-	-2.7	11	8	8	0	-5.0	11	9	-	3.0	48.6	-
	21-end	19.4	-	2	2	8.0	-0.5	3.8	-	-3.0	22	5	8	0	-5.7	22	6	-	3.2	39.8	-
	month	50.7	-	10	8	7.9	0.0	4.0	-1.6	-4.0	1	15	32	1	-5.7	22	20	-	3.6	112.5	174
<b>Co. Wexford</b>	1-10	47.4	-	6	5	7.7	2.4	5.1	-	-0.8	1	1	13	0	-4.5	1	5	3.7	4.9	19.6	-
J.F.K. Park	11-20	0.6	-	1	0	6.7	-0.1	3.3	-	-2.8	20	5	6	0	-7.0	20	10	1.7	4.3	49.3	-
	21-end	29.8	-	4	2	7.5	0.3	3.9	-	-1.5	21	3	8	0	-5.2	21	6	2.8	4.5	32.7	-
	month	77.8	93	11	7	7.3	0.9	4.1	-0.9	-2.8	20	9	27	0	-7.0	20	21	2.8	4.6	101.6	150

MEASURED POTENTIAL EVAPOTRANSPIRATION (P.E.) AND SOIL MOISTURE					
Station	Period	P.E. (mm)		Soil Moisture (mm)	
		Amount	Deficit	Accum'd	Deficit Surplus
<b>Co. Kerry</b>	1-10	4.6	-	0	45
Valentia Obs.	11-20	11.4	-	0	0
	21-end	6.0	-	0	2
	month	22.0			

Station	P.E. (Penman)		GLOBAL SOLAR RADIATION (MJ/sq.m.)			
	total(mm)	1st-10th	11th-20th	21st-end	Total	
<b>Co. Carlow</b>						
Carlow (Oak Park)*	6	29.94	53.03	43.71	126.68	
<b>Co. Cavan</b>						
Ballyhaise*	5	30.92	43.41	34.70	109.03	
<b>Co. Clare</b>						
Shannon Airport	8	global solar radiation values for stations marked * are provisional				
<b>Co. Cork</b>						
Cork Airport	8					
Roche's Point*		36.60	71.16	68.96	176.72	
<b>Co. Donegal</b>						
Malin Head	19	34.75	53.50	41.7	129.99	
<b>Co. Dublin</b>						
Dublin Airport	7	33.09	56.32	37.26	126.67	
Casement Aerodrome	7					
<b>Co. Kerry</b>						
Valentia Obs.	12	41.84	73.37	71.10	186.31	
<b>Co. Mayo</b>						
Belmullet	9	37.63	55.10	56.07	148.80	
Knock Airport	4					
<b>Co. Tipperary</b>						
Curteen*	5	32.08	53.97	43.24	129.29	
<b>Co. Westmeath</b>						
Mullingar*	4	31.53	51.67	34.33	117.53	
<b>Co. Wexford</b>						
Johnstown Castle*	11	30.11	59.23	46.66	136.00	

MONTHLY EVAPORATION (MM) FROM CLASS A PAN			
County	Station	Monthly Rainfall (mm)	Monthly Evaporation (mm)
<b>Kerry</b>	Valentia Observatory	68.4	11.1
<b>Kerry</b>	North Kerry Landfill	68.3	3.7
<b>Mayo</b>	Newport (Furnace)	69.1	1.8
<b>Offaly</b>	Derrygreenagh	40.5	2.5
<b>Waterford</b>	Dungarvan (Carriglea)	50.7	14.4
<b>Wexford</b>	J.F.K. Park	77.8	14.8

**Monday 1st:** Cold and frosty overnight except in Ulster, where there was a little drizzle. Apart from scattered showers in Connacht it was a mostly dry, overcast day with very little sunshine. In the late evening, light rain spread into western areas. Winds were very light, west or northwesterly overnight, gradually backing southwesterly and increasing moderate by evening.

**Rainfall:** nil to 4mm, heaviest at Belmullet, nil in the east and south

**Temperature:** max. 5°C to 9°C, min. -2°C to 3°C, ground temperatures down to -7°C at Valentia

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

**Tuesday 2nd:** Mostly cloudy overnight with patchy rain in places. Continuing mostly cloudy during the morning, with scattered outbreaks of rain, heavy in parts. The rain and drizzle continued in many places during the afternoon, but with a little sunshine in the east. Staying overcast and damp throughout the evening. Winds were light to moderate, variable in direction.

**Rainfall:** trace to 9mm, heaviest at Shannon Airport, trace at Roche's Point

**Temperature:** max. 7°C to 11°C, min. 2°C to 8°C, ground temperatures down to -1°C at Malin Head

**Sunshine:** nil to 2 hours, sunniest at Dublin Airport, nil at Shannon Airport

**Wednesday 3rd:** Mostly cloudy overnight with rain and drizzle in places. The rain and drizzle spread northeastwards during the morning, turning to sleet or snow over northern parts. The rain cleared the south coast by mid-morning, with some sunny spells developing there; this clearance continued to spread northwards during the afternoon. Generally dry overnight with ground frost in places. Winds were light and variable in direction.

**Rainfall:** 3 to 11mm, heaviest at Johnstown Castle, 3mm at Cork Airport

**Temperature:** max. 7°C to 11°C, min. 0°C to 6°C, ground temperatures down to -3°C at Carlow (Oak Park)

**Sunshine:** nil to 4 hours, sunniest at Belmullet, nil in the east

**Thursday 4th:** Rain approached the southeast and south coast before dawn and spread over Leinster and south Munster, affecting most parts by noon. By then another band of rain, heavier and more persistent, approached the south coast. This band of rain moved northwards to affect all but Atlantic coasts and giving significant falls in parts of Leinster and Munster. A clearance spread into Munster by the end of the day. Winds were southerly or variable, light to moderate with occasional gusts.

**Rainfall:** 1 to 25mm, heaviest at Johnstown Castle, 1mm at Malin Head

**Temperature:** max. 8°C to 11°C, min. 0°C to 7°C, ground temperatures down to -5°C at Mullingar

**Sunshine:** nil to trace

**Friday 5th:** Persistent heavy rain over the north of the country cleared northeastwards during the night. Clear spells elsewhere, with mist and fog in places. A band of heavy, showery rain in the south moved northwards during the afternoon, giving significant falls, before dying out during the evening. Sunny spells in the northern half of the country. Light winds generally.

**Rainfall:** nil to 16mm, heaviest at Valentia, nil in the northwest

**Temperature:** max. 7°C to 10°C, min. 1°C to 6°C, ground temperatures down to -4°C at Dublin Airport

**Sunshine:** trace to 7 hours, sunniest at Casement Aerodrome, trace at Valentia

**Saturday 6th:** A cold night generally with mist and dense fog patches and ground frost in places. Rain moved southwards from east Ulster during the night, affecting parts of Leinster, before dying out around noon. Generally dry for the rest of the day. It was a cold day with fog persisting in many places and just a few sunny spells. Light, sometimes moderate, northerly or variable winds became light southeasterly in the afternoon and evening.

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

**Temperature:** max. 5°C to 11°C, min. -1°C to 5°C, ground temperatures down to -4°C at Belmullet

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

**Sunday 7th:** Cold overnight with mist and fog patches and a slight to sharp ground frost in places also. It was a dry, cold and dull day generally with little sunshine. Very cold again after dark, with occasional drizzle in the east. Light southeasterly winds at first increased moderate to fresh and sometimes gusty during the night.

**Rainfall:** nil to trace

**Temperature:** max. 5°C to 10°C, min. -1°C to 7°C, ground temperatures down to -4°C at Casement Aerodrome

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

**Monday 8th:** Dry overnight with frost in a few areas. The day was dry in most parts with just a few isolated light wintry showers near the east coast. Cold. Sunny in the west, cloudier elsewhere. In the evening it became cold and frosty in parts of the west, elsewhere it was cold but cloud cover kept frost at bay. Winds were moderate, northeasterly in direction.

