

Decimal Index

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METEOROLOGICAL OFFICE

CLIMATOLOGICAL SERVICES (MET.0.3)

CLIMATOLOGICAL MEMORANDUM NO.61

AVERAGE AND EXTREME DATES OF FIRST AND LAST SCREEN FROSTS

NORTHERN IRELAND

by S. D. Glassey

Introduction

The 30-year period, 1936-65, was adopted for this extraction of dates of first and last screen frosts. This period was chosen to provide the maximum possible coverage of Northern Ireland up to the present time.

Screen frost is defined as a minimum air temperature of 32°F. or below. Thermometer screens are of the standard louvered pattern with the minimum thermometer approximately four feet above ground level.

For purposes of averaging, the days of the year were numbered consecutively, counting 1st January as one. Leap years were included in the numbering by counting 29th February as 60, 1st March as 61 and so on. The resulting average was referred to non-leap year numbering. There are only three stations in Northern Ireland with the full 30 years observations and one, Moneydig, with 28 years. These four are given in Group One of the table, 25 years or over. Group Two is of stations with 15 to 24 years and Group Three is of ones with 5 to 14 years. A final section gives additional information for Armagh over the 80-year period 1886-1965.

The averages for those stations with less than 30 years' data, including Moneydig, were computed with reference to at least two other stations. For example, if data for station A were missing for a particular year the dates from nearby station B were used after adjusting them by an amount equal to the average date difference between the two stations. This was based on all the years in which both stations' data were available. The process was repeated for a second station C. The date chosen for use with station A would then be a mean of the dates computed from stations B and C. If these dates were markedly different it would be necessary to take a further station (D) into consideration, but this did not arise in this study. Thus, the figures given for stations in Group Two may be considered reasonably representative of the 30-year period but those in Group Three are provisional.

For each place the mean dates of the first and last frost are given, together with the earliest and latest dates. Extremes dates for stations with less than 30 years' data were derived in the manner explained in the previous paragraph. Where the derived date fell outside of the period of operation of the station, it is shown in parenthesis without a year of probable occurrence. No place was found to have been entirely frost free throughout any one winter, but dates of 31st December for first and 10th January for last frosts were noted at some coastal stations.

It should be noted that interpolations are not valid and the dates apply to conditions at only the specified climatological stations.

NOTES:

1. Aldergrove Airport is the only station which has had more than one screen frost in June. This has occurred on four occasions at this station. The only other occurrences were once at both Hillsborough and Moneydig.
2. Ballykelly Airfield: There was a two-year break from mid-1951 to mid-1953 at this station. Nearby Limavady Airfield observations were available for 1942-1945.
3. Castle Archdale: Refers to the former flying-boat station for which observations ceased in 1956.
4. Lisburn: ceased 1955.
5. Belfast, Queen's University: ceased 1956.
6. Castle Archdale Forest: Although established less than 5 years, data are available for nearby Castle Archdale (see above) and similarly located Ely Lodge (1958-62).
7. Castlerock: ceased 1953.
8. Armagh Observatory: The site may have been affected slightly by urban development and additional observatory buildings. This could account for the quite marked change between the 30 year periods up to 1955 and the one 1936-65.

Meteorological Office,
Belfast.

January, 1967.

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NORTHERN IRELAND

Abbreviations used: Alt. = Altitude of station in feet.

Com. = Year of commencement of station, or 1936 if later.

M = Mean date.

Ex = Earliest or latest date as appropriate.

GROUP ONE: 25 years or over

	Alt.	Com.	Last Frost		First Frost	
			M	Ex	M	Ex
Aldergrove Airport (Note 1)	225	1936	9 May	26 June 1957	25 Oct.	7 Sept. 1952
Armagh Observatory	202	1936	24 Apr.	25 May 1948	2 Nov.	26 Sept. 1942
Hillsborough	379	1936	28 Apr.	1 June 1962	5 Nov.	26 Sept. 1942
Moneydig, Garvagh	112	1938	2 May	15 June 1956	26 Oct.	27 Sept. 1954

GROUP TWO: 15 to 24 years

Ballykelly Airfield (Note 2)	6	1946	25 Apr.	26 May 1948	28 Oct.	27 Sept. 1954
Castle Archdale (Note 3)	225	1942	19 Apr.	20 May 1956	28 Oct.	(18 Sept.)
Lisburn (Note 4)	200	1936	25 Apr.	27 May 1948	1 Nov.	28 Sept. 1952

GROUP THREE: 5 to 14 years

Belfast, Queen's Univ. (Note 5)	57	1950	2 Apr.	(6 May)	12 Nov.	(29 Sept.)
Castle Archdale Forest (Note 6)	215	1963	23 Apr.	(25 May)	28 Oct.	18 Sept. 1963
Castlerock (Note 7)	57	1941	12 Apr.	24 May 1948	8 Nov.	11 Oct. 1952
Creighton's Green	391	1959	9 Apr.	(27 May)	19 Nov.	(26 Oct.)
Helen's Bay	142	1961	28 Mar.	(6 May)	29 Nov.	(7 Nov.)
Kilkeel	58	1953	31 Mar.	(30 Apr.)	27 Nov.	26 Oct. 1954, 1962
Larne (Grammar School)	140	1961	1 Apr.	20 May 1965	16 Nov.	27 Oct. 1962
Lislap Forest	685	1959	1 May	28 May 1961	23 Oct.	(26 Sept.)
Lough Bradan	554	1960	25 Apr.	20 May 1965	28 Oct.	(27 Sept.)
Loughgall	82	1957	6 May	(30 May)	26 Oct.	(7 Sept.)
Parkmore Forest	770	1956	7 May	(15 June)	21 Oct.	(7 Sept.)
Somerset Forest	140	1961	29 Apr.	29 May 1958	28 Oct.	(28 Sept.)
Stormont	185	1957	5 Apr.	6 May 1957	20 Nov.	7 Nov. 1957

ARMAGH OBSERVATORY, 1886 to 1965 (Note 8)

Period

1886-1965	27 Apr.	27 May 1886	27 Oct.	23 Sept. 1932
1886-1915	27 Apr.	27 May 1886	21 Oct.	28 Sept. 1894
1896-1925	28 Apr.	25 May 1914	23 Oct.	29 Sept. 1906
1906-1935	29 Apr.	25 May 1914	22 Oct.	23 Sept. 1932
1916-1945	29 Apr.	22 May 1941	24 Oct.	23 Sept. 1932
1926-1955	27 Apr.	25 May 1948	26 Oct.	23 Sept. 1932