

Monthly Weather Bulletin

No. 257

SEPTEMBER 2007

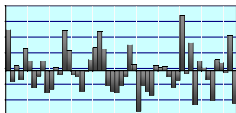


INSIDE



Arctic sea ice in rapid decline- page 3

Wind & Elements	4
Marine & Pressure	5
Agmet /Lab.....	6
Diary	8
Rainfall	10
Temperature ...	12
Sunshine	14
World Weather..	15
Feature	16



50 years of summer weather at Birr

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



The fine weather of late August continued into the first half of September, with dry, warm and sunny weather in many areas, giving suitable surfing conditions along the south coast. Between 25% and 50% more sunshine than normal for the month was measured over the south and southwest of the country. (picture Irish Examiner)

Drier than normal everywhere- mainly warm and sunny

After the very wet weather of the summer months, rainfall totals for September were below normal everywhere. High pressure was the dominant influence throughout the first half of the month and again during the final week, bringing predominantly dry weather with lighter than normal winds. Rainfall totals were just over half of normal in many places, but at no station were they as low as the exceptionally dry September of 2002. Most of the month's rainfall was recorded between the 15th and 24th, with some heavy falls in places on the 15th/16th and 20th/21st. The number of

wetdays during the month (days with 1mm or more rainfall) varied between 7 and 11 in most places, around half of the normal number for September. Although mean air temperatures for the month were above normal everywhere, by around half a degree generally, it was still the coolest September for between 5 and 13 years at most stations. As shown by the charts of daily temperatures on page 12, the first half of the month was warm, but both daytime and nighttime values fell sharply during the second half, especially during the final week. Unusually for September, there was widespread ground frost on the 18th

and in the period 26th to 27th; air and ground temperatures of -1.1°C and -6.6°C respectively at Birr on the 27th were the lowest on record for September at the station. Sunshine totals were near normal in the Dublin area, but they were higher than normal elsewhere, especially in the southwest; it was the sunniest September for between 5 and 11 years at a number of stations. Both Mullingar and Shannon Airport had their sunniest September day in over 50 years of record when both recorded over 12 hours on the 7th.

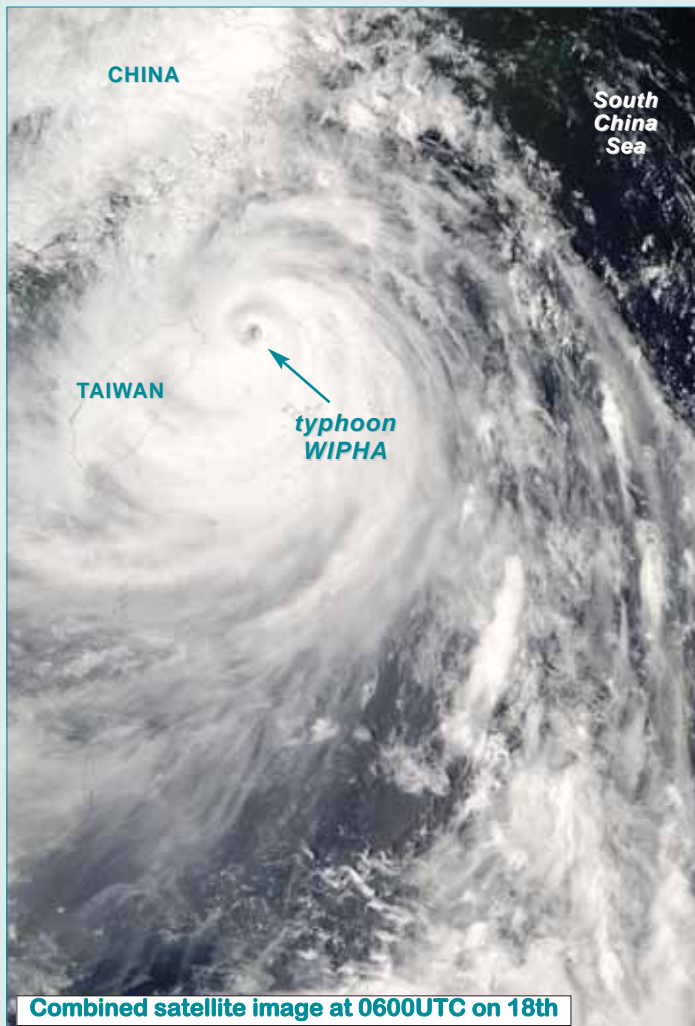
1st to 15th: A large anticyclone centred over or to the southwest of Ireland gave mainly settled conditions. Light showers fell over the northern half of the country during the first few days of the month, but rainfall amounts overall were small. Winds were light throughout the period, mainly between southwesterly and northwesterly in direction. Both daytime and nighttime temperatures were above normal, while it was sunniest on the 3rd and between the 6th and 10th.

16th to 24th: An active cold front moved eastwards across the country on the 16th,

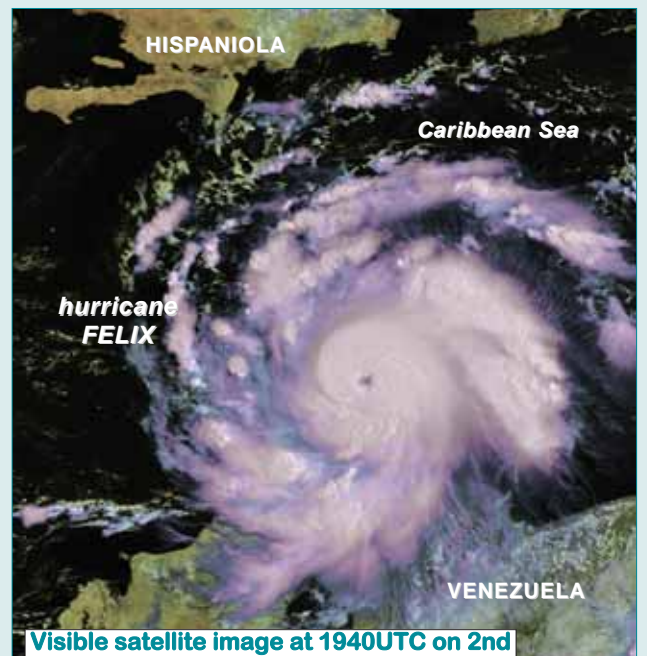
Powerful cyclones in Atlantic and Pacific

Typhoon **Wipha** developed in the western Pacific Ocean as a tropical depression on the 15th. It attained typhoon status by the 17th but reached its peak intensity on the 18th, with maximum sustained winds of 135 knots (250 km/hr). Mean windspeeds of 87 knots were recorded in Zhejiang province in eastern China on the 19th as **Wipha** made landfall. Heavy rain brought floods which destroyed about 670 houses and caused widespread disruption to power supplies. Damages from the storm were estimated to be more than 600 million euro. Nine fatalities were reported, with three others missing. Prior to making landfall, **Wipha** was expected to be the worst typhoon to strike in a decade; this resulted in the largest evacuations in the provinces of Shanghai, Zhejiang, and Fujian since 1949. Hurricane **Felix** developed as a depression in the eastern Atlantic Ocean on August 31st, reaching tropical storm intensity later that day; it continued to intensify and was a strong category five hurricane with maximum winds of 146 knots (270 km/hr) by September 3rd. Prior to making landfall, **Felix** weakened briefly

but then re-intensified into a Category 5 storm and made landfall in northeastern Nicaragua by the 4th. The rugged terrain of Central America weakened the storm significantly, such that it was downgraded to a tropical depression by the 5th. The worst affected area was Puerto Cabezas in Nicaragua, where heavy rainfall destroyed hundreds of homes and left many people dead. Hurricane **Henriette**, which formed in the East Pacific Ocean, and hurricane **Felix** made landfall on the same day, September 4th; this is the first time since records began in 1949 that both Atlantic and Pacific hurricanes made landfall on the same day. (satellite images courtesy NOAA, EUMETSAT)



Combined satellite image at 0600UTC on 18th



Visible satellite image at 1940UTC on 2nd

bringing heavy rain and introducing a spell of cooler and more unsettled weather. Most days during this period were showery, with more persistent falls on the 21st, 23rd and 24th. Southwest to westerly winds were strong at times, especially on the 24th as a deep depression passed to the northwest of Ireland. While daytime temperatures were near normal, there was ground frost under clear skies in inland areas on the 17th and 18th.

25th to 30th: An anticyclone centred to the north of Ireland brought a cool north to northeasterly airstream across the country, later veering southeasterly. Bands of showery rain crossed the country at times, but rainfall amounts were small except in eastern counties. After a cold

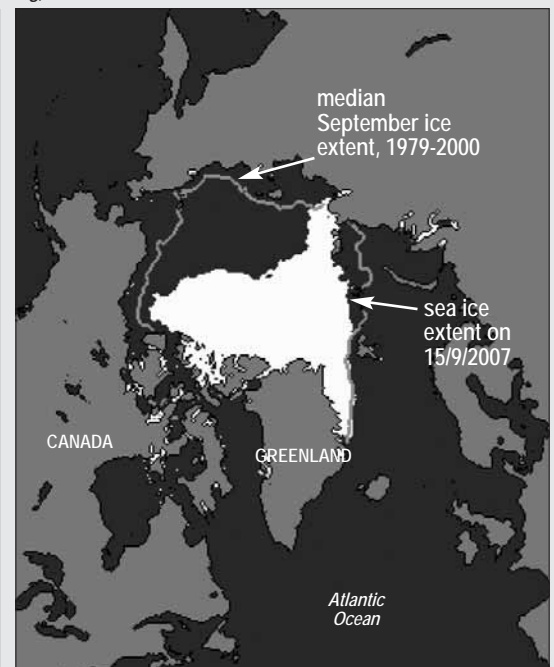
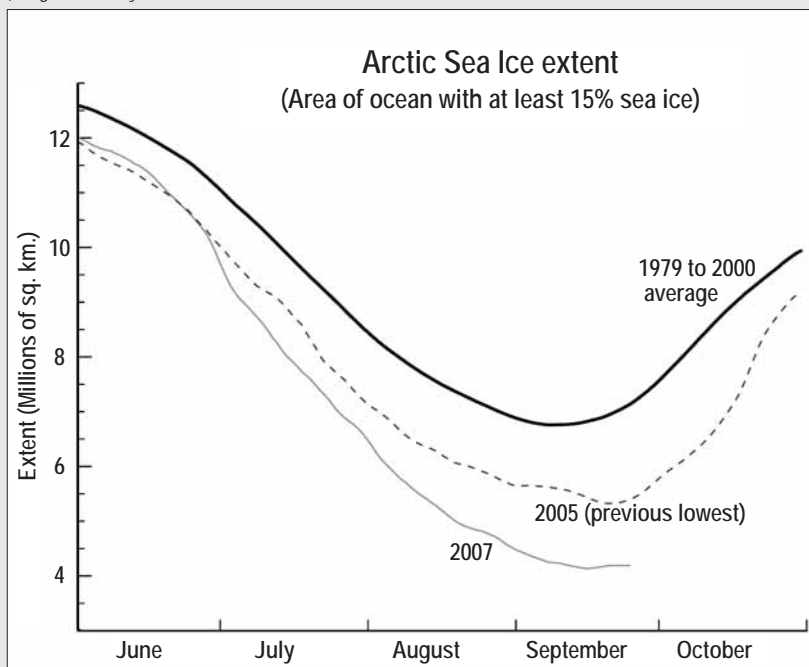
start with clear skies and widespread ground frost on the 26th and 27th, the weather became cloudier but milder at the end of the month.

