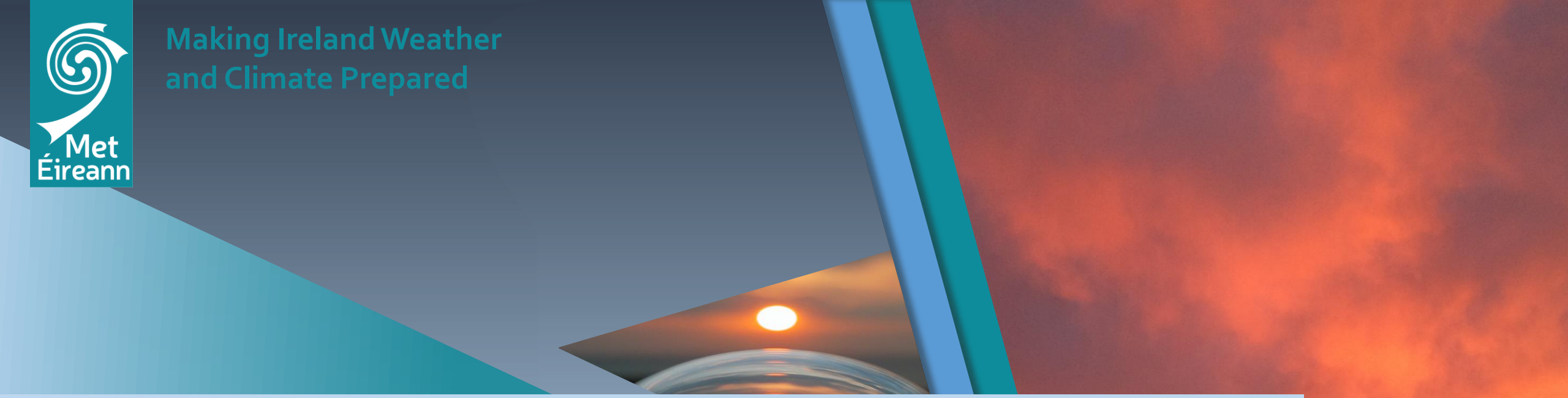
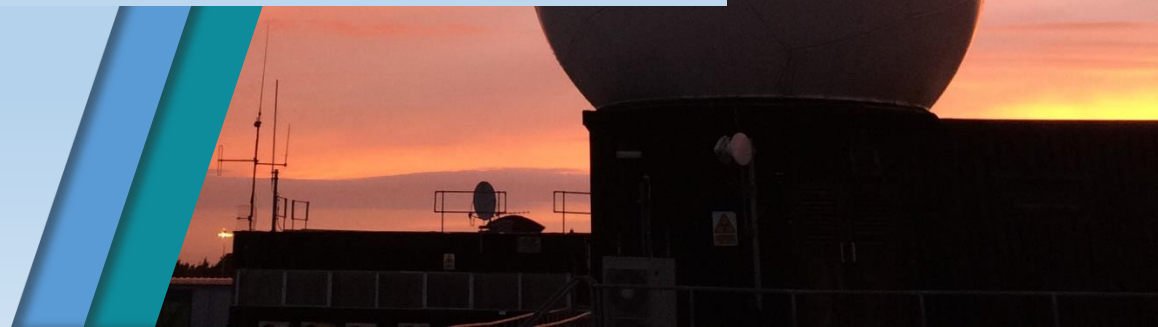
Making Ireland Weather and Climate Prepared



EUMETNET – Data Management Workshop
Developing an SOP for the re-evaluation of historical national climate records

John O'Sullivan*, Mary Curley, and Colin Evans



An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

Contents

- Validating climate records
- An SOP for historical national climate records
- Comparison: 2010 vs 1892
- Future work

How do we validate climate records?

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

How do we validate climate records?

Standard Operating Procedure - Nov 2022

How to Certify a New Climate National Record

Met Éireann, The Irish Meteorological Service

The following process is triggered when a Weather Extreme Record from https://www.met.ie/climate/weather-extreme-records, is provisionally broken for each of the following parameters:

- Highest and lowest monthly and annual **Temperatures**
- Highest and lowest monthly and annual **Rainfall** and highest **Daily rainfall**
- Highest monthly and annual **Sustained (10-min Mean) Wind** and **Gust**
- Highest and lowest monthly and annual **Mean Sea Level Pressure**
- Highest and lowest monthly **Sunshine Duration**

1. Inform the head of the Climate Services Division that a provisional New National Record was observed.
2. The head of the Climate Services Division should appoint a project leader to complete the instructions on the template for evaluating Irish National Records found at [G:\Users\Climate\National Records Certification].
3. The project leader will circulate the template for evaluating Irish National Records to the heads of the Observations Division, the Climate Services Division, and the Forecasts Division, requesting them to nominate suitable experts to complete the section or sections of the template, associated with their division. [Section 1 - Meteorologist/Climatologist - Climate Services Division, Section 2 - Meteorologist - CAFO, Section 3 - Instrumentation Expert - Observations Division, Section 4 - Climate MO/SMO - Climate Services Division, Section 5 - Observations/Site Expert - Observations Division]
4. The nominated experts from each division to fill out and sign their relevant sections and return to Climate Services Division [enquiries@met.ie].
5. The project leader will compile responses and circulate completed document, including supporting evidence, to all the staff involved in the process, including the heads of the three divisions.
6. The project leader will hold a meeting, or confirm by email, that all divisions agree with final report and decision.
7. The head of the Climate services Division will sign and date document.
8. Official certifying document to be archive at [G:\Users\Climate\National Records Certification].