**Rainfall:** nil to trace generally, <1mm at Johnstown Castle

**Temperature:** max. 4°C to 8°C, min. -1°C to 4°C, ground temperatures down to -6°C at Belmullet

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

**Tuesday 9th:** Mostly dry overnight. Frost occurred in a few isolated spots. There were some isolated light wintry showers near the east coast. The day was dry in most areas with just a few light wintry showers along the east coast. Some sunshine in the south and east, cloudier further north and west. Frost returned after dark. Winds were light north or northeasterly.

**Rainfall:** nil to <1mm, heaviest at Johnstown Castle

**Temperature:** max. 3°C to 7°C, min. -3°C to 4°C, ground temperatures down to -8°C at Ballyhaise

**Sunshine:** nil to 3 hours, sunniest at Dublin Airport, nil at Belmullet

**Wednesday 10th:** Very cold and frosty overnight with light winds. The morning was clear and sunny with frost clearing slowly. Staying mainly dry during the afternoon, with sunny spells and isolated hail showers along the east coast. The evening and night saw clear skies, with frost again setting in shortly after dark. Winds were light and variable in direction.

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

**Temperature:** max. 4°C to 7°C, min. -6°C to 0°C, ground temperatures below zero at all stations, down to -11°C at Gurteen

**Sunshine:** 2 to 9 hours, sunniest at Cork Airport, 2 hours at Belmullet

**Thursday 11th:** Dry and frosty overnight with light winds. Sunny during the morning as the frost cleared, with isolated showers along the north coast. The afternoon continued sunny, however, it remained cool. Mainly clear during the evening with frost setting in after dark. Winds were light and variable.

**Rainfall:** nil generally, 2mm at Malin Head

**Temperature:** max. 4°C to 8°C, min. -6°C to 0°C, ground temperatures below zero at all stations, down to -11°C at Carlow (Oak Park)

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

**Friday 12th:** Very cold with clear spells, light winds and mist patches, leading to a severe or very severe frost in places away from exposed northern coasts. During the day there were long sunny spells in the north, west and southwest but elsewhere it was cloudy and temperatures remained below normal. Outbreaks of rain in the northwest and southeast during the evening, though amounts were small. Winds were light and variable in direction.

**Rainfall:** nil generally, 1mm at Belmullet and Johnstown Castle

**Temperature:** max. 5°C to 10°C, min. -3°C to 5°C, ground temperatures down to -10°C at Valentia

**Sunshine:** trace to 8 hours, sunniest at Belmullet, trace at Cork Airport

**Saturday 13th:** Rain overnight, heaviest in the southeast. Ground frost also in most parts. It was a dry day generally with sunny spells, mainly in the west. Misty in places during the evening with widespread ground frost. Winds were light, northerly or calm and it was cool throughout.

**Rainfall:** nil to trace generally, 2mm at Johnstown Castle

**Temperature:** max. 5°C to 8°C, min. -3°C to 2°C, ground temperatures down to -9°C at Carlow (Oak Park)

**Sunshine:** trace to 5 hours, sunniest at Knock Airport, trace at Casement Aerodrome

**Sunday 14th:** A very cold night with widespread sharp to severe ground frost. Overnight fog lingered in some areas until around midday. After a cold start, the day was cloudy and slightly milder than recently in most areas, with rain and drizzle in the northwest moving southwards over the northern half of the country. Most of Munster and south Leinster had a largely dry day with some sunny spells at times. Winds were generally light and variable, moderate westerly or northwesterly on some exposed coasts.

**Rainfall:** nil to <1mm generally, 7mm at Malin Head, 2mm at Belmullet

**Temperature:** max. 6°C to 9°C, min. -4°C to 5°C, ground temperatures down to -9°C at Gurteen

**Sunshine:** trace to 8 hours, sunniest at Valentia, trace at Belmullet

**Monday 15th:** Scattered outbreaks of rain or drizzle overnight, mainly over the northern half of the country. Another band of rain near the northwest coast moved southwards over the country during the day. Clearer, more showery conditions followed from the north in the afternoon, with some wintry showers in places. Continuing showery in the evening, particularly in the western half of the country, with a slight ground frost developing in some sheltered areas. Winds were westerly, light to moderate with occasional gusts.

**Rainfall:** trace to 8mm, heaviest at Belmullet, trace at Johnstown Castle

**Temperature:** max. 6°C to 9°C, min. 0°C to 4°C, ground temperatures down to -5°C at Valentia

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

**Tuesday 16th:** A very cold night with severe ground frost and wintry showers, mainly over the western half of the country. The showers became infrequent during the night. It was a cold day generally with scattered showers and sunny spells. The showers were largely confined to the western half of the country and some were wintry near Atlantic coasts. Light to moderate westerly winds gradually backed southeasterly during the day.

**Rainfall:** nil to 3mm generally, 15mm at Belmullet

**Temperature:** max. 4°C to 8°C, min. -2°C to 2°C, ground temperatures down to -9°C at Carlow (Oak Park)

**Sunshine:** <1 to 8 hours, sunniest at Shannon Airport, <1 hour at Belmullet

**Wednesday 17th:** Another very cold night with a widespread sharp to severe ground frost and scattered wintry showers. A few wintry showers during the morning, but most places had a dry, cold day with sunny spells. Light to moderate easterly winds backed gradually northerly in the afternoon.

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

**Temperature:** max. 3°C to 7°C, min. -4°C to 2°C, ground temperatures below zero at most stations, down to -10°C at Carlow (Oak Park)

**Sunshine:** 1 to 8 hours, sunniest at Dublin Airport, 1 hour at Knock Airport

**Thursday 18th:** Cold with clear spells overnight and a widespread severe frost. Some showers of hail in the northwest overnight. Dry and sunny in many parts, however the northwest had showers of hail throughout the day. Winds were northerly or variable, light to moderate.

**Rainfall:** nil to <1mm generally, 5mm at Belmullet

**Temperature:** max. 4°C to 7°C, min. -4°C to 2°C, ground temperatures below zero at all stations, down to -10°C at Casement Aerodrome

**Sunshine:** 3 to 7 hours, sunniest at Valentia, 3 hours at Dublin Airport

**Friday 19th:** Very cold overnight with a widespread sharp to severe frost. Some showers along the west coast. Showers continued in the west during the morning, while dry and cold conditions with sunny spells developed over the remainder of the country. Sunny spells during the afternoon, with scattered showers of hail or snow. Mostly dry overnight, with isolated showers continuing on northern coasts. Frost set in quickly after dark in most places. Light variable winds.

**Rainfall:** nil to 6mm, heaviest at Valentia

**Temperature:** max. 3°C to 7°C, min. -4°C to 1°C, ground temperatures below zero at all stations, down to -9°C at Ballyhaise

**Sunshine:** 2 to 7 hours, sunniest at Shannon Airport, 2 hours at Dublin Airport

**Saturday 20th:** Another very cold night everywhere with fog in places. The fog tended to clear during the late morning, while showers in the west spread steadily eastwards across the country in bands, giving rain, sleet and snow in places. Sunny spells in most parts. Clear spells in the west during the evening. Winds were light and variable in direction.

**Rainfall:** trace to 5mm, heaviest at Casement Aerodrome, trace at Mullingar

**Temperature:** max. 0°C to 7°C, min. -6°C to 0°C, ground temperatures below zero at all stations, down to -10°C at Ballyhaise

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

**Sunday 21st:** Wintry showers cleared the east coast overnight. A very cold, dry day generally with cloud and fog in the east and midlands, while the south and west had sunshine. Very cold again after dark. Winds were light variable.