Wind and elements: Mean windspeeds for the month of between 5 and 11 knots generally (*9 and 20km/hour*) were below normal everywhere and were the lowest on record for September at both Belmullet and Valentia Observatory. The strongest winds of the month were measured on the 17th and in the period 24th/25th; the highest gust, 49 knots (*91km/hour*), was recorded at Malin Head on the 17th. Thunderstorms were recorded only on the 24th, while hail was observed only on the 20th. Fog was most frequent during the period 2nd to 8th.

Rapid decline in Arctic sea ice during summer 2007

During the summer of 2007, Arctic sea ice retreated to its lowest areal extent since satellite measurements began in 1979. The average sea ice area over the Arctic Ocean this month was 4.28 million square kilometres, the lowest on record for September and considerably less than the previous lowest extent recorded in September 2005 (see *charts below*). At the end of the melt season, sea ice area was 39% less than the long-term average from 1979 to 2000. Some estimates, based on ship and aircraft records prior to the satellite era, suggest that sea ice may have retreated by as much as 50% since the 1950s. A rise in global temperature, together with unusual wind patterns over the area during the last few years, have contributed to the dramatic decline. A team of scientists from NASA's Jet Propulsion Laboratory observed less perennial ice cover in March 2007 than ever before, with the thickest ice confined to the Arctic Ocean north of Canada and Greenland; as a result, much of the ocean this season was covered by thinner than usual seasonal ice, which melts more quickly. This ice is more easily compressed and also more easily carried southwards by strong winds. Changed atmospheric conditions over the area since 2000 have set up wind patterns that compressed the sea ice, loaded it onto the Transpolar Drift Stream and then sped its flow away from the Arctic. When this sea ice reaches lower latitudes, it rapidly melts in the warmer waters. These conditions have facilitated the ice loss, leading to this year's record low levels.

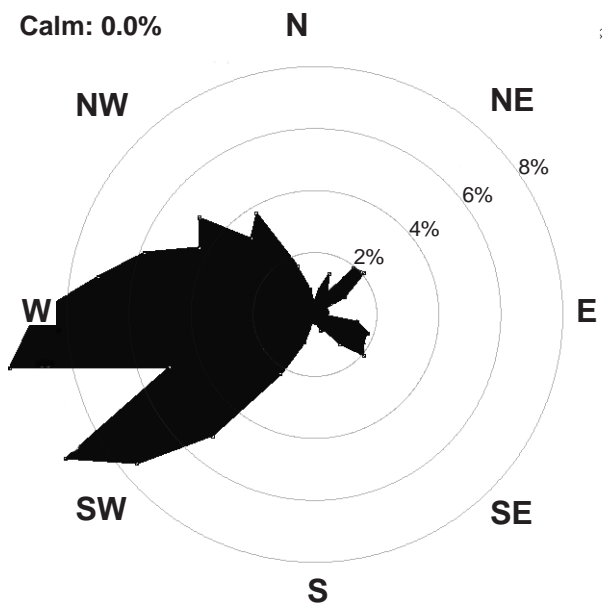
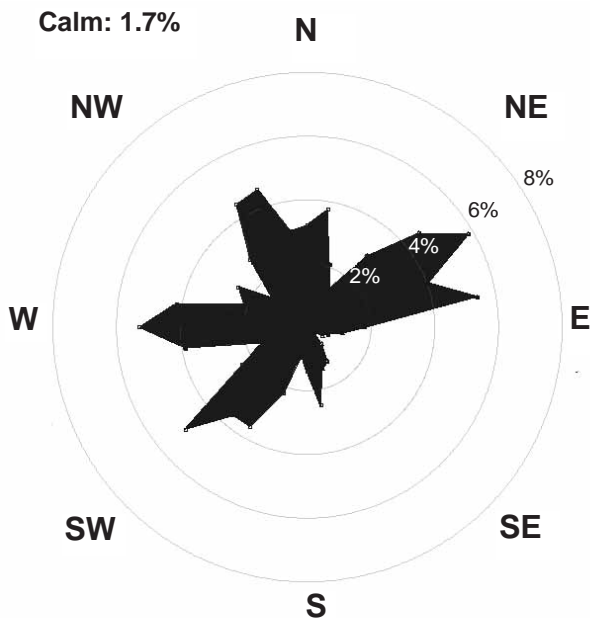
(images courtesy U.S. National Snow and Ice Data Centre, for more information, see website: www.nsidc.org)



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	7.6	230°	30	19/14	260°	41	24/1326	0	2	9	0	0	0	0	4
CO. CORK CORK AIRPORT	7.7	360°	24	17/15	340°	34	17/1418	0	1	1	0	0	0	0	3
		300°	24	24/16											
CO. DONEGAL MALIN HEAD	13.5	340°	37	17/08	340°	49	17/0752	1	13	74	0	0	1	0	0
CO. DUBLIN CASEMENT AERODROME	8.1	220°	29	16/11	220°	47	16/1144	0	2	8	0	0	0	0	1
DUBLIN AIRPORT	10.3	260°	30	24/13	260°	42	24/1224	0	4	12	0	0	0	0	0
CO. KERRY VALENTIA OBSERVATORY	6.2	270°	26	24/08	260°	41	24/0725	0	1	5	0	0	0	0	3
CO. KILKENNY KILKENNY	5.6	270°	20	24/14	350°	33	17/1244	0	0	0	n/a	0	---	n/a	---
					270°	33	19/1430								
CO. MAYO BELMULLET	7.8	210°	29	22/17	300°	47	24/0923	0	7	39	0	0	0	0	1
KNOCK AIRPORT	8.3	270°	24	24/13	270°	35	24/1200	0	1	3	0	0	0	0	11
CO. MONAGHAN CLONES	6.6	280°	22	24/14	330°	35	25/1433	0	1	1	n/a	0	---	n/a	---
		330°	22	25/15											
CO. OFFALY BIRR	5.5	150°	29	18/11	290°	34	24/1334	0	1	1	n/a	0	---	n/a	---
CO. WESTMEATH MULLINGAR II	5.3	200°	17	16/09	260°	32	24/1200	0	0	0	n/a	0	---	n/a	---
		260°	17	24/13											
CO. WEXFORD ROSSLARE	Data for Rosslare no longer available														

Valentia Observatory

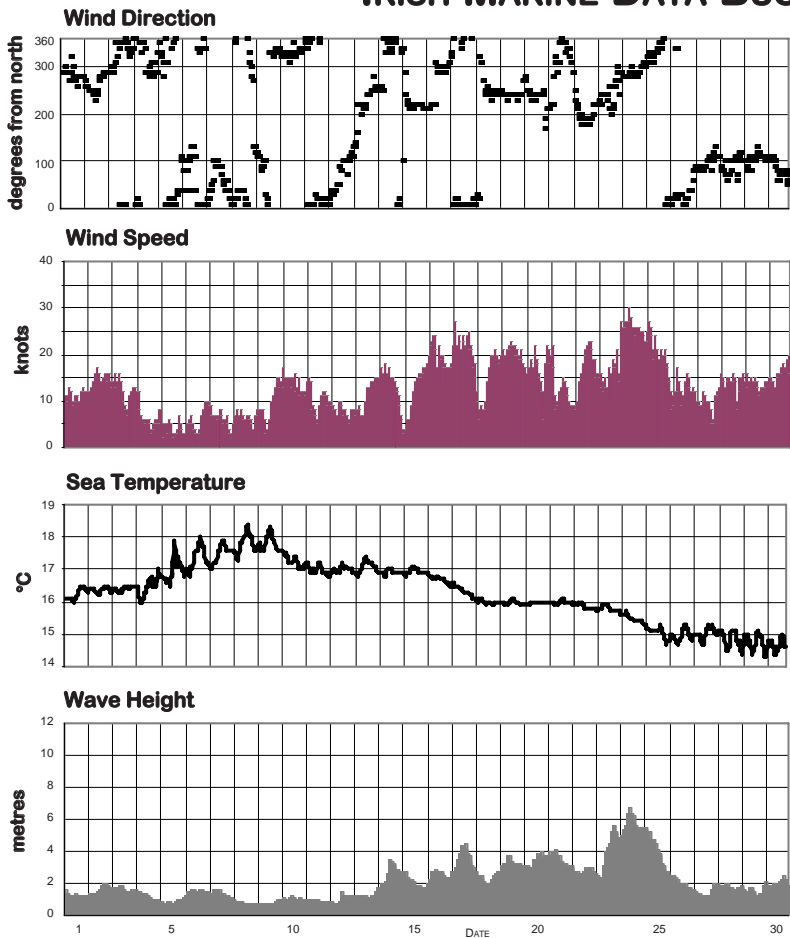
Dublin Airport



0 1 2 3 4%

FREQUENCY OF WIND DIRECTION

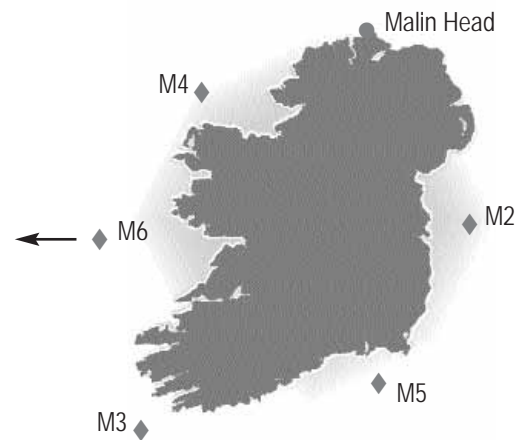
MARINE OBSERVATIONS FROM IRISH MARINE DATA BUOY NETWORK



Hourly wind and wave conditions at M3 (51.22° N, 10.55°W)

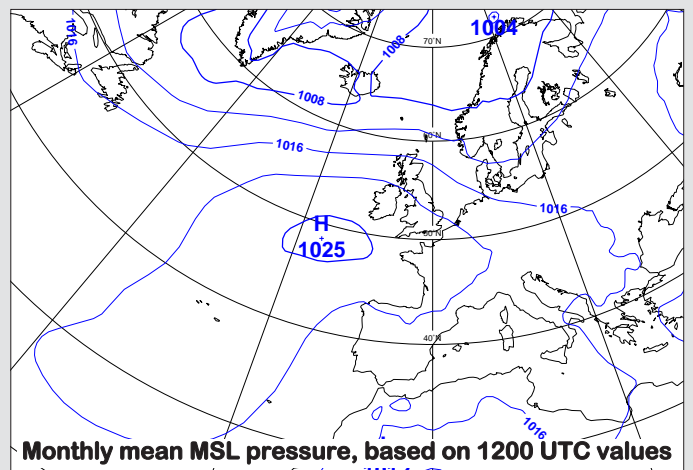
Buoy	Sea surface temp. (°C)	Mean wind speed (knots)	Max. 10-min wind (knots)	Mean wave height (m.)	Max. wave height (m.)
M2	14.9	14.0	31	1.0	2.8
M3	16.3	13.1	30	2.1	6.7
M4	14.7	15.8	32	2.7	6.9
M5		not available			
M6	16.3	14.1	35	2.8	8.0
Malin Head	14.6				