Questions

When validating records:

- Do you use CIMO station classifications?
  - If yes, which classes do you use for record values?
  - If no, how do you classify your stations?
- Do you use any other information when validating new records?
- What process do you follow for reassessing historical records? (Different eras – different information)

Reassessing historical records

Weather Extreme Records for Ireland

Last updated Wednesday 13th June 2023

Note: For each element, the annual extreme record is shaded.

Temperatures (°C)

- Highest air temperature recorded in the 20th Century: 32.5°C at Boora, Co. Offaly on 29th June 1976
- Lowest air temperature recorded in the 20th century: -18.8°C at Lullymore, Co. Kildare on 2nd January 1979
- Lowest grass minimum temperature: -19.6°C at Glasnevin, Dublin on 12th January 1982

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
Highest Shaded Air	18.5°C Dublin (Glasnevin) 10th 1998	18.1°C Dublin (Phoenix Park) 23rd 1891	23.6°C Dublin (Trinity College) 28th 1965	25.8°C Donegal (Glenties) 26th 1984	28.4°C Kerry (Ardfert Liscahane) 31st 1997	**33.3°C*** Kilkenny Kilkenny Castle) 26th 1887	33.0°C Dublin (Phoenix Park) 18th 2022	31.7 Carlo (Oak 12th
Lowest Shaded Air	**-19.1°C** Sligo (Markree) 16th 1881	-17.8°C Longford (Mostrim) 7th 1895	-17.2°C Sligo (Markree) 3rd 1947	-7.7°C Sligo (Markree) 15th 1892	-5.6°C Donegal (Glenties) 4th 1979	-3.3°C Offaly (Clonsast) 1st 1962	-0.3°C Longford (Mostrim) 8th 1889	-2.7° Wick (Rath 30th

Rainfall Totals (mm) since 1942

- Highest annual total: 3964.9mm at Ballaghbeama Gap, Co Kerry in 1960
- Highest hourly total: 52.2mm at Clonroche, Co. Wexford on 27th June 1986
- Lowest annual total: 356.6mm at Glasnevin, Co Dublin in 1887
- Longest absolute drought: 3rd April to 10th May 1938 in Limerick

	JAN	FEB	MAR	APR	MAY	JUN	JUL
Highest Monthly	711.2 mm Kerry (Ballagh-beame Gap) 1990	780.0 mm Kerry (Mt Cummeragh) 1995	685.8 mm Kerry (Mt Ballagh-beama) 1989	445.5 mm Kerry (Glenvickee) 1966	605.0 mm Wicklow (M.Lough Dan) 1993	469.0 mm Kerry (Mt Cummeragh) 2012	577.9 mm Kerry (Ballagh-beama Gap) 1950
Lowest	7.5 mm	**0.0 mm**	0.1 mm	1.3 mm	3.0 mm	0.8 mm	0.7 mm

- Max and min daily air temperature record by month
- Highest and lowest monthly rainfall
- Highest daily rainfall in a month
- Highest and lowest MSLP
- Highest 10-minute wind speed and gust
- Highest and lowest monthly sunshine duration

Approach so far

- Previously we analysed:
  - Ireland's all-time maximum air temperature record (Kilkenny, 1887)
  - Ireland's all-time minimum air temperature record (Markree Castle, 1881)
- We approached these in an organised way… but as big stand-alone projects
- We then decided to standardise the approach to work through remaining records in a systematic and consistent way

Approach so far

- We developed an SOP and template, based on the experience of analysing Kilkenny and Markree (and using the new record SOP and template as a starting point)
- We have applied this to all air temperature monthly minima records
- We are currently working on monthly maxima and wind records
- We plan to publish the approach and summary of results

Standard Operating Procedure – May 2025

How to Certify a Historical National Climate Record

Met Éireann, The Irish Meteorological Service

The following process is followed in order to certify a Weather Extreme Record from https://www.met.ie/climate/weather-extreme-records, for each of the following variables:

- Highest and lowest monthly and annual **Air Temperatures**
- Highest and lowest monthly and annual **Rainfall** and highest **Daily rainfall**
- Highest monthly and annual **Sustained (10-min Mean) Wind** and **(3-sec Mean) Gust**
- Highest and lowest monthly and annual **Mean Sea Level Pressure**
- Highest and lowest monthly **Sunshine Duration**

Note: Exempt from this process are those records which have already been certified using the SOP for New Climate National Records

1. The head of the Historical National Climate Record (HNCR) team will identify a particular past record to certify (e.g., January maximum air temperature).
2. They will then assign a project leader to complete the instructions on the template for certifying Historical National Climate Records (template found on Sharepoint: [LINK HERE]).
3. The project leader will circulate the template to the project team, and assign a team member to complete each section of the template.
4. Each team member will then fill in and sign their section(s), and return these to the project leader.
5. The project leader will compile responses and circulate a completed document - including supporting evidence - to all staff involved in the process, including the head of the HNCR team.
6. The project leader will hold a meeting or confirm by email that all staff involved agree with the final report and decision.
7. The head of Climate Services Division will sign and date the document.
8. Official certifying document to be archived at [LINK HERE].