**Rainfall:** nil to trace generally, 2mm at Dublin Airport

**Temperature:** max. -1°C to 8°C, min. -7°C to -1°C, ground temperatures below zero at all stations, down to -10°C at Mullingar

**Sunshine:** nil to 7 hours, sunniest at Cork Airport, nil at Casement Aerodrome

**Monday 22nd:** Extremely cold overnight with a widespread sharp to severe frost, some icy patches and snow lying in places. The frost and fog cleared

slowly during the morning and most areas had a dry and very cold day with sunny spells. Very cold after dark with frost returning. Mist and fog again in places also. Winds were mostly light to moderate, northerly or variable.

**Rainfall:** nil

**Temperature:** max. 2°C to 8°C, min. -7°C to -1°C, ground temperatures below zero at all stations, down to -11°C at Shannon Airport

**Sunshine:** nil to 9 hours, sunniest at Belmullet, nil at Shannon Airport

**Tuesday 23rd:** After another very cold night, the morning was dry in most parts. By noon, however, a band of rain in the south spread over the country. The rain was heavy at times along the south coast and turned to sleet or snow as it progressed northwards. Some sunny spells in northern areas, generally overcast elsewhere. Light variable or northeasterly winds overnight, increasing moderate to fresh and gusty during the day.

**Rainfall:** nil to 8mm generally, 20mm at Johnstown Castle, nil at Belmullet

**Temperature:** max. 2°C to 8°C, min. -5°C to 2°C, ground temperatures down to -10°C at Shannon Airport

**Sunshine:** nil to 2 hours, sunniest at Belmullet

**Wednesday 24th:** Outbreaks of rain, sleet and snow in many areas overnight, with snow lying in places. It was a cold day with wintry showers spreading northwards and falls of snow in parts of Ulster. Drier, mistier weather with scattered wintry showers followed into most areas during the day. Generally overcast with just a few sunny spells. Light to moderate north or northeasterly winds, fresh to strong and gusty on northern and northwestern coasts.

**Rainfall:** trace to 10mm, heaviest at Malin Head, trace at Belmullet

**Temperature:** max. 3°C to 10°C, min. -1°C to 4°C, ground temperatures down to -3°C at Claremorris

**Sunshine:** nil generally, 2 hours at Belmullet, 1 hour at Valentia

**Thursday 25th:** Outbreaks of sleet and snow moved across the midlands overnight, clearing the northeast coast by noon. Mostly dry for the rest of the day, with the exception of some light wintry showers near northwestern coasts. Cold. Overcast in the east, sunshine in other parts. Winds were generally light to moderate though stronger in the northwest, variable in direction.

**Rainfall:** nil to 7mm, heaviest at Belmullet, nil at Ballyhaise

**Temperature:** max. 2°C to 7°C, min. -2°C to 3°C, ground temperatures down to -7°C at Valentia

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

**Friday 26th:** Showers along the west coast, with more persistent rain in the north overnight. The rain continued in northern areas during the day, with scattered showers and sunny spells elsewhere. Most sunshine was recorded in the south. Mostly dry overnight apart from Ulster. Winds were moderate to strong and gusty, easterly or variable in direction.

**Rainfall:** nil to 28mm, heaviest at Malin Head, nil at Cork Airport

**Temperature:** max. 4°C to 9°C, min. -1°C to 3°C, ground temperatures down to -3°C at Shannon Airport

**Sunshine:** trace to 9 hours, sunniest at Cork Airport, trace at Knock Airport

**Saturday 27th:** Rain in northern and northwestern areas overnight. The morning was dry apart from a few scattered showers. Some showers continued during the afternoon, with sunny spells also. Frost returned after dark. Winds were light to moderate, variable in direction.

**Rainfall:** nil to 7mm, heaviest at Belmullet and Malin Head

**Temperature:** max. 5°C to 10°C, min. -2°C to 3°C, ground temperatures down to -7°C at Mullingar

**Sunshine:** trace to 9 hours, sunniest at Cork Airport, trace at Knock Airport

**Sunday 28th:** Very cold overnight with a sharp to severe frost. Early in the night there were showers along western and eastern coasts. The showers continued during the day, heaviest in the west, while parts of the east remained dry. Generally dull in the east, while further west there were sunny spells between the showers. Cool again with temperatures below zero in many places. Winds were light to moderate, variable in direction.

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

**Temperature:** max. 5°C to 9°C, min. -5°C to 3°C, ground temperatures below zero at all stations, down to -8°C at Ballyhaise

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

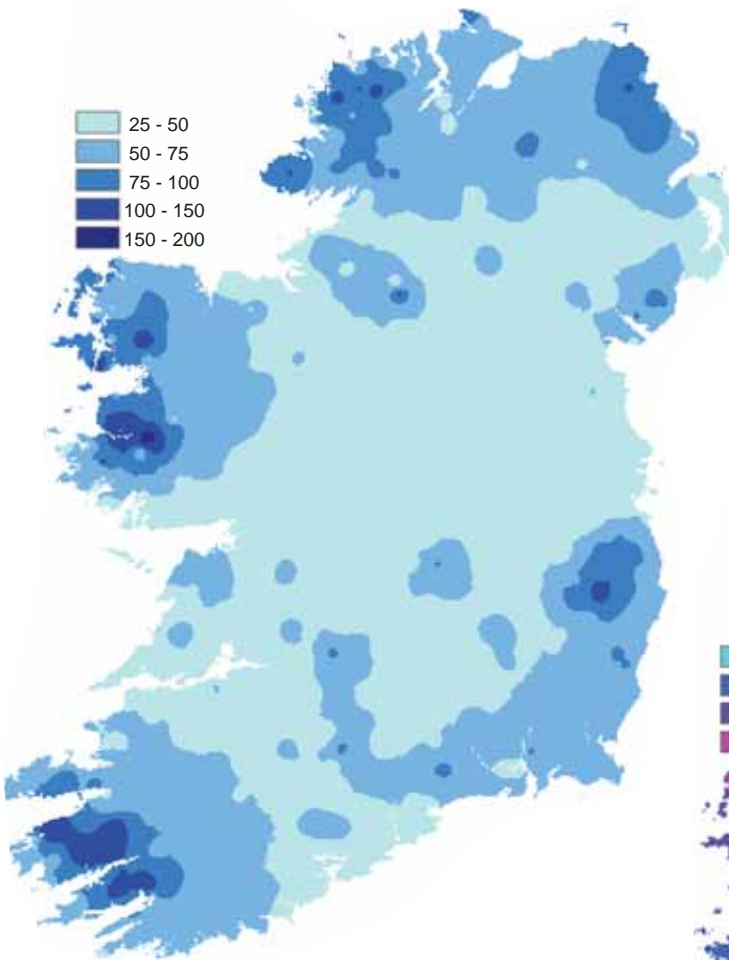
## Drier than normal almost everywhere

February rainfall totals were below normal except in some coastal areas of the northwest, north and southeast. Less than half of the normal totals for February were measured over much of Munster and parts of Connacht. Totals ranged from 33mm at Ballyhaise to 87mm at Malin Head, with percentage of normal values between 37% of normal at Cork Airport and 114% at Malin Head.