Summary of Mean Monthly Values

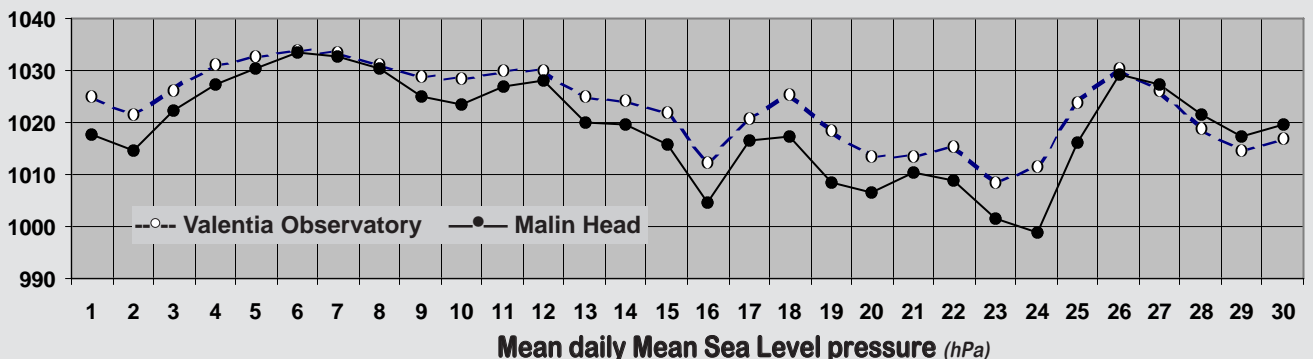


MEAN ATMOSPHERIC PRESSURE

Mean sea level pressure values for the month ranged from 1020hPa in the north to 1023hPa in the southwest, around 8hPa higher than normal for September. Pressure was above normal for most of the month, particularly during the first half of the month. The highest value, 1035.6hPa, was recorded at Knock Airport on the 8th. The month's lowest value, 993.2hPa at Malin Head, was associated with a deep depression which passed north of Ireland on the 24th.

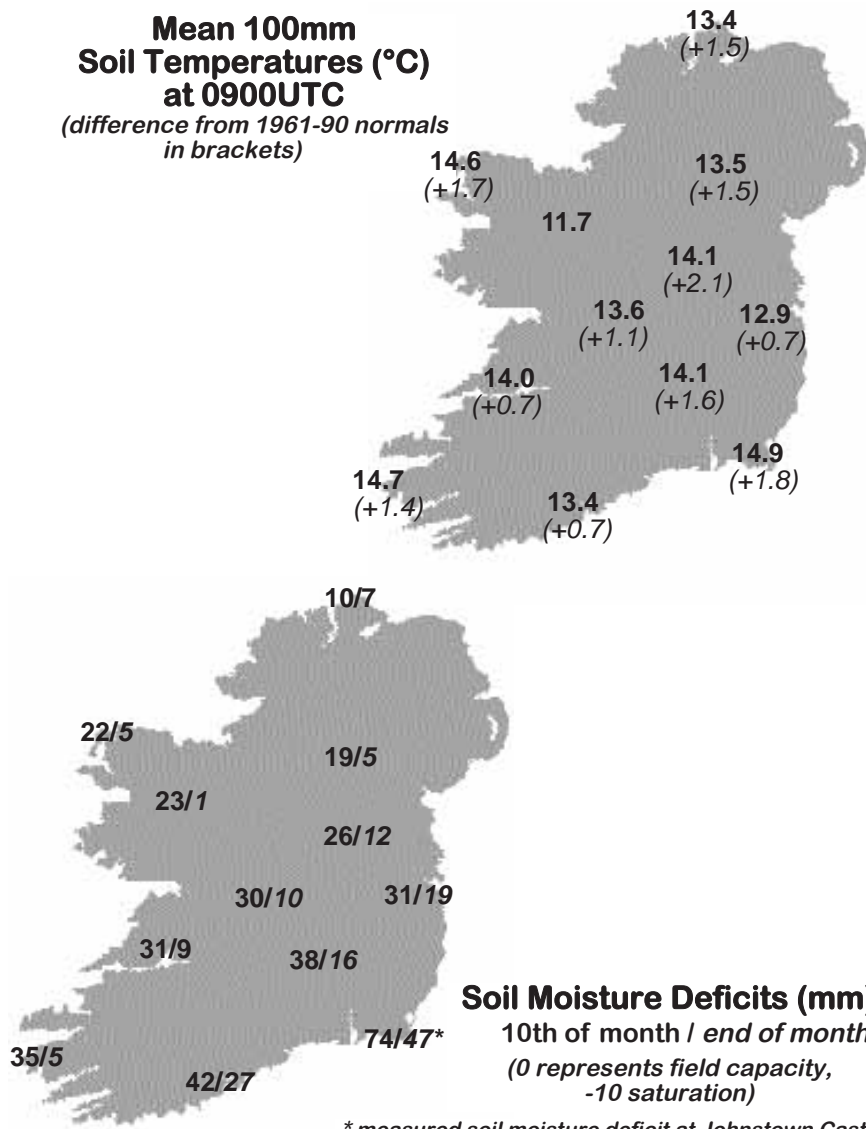


Monthly mean MSL pressure, based on 1200 UTC values



Mean daily Mean Sea Level pressure (hPa)

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



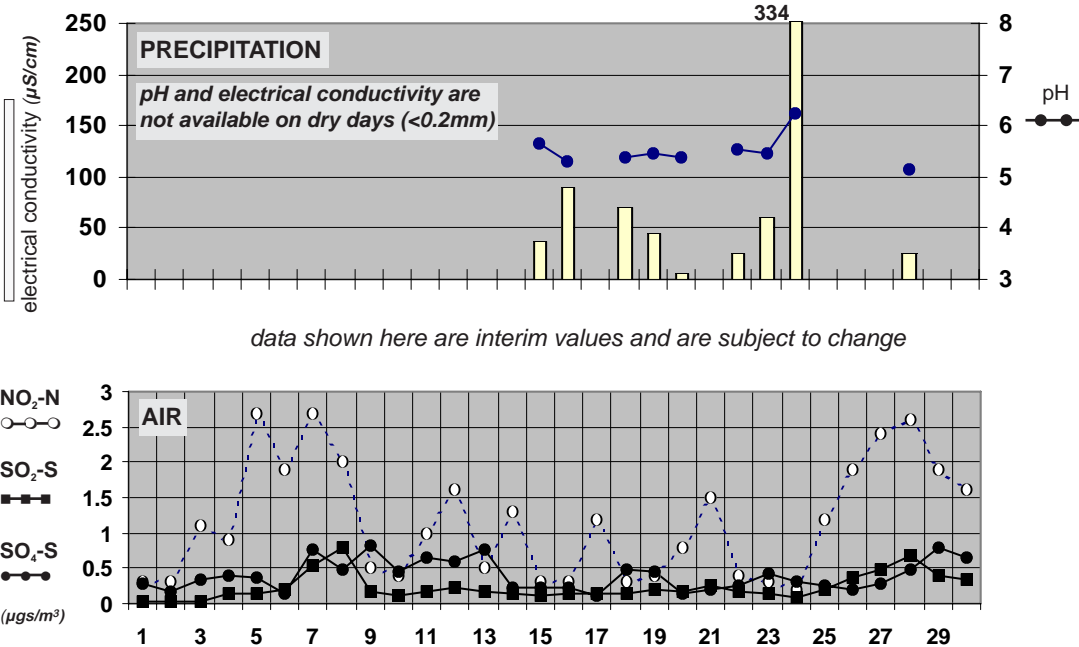
Soil Temperatures at 0900UTC

County/ Station	°C		
	100mm	200mm	300mm
CO. CLARE			
SHANNON AIRPORT	14.0	14.7	15.7
CARRON	15.0		15.9
CO. CORK			
FERMOY (MOORE PARK)	14.3	14.9	15.3
CORK AIRPORT	13.4	14.3	15.5
SHERKIN ISLAND	14.7		15.5
BALLINCURRIG (PEAFIELD)	13.4	14.3	15.2
CO. DONEGAL			
MALIN HEAD	13.4	14.3	15.1
CO. DUBLIN			
DUBLIN AIRPORT	13.3	14.0	14.8
CASEMENT AERODROME	12.9	13.7	14.9
CO. KERRY			
VALENTIA OBSERVATORY	14.7	15.9	16.8
CO. KILKENNY			
KILKENNY	14.1	15.1	15.9
CO. LIMERICK			
MOUNT RUSSELL	13.4	14.1	
CO. LOUTH			
ARDEE (BOHARNAMOE)	13.1	13.4	14.3
CO. MAYO			
BELMULLET	14.6	15.8	17.0
STRAIDE	14.0		
KNOCK AIRPORT	11.7	12.7	13.9
CO. MEATH			
WARRENSTOWN	13.6	14.5	15.6
CO. MONAGHAN			
CLONES	13.5	14.1	14.9
CO. OFFALY			
BIRR	13.6	14.7	15.8
CO. TIPPERARY			
FETHARD (PARSONSHILL)		13.2	14.5
CO. WATERFORD			
DUNGARVAN (CARRIGLEA)		15.0	15.5
CO. WESTMEATH			
MULLINGAR II	14.1	14.9	16.0
CO. WEXFORD			
JOHNSTOWN CASTLE	14.9	15.3	15.8
ROSSLARE			no longer available
JOHN F. KENNEDY PARK	14.7	15.5	16.7
CLONROCHE (KNOXTOWN)	13.5	14.4	15.0

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

* measured soil moisture deficit at Johnstown Castle

**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.

Saturday 1st: Mainly cloudy during the period with a few sunny spells. Light rain, drizzle or showers in many areas, although amounts of rainfall were small. Becoming drier during the evening with rain or drizzle confined to northern areas. Temperatures were above normal generally. Winds were mainly light southwesterly, a little stronger in northern areas.

Rainfall: nil to 3mm, heaviest at Belmullet

Temperature: max. 17°C to 21°C, min. 12°C to 14°C, no ground frost

Sunshine: 1 to 4 hours, sunniest at Malin Head, 1 hour at Knock Airport

Sunday 2nd: Mild and humid overnight with a few patches of drizzle generally, more organised rain in northern coastal areas. It was a warm and mostly cloudy day with outbreaks of rain and drizzle spreading southwards and only short sunny spells. Becoming clearer in the late afternoon and evening, with the rain and drizzle becoming confined to the extreme southwest. Light to moderate southwesterly winds veered northwesterly by evening.

