

IRELAND LONG-TERM MAXIMUM AND MINIMUM AIR TEMPERATURE DATASET (ILMMT)

DATASET INFORMATION

If using this dataset please cite:

Mateus, C., Potito, A., Curley, M. 2020. Reconstruction of a long-term historical daily maximum and minimum air temperature network dataset for Ireland (1831-1968). *Geoscience Data Journal*. 00:1–14. <https://doi.org/10.1002/gdj3.92>

PLEASE NOTE: raw observations are provided. Quality control and homogenisation procedures are recommended prior any climate data analysis.

The ILMMT Dataset is composed of 12 long-term and 21 short-term daily maximum and minimum air temperature series which are available in individual station folders as 'station_years.CSV'. Not available observations are represented as NA.

Station metadata by chronological order on location, instrumentation, observation time, observing practices, observer's name and comments, inspections, and data-sources consulted for data rescued are provided in each station folder as 'station_metadata.XLSX'. The metadata tables are presented in columns (date, metadata and description). Key-words such as 'station history', 'thermometers', 'location', 'observations', etc. are inserted in the metadata column to aid the users' navigation.

Twice daily readings of maximum and minimum thermometers were made at 7h and 18h at Malin Head, Blacksod Point, Birr Castle, Valentia Observatory and Roches Point since 1921. Later, the observing time changed as 9h and 21h (please read each station metadata file for detailed dates). The twice daily readings are provided in the ILMMT dataset so the data users can assess the absolute maximum and minimum air temperature records in the 24h period at 9h-9h or at 21h-21h according to their goals.

Historical station classification (Meteorological Office, 1902: iv):

“Stations of the First Order. – Observatories at which continuous records of the chief meteorological phenomena are obtained.” [Valentia Observatory].

“Stations of the Second Order, at which systematic observations of temperature, and of other meteorological data, are made at least twice a day.” [Birr Castle (Parsonstown), Botanic Gardens Glasnevin – Dublin, Fitzwilliam Square Dublin, Killarney, Markree, Phoenix Park Dublin, Trinity College Dublin, Valentia].

“Stations of Third Order, at which daily meteorological observations are regularly made, but less frequently, or with less detail, than at stations of the Second Order.” [Killarney].

“Telegraphic Reporting Stations, at which observations are made two or three times a day, primarily for use in the preparation of daily forecasts of weather.” [Belmullet, Birr Castle (Parsonstown), Blacksod Point, Malin Head, Roches Point, Valentia].

Private Registers.

The ILMMT Dataset is organised as follows:

1) Folder 'Long-term series'

a. Birr Castle (Parsonstown)

i. Birr Castle telegraphic reporting station_1880-1920.CSV

- Once daily observations.