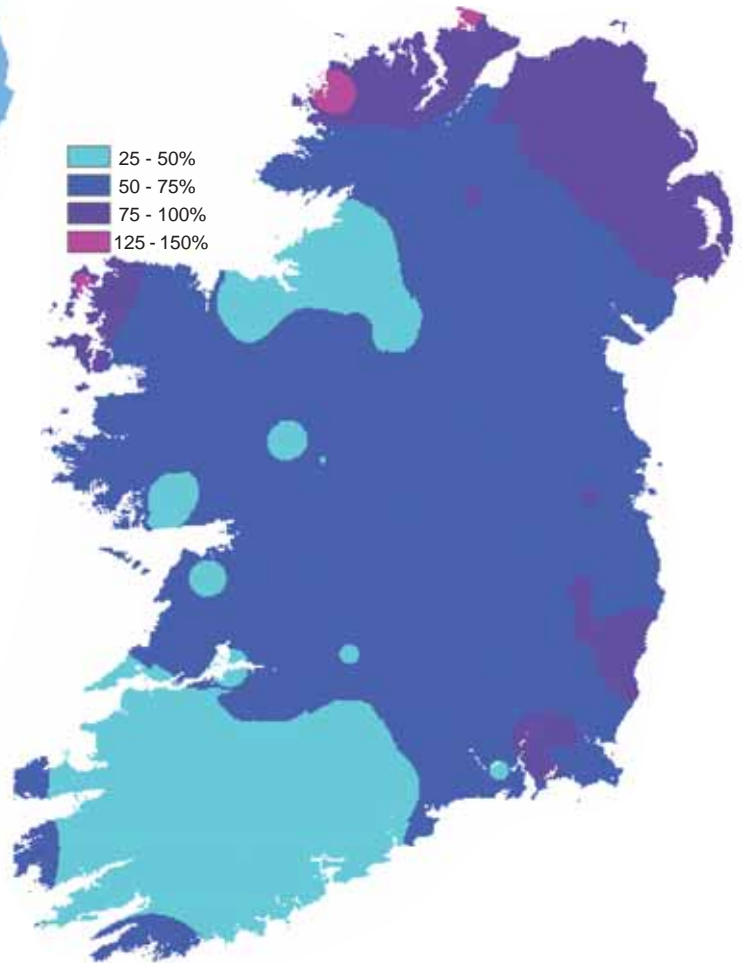
The period between the 6th and 13th was largely dry, but some heavy falls were recorded early in the month, especially on the 4th, while much of the precipitation during the second half of the month was in the form of wintry showers or longer spells of sleet or snow. This led to accumulations of snow in many northern and upland areas. Malin Head recorded the highest daily total of the month, 28.2mm on the 26th. There was a total of between 7 and 12 wetdays at the majority of stations (*days with 1mm or more of rainfall*); this compares with the normal range for February of between 12 and 15 wetdays.

County/ Station	Total Amount (mm)	% of 1961-90 average	Most in a day / date		Number of Raindays (>0.2mm)	Wetdays (≥1mm)
<b>CO. CARLOW</b>						
CARLOW (OAK PARK)	48.0	74	18.5	4	12	7
<b>CO. CAVAN</b>						
BALLYHAISE	32.7	48	11.3	4	11	7
CAVAN LORETO COLLEGE	43.9		11.9	4	11	9
<b>CO. CLARE</b>						
SHANNON AIRPORT	35.1	49	8.7	2	14	8
CARRON	49.9	48	11.2	2	19	10
<b>CO. CORK</b>						
ROCHE'S POINT	35.1	43	14.7	4	10	6
FERMOY (MOOREPARK)	36.7	43	17.9	4	10	7
CORK AIRPORT	42.7	37	19.5	4	12	6
SHERKIN ISLAND	63.5	57	13.2	23	13	10
BALLINCURRIG (PEAFIELD)	50.8		21.3	4	11	9
<b>CO. DONEGAL</b>						
MALIN HEAD	87.0	114	28.2	26	18	14
GLENTIES HATCHERY	59.8	53	11.7	1	12	10
BALLYSHANNON (CATHLEEN'S FALL)	36.2	48	12.4	4	11	9
<b>CO. DUBLIN</b>						
DUBLIN (PHOENIX PARK)	36.2	66	7.2	23	14	9
DUBLIN AIRPORT	36.7		8.5	23	14	8
CASEMENT AERODROME	36.6	75	8.6	23	14	8
DUBLIN (MERRION SQUARE)	36.8	72	9.7	23	15	6
<b>CO. GALWAY</b>						
GALWAY (UNIV. COLL.)	42.0	52	15.2	2	13	8
MAAM VALLEY	58.1		10.9	4	15	12
BALLYGAR	37.9	50	12.0	2	13	8
<b>CO. KERRY</b>						
VALENTIA OBSERVATORY	68.4	56	19.9	4	17	12
ARDFERT (LISCAHANE)	57.8		10.8	4	15	13
<b>CO. LIMERICK</b>						
MOUNT RUSSELL	57.4		13.6	4	15	12
<b>CO. MAYO</b>						
BELMULLET	81.1	101	18.1	25	18	12
STRAIDE	50.4	58	9.8	27	16	13
KNOCK AIRPORT	45.1		9.1	4	17	12
DELPHI LODGE II	76.7		15.3	4	16	14
<b>CO. MEATH</b>						
WARRENTOWN	35.9	59	6.5	23	16	8
<b>CO. MONAGHAN</b>						
CARRICKMACROSS (DUNOGE)	40.5	57	9.6	23	12	10
<b>CO. OFFALY</b>						
DERRYGREENAGH	40.5	65	12.1	4	11	9
<b>CO. SLIGO</b>						
ARDTARMON	39.6		8.0	4	12	8
<b>CO. TIPPERARY</b>						
GURTEEN	35.1		8.6	4	12	8
FETHARD (PARSONSHILL)	45.5		11.9	4	10	8
<b>CO. WATERFORD</b>						
WATERFORD (TYCOR)	40.6	46	14.7	4	8	6
DUNGARVAN (CARRIGLEA)	50.7		16.1	4	10	8
<b>CO. WESTMEATH</b>						
MULLINGAR	41.9	62	13.3	4	10	8
<b>CO. WEXFORD</b>						
JOHNSTOWN CASTLE	70.7	110	20.6	23	14	7
JOHN F. KENNEDY PARK	77.8	93	27.2	4	11	7
CLONROCHE (KNOXTOWN)	67.9		23.1	4		

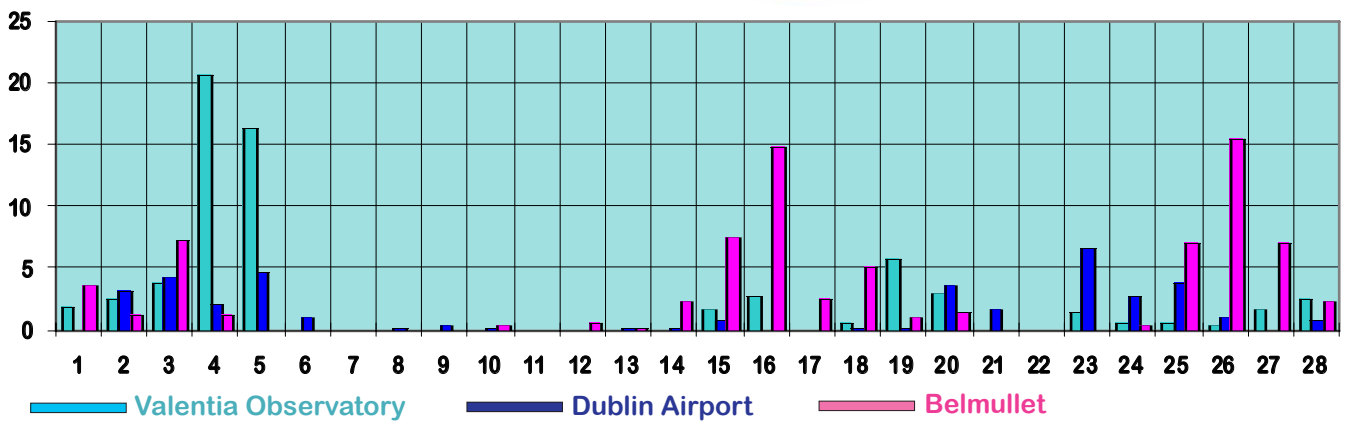
Total rainfall (mm)