Rainfall: nil to 6mm, heaviest at Mullingar, nil at Rosslare and Cork Airport

Temperature: max. 16°C to 21°C, min. 12°C to 15°C, no ground frost

Sunshine: nil to 2 hours, sunniest at Kilkenny, nil at Valentia

Monday 3rd: Apart from some light showers overnight in Ulster it was a dry day. Some cloud, but long sunny spells everywhere. Winds were moderate in the north but generally light, from a west or northwesterly direction for most of the day, becoming very light and variable by evening.

Rainfall: nil to trace

Temperature: max. 16°C to 19°C, min. 7°C to 13°C, no ground frost

Sunshine: 8 to 12 hours, sunniest at Kilkenny, 8 hours at Casement Aerodrome

Tuesday 4th: Mostly dry during the day and evening with the exception being some northern and western areas. Visibility was poor at times in drizzle. Temperatures were above normal, despite little sunshine except in the southeast and east. Winds were light variable, a little stronger in the north.

Rainfall: nil to 2mm generally, 7mm at Clones

Temperature: max. 17°C to 21°C, min. 7°C to 14°C, no ground frost

Sunshine: nil to 11 hours, sunniest at Rosslare, nil at Malin Head and Belmullet

Wednesday 5th: Dry in most places apart from some drizzle in the north and northwest. Dry during the morning with sunny spells in many places; an exception was near northern coasts, where some rain and drizzle persisted. During the afternoon it became dry and sunny everywhere. The evening and night were dry with sunny or clear spells. Winds were light, generally westerly in direction.

Rainfall: nil to <1mm generally, >1mm at Malin Head

Temperature: max. 17°C to 21°C, min. 11°C to 15°C, no ground frost

Sunshine: nil to 7 hours, sunniest at Belmullet, nil at Cork Airport

Thursday 6th: Most areas were clear and dry overnight with fog and mist patches in parts, some rain and drizzle along the northwest and north coast. The morning was dry with sunshine in places, especially in the south. The afternoon was dry with variable cloud amounts. Remaining dry during the evening with sunny spells. Winds were light and variable in direction.

Rainfall: nil to trace generally, 1mm at Malin Head

Temperature: max. 17°C to 24°C, min. 10°C to 16°C, no ground frost

Sunshine: trace to 12 hours, sunniest at Valentia, trace at Knock Airport

Friday 7th: Some mist or fog patches in places at first, becoming widespread by dawn and continuing in most areas during the late morning. The mist cleared earlier in the south and midlands, giving long spells of sunshine throughout, cloudier in the southeast and east. Warm with temperatures well above normal. Sunny spells everywhere by evening and clear spells after dark, when there was a return of mist and fog patches. Light variable winds.

Rainfall: nil to trace

Temperature: max. 18°C to 22°C, min. 9°C to 14°C, no ground frost

Sunshine: 4 to 12 hours, sunniest at Mullingar, 4 hours at Kilkenny

Saturday 8th: Some drizzle along northern coasts overnight, dry with clear spells elsewhere with patches of mist. The drizzle persisted along the north coast, some fog patches cleared elsewhere to give sunny spells, especially in southern areas. Similar conditions during the afternoon. The evening was dry with sunny spells. A dry night. Light winds throughout.

Rainfall: nil to trace generally, 1mm at Malin Head

Temperature: max. 16°C to 22°C, min. 8°C to 14°C, no ground frost

Sunshine: <1 to 12 hours, sunniest at Shannon Airport, < 1 hour at Malin Head

Sunday 9th: Some outbreaks of drizzle on northern coasts overnight, dry elsewhere with mist and fog patches. The mist and fog lingered in a few areas during the morning. The southern half of the country had a dry day with long sunny spells, elsewhere it was more cloudy with the occasional drizzle and very little sunshine. Warm generally with afternoon temperatures above normal. Mild and humid again after dark. Light to moderate westerly winds were fresh at times on exposed northern coasts.

Rainfall: nil to trace

Temperature: max. 16°C to 21°C, min. 9°C to 14°C, no ground frost

Sunshine: nil to 11 hours, sunniest at Valentia, nil at Malin Head

Monday 10th: Mild and humid overnight with patches of drizzle or light rain in places, mainly in the northern half of the country. The rain and drizzle moved southwards over the country during the morning and was followed by mainly dry, clear weather. Largely dry by the afternoon with sunny spells in Ulster and Leinster. Warm with afternoon temperatures a degree or two above normal. Some drizzle and fog patches in Connacht in the evening but otherwise mostly dry. Light to moderate northwesterly winds were fresh and gusty at times on exposed coasts.

Rainfall: nil to 1mm, heaviest at Knock Airport

Temperature: max. 16°C to 21°C, min. 8°C to 15°C, no ground frost

Sunshine: trace to 9 hours, sunniest at Clones, trace at Belmullet

Tuesday 11th: Mist or fog in some inland areas during the night, with some drizzle or light rain in western areas. Dry but mainly cloudy during the period with temperatures near or above normal for the remainder of the day. Dry and mild during the evening. Light variable winds throughout.

Rainfall: nil to 1mm, heaviest at Malin Head

Temperature: max. 16°C to 19°C, min. 8°C to 15°C, no ground frost

Sunshine: nil to 1 hour generally, 5 hours at Rosslare

Wednesday 12th: Mild and humid overnight with a few mist or fog patches. It was a warm and mostly dry day with just the odd spot of drizzle. Generally dull with little sunshine, however afternoon temperatures were slightly above normal for the time of year. Mild again in the evening with one or two light showers in the southwest. Light variable winds were moderate southwesterly at times on northwestern coasts.

Rainfall: nil

Temperature: max. 18°C to 20°C, min. 13°C to 15°C, no ground frost

Sunshine: nil to <1 hour generally, 4 hours at Malin Head

Thursday 13th: The day was generally warm and mostly dry apart from occasional drizzle in places. Southern coastal areas had most sunshine. A band of rain moved into the northwest in the late afternoon and moved southwards over the country in the evening; the southeast remained dry, however. Light, variable winds overnight became southwesterly during the day and gradually increased to moderate with occasional gusts.

Rainfall: nil to <1mm generally, 4mm at Malin Head and Belmullet

Temperature: max. 17°C to 21°C, min. 12°C to 15°C, no ground frost

Sunshine: trace to 7 hours, sunniest at Cork Airport, trace at Knock Airport

Friday 14th: Rain or drizzle in many areas during the night, however amounts were quite small. Dry with sunny spells in some areas, mainly in the southwest. Isolated showers later in the period. Temperatures a little lower than of late. Winds were variable initially, but becoming northwesterly and strengthening later before falling light and variable again by evening.

Rainfall: trace to 2mm, heaviest at Birr, trace at Belmullet and Knock Airport

Temperature: max. 15°C to 19°C, min. 6°C to 12°C, no ground frost

Sunshine: 4 to 10 hours, sunniest at Valentia, 4 hours at Knock Airport

Saturday 15th: Dry overnight with some clear spells. Dry with sunny spells during the morning. It continued dry with sunny spells in the afternoon, however, some rain or drizzle developed in the extreme north by mid-afternoon. Rain and drizzle in the north and northwest during the evening and night, otherwise dry with clear or sunny spells. Winds were light to moderate, south to southwesterly in direction.

Rainfall: nil to 2mm, heaviest at Malin Head

Temperature: max. 17°C to 21°C, min. 5°C to 12°C, no ground frost

Sunshine: trace to 12 hours, sunniest at Cork Airport, trace at Belmullet

Sunday 16th: Rain in the northwest at first, gradually spread southeastwards overnight and through the morning, heavy in Ulster and north Connacht, finally clearing the southeast by mid-afternoon. Scattered showers, mostly light but occasionally heavy, followed the clearance. Mild. Sunny spells after the early rain cleared. Winds were moderate southwesterly at first, veering west or northwesterly and decreasing a little.

Rainfall: <1 to 31mm, heaviest at Knock Airport, <1mm at Rosslare
Temperature: max. 16°C to 19°C, min. 8°C to 13°C, no ground frost
Sunshine: 4 to 7 hours, sunniest at Valentia, 4 hours at Rosslare

Monday 17th: Scattered light showers along Atlantic coasts overnight became widespread during the day. Sunshine throughout the country. Mostly dry during the evening except for showers in the north and northwest. Winds were northerly, strong and gusty on northern coasts, lighter inland, decreasing later.

Rainfall: nil to 4mm, heaviest at Knock Airport, nil at Shannon Airport
Temperature: max. 11°C to 15°C, min. 3°C to 9°C, ground temperatures down to -2°C at Casement Aerodrome
Sunshine: 7 to 11 hours, sunniest at Kilkenny, 7 hours at Malin Head

Tuesday 18th: The morning was mostly dry with some sunny spells, mainly in the east and southeast. The afternoon was more overcast and winds increased with some outbreaks of rain developing in the north and northwest. During the evening and night rain developed in the west, north and south of the country, but continuing dry further east. Winds were westerly, light to moderate with occasional gusts in the north and northwest of the country.

Rainfall: nil to 8mm, heaviest at Malin Head
Temperature: max. 13°C to 15°C, min. 1°C to 9°C, ground temperatures down to -5°C at Kilkenny
Sunshine: nil to 6 hours, sunniest at Rosslare, nil at Malin Head and Clones

Wednesday 19th: Mild with rain and drizzle during the night. The precipitation cleared northern areas during the morning but was slow to clear extreme southern areas. After the clearance, a few showers developed in places. Some sunny periods, mainly in northern areas. Winds were southwesterly, moderate to fresh, up to gale force at times in coastal areas.

Rainfall: 1 to 13mm, heaviest at Birr, 1mm at Cork Airport
Temperature: max. 16°C to 20°C, min. 9°C to 14°C, no ground frost
Sunshine: trace to 7 hours, sunniest at Malin Head, trace at Valentia

Thursday 20th: Early showers in the west and north persisted during the day, sunny spells elsewhere. A band of rain affecting the southwest during the late afternoon spread eastwards to affect Munster and south Leinster by the end of the day. Elsewhere the showers died out and there were clear spells after dark. Fresh to strong westerly winds with occasional gale gusts around coasts.

Rainfall: trace to 17mm, heaviest at Valentia, trace at Rosslare
Temperature: max. 15°C to 19°C, min. 9°C to 12°C, no ground frost
Sunshine: 1 to 8 hours, sunniest at Cork Airport, 1 hour at Malin Head

Friday 21st: A band of heavy rain crossed the southern half of the country from west to east, giving some very heavy falls in the early hours. This rain cleared the east coast by late morning. There were sunny spells during the afternoon, however, the east remained mainly overcast. Winds were light, generally southwesterly in direction.

Rainfall: 1 to 24mm, heaviest at Kilkenny, 1mm at Clones
Temperature: max. 15°C to 18°C, min. 6°C to 13°C, no ground frost
Sunshine: 2 to 7 hours, sunniest at Valentia, 2 hours at Dublin Airport

Saturday 22nd: Mist or fog soon cleared in the morning and apart from one or two showers it was a dry, breezy day. Sunny spells with afternoon temperatures a degree or two above normal. Late in the afternoon, dull and wet weather moved into southern coastal districts. Winds were light southerly or variable, increasing moderate to fresh and gusty.