Historical National Climate Records

Template for Evaluating and Certifying Historical National Climate Records

Met Éireann, The Irish Meteorological Service

Parameter:	
Record for Evaluation and Certification:	
Date:	
Station Name:	
Station Type:	
Station Location:	

A robust database of historical climate extremes is crucial for assessing and managing risks associated with extreme weather events such as heatwaves, floods and storms, enabling the development of effective adaptation and mitigation strategies.

The World Meteorological Organization (WMO), as part of its remit in maintaining the World Weather and Climate Extremes Archive, produced a document outlining the formal process to evaluate potential global, hemispherical and regional extreme records ("Guidelines for the WMO Evaluation of Records of Weather and Climate Extremes", WMO (2023)). To date, the WMO has not evaluated or re-evaluated national records, leaving this task to the respective National Meteorological and Hydrological Services (NMHS).

As Ireland's NMHS, Met Éireann maintains a database of national climate records (https://www.met.ie/climate/weather-extreme-records), as observed at national weather observing stations in Ireland. The division within Met Éireann with the responsibility for assessing these historical extremes is the Climate Services Division (CSD). The national climate records span from the early nineteenth century to the present day; consequently, the quality control procedures and checks on the original observations, sites, and instruments, would have varied significantly, depending on when the original observation was made. To counter these possible discrepancies, this template has been initiated by a team within CSD, and is designed to provide a systematic, transparent and consistent approach to evaluating and certifying all historical national climate records in Met Éireann's database(s), regardless of when they occurred. (Note: Exempt from this process are those records which have already been certified using the SOP for New Climate National Records.)

Instructions:

Step 1: When a historical national climate record has been chosen to be evaluated and certified (see the SOP for the complete list), the head of the Historical National Climate Records team will appoint a project leader to assign relevant project team members to complete the below instructions. This may involve the support of appropriate experts in climatology, meteorology, instrumentation, and observations. The appointed project team members will complete their assigned box below and supply relevant supporting documentation to be included in the appendix. When all steps are complete, the report, along with the project leader's recommendation, will be passed to the head of CSD to accept or reject certification of the Historical National Climate Record.

Step 2 - The project leader will assign each of the below sections to an appropriate project team member for completion:

- **Section 1 – Provisional Checks**

  Is this the most extreme value in the Met Éireann database(s) for this parameter? List the sources which were searched in reaching this conclusion, including all necessary details.

  If it is not the most extreme value in the Met Éireann database(s), give details of the more extreme observations, and state clearly why these are not being considered as the record values. (These more extreme values should then be flagged in the database(s), directing people towards this report, and providing a clear reason why these values are not considered reliable.)

  Supporting documentation here may include SQL code and images from database searches, etc.

Team member name:

Is this the most extreme value in the Met Éireann database(s)?

List the sources which were searched in reaching this conclusion:

If it is not the most extreme value in the Met Éireann database(s), give details of the more extreme observations, and state clearly why these are not being considered as the record values. Use (and expand, if needed) the below table:

More extreme value:	Reason(s) this is not being considered as a record value:

List of supporting documentation supplied (and, if applicable, list the experts consulted for this section):

- **Section 2 – Review of existing literature**

  Outline briefly any relevant information found in contemporaneous sources (or more recent studies relevant to the record). These may be found in (but not limited to) Meteorological Office publications; Met Éireann publications; newspapers; diaries; and academic papers. Repetition should be avoided – for example, a source may contain information on the synoptic situation. This fact should be stated briefly here, but the description of the synoptic situation should be included in *Section 3 – The Synoptic Situation*.

  Supporting documentation here may include a list of archives which were searched, a list of search terms, a list of publications which had relevant information, a list of academic papers relevant to the record, etc.

Team member name: Include a brief description of any relevant information found in contemporaneous sources: Include a brief description of any relevant information found in subsequent sources: Other relevant information regarding the event: List of supporting documentation included (and, if applicable, list the experts consulted for this section):

Did the review of existing literature support the record observation?

Yes:	No:	Comment:

Signed:

Date:

- **Section 3 – The Synoptic Situation**

  Describe the synoptic situation during the event, including details on the regional weather and any relevant local factors (e.g., Föhn wind effect, freezing fog, or any other notable unusual or unique information concerning the observation).