Percentage of normal rainfall



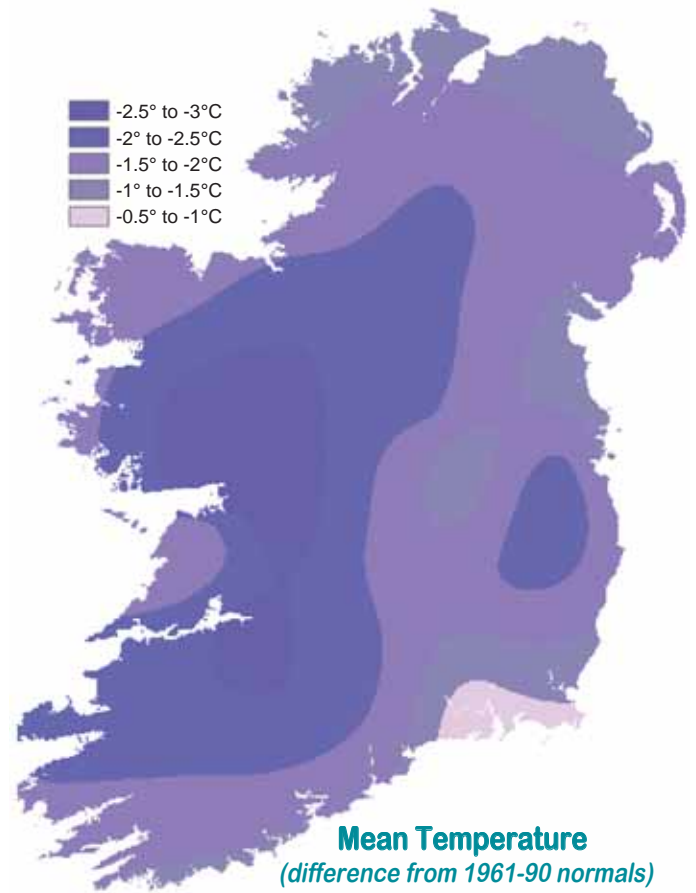
Daily 0-24h rainfall values (mm)



# Coldest February for almost 25 years

Mean monthly air temperatures were around two degrees below normal for February in most places and up to three degrees below normal in parts of the west. Mean temperatures varied between 2.1°C at Ballyhaise and 4.7°C at Roche's Point. It was the coldest February since 1986 generally, while mean minimum values of around -1°C were the lowest for February for over 40 years at Shannon Airport and in the Dublin area.

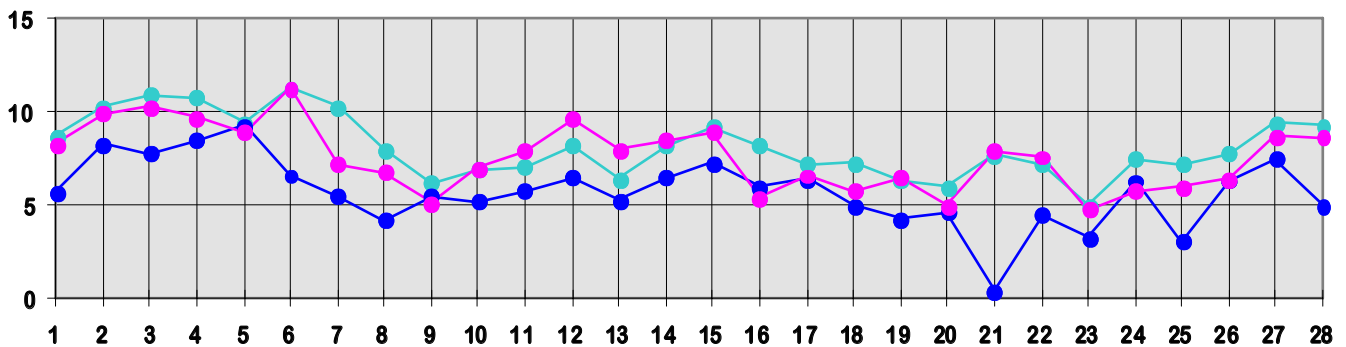
Frost was very frequent during the month, with ground frost on almost every night and severe air frost at times, especially on the 11th and 22nd. The month's lowest air temperature, -8.1°C, was recorded at Straide, Co. Mayo, on the 11th, its lowest such value for February since 1986. The lowest grass minimum value of -12.2°C was measured at the same station on the same day. Most stations recorded a total of between 24 and 27 ground frosts, compared with the normal range for February of between 10 and 15. The only period of relatively mild weather in many places was during the first week, when the month's highest temperature of



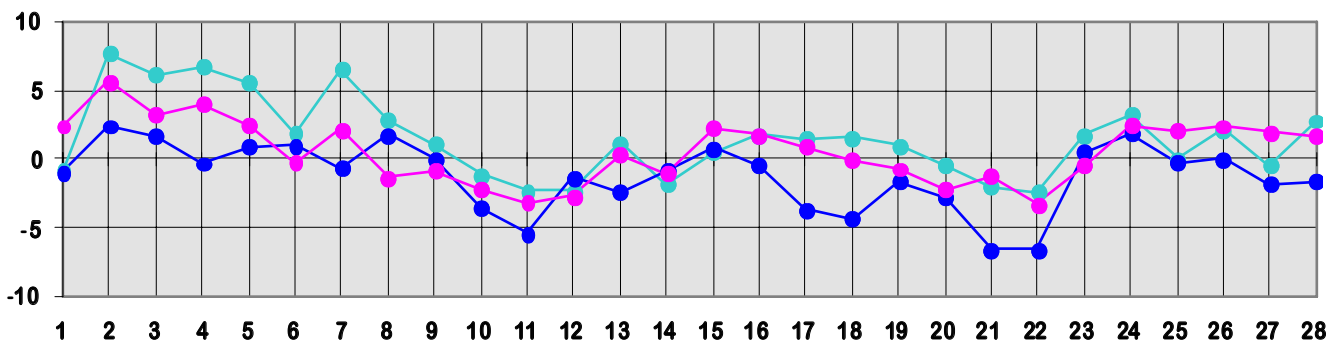
Mean Temperature  
(difference from 1961-90 normals)

11.9°C was recorded at Delphi Lodge, Co. Mayo, on the 3rd.

Daily 0-24h maximum temperatures (°C)



Daily 0-24h minimum temperatures (°C)