Rainfall: nil to 5mm, heaviest at Valentia
Temperature: max. 16°C to 19°C, min. 5°C to 12°C, no ground frost
Sunshine: 3 to 10 hours, sunniest at Rosslare, 3 hours at Knock Airport

Sunday 23rd: Mild and humid overnight with outbreaks of rain and drizzle. This rain and drizzle was followed by clearer weather and it was a warm and breezy day with scattered showers and sunny spells. Persistent rain moved into south Munster and south Leinster in the evening and was heavy at times. Remaining showery elsewhere. Southwesterly winds were moderate to fresh and gusty, decreasing gradually in the evening.

Rainfall: 1 to 13mm, heaviest at Rosslare, 1mm at Casement Aerodrome
Temperature: max. 16°C to 19°C, min. 8°C to 13°C, no ground frost
Sunshine: 2 to 5 hours, sunniest at Clones, 2 hours at Malin Head

Monday 24th: Showers in western areas during the night, otherwise dry. A showery trough moved southeastwards across the country during the day, giving showers in many areas. These showers became less frequent during the late afternoon. Some sunny spells also, but cool in the strong winds. Southwesterly winds veering westerly, up to gale force with stronger gusts.

Rainfall: trace to 15mm, heaviest at Clones, trace at Cork Airport
Temperature: max. 12°C to 15°C, min. 7°C to 11°C, no ground frost
Sunshine: 1 to 8 hours, sunniest at Cork Airport, 1 hour at Clones

Tuesday 25th: Showers in the north and northwest overnight, mostly dry with clear spells elsewhere. Widespread showers during the morning in the west and north continued into the afternoon with sunny spells also throughout. The showers continued into the evening in the west, although less frequent. Winds were northwesterly, moderate to strong with occasional gusts.

Rainfall: nil to 4mm, heaviest at Knock Airport
Temperature: max. 12°C to 16°C, min. 4°C to 10°C, ground temperatures down to -1°C at Casement Aerodrome
Sunshine: 5 to 10 hours, sunniest at Rosslare, 5 hours at Casement Aerodrome

Wednesday 26th: Some showers in the north overnight, dry elsewhere with clear spells and ground frost. Sunny spells during the morning with some well-scattered showers in northern areas. Cloudier during the afternoon with isolated showers. The evening was clear with ground frost again after dark. Northerly winds fell light as the day went on.

Rainfall: nil to trace
Temperature: max. 11°C to 14°C, min. 2°C to 9°C, ground temperatures down -4°C at Birr
Sunshine: 2 to 8 hours, sunniest at Rosslare, 2 hours at Belmullet

Thursday 27th: A dry night with clear spells in most places. Cool, with temperatures dipping below freezing in some midland areas. After dawn there were long hours of sunshine countrywide, particularly in the west, but temperatures were a little below normal. A cold night followed, with ground frost recurring. Winds were light and variable in direction.

Rainfall: nil
Temperature: max. 11°C to 14°C, min. -1°C to 7°C, ground temperatures down to -7°C at Birr
Sunshine: 5 to 11 hours, sunniest at Knock Airport, 5 hours at Rosslare

Friday 28th: Some patchy rain in the north, but dry with some ground frost elsewhere overnight. A few scattered showers in the east during the morning but mostly dry with sunny spells in the west. Some showers again in the east during the afternoon, dry with some sunshine in the west. The evening and night were mostly dry with variable cloud amounts. Light variable winds.

Rainfall: nil to 2mm, heaviest at Valentia
Temperature: max. 13°C to 16°C, min. 2°C to 12°C, ground temperatures down to -2°C at Birr
Sunshine: trace to 6 hours, sunniest at Belmullet, trace at Casement Aerodrome

Saturday 29th: Patchy light rain or drizzle overnight and throughout the day. This became more persistent, with heavier falls during the afternoon and evening. Sunshine in the west and southwest, mostly cloudy elsewhere. Mild for late September. Winds were light, from an easterly direction throughout.

Rainfall: nil to 4mm, heaviest at Kilkenny, nil at Belmullet and Valentia
Temperature: max. 12°C to 17°C, min. 6°C to 13°C, no ground frost
Sunshine: nil to 5 hours, sunniest at Valentia

Sunday 30th: Drizzle during the night in eastern areas. Mist or fog in many inland areas. Coastal western areas stayed dry at first, but eastern areas remained wet with light rain and drizzle. Visibility improved during the morning. A few showers in western areas during the afternoon, otherwise cloudy. Dry during the evening except for the odd spot of drizzle in southern areas. Temperatures near normal with a few sunny intervals, mainly in coastal areas. No frost. Winds were from a southeasterly to a northeasterly direction, mainly light, but otherwise variable.

Rainfall: nil to 12mm, heaviest at Casement Aerodrome
Temperature: max. 15°C to 19°C, min. 8°C to 13°C, no ground frost
Sunshine: <1 to 8 hours, sunniest at Birr, <1 hour at Malin Head

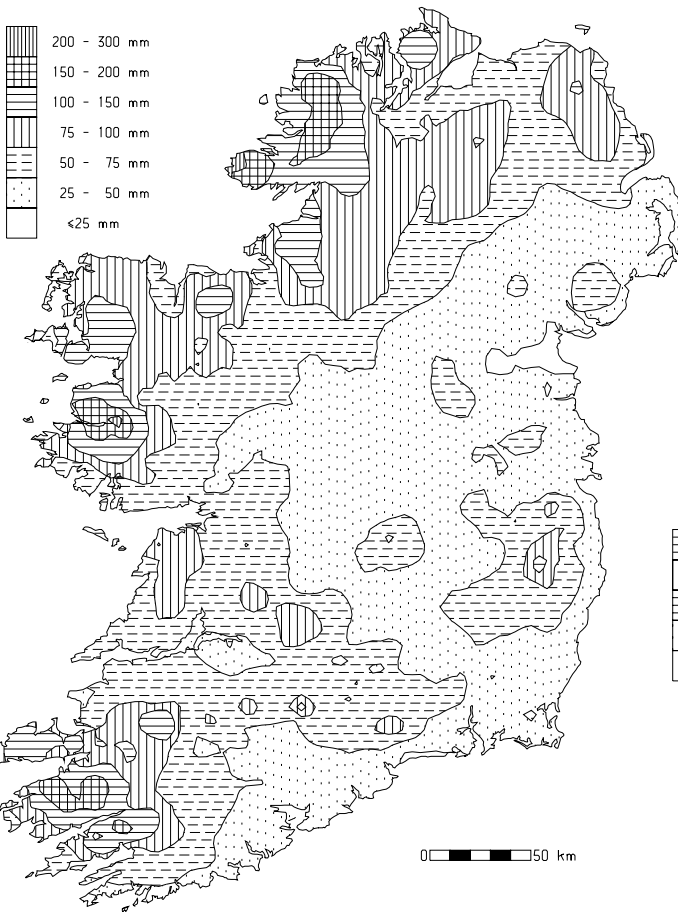
Drier than normal almost everywhere -very dry near south coast

Rainfall totals were below normal everywhere except in parts of the northwest. Less than half of the normal September totals were recorded in parts of the east, northeast, midlands and south; totals ranged from 24mm at Ardee (Boharnamoe), Co. Louth, to 145mm at Maam Valley, Co. Galway, with percentage of normal values between 34% at Ballygar, Co. Galway and 106% at Ballyshannon (Cathleen's Fall), Co. Donegal. At many stations it was the driest since the exceptionally dry September of 2002.

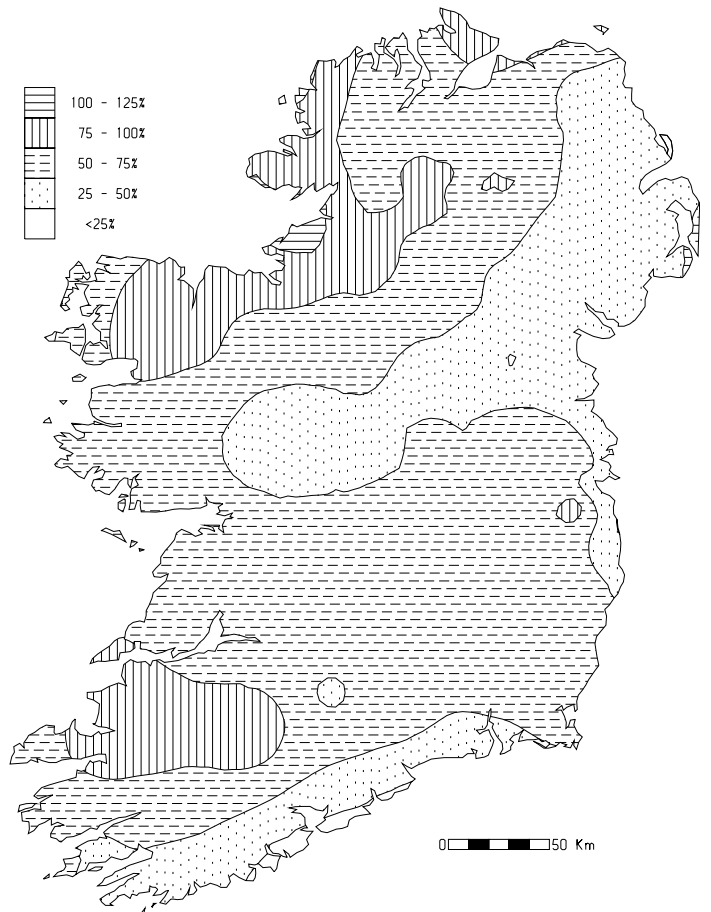
Most of the month was dry, with rainfall concentrated into the period between the 15th and 24th. There were between 7 and 11 wetdays (days with 1mm or more rainfall) at the majority of stations, but between 14 and 16 wetdays were measured in parts of the northwest. The heaviest falls of the month were in the periods 15th/16th and 20th/21st. Over 30mm of rain fell over many western areas on the 15th, with the heaviest fall of 61.6mm measured at Maam Valley, the highest daily fall of the month. The daily fall of 43.8mm on this day at Straide, Co. Mayo, was its highest September fall since 1985.