  Supporting documentation here may include synoptic charts, air mass charts, satellite charts, radiosonde ascents, etc.

Team member name: Include a brief description of the synoptic situation during the event: Other relevant information or local factors regarding the event: List of supporting documentation included (and, if applicable, list the experts consulted for this section):
Did the synoptic situation support the record observation?

Yes:	No:	Comment:

Signed:

Date:

- **Section 4 – The Forecast**

  Did the forecast support the record?

  Supporting documentation here may include Harmonie and/or other model forecast charts at the time the record occurred.

Team member name: What was the forecast (if available) for the relevant parameter in the area where the record occurred? Other relevant information regarding the forecast: List of supporting documentation included (and, if applicable, list the experts consulted for this section):
Did the forecast support the record observation?

Yes:	No:	Comment:

Signed:

Date:

- **Section 5 – The Instrumentation**

  What type of instrumentation was used to make the observation? Include details (where known) on type and brand, calibration, maintenance, inspections, if there a correction factor needed, etc.

  Supporting documentation here may include calibration certificates, a spreadsheet for sensor installations (current and historical), instrumentation test results, photos, etc.

Team member name: Name of the instrument and/or equipment used for the record measurement: Date of last calibration/inspection prior to the record measurement: Date of installation of the instrument/equipment used for the observation: Had the instrument been tested after the record, and if so, what was the result? What was the expected accuracy of the instrument in the field? Other relevant information regarding the instrumentation: List of supporting documentation included (and, if applicable, list the experts consulted for this section):
Did the equipment/instrumentation used pass all relevant tests and calibration procedures? Yes: | No: | Comment: Signed: Date:

- **Section 6 – The Observation and Data Analysis**

  Include the observation itself here. This might be from a Tucson graph, a scanned image of a handwritten (or otherwise) observation sheet, a screenshot from a database, a plot of a time series, etc. If available, include relevant plots of nearby station observations at the same time for comparison.

  An analysis to put the observation in context with the longer-term series from the station should be included here. This may include, but is not limited to: univariate time series plots of the parameter measurements over the station history; appropriate plots to compare with nearby stations over extended periods; appropriate extreme value theory analysis and plots, etc.

  Supporting documentation here may include Tucson graphs, photos, tables, before and after observation to be included, nearby observations where available, etc.

Team member name: State the record and where and when it was recorded: Include and describe other nearby observations: Does an analysis of the longer-term series from the station support the record? List of supporting documentation included (and, if applicable, list the experts consulted for this section):

Did the nearby observations and longer-term analysis support the record measurement?

Yes:	No:	Comment:

Signed:

Date:

- **Section 7 – The Site Metadata**

  Include details of all relevant site metadata here.

  This could include details of site visits prior to and subsequent to the record observation; specifics on site and location; observation practices; site layout; site condition; site exposure; changes of location; changes nearby to station; and any other relevant information.

  Has the station class for the relevant parameter been assessed, as per the WMO standards?

  Explaining your reasons, rate the site and instrument exposure as Excellent, Satisfactory, or Unsatisfactory.

  Supporting documentation here may include an aerial map with measurements to nearby objects (car parks, buildings, fences), photos of the site, video of site (if available), written analysis and opinion about the site with input from relevant experts, etc.

Team member name:

Name of site and coordinates:

Discuss the measurements (if available) from instrument used to nearby objects, including height of nearby objects, such as boundary walls etc. Include an aerial map (if available), annotated with the distances between all relevant objects:

Station class according to WMO standards:

Exposure rating:

List of supporting documentation included (and, if applicable, list the experts consulted for this section):

Does the site analysis support the record measurement?

Yes:	No:	Comment:

Signed:

Date:

- **Section 8 – Final Comments**

  Is there any additional information (for example, contemporaneous information from newspapers or other sources) or comments relevant to the record, which were not included in the previous answers? In answering this, consider and address the following:

  - Is there any additional information which was not captured by any of the previous sections, but which is relevant to the evaluation of this record?
  - Is there need for more raw data or documentation on this event to determine its validity or invalidity? Is there other data or other analyses corresponding to this time/place/extreme event?
  - Are there any concerns as to equipment, calibration, measurement procedures, site location or other processes/procedures associated with the measurement of the event?
  - Are there any concerns associated with the nature of the event (synoptic setup) that would raise questions regarding the validity of the record?
  - Are there any other concerns associated with the event?
  - Fundamentally, does the documentation support or refute this new weather record?

Project leader name:
Final Comments:

Step 3 - The Project leader completes the report (along with Section 9) and sends it, along with their recommendations, to the head of CSD for sign off and certification.

- Section 9 - Conclusions and recommendations for head of CSD to accept or reject the certification of the Historical National Climate Record. This includes a verification box with date for the head of CSD to sign, which will conclude the evaluation process. The record will be certified as a national climate record or else rejected, and another record must be certified instead.