- ii. Birr Castle telegraphic reporting station_1921-1956.CSV
 - Twice daily observations.
 - iii. Birr Castle second order station_1872-1911.CSV
 - iv. Birr Castle second order station_metadata.XLSX
 - v. Birr Castle telegraphic reporting station_metadata.XLSX
- b. Blacksod Point & Belmullet**
- i. Blacksod Point_Belmullet_1872-1920.CSV
 - Once daily observations.
 - ii. Blacksod Point_Belmullet_1921-1956.CSV
 - Twice daily observations.
 - iii. Blacksod Point_Belmullet_metadata.XLSX
- c. Botanic Gardens Glasnevin Dublin**
- i. Botanic Gardens Dublin_1834-1958.CSV
 - Year 1880: Observations at 12:20h (1 January – 30 June) and at 21h (1 July – 31 December).
 - Major data gaps: April 1834 – June 1847; 1950 – 1951.
 - ii. Botanic Gardens Dublin_1880.CSV
 - Observations at 9h (1 June – 31 December 1880 and at 21h (16 May – 31 December 1880) although without reference on thermometers setting time.
 - iii. Botanic Gardens Dublin NLI series_1882-1952.CSV
 - Morning observations taken at 9h or 10h.
 - iv. Botanic Gardens Dublin NLI series_metadata.XLSX
 - v. Botanic Gardens Dublin_metadata.XLSX
- d. Fitzwilliam Square Dublin**
- i. Fitzwilliam Square Dublin_1871-1937.CSV
 - ii. Fitzwilliam Square Dublin_metadata.XLSX
- e. Killarney**
- i. Killarney_1881-1934.CSV
 - Major data gaps: January 1899 – July 1920
 - ii. Killarney_metadata.XLSX
- f. Malin Head**
- i. Malin Head_1885-1920.CSV
 - Once daily observations.
 - ii. Malin Head_1921-1955.CSV
 - Twice daily observations.
 - iii. Malin Head closed station_1955.CSV
 - Observations at the closed station in the period May – December 1955.
 - iv. Malin Head_metadata.XLSX
- g. Markree**
- i. Markree_1850-1968.CSV
 - Major data gaps: March 1852 – December 1854; March 1856 – October 1874
 - ii. Markree_new screen_1953-1954.CSV
 - New screen in use since 17 October 1953 onwards. The observations taken in the old thermometer screen in the period 17 October 1953 – 30 November 1954 are included in the file ‘Markree_1850_1968’
 - iii. Markree_metadata.XLSX
- h. NUI Galway**
- i. NUI Galway_1851-1965.CSV
 - Major data gaps: April 1852 – December 1860 (the observations which were sent to the Royal Irish Academy

finished in 1851 and were recommenced in 1861); 1862; 1872 – 1879; July 1952 – October 1963; February 1964 – September 1965.

ii. NUI Galway_metadata.XLSX

i. Phoenix Park Dublin

i. Phoenix Park Dublin_1831-1958.CSV

- Once daily observations.
 - a. Major data gaps: 1853 – 1854.

ii. Phoenix Park Dublin_1959.CSV

- Twice daily observations.

iii. Phoenix Park Dublin_Bilham screen_1953-1955.CSV.

- Observations taken in the Stevenson screen during this period are provided in the file ‘Phoenix Park Dublin_1831-1958.CSV’.

iv. Phoenix Park Dublin_Comparison sheet_1856-1860.CSV

- Observations made on Thermometer Stand.

v. Phoenix Park Dublin_not corrected_1855-1857.CSV

- Observations not corrected for thermometers errors.

vi. Phoenix Park Dublin_Larcom papers_1853-1855.CSV

- 23 December 1853 – 16 January 1854: daily minimum air temperature registered ‘in observatory’ and ‘in clock square’ at 9 a.m.
- 26 January - 20 February 1855: daily maximum and minimum air temperatures registered ‘in observatory’ and daily minimum air temperature recorded ‘in clock square’ at 9 a.m.

vii. Phoenix Park Dublin_outside observatory_1842-1847.CSV

- Observations outside observatory: thermometers placed outside of a window and suspended against the louvre-work.
- Observations in ‘Observatory’ (large octagonal wooden shed) are available in the file ‘Phoenix Park Dublin_1831-1958.CSV’.

viii. Phoenix Park Dublin_metadata.XLSX

j. Roches Point

i. Roches Point_1872-1920.CSV

- Once daily observations.

ii. Roches Point_1921-1956.CSV

- Twice daily observations.

iii. Roches Point_new station_1955.CSV

- New station installed on 1st December 1955. Daily maximum air temperature observations at 9h and at 18h in the period 1 – 31 December 1955. The daily maximum air temperature observations registered in the same period at the old station are provided in the file ‘Roches Point_1921-1956.CSV’ file.

iv. Roches Point_metadata.XLSX

k. Trinity College Dublin

i. Trinity College Dublin_1840-1959.CSV

- Major data gaps: 1840 (maximum thermometer); 1852 – 1854; March 1856 – December 1903.

ii. Trinity College Dublin_metadata.XLSX

l. Valentia Observatory

i. Valentia Observatory telegraphic reporting station_1850-1920.CSV

- Once daily observations.
 - Major data gaps: 1852 – 1871. The Royal Irish Academy observations finished in 1851 and the

observations were commenced in the 1860s but such readings are untraceable.