County/ Station	Total Amount (mm)	% of 1961-90 average	Most in a day / date		Number of	
					Raindays (≥0.2mm)	Wetdays (≥1mm)
CO. CAVAN						
CAVAN (LORETO COLLEGE)	33.8		5.6	16	20	12
CO. CLARE						
SHANNON AIRPORT	51.4	63	13.4	23	14	9
CARRON	93.5	66	25.1	18	18	13
CO. CORK						
FERMOY (MOORE PARK)	46.1	58	22.6	20	10	7
CORK AIRPORT	36.1	37	20.9	20	9	6
SHERKIN ISLAND	38.0	40	15.6	20	12	5
BALLINCURRIG (PEAFIELD)	42.2		20.1	20	13	6
CO. DONEGAL						
MALIN HEAD	79.5	78	23.7	15	22	11
BALLYSHANNON (CATHLEEN'S FALL)	108.8	106	31.6	15	21	15
GLENTIES	115.9	80	36.5	15	21	16
CO. DUBLIN						
DUBLIN (PHOENIX PARK)	38.3	56	8.3	20	15	10
DUBLIN AIRPORT	39.2		9.0	19	14	9
CASEMENT AERODROME	40.7	65	12.2	29	14	9
DUBLIN (MERRION SQUARE)	25.5	41	5.3	21	13	9
CO. GALWAY						
GALWAY (UNIV. COLL.)	62.5	57	16.5	23	15	11
MAAM VALLEY	145.4		61.6	15	15	13
CONNEMARA NATIONAL PARK	97.0	63	45.3	15	15	11
BALLYGAR	32.3	34	26.8	28	7	3
CO. KERRY						
VALENTIA OBSERVATORY	74.4	60	34.6	20	14	10
ARDFERT (LISCAHANE)	55.3		12.0	20	13	8
CO. KILKENNY						
KILKENNY	44.1	60	24.9	20	11	8
CO. LIMERICK						
MOUNT RUSSELL	81.7		37.1	20	21	10
CO. LOUTH						
ARDEE (BOHARNAMOE)	24.2	35	6.7	20	12	9
CO. MAYO						
BELMULLET	59.9	55	21.6	15	20	10
STRAIDE	87.0	83	43.8	15	18	10
KNOCK AIRPORT	84.1		27.2	15	21	14
CO. MEATH						
WARRENSTOWN	52.6	68	17.1	20	13	9
CO. MONAGHAN						
CLONES	54.6	66	11.9	24	15	11
CO. OFFALY						
BIRR	44.5	63	10.0	19	14	10
DERRYGREENAGH	41.0	51	13.1	20	15	11
CO. SLIGO						
ARDTARMON	94.3		35.5	15	18	12
CO. TIPPERARY						
FETHARD (PARSONSHILL)	47.3		24.2	20	16	7
CO. WATERFORD						
WATERFORD (TYCOR)	36.1	42	15.8	20	7	6
DUNGARVAN (CARRIGLEA)	30.2		13.5	20	8	7
CO. WESTMEATH						
MULLINGAR II	44.9	53	10.1	20	18	11
CO. WEXFORD						
JOHNSTOWN CASTLE	53.1	62	21.6	20	9	5
ROSSLARE	Data for Rosslare no longer available					
JOHN F. KENNEDY PARK	45.3	52	21.0	20	8	5
CLONROCHE (KNOXTOWN)	50.0		22.7	20	9	8

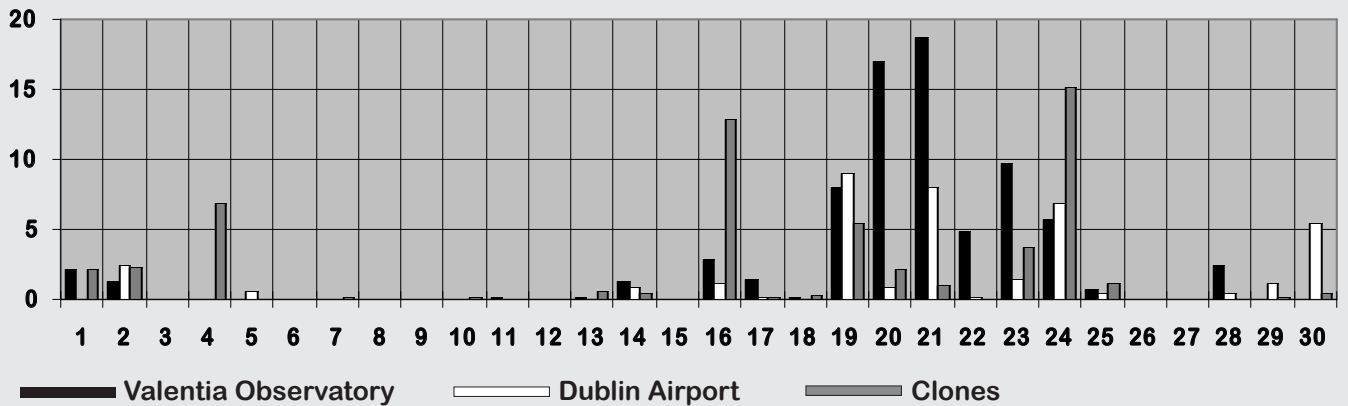
Total rainfall (mm)



Percentage of normal rainfall



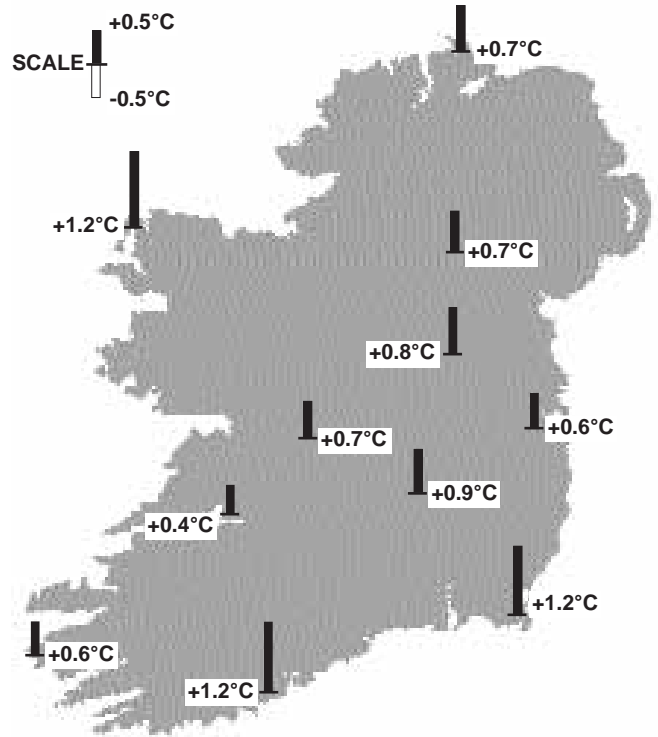
Daily 0-24h rainfall values (mm)



Warmer than normal, especially in west and south

Mean air temperatures for September were between a half and one degree above normal at most stations, but were more than a degree above normal in some coastal areas. They ranged from 12.5°C at Knock Airport to 14.9°C at Sherkin Island, Co. Cork. Despite the fact that it was a warmer than normal month everywhere, it was still the coolest September for between 6 and 13 years generally.

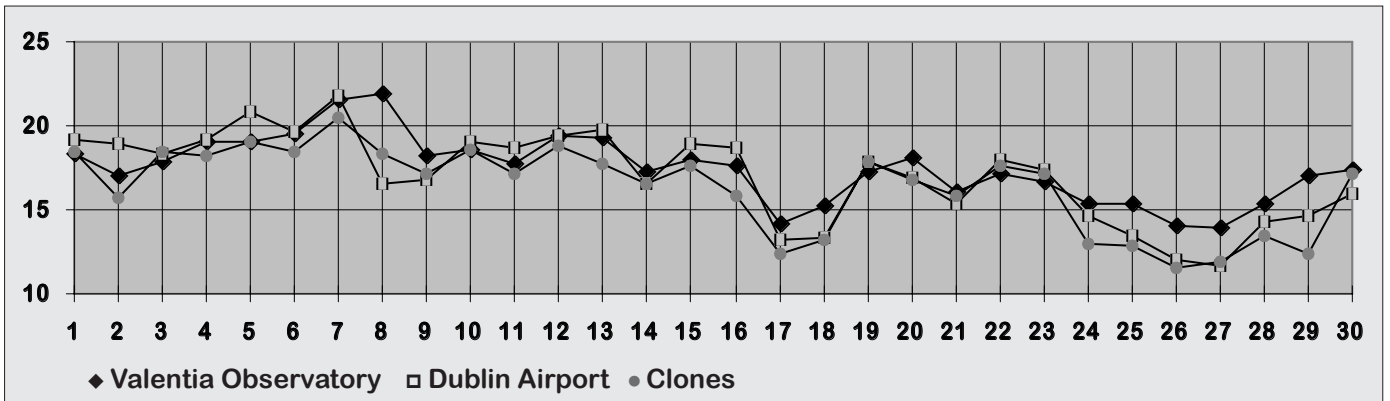
As is typical for September, the first half of the month was much warmer than the second, but minimum temperatures dropped well below normal at times during the second half. Most stations recorded their highest temperatures in the period 5th to 8th, with the highest value of the month, 24.6°C, recorded at Ardfert (Liscahane), Co. Kerry, on the 6th. Minimum temperatures dipped well below normal in the periods 17th to 18th and 26th to 27th. The lowest air temperature of the month, -1.1°C, was recorded at both Birr and at Straide, Co. Mayo, on the 27th, while the lowest grass minimum temperature, -6.6°C, was recorded at Birr on the same day. Many stations recorded their lowest



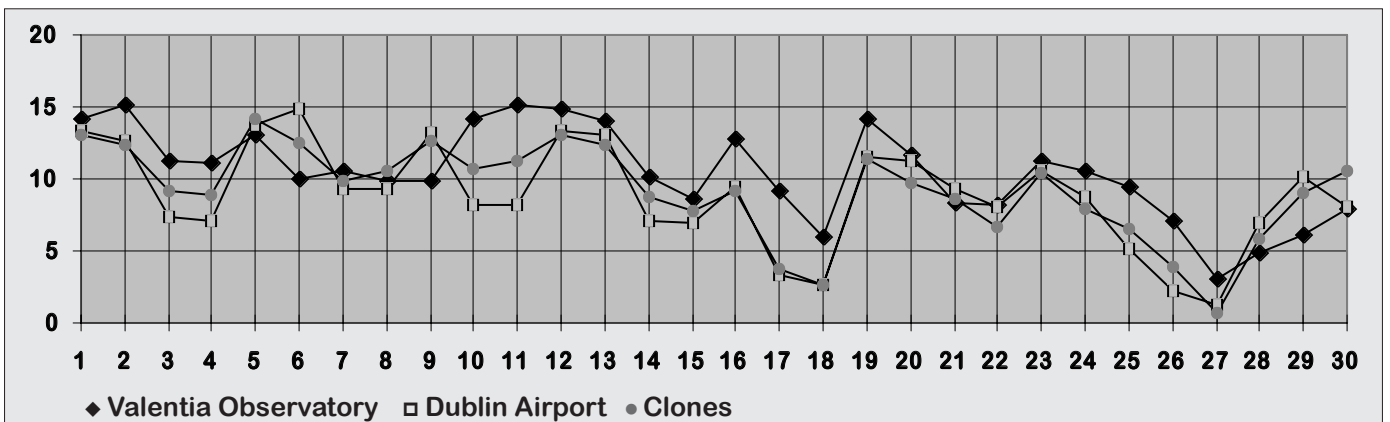
Mean Temperature
(difference from 1961-90 normals)

September temperatures for between 12 and 65 years on this day, while Birr's values were its lowest for September since the station opened in 1954.