Project leader name:

Conclusions and recommendations to accept (Yes) or reject (No) the historical national climate record:

Section:	Yes:	No:	Maybe:	Comment:
2. Synoptic Situation				
3. Review of Literature				
4. Forecast				
5. Instrumentation				
6. Observation				
7. Site Metadata				
8. Final Comments				

Final recommendation:

Does all the expert analysis and documentation support the evaluation and certification of this measurement as a Historical National Climate Record?

Yes:	No:	Comment:

Signed:

Date:

Parameter:	
Record for Evaluation and Certification:	
Date:	
Station Name:	
Station Type:	
Station Location:	

Certification of this Historical National Climate Record Accepted:

Yes:	No:

Signed (head of CSD):	
Date:	
Name (head of CSD):	

Step 4 - The report and decision will be published internally on the Met Éireann CSD SharePoint page.

Comparing two records

Ireland's monthly minimum air temperature records:

- Record 1: -17.5°C in Straide (Co. Mayo) on 25th December 2010
- Record 2: -7.7°C in Markree (Co. Sligo) on 15th April 1892

Record 1 – provisional checks

Historical National Climate Records

Template for Evaluating and Certifying Historical National Climate Records

Met Éireann, The Irish Meteorological Service

Parameter:	December Minimum Air Temperature
Record for Evaluation and Certification:	-17.5°C
Date:	25th of December, 2010
Station Name:	Straide, Co. Mayo (STNO: 3335)
Station Type:	Climate Station
Station Location:	53.925°N, 9.1264°W

Step 2 - The project leader will assign each of the below sections to an appropriate project team member for completion:

- **Section 1 – Provisional Checks**

  Is this the most extreme value in the Met Éireann database(s) for this parameter? List the sources which were searched in reaching this conclusion, including all necessary details.

  If it is not the most extreme value in the Met Éireann database(s), give details of the more extreme observations, and state clearly why these are not being considered as the record values. (These more extreme values should then be flagged in the database(s), directing people towards this report, and providing a clear reason why these values are not considered reliable.)

  Supporting documentation here may include SQL code and images from database searches, etc.

Team member name:

Is this the most extreme value in the Met Éireann database(s)?

Yes

List the sources which were searched in reaching this conclusion:

The maxmin24 table of synoptic stations (select stno, date, mindy from maxmin24 where mindy < -15 and month = 12 order by mindy);

the allclimat table of climate stations (select stno, date, mint from allclimat where mint < -15 and month = 12 order by mint);

and the CSV file of rescued data (checked in R)

If it is not the most extreme value in the Met Éireann database(s), give details of the more extreme observations, and state clearly why these are not being considered as the record values. Use (and expand, if needed) the below table:

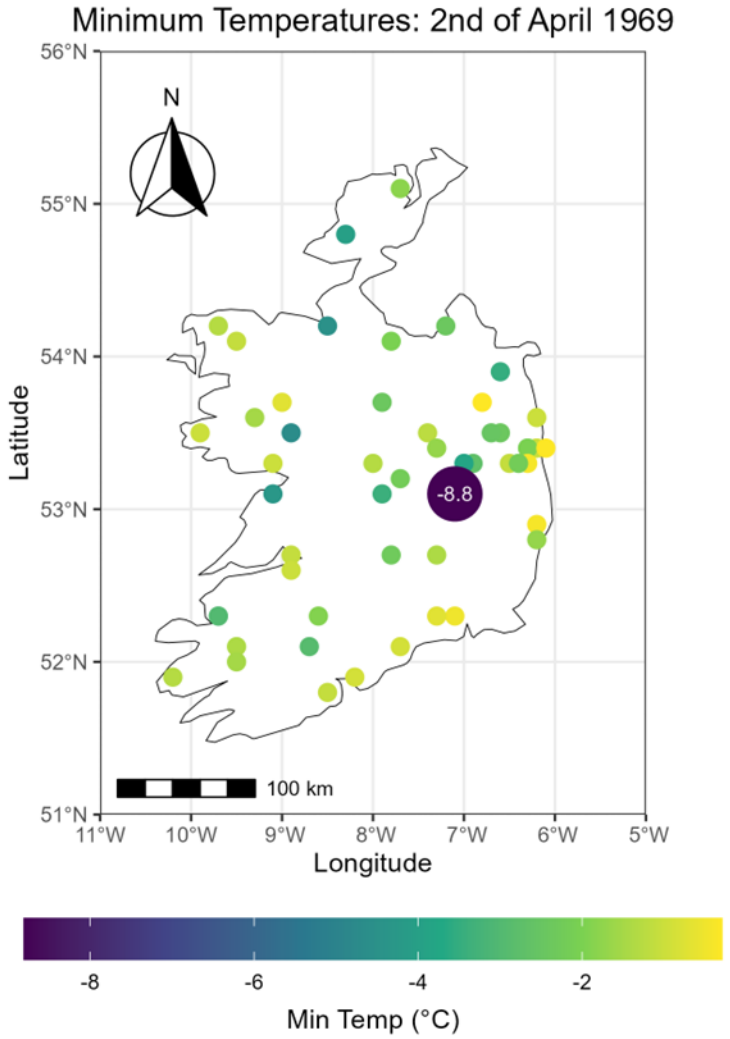
More extreme value:	Reason(s) this is not being considered as a record value:
NA	NA