- ii. Valentia Observatory telegraphic reporting station_1921-1943.CSV
 - Twice daily observations.
- iii. Valentia Observatory second order station_1882-1909.CSV
- iv. Valentia Observatory telegraphic reporting station_metadata.XLSX
- v. Valentia Observatory second order station_metadata.XLSX
- vi. Valentia Observatory_metadata.XLSX

2) Folder 'Short-term series'

a. Athy

- i. Athy_1850-1852.CSV
- ii. Athy_metadata.XLSX

b. Belfast

- i. Belfast_1851-1852.CSV
- ii. Belfast_metadata.XLSX

c. Blackrock

- i. Blackrock_1881-1890.CSV
- ii. Blackrock_metadata.XLSX

d. Buncrana

- i. Buncrana_1850-1851.CSV
 - Main series – once daily readings.
- ii. Buncrana_9h & 21h_1850.CSV
 - Twice daily readings at 9h and 21h in the period 1 October – 26 November 1850 rescued from a different manuscript cited in 'Buncrana_metadata.PDF'. The minimum thermometer observations taken at 9h does not match the observations in the main series.
- iii. Buncrana_metadata.XLSX

e. Castletownsend

- i. Castletownsend_1850-1851.CSV
- ii. Castletownsend_metadata.XLSX

f. Commercial Buildings Dublin

- i. Commercial Buildings Dublin_1849-1858.CSV
- ii. Commercial Buildings Dublin_metadata.XLSX

g. Courtown

- i. Courtown_1850-1852.CSV
- ii. Courown_metadata.XLSX

h. Donaghadee

- i. Donaghadee_1850-1852.CSV
- ii. Donaghadee_metadata.XLSX

i. Dunmore East

- i. Dunmore East_1850-1851.CSV
- ii. Dunmore East_metadata.XLSX

j. Glendoeen

- i. Glendoeen_1865-1870.CSV
- ii. Glendoeen_metadata.XLSX

k. Grafton Street Dublin

- i. Grafton Street Dublin_1843-1849.CSV
- ii. Grafton Street Dublin_metadata.XLSX

l. Innisgort Island

- i. Innisgort Island_1851-1852.CSV
- ii. Innisgort Island_metadata.XLSX

m. Kilkenny

- i. Kilkenny_1862-1864.CSV
- ii. Kilkenny_metadata.XLSX

n. Killough

- i. Killough_1851-1854.CSV
- ii. Killough_metadata.XLSX

o. Killybegs

- i. Killybegs_1850-1851.CSV
- ii. Killybegs_metadata.XLSX

p. Kilrush

- i. Kilrush_1850-1851.CSV
- ii. Kilrush_metadata.XLSX

q. Portarlinton

- i. Portarlinton_1845-1864.CSV
- ii. Portarlinton_metadata.XLSX

r. Portrush

- i. Portrush_1850-1852.CSV
 - Once daily readings.
- ii. Portrush twice daily readings_1850.CSV
 - Twice daily readings at 9h and 21h in the period 1 October – 7 November 1850.
- iii. Portrush_metadata.XLSX

s. Royal College of Surgeons Dublin

- i. RCS Dublin_1841-1857.CSV
 - Major data gaps: January 1843 – November 1845.
- ii. RCS Dublin_metadata.XLSX

t. Royal Dublin Observatory (Dunsink)

- i. RDO Dunsink_1851.CSV
- ii. RDO Dunsink_metadata.XLSX

u. Scattery

- i. Scattery_1850-1852.CSV
- ii. Scattery_metadata.XLSX

Reference

Meteorological Office. 1902. Temperature tables for the British Islands. Daily means for the thirty years 1871 to 1900, with diagrams and additional tables. London: His Majesty's Stationery Office.