Daily 0-24h maximum temperatures (°C)



Daily 0-24h minimum temperatures (°C)



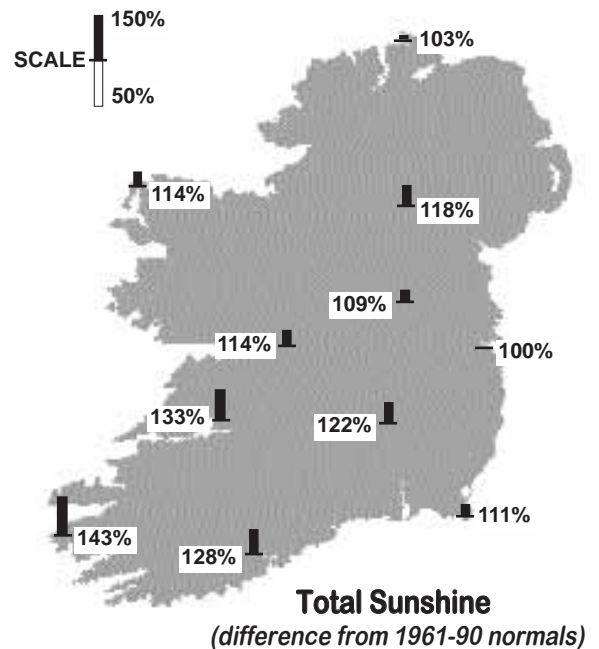
County/ Station	°C											
	Mean max.	Mean min.	Mean/ deviation from 1961-90 average		Highest max./date		Lowest min./date		Lowest grass min./date		Days with air frost ground frost	
CO. CAVAN												
CAVAN (LORETO COLLEGE)	17.3	8.5	12.9		21.0	7	0.6	27	-2.2	27	0	3
CO. CLARE												
SHANNON AIRPORT	17.8	10.3	14.1	0.4	22.4	7	1.7	27	-0.3	28	0	3
CARRON	16.9	9.7	13.3	1.0	20.9	7	1.4	27	-2.6	27	0	2
CO. CORK												
FERMOY (MOORE PARK)	18.1	9.6	13.9	1.1	23.0	6	1.5	27	-2.5	18	0	3
CORK AIRPORT	17.5	10.5	14.0	1.2	21.5	8	3.4	27	-1.5	18	0	2
SHERKIN ISLAND	18.6	11.1	14.9	1.2	22.7	8	3.8	27	0.4	27	0	0
BALLINCURRIG (PEAFIELD)	17.9	9.2	13.6		22.5	6	1.1	27	-2.0	18	0	2
CO. DONEGAL												
MALIN HEAD	15.4	11.5	13.5	0.7	18.4	6	7.0	27	5.5	28	0	0
BALLYSHANNON (CATHLEEN'S FALL)	16.2	10.6	13.4	0.7	19.5	13	3.1	27			0	
GLENTIES	16.3	9.7	13.0	0.7	19.7	7	1.5	28	-0.5	28	0	1
CO. DUBLIN												
DUBLIN (PHOENIX PARK)	17.8	9.9	13.9	0.9	22.4	7	2.1	18 27	-2.6	18	0	3
DUBLIN AIRPORT	17.1	9.9	13.5		21.8	7	1.2	27	-1.6	27	0	1
CASEMENT AERODROME	17.2	9.7	13.5	0.6	22.0	7	0.5	27	-2.6	26	0	3
DUBLIN (MERRION SQUARE)	17.3	11.6	14.5	0.4	20.6	5 13	5.4	18			0	
CO. GALWAY												
GALWAY (UNIV. COLL.)	17.8	9.5	13.7	0.3	22.5	7	-0.7	27	-1.5	27	1	2
MAAM VALLEY	17.6	10.3	14.0		23.2	8	1.3	28	-3.7	28	0	3
CONNEMARA NATIONAL PARK	16.8	10.9	13.9		21.5	5	3.3	27			0	
BALLYGAR	17.4	9.3	13.4		20.7	8	0.1	28	-1.4	28	0	2
CO. KERRY												
VALENTIA OBSERVATORY	17.5	11.0	14.3	0.6	21.9	8	3.1	27	-1.6	27	0	2
ARDFERT (LISCAHANE)	18.9	9.7	14.3	1.0	24.6	6	1.5	27	-3.3	27 28	0	4
CO. KILKENNY												
KILKENNY	18.2	9.2	13.7	0.9	23.5	6	1.4	18	-4.5	18	0	4
CO. LIMERICK												
MOUNT RUSSELL	17.0	10.0	13.5		22.5	6	2.7	27	-1.9	27	0	2
CO. LOUTH												
ARDEE (BOHARNAMOE)	17.5	9.0	13.3	0.9	22.0	7	-0.7	27	-3.0	28	2	3
CO. MAYO												
BELMULLET	16.9	11.4	14.2	1.2	19.7	6	3.7	28	0.8	28	0	0
STRAIDE	17.4	9.1	13.3	0.8	21.7	7	-1.1	27	-5.5	27	2	4
KNOCK AIRPORT	15.5	9.5	12.5		19.4	7	4.1	28	0.5	27	0	0
CO. MEATH												
WARRENTOWN	17.2	9.9	13.6	1.0	21.5	7	1.5	27	-2.1	27	0	2
CO. MONAGHAN												
CLONES	16.4	9.6	13.0	0.7	20.5	7	0.7	27	-3.9	27	0	2
CO. OFFALY												
BIRR	17.4	9.5	13.5	0.7	22.0	7	-1.1	27	-6.6	27	1	3
DERRYGREENAGH	17.8	8.9	13.4	1.2	22.3	7	0.4	27			0	
CO. SLIGO												
ARDTARMON	17.2	11.0	14.1		20.5	5	3.5	28	-0.5	28	0	1
CO. TIPPERARY												
FETHARD (PARSONSHILL)	17.1	9.1	13.1		22.2	7	1.8	27	-2.1	27	0	3
CO. WATERFORD												
WATERFORD (TYCOR)	18.5	10.4	14.5	1.2	23.4	6	3.9	27			0	
DUNGARVAN (CARRIGLEA)	18.7	9.7	14.2	0.8	23.7	6	0.9	18	-0.5	18 27	0	2
CO. WESTMEATH												
MULLINGAR II	16.9	9.2	13.1	0.8	21.6	7	0.6	27	-3.6	27	0	3
CO. WEXFORD												
JOHNSTOWN CASTLE	17.3	11.0	14.2	1.2	20.8	7	4.7	18	2.3	18	0	0
ROSSLARE	Data for Rosslare no longer available											
JOHN F. KENNEDY PARK	17.9	9.9	13.9	0.9	22.2	6	3.0	18	-1.2	18	0	1
CLONROCHE (KNOXTOWN)	17.6	9.1	13.4		22.0	6	1.0	27	-3.5	27	0	2

County/ Station	Daily mean (hours/day)	% of average	% of possible	Most in a day/date
CO. CAVAN				
CAVAN (LORETO COLLEGE)	3.89		30	10.2 17
CO. CLARE				
SHANNON AIRPORT	4.89	133	39	12.2 7
CO. CORK				
FERMOY (MOORE PARK)	4.49	121	35	10.5 3 15
CORK AIRPORT	5.29	128	42	11.5 3 15
SHERKIN ISLAND	5.91	134	47	11.4 8
BALLINCURRIG (PEAFIELD)	5.20			11.4 3
CO. DONEGAL				
MALIN HEAD	3.57	103	28	10.6 3
BALLYSHANNON (CATHLEEN'S FALL)	4.06	124	32	10.2 27
CO. DUBLIN				
DUBLIN AIRPORT	4.23	99	33	10.2 7
CASEMENT AERODROME	4.09	100	32	9.9 17
CO. GALWAY				
GALWAY (UNIV.COLL.)	4.82	131	38	11.8 3
CO. KERRY				
VALENTIA OBSERVATORY	5.15	143	41	11.8 6
ARDFERT (LISCAHANE)	5.29		42	11.4 7
CO. KILKENNY				
KILKENNY	4.66	122	37	11.6 3
CO. MAYO				
BELMULLET	4.15	114	32	9.7 3
STRAIDE	not available			
KNOCK AIRPORT	3.73			11.0 7 27
CO. MONAGHAN				
CLONES	3.90	118	31	10.7 3
CO. OFFALY				
BIRR	4.11	115	32	11.4 3
CO. WATERFORD				
DUNGARVAN (CARRIGLEA)	5.71	139	45	11.6 3
CO. WESTMEATH				
MULLINGAR II	4.03	109	32	12.2 7
CO. WEXFORD				
JOHNSTOWN CASTLE	4.80	111	38	10.1 15
ROSSLARE	Data for Rosslare no longer available			
JOHN F. KENNEDY PARK	5.04	131	40	10.8 15
CLONROCHE (KNOXTOWN)	4.85			10.5 15

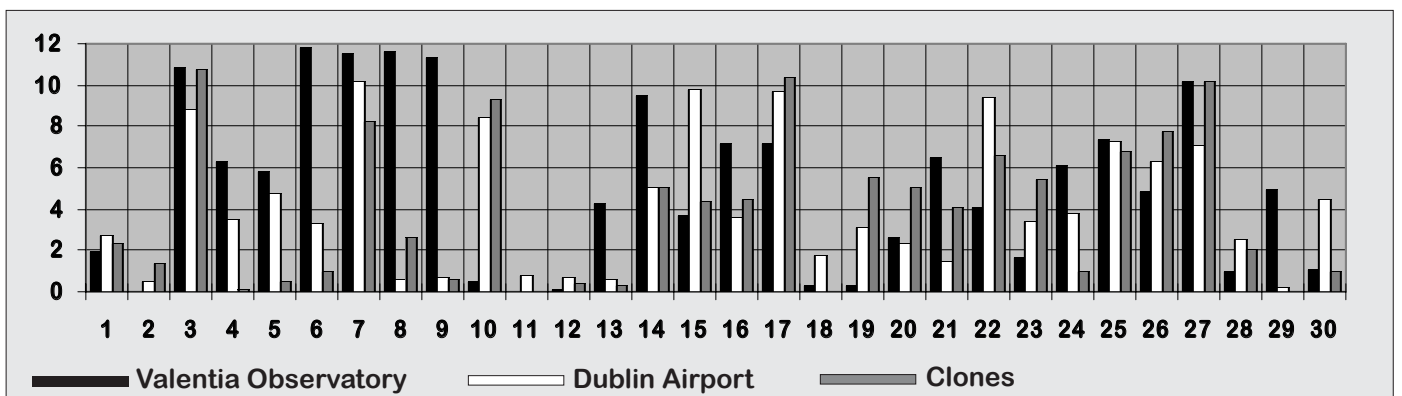
Sunnier than normal almost everywhere

September sunshine totals were close to normal in the Dublin area, but they were above normal elsewhere, especially in the southwest. They ranged from 107 hours at Dublin Airport to 177 hours at Sherkin Island, Co. Cork, with percentage of normal values between 99% at Dublin and 143% at Valentia Observatory. It was the sunniest September for between 5 and 11 years at several stations.