List of supporting documentation supplied (and, if applicable, list the experts consulted for this section):

Screenshots of database and rescued data checks (in appendix)

Record 2 – provisional checks

Step 2 - The project leader will assign each of the below sections to an appropriate project team member for completion:



Historical National Cl

Template for Evaluating and

Met Éireann, The Irish Meteo

Parameter:
Record for Evaluation and Certification:
Date:
Station Name:
Station Type:
Station Location:

ıeter? List the sources which were searched

ls of the more extreme observations, and
e more extreme values should then be
ng a clear reason why these values are not

base searches, etc.

axmin24 where mindy < 0 and month = 4

t where mint < 0 and month = 4 order by

ails of the more extreme observations, and
(and expand, if needed) the below table:

a record value:
rding is 4.1°C colder than the next coldest appendix.

rts consulted for this section):

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Record 1 – Review of existing literature

Monthly Weather Bulletin

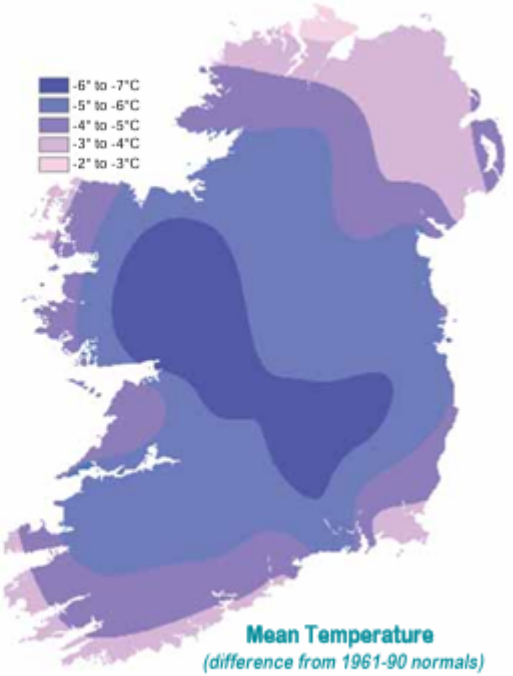
Ireland was almost completely covered by snow and ice on Christmas Day, one of the colde
acquired by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua

12 TEMPERATURE December 2010

Coldest December on record

The very cold conditions of late November intensified during December, producing record-breaking low temperatures in many places. Mean monthly air temperatures varied between -1.5°C at Cavan (Loreto College) and 4.1°C at Malin Head, between four and six degrees below normal for December generally. It was the coldest of any month since January 1963 at many stations and the coldest month on record at both Dublin Airport and Mullingar, each with over 50 years of observations.

There was a small rise in temperature during the second week and the end of the month was mild, but most of December was extremely cold. At some Leinster stations, the lowest temperatures were recorded between the 3rd and 7th, but the lowest maxima and minima were measured between the 21st and 25th. The daily *maximum* value of -9.8°C at Cavan (Loreto College) on the 21st was the lowest such value for any month ever recorded in Ireland. Straide's minimum of -17.5°C on the 25th was the lowest December air temperature ever recorded in the Republic of Ireland, while the value of -18.7°C at Castlederg, County Tyrone, on the 23rd was the lowest for December ever recorded in Ireland. Most



Mean Temperature
(difference from 1961-90 normals)

stations recorded between 17 and 24 air frosts, around three times the normal number for December.

Section 2 – Review of existing literature

Outline briefly any relevant information found in contemporaneous sources (or more recent studies relevant to the record). These may be found in (but not limited to) Meteorological Office publications; Met Éireann publications; newspapers; diaries; and academic papers. Repetition should be avoided – for example, a source may contain

ere, but the description of the synoptic

searched, a list of search terms, a list of

evant to the record, etc.

poraneous sources:

t was very cold across Ireland. It states that it
places averaging 6 degrees below normal for
ations also recorded their lowest December
.7°C, noted as the lowest temperature of any
cluded in the appendix that was printed in the

rticle published in *Irish Geography*. He
the article also describes the 2009-2010 cold
or more days. The 2010 cold spell lasted from
phases from 27/11-9/12 and 17/12-26/12. The
widespread and persistent.

graphy, 44, 303-321.