● Valentia Observatory      ● Dublin Airport      ● Belmullet

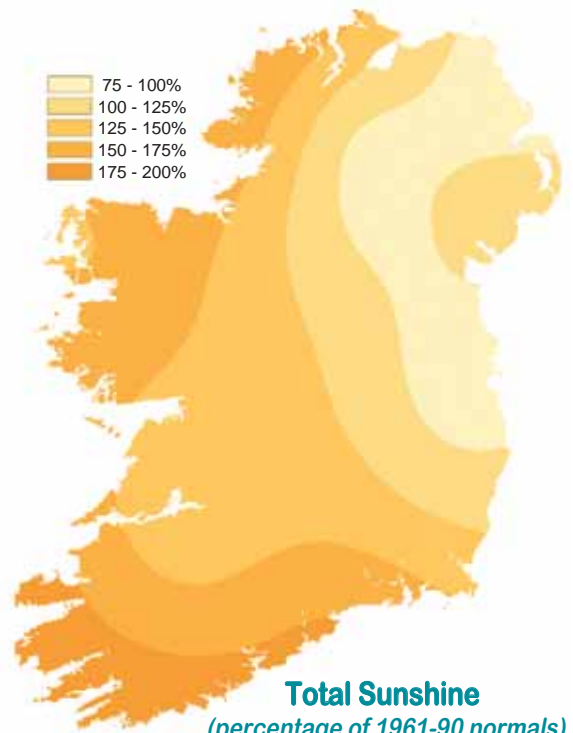
County/ Station	°C											
	Mean max.	Mean min.	Mean/ deviation from 1961-90 average		Highest max./date		Lowest min./date		Lowest grass min./date		Days with air frost ground frost	
<b>CO. CARLOW</b>												
CARLOW (OAK PARK)	6.4	-1.0	2.7	-2.0	9.6	4	-4.5	11	-11.0	11	17	27
<i>Correction to January 2010:</i>	<i>5.1</i>	<i>-1.2</i>	<i>2.0</i>	<i>-2.5</i>	<i>10.6</i>	<i>15</i>	<i>-12.1</i>	<i>7</i>	<i>-11.6</i>	<i>4</i>	<i>20</i>	<i>27</i>
<b>CO. CAVAN</b>												
BALLYHAISE	5.5	-1.4	2.1		9.3	5	-6.0	11	-10.3	20	17	27
CAVAN LORETO COLLEGE	5.6	-1.2	2.2		9.4	5	-6.7	11	-9.3	11	14	24
<b>CO. CLARE</b>												
SHANNON AIRPORT	7.0	-0.8	3.1	-2.5	10.2	4	-4.8	11	-10.9	11	16	25
CARRON	6.1	-1.0	2.6	-1.7	9.5	3	-5.4	11	-9.5	11	19	24
<b>CO. CORK</b>												
ROCHE'S POINT	7.6	1.7	4.7	-1.5	10.5	2	-1.3	22	-4.7	21	6	16
FERMOY (MOOREPARK)	7.1	-1.2	3.0	-2.2	10.4	3	-5.4	11	-10.0	11	18	23
CORK AIRPORT	6.5	0.2	3.4	-1.7	9.6	3	-3.6	22	-8.4	11	14	20
SHERKIN ISLAND	8.5	1.8	5.2	-1.4	11.2	24	-2.2	22	-5.0	14 22	7	17
BALLINCURRIG (PEAFIELD)	7.1	-1.0	3.1		9.9	28	-4.6	22	-4.8	21 22	19	21
<b>CO. DONEGAL</b>												
MALIN HEAD	6.2	1.8	4.0	-1.2	8.9	4	-3.3	22	-5.3	22	8	11
GLENTIES HATCHERY	6.7	-1.1	2.8	-1.5	8.8	12	-5.9	11	-6.4	12	18	21
BALLYSHANNON (CATHLEEN'S FALL)	6.2	-0.6	2.8	-1.8	9.1	4	-4.6	11			12	
<b>CO. DUBLIN</b>												
DUBLIN (PHOENIX PARK)	6.3	-0.4	3.0	-1.4	10.4	5	-4.3	11	-8.0	11 18	15	25
DUBLIN AIRPORT	5.9	-1.1	2.4		9.3	5	-6.6	22	-9.8	22	18	24
CASEMENT AERODROME	5.7	-1.0	2.4	-2.2	10.1	4	-5.1	11	-10.4	11	16	24
DUBLIN (MERRION SQUARE)	6.4	1.8	4.1	-1.7	9.6	2	-0.6	22			4	
<b>CO. GALWAY</b>												
GALWAY (UNIV. COLL.)	7.2	-2.3	2.5	-3.0	10.2	3	-6.5	11	-11.1	11	24	26
MAAM VALLEY	7.6	0.0	3.8		11.4	6	-5.8	21	-10.5	11	13	22
BALLYGAR	6.8	-1.5	2.7		9.6	3	-5.5	11	-8.7	11	18	24
<b>CO. KERRY</b>												
VALENTIA OBSERVATORY	8.2	1.0	4.6	-2.0	11.3	6	-2.4	22	-10.3	12	12	21
ARDFERT (LISCAHANE)	7.8	-0.6	3.6	-2.2	11.5	27	-4.7	11	-7.4	11	15	25
<b>CO. LIMERICK</b>												
MOUNT RUSSELL	6.0	-0.3	2.9		9.8	3	-5.1	22	-8.9	22	16	25
<b>CO. MAYO</b>												
BELMULLET	7.6	0.6	4.1	-1.5	11.3	6	-3.3	22	-8.0	22	11	24
STRAIDE	6.9	-1.8	2.6	-2.2	11.0	6	-8.1	11	-12.5	11	19	26
KNOCK AIRPORT	4.8	-0.4	2.2		8.4	6	-3.9	21	-7.9	20	17	22
DELPHI LODGE II	7.5	0.0	3.8		11.9	3	-4.9	11	-8.9	11	14	21
<b>CO. MEATH</b>												
WARRENSTOWN	6.2	-0.9	2.7	-1.6	10.1	5	-6.0	22	-9.9	22	18	26
<b>CO. MONAGHAN</b>												
CARRICKMACROSS (DUNOGE)	5.9	-1.2	2.4		10.1	5	-6.6	11	-8.2	11	16	26
<b>CO. OFFALY</b>												
DERRYGREENAGH	6.3	-1.0	2.7	-1.3	9.5	2 4	-4.7	22	-5.9	11	15	27
<b>CO. SLIGO</b>												
ARDTARMON	6.7	0.8	3.8		9.8	6	-2.9	22	-8.7	22	10	22
<b>CO. TIPPERARY</b>												
GURTEEN	6.1	-1.4	2.4		9.6	4 3	-6.2	11	-10.7	10	18	26
FETHARD (PARSONSHILL)	6.2	-0.6	2.8		9.0	28	-5.7	22	-7.3	22	20	20
<b>CO. WATERFORD</b>												
WATERFORD (TYCOR)	8.1	1.0	4.6	-0.7	10.5	3	-3.1	22			9	
DUNGARVAN (CARRIGLEA)	7.9	0.0	4.0	-1.6	11.0	3 6	-4.0	1	-5.7	22	15	20
<b>CO. WESTMEATH</b>												
MULLINGAR	5.9	-1.4	2.3	-1.9	9.2	5	-5.8	22	-10.5	22	19	27
<b>CO. WEXFORD</b>												
JOHNSTOWN CASTLE	7.2	1.2	4.2	-1.0	9.9	24	-2.8	20	-6.3	17	8	6
JOHN F. KENNEDY PARK	7.3	0.9	4.1	-0.9	11.2	16	-2.8	20	-7.0	20	9	21
CLONROCHE (KNOXTOWN)	6.7	-0.4	3.2		10.0	24	-4.1	10 20	-8.9	17	15	23

County/ Station	Daily mean (hours/day)	% of average	% of possible	Most in a day/date
<b>CO. CAVAN</b>				
CAVAN LORETO COLLEGE	2.09		22	7.1 18
<b>CO. CLARE</b>				
SHANNON AIRPORT	3.04	130	31	8.2 17
<b>CO. CORK</b>				
CORK AIRPORT	4.04	177	41	9.3 11
SHERKIN ISLAND	4.50	198	45	9.0 28
BALLINCURRIG (PEAFIELD)	4.31			9.0 27
<b>CO. DONEGAL</b>				
MALIN HEAD	3.35	154	35	7.9 10
BALLYSHANNON (CATHLEEN'S FALL)	3.03	142	31	6.6 11
<b>CO. DUBLIN</b>				
DUBLIN AIRPORT	2.29	92	23	8.8 11
CASEMENT AERODROME	2.17	89	22	7.2 17
<b>CO. GALWAY</b>				
GALWAY (UNIV.COLL.)	3.36	147	34	7.8 25 28
<b>CO. KERRY</b>				
VALENTIA OBSERVATORY	4.20	195	42	8.4 22 14
ARDFERT (LISCAHANE)	3.47		35	8.2 27
<b>CO. MAYO</b>				
BELMULLET	3.59	149	37	9.0 11
STRAIDE	2.95			8.1 11
KNOCK AIRPORT	2.63			9.2 11
<b>CO. WATERFORD</b>				
DUNGARVAN (CARRIGLEA)	4.02	174	41	9.0 26
<b>CO. WEXFORD</b>				
JOHN F. KENNEDY PARK	3.63	150	37	9.1 22
CLONROCHE (KNOXTOWN)	3.44			8.6 18