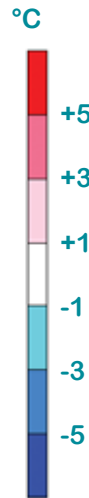
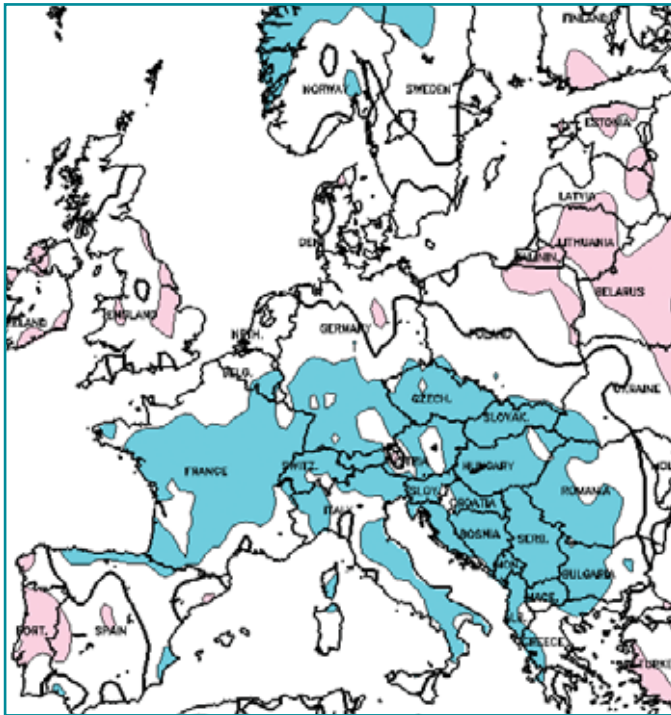
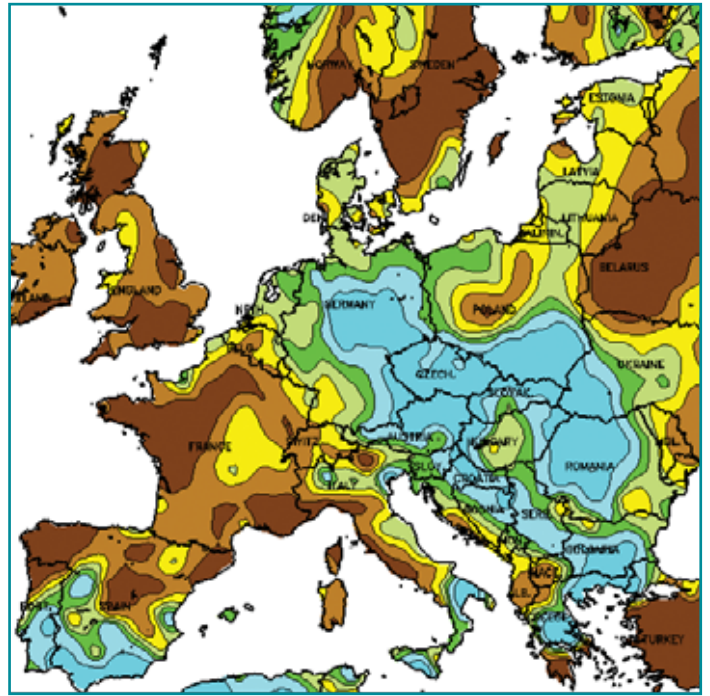
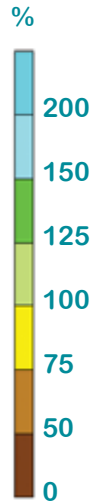
The first week of the month was the sunniest period in most places, especially in the west. The highest daily value, 12.2 hours, at both Mullingar and Shannon Airport on the 7th, was in both cases the highest daily value on record for September. Global solar radiation totals were close to normal generally, ranging from 98% of normal at Clones and Malin Head to 116% at Valentia.



Daily sunshine values (hours)



SEPTEMBER RAINFALL
(percentage of 1961-1990 normal)



SEPTEMBER MEAN TEMPERATURE
(difference from 1961-1990 normal)

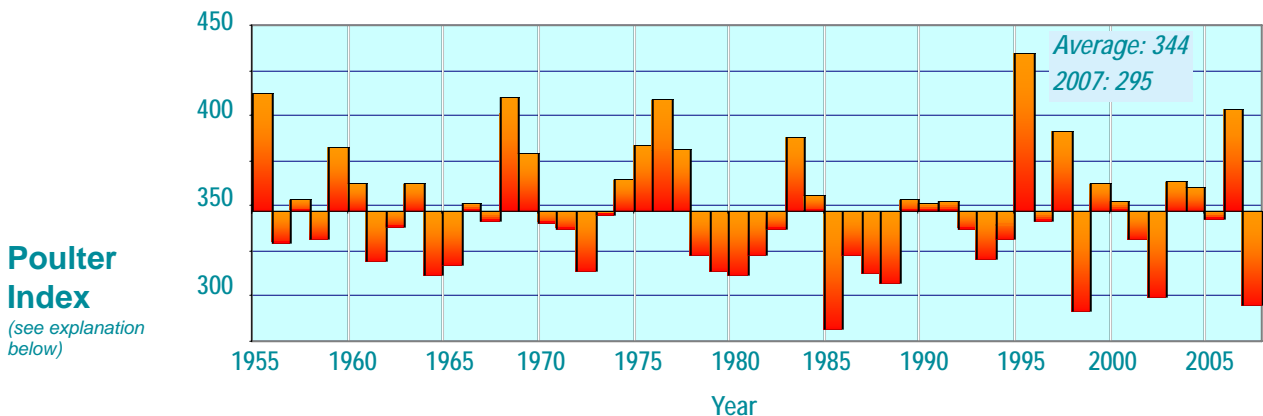
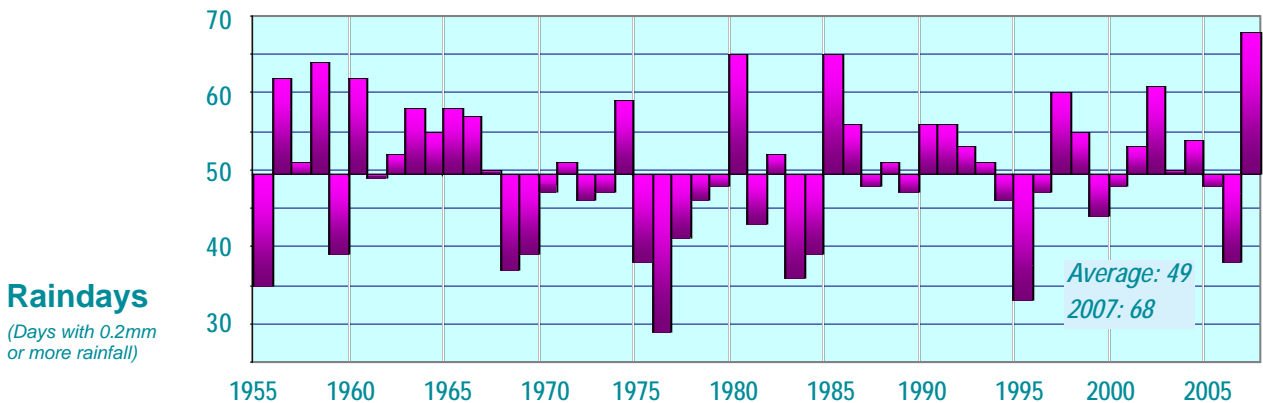
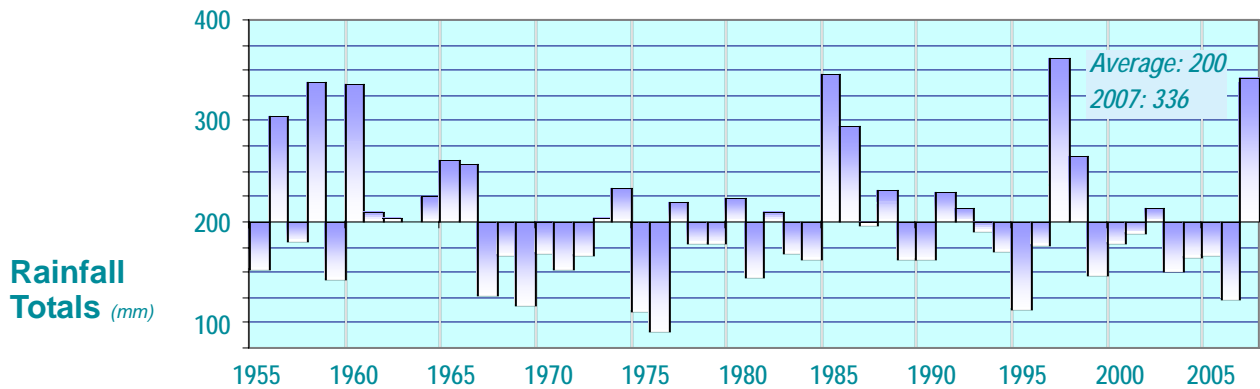
Data supplied by NOAA
Climate Prediction Centre,
US Department of Commerce

A world map with several regions highlighted in green, yellow, and red. Text boxes provide details on weather events:

- California:** Across southern areas of the state of California, 25 fatalities were attributed to a heatwave that produced temperatures of over 40°C. The excessive heat resulted in the declaration of an 'electrical emergency' early in the month, leaving about 55,000 people without electricity for two days.
- Spain:** Severe thunderstorms affected the Andalucía region of Spain on the 21st. Heavy rain and large hailstones fell across the region, causing flash floods and breaking hundreds of car windscreens, injuring about 18 people. One fatality was reported.
- Africa:** In Africa, torrential rain triggered widespread floods across the northern half of the continent, affecting over a million people in 22 countries. The heavy rains destroyed thousands of acres of land and prompted an outbreak of cholera, which killed at least 68 people. The worst affected countries were Sudan, Uganda, Ethiopia, Rwanda, Ghana, and Burkina Faso. In Sudan, 64 people lost their lives in what was described as the worst flooding in living memory.
- India:** Heavy rain fell during the 22nd/23rd in southern and eastern parts of India, triggering flash floods and landslides that killed more than 60 people and left about 50 villages under water. In the state of Orissa, 190mm of rain fell in Chandbali during a 24-hour period.

Global weather highlights of the month

Fifty years of summer weather at Birr, Co. Offaly



Rainfall totals for summer 2007 (June, July and August) were above normal across the country, with more than twice the summer normal recorded in parts of the east and southeast. Many stations in Leinster had their wettest summer for around 50 years, but at Birr, where records for the modern station date back to 1954, it was the wettest since 1997. The chart of summer rainfall totals at Birr (above top) shows that Birr's totals of 336mm for this season was the fourth highest in the series. However, the number of raindays (days with 0.2mm or more rainfall) was the highest on record for summer at the station; the total of 68 raindays recorded this summer compares with the normal seasonal total of 49.

The Poulter index at Birr for 2007 was well below the long-term normal. This index is a method of quantifying summer weather, using a formula based on mean temperature, rainfall and sunshine for each station, i.e. the higher the index, the 'better' the summer weather. Birr's value of 295 for summer 2007 was the third lowest in the series shown above and the fourth lowest extending back to 1915, when records for the previous station at Birr Castle are taken into account. In common with most other long-term stations around the country, as seen from the chart above, the summer of 1995 scored highest with an index value of 435, while the "worst" summer in the series was that of 1985.