6b-6a89e1a3d23c/content

ient sources:

perts consulted for this section):

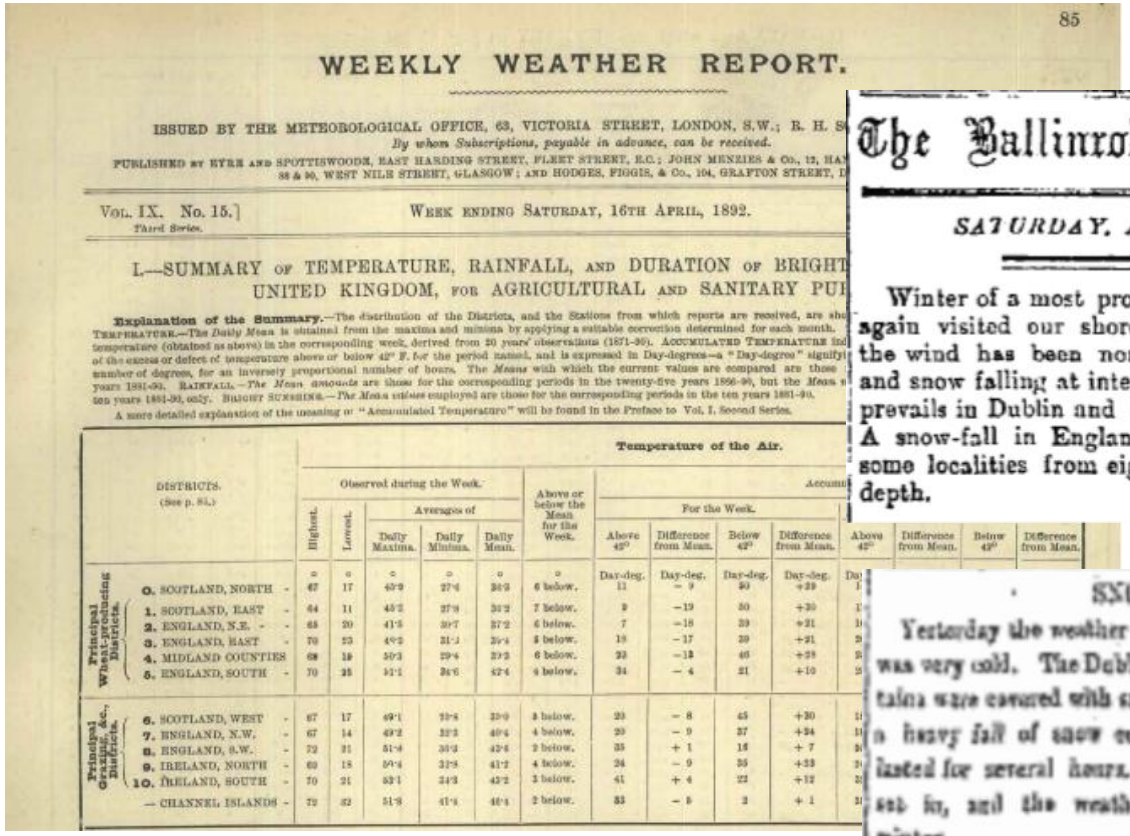
Did the review of existing literature support the record observation?

Yes: ✓	No:	Comment: Widespread cold conditions were evident and observed during this time.

Signed:

Date:

Record 2 – Review of existing literature



85

WEEKLY WEATHER REPORT.

ISSUED BY THE METEOROLOGICAL OFFICE, 63, VICTORIA STREET, LONDON, S.W.; R. H. S

By whom Subscriptions, payable in advance, can be received.

PUBLISHED BY EYRE AND SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.; JOHN MENZIES & Co., 12, HA 88 & 90, WEST NILE STREET, GLASGOW; AND HODGES, FIGGIS, & Co., 104, GRAFTON STREET, D

VOL. IX. No. 15.] Third Series. WEEK ENDING SATURDAY, 16TH APRIL, 1892.

I.—SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT UNITED KINGDOM, FOR AGRICULTURAL AND SANITARY PU

Explanation of the Summary.—The distribution of the Districts, and the Stations from which reports are received, are sh TEMPERATURE.—The *Daily Mean* is obtained from the maxima and minima by applying a suitable correction determined for each month. temperature (obtained as above) in the corresponding week, derived from 20 years' observations (1871-90). ACCUMULATED TEMPERATURE find of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifi number of degrees, for an inversely proportional number of hours. The *Means* with which the current values are compared are those years 1881-90. RAINFALL.—The *Mean* amounts are those for the corresponding periods in the twenty-five years 1856-80, but the Means ten years 1881-90, only. BRIGHT SUNSHINE.—The *Mean* values employed are those for the corresponding periods in the ten years 1881-90.

A more detailed explanation of the meaning of "Accumulated Temperature" will be found in the Preface to Vol. I. Second Series.

Temperature of the Air.