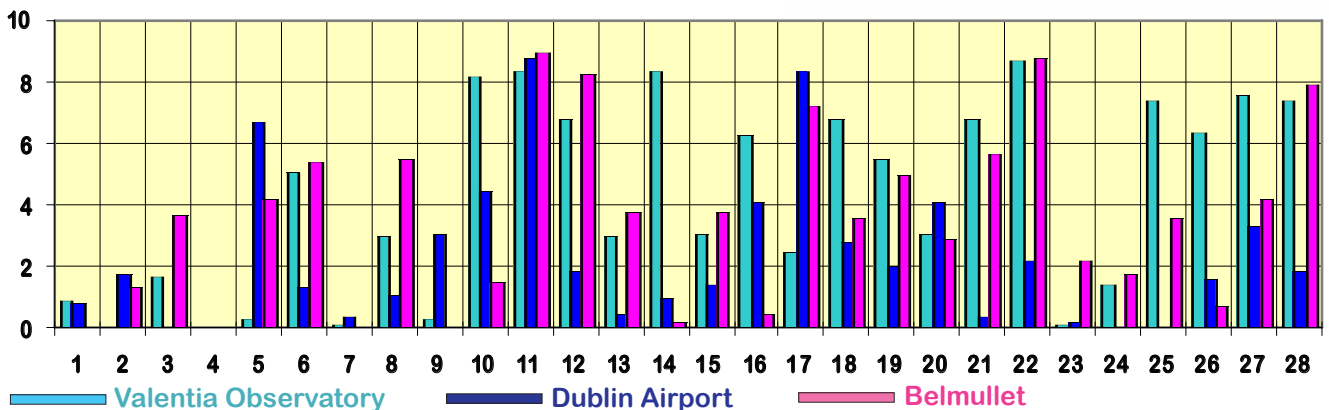
## Exceptionally sunny in south and southwest

Sunshine totals for February were above normal except in parts of the east and northeast, while it was another exceptionally sunny month in the south and southwest. Totals ranged from 59 hours at Cavan (Loreto College) to 126 hours at Sherkin Island, Co. Cork, with percentage of normal values between 89% of normal at Casement Aerodrome and 198% at Sherkin Island. In parts of Munster it was the sunniest February for between 42 and 54 years.

The month's highest daily value of 9.3 hours was measured at Cork Airport on the 11th. Global solar radiation totals were above normal everywhere, varying between 112% at Dublin Airport and 134% at Valentia Observatory.

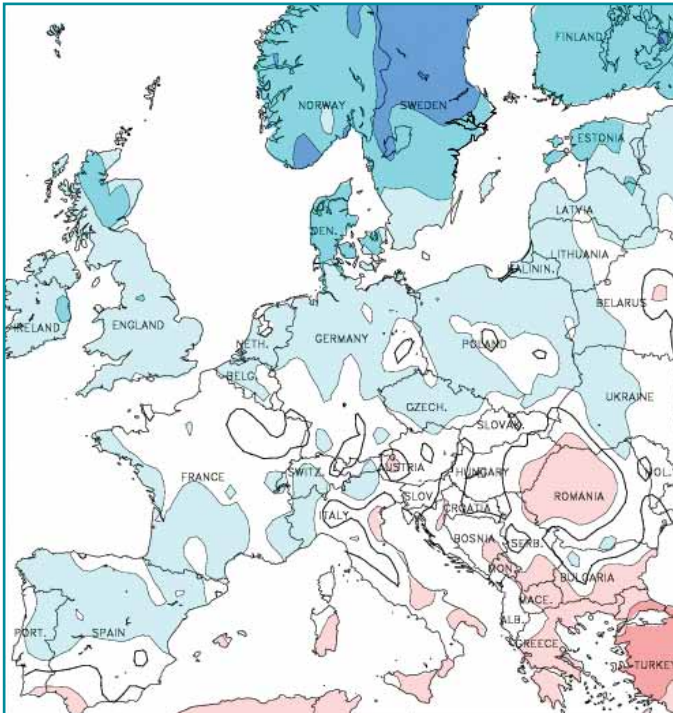
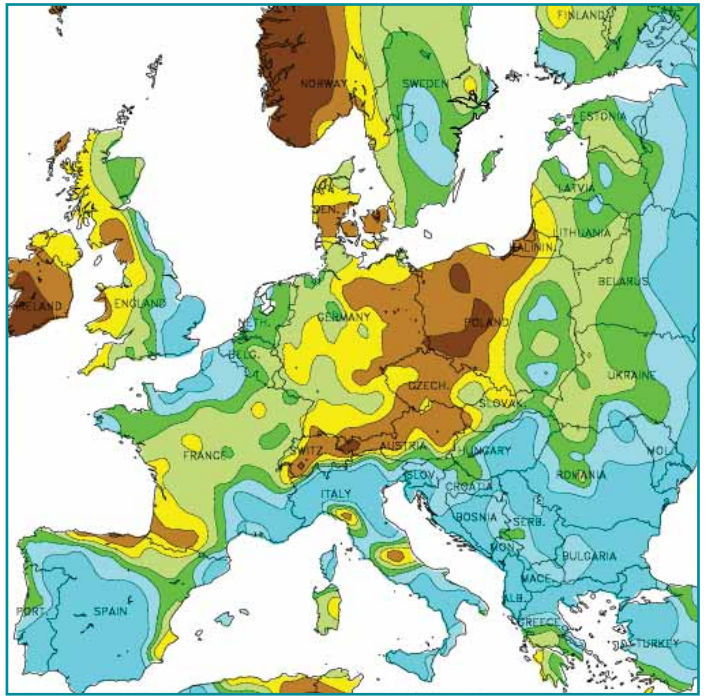


Daily sunshine values(hours)

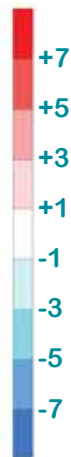


Total Sunshine (percentage of 1961-90 normals)

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



°C



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

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

A historic blizzard hit the mid-Atlantic region of the U.S.A. on the 5th/6th. Dubbed 'Snowmageddon' by local media, this was the second major snow storm to leave more than 41cm on the region during the 2009/10 winter season. A very large North Atlantic extratropical cyclone created an upper-level low, which helped block the mid-Atlantic snowstorm from moving northwards. Several all-time records were reported, including a state record of 65.3cm that fell in Wilmington, Delaware, while Washington's Dulles Airport received 82.3cm, its largest two-day snowfall total on record.

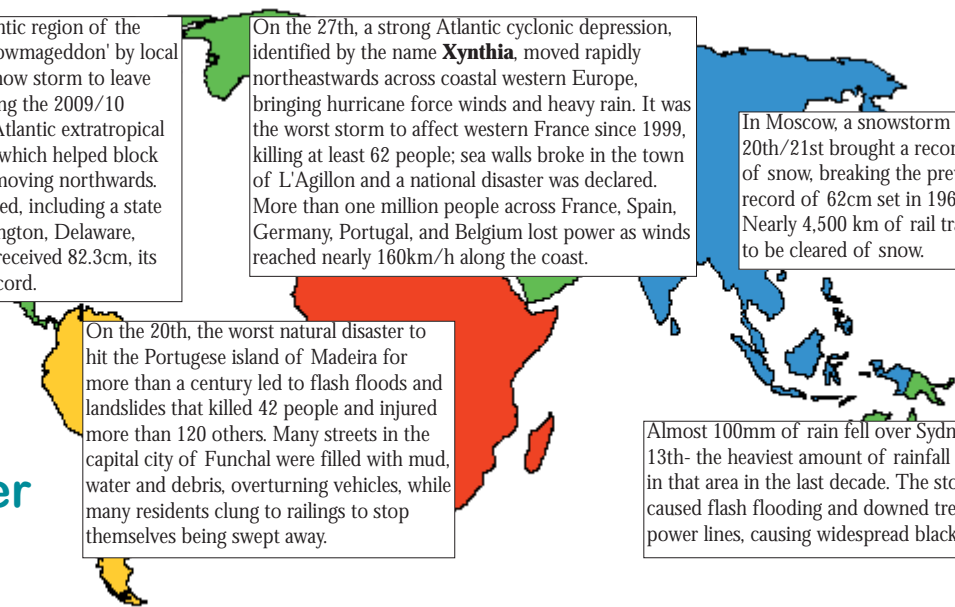
On the 27th, a strong Atlantic cyclonic depression, identified by the name **Xynthia**, moved rapidly northeastwards across coastal western Europe, bringing hurricane force winds and heavy rain. It was the worst storm to affect western France since 1999, killing at least 62 people; sea walls broke in the town of L'Agillon and a national disaster was declared. More than one million people across France, Spain, Germany, Portugal, and Belgium lost power as winds reached nearly 160km/h along the coast.

In Moscow, a snowstorm on the 20th/21st brought a record 63cm of snow, breaking the previous record of 62cm set in 1966. Nearly 4,500 km of rail track had to be cleared of snow.

On the 20th, the worst natural disaster to hit the Portugese island of Madeira for more than a century led to flash floods and landslides that killed 42 people and injured more than 120 others. Many streets in the capital city of Funchal were filled with mud, water and debris, overturning vehicles, while many residents clung to railings to stop themselves being swept away.

Almost 100mm of rain fell over Sydney on the 13th- the heaviest amount of rainfall recorded in that area in the last decade. The storm caused flash flooding and downed trees and power lines, causing widespread blackouts.

**Global weather highlights of the month**



### The Weather of December, January and February

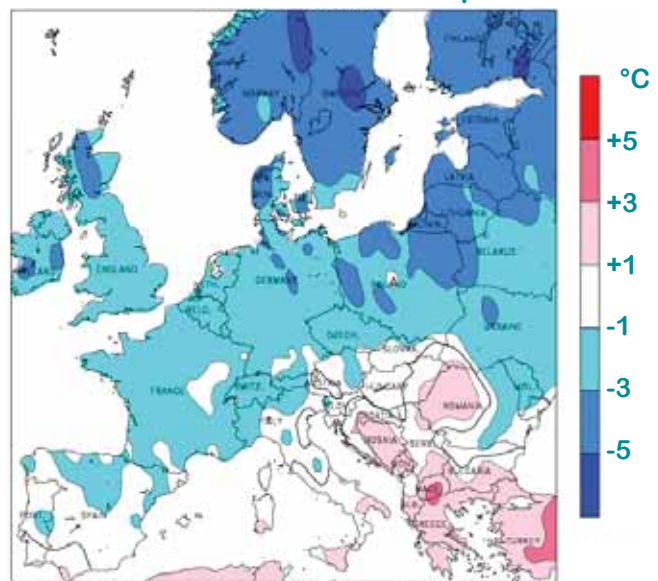
## COLDEST WINTER FOR BETWEEN 13 AND 18 YEARS IN PLACES

Mean air temperatures for the season were around two degrees lower than average for the 1961-90 period and it was the coldest winter since 1962/3 everywhere. The season began with relatively mild weather, but each of the winter months was colder than normal. The season's lowest temperatures were measured in the periods December 24th to 25th and January 7th to 9th, when air temperatures fell below  $-10^{\circ}\text{C}$  in places and several stations recorded their lowest winter values for more than 20 years. There was a total of between 70 and 80 ground frosts during the season at inland stations, while Valentia Observatory's total of 62 ground frosts was almost three times its average winter figure of 22.

Rainfall totals (including snowfall) for the season were below normal almost everywhere, with only around half of the seasonal totals recorded in some places. At most stations it was not as dry as the winter of 2005/6, but at Shannon Airport it was the driest since 1963/4. The season's heaviest falls were during December and mid-January, particularly on December 29th/30th and on January 12th in the south. There were between 20 and 30 days with snow in many places, mainly in the form of showers, but snowfall accumulations were generally slight except on high ground. The total number of raindays during the 3-month period was between 44 and 62 generally, around 10% lower than normal for the season.

Sunshine totals for the season were above normal everywhere and they were exceptionally high in the west and south. It was the sunniest winter on record at stations in these areas, including Valentia Observatory, where over a century of sunshine records exist. Another notable feature of the winter's weather was the infrequency of strong winds. Mean windspeeds for the season of between 5 and 11 knots (*9 and 20km/h*) were below normal everywhere and were the lowest on record for winter at many stations. The highest gust of the season, 62 knots (*115km/h*) was measured at Valentia Observatory on January 12th.

### Exceptionally cold winter over northern Europe



Winter 2009/10- Mean seasonal temperature difference from normal  
(image: NOAA Climate Prediction Centre, US Dept of Commerce)

County/ Station	RAINFALL (mm)			TEMPERATURE ( $^{\circ}\text{C}$ )			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
<b>CO. CARLOW</b>																
Carlow (Oak Park)	188.0	84	20.1 4 Feb	2.6	-2.2	11.8 -12.1				49	50					6
<b>CO. CAVAN</b>																
Ballyhaise	143.5	59	14.2 30 Dec	1.9		11.4 -9.7				44	52					7
<b>CO. CLARE</b>																
Shannon Airport	134.3	51	18.1 29 Dec	2.9	-2.9	12.4 -11.2	2.55	134	8.2 17 Feb	48	12	50	0	0	25	9
<b>CO. CORK</b>																
Cork Airport	317.7	81	39.3 30 Dec	3.4	-2.0	10.9 -5.6	3.50	176	9.3 11 Feb	47	10	42	0	0	28	14
Roche's Point	246.2	77	29.8 12 Jan	4.7	-1.9	11.3 -2.7				45	24					23
<b>CO. DONEGAL</b>																
Malin Head	212.9	72	28.2 26 Feb	4.5	-1.1	10.8 -3.7				62	19					37
<b>CO. DUBLIN</b>																
Dublin Airport	150.2		28.4 30 Dec	2.6		13.1 -9.5	2.35	117	8.8 11 Feb	49	21	52	11	1	18	11
Casement Aerodrome	182.2	98	40.3 30 Dec	2.4	-2.6	12.6 -12.4	1.98	107	7.2 17 Feb	49	24	51	7	1	18	11
<b>CO. KERRY</b>																
Valentia Observatory	425.7	94	58.5 12 Jan	5.1	-1.9	12.6 -4.7	3.21	203	8.4 11 Feb	61	4	33	7	0	1	25
<b>CO. MAYO</b>																
Belmullet	317.6	98	20.6 26 Dec	4.6	-1.4	11.6 -5.6	2.67	162	9.0 11 Feb	71	25	29	29	3	3	35
Knock Airport	205.9		12.1 13 Jan	2.0		9.9 -6.1	2.42		9.2 11 Feb	59	27	51	5	0	47	10
<b>CO. TIPPERARY</b>																
Gurteen	121.7		13.5 12 Jan	2.2		12.1 -8.4				44	53					5
<b>CO. WESTMEATH</b>																
Mullingar	161.1	63	21.6 30 Dec	1.9	-2.4	11.2 -10.0				44	54					2
<b>CO. WEXFORD</b>																
Johnstown Castle	339.1	114	28.4 30 Dec	4.1	-1.4	11.6 -3.7				48	26					7