DISTRICTS. (See p. 85.)	Observed during the Week. Highest.	Lowest.	Averages of Daily Maxima.	Daily Minima.	Daily Mean.	Above or below the Mean for the Week.	For the Week. Above 42°	Difference from Mean.	Below 42°	Difference from Mean.	Above 42°	Difference from Mean.	Below 42°	Difference from Mean.
	°	°	°	°	°	°	Day-deg.	Day-deg.	Day-deg.	Day-deg.				
Principal Wheat-producing Districts. 0. SCOTLAND, NORTH	67	17	45·9	27·6	36·3	6 below.	11	− 9	90	+29				
1. SCOTLAND, EAST	64	11	45·2	27·8	36·2	7 below.	9	−19	80	+30				
2. ENGLAND, N.E.	68	20	47·5	30·7	37·2	6 below.	7	−18	89	+31				
3. ENGLAND, EAST	70	23	49·2	31·1	39·4	5 below.	18	−17	89	+31				
4. MIDLAND COUNTIES	68	18	50·3	29·4	39·3	6 below.	32	−13	46	+28				
5. ENGLAND, SOUTH	70	25	51·1	34·6	42·4	4 below.	34	− 4	21	+10				
Principal Grazing, &c., Districts. 6. SCOTLAND, WEST	67	17	49·1	31·4	39·9	4 below.	20	− 8	45	+30				
7. ENGLAND, N.W.	67	14	49·2	32·3	40·4	4 below.	20	− 9	37	+34				
8. ENGLAND, S.W.	72	21	51·4	36·3	43·4	2 below.	35	+ 1	18	+ 7				
9. IRELAND, NORTH	69	18	50·4	32·8	41·2	4 below.	24	− 9	35	+33				
10. IRELAND, SOUTH	70	21	53·1	34·3	43·2	3 below.	41	+ 4	22	+12				
— CHANNEL ISLANDS	72	32	51·8	41·4	46·4	2 below.	33	− 5	3	+ 1				

The Ballinrobe Chronicle,

SATURDAY, APRIL 16, 1892.

Winter of a most pronounced character has again visited our shores. Since Wednesday the wind has been north, with intense cold, and snow falling at intervals. Similar weather prevails in Dublin and other parts of Ireland. A snow-fall in England is also reported, in some localities from eight to twelve inches in depth.

SNOW.

Yesterday the weather in the city and suburbs was very cold. The Dublin and Wicklow mountains were covered with snow. In the afternoon a heavy fall of snow occurred in the city and lasted for several hours. In the evening a fog set in, and the weather was in every respect wintry.

Section 2 – Review of existing literature

Outline briefly any relevant information found in contemporaneous sources (or more recent studies relevant to the record). These may be found in (but not limited to) Meteorological Office publications; Met Éireann publications; newspapers; diaries; and academic papers. Repetition should be avoided – for example, a source may contain information on the synoptic situation. This fact should be stated briefly here, but the description of the synoptic situation should be included in *Section 3 – The Synoptic Situation*.

here may include a list of archives which were searched, a list of search terms, a list of evant information, a list of academic papers relevant to the record, etc.

n of any relevant information found in contemporaneous sources:

ltural Weather Reports, on the 15th of April 1892, there is recording for a minimum of 18°F (-7.8°C). On the same day there is another recording of 18°F at Brookeborough in the away.

on the 16th of April describes an "intense cold" and "severely cold season". The *Freeman's* old conditions in and around Dublin. The *Kerry Evening Post* describes a dramatic change from ginning of the week to heavy snow later in the week (April 15th 1892 was a Friday).

er Reports archive, the 18°F is recorded as the minimum temperature for the North of Ireland il 16th 1892. The summary report also states that temperatures were below normal this week were recorded on the 15th and 16th that week and that they were "extremely low" for this time of the year.

The *Monthly Weather Report* also mentions that the lowest temperatures of the month were recorded between the g that temperatures were below average. This document again lists 18°F as the low for the orded on the 15th.

ond Order Station observations, the low temperature on the 15th of April was recorded as 18.2°F l still be the record low.

rts, I cannot find any published literature on this record.

tion of any relevant information found in subsequent sources:

ation regarding the event:

umentation included (and, if applicable, list the experts consulted for this section):

Met archives – UK Agricultural Weather Review, Weekly Weather Reports, Monthly Weather rts, and screenshots from Irish Newspaper Archive.

Did the review of existing literature support the record observation?

Yes: ✓	No:	Comment: Given the widespread reporting of how cold it was during the latter half of April in both the meteorological reports and the newspapers, preliminary information says this record should stand.

Signed:

Date:

Record 1 – Observation and Data Analysis

December Minimum Temperature Record

-17.5°C on the 25th of December 2010, Straide

Daily minimum temperature (°C)

−15 −10 −5 0 5

Station	15th Dec	16th Dec	17th Dec	18th Dec	19th Dec	20th Dec	21st Dec	22nd Dec	23rd Dec	24th Dec	25th Dec	26th Dec	27th Dec	28th Dec	29th Dec	30th Dec	31st Dec	1st Jan	2nd Jan	3rd Jan	4th Jan
STRAIDE	-3.3	3.6	-1.0	-6.8	-5.8	-17.2	-16.0	-16.9	-16.4	-16.4	-17.5	-13.4	3.1	6.7	9.0	6.7	6.4	4.5	1.2	-5.8	-5.3
KNOCK AIRPORT	1.2	3.0	-2.1	-4.1	-5.3	-5.7	-7.3	-7.4	-3.8	-3.4	-5.9	-6.7	1.0	5.5	7.6	5.9	6.1	4.5	0.4	-3.7	-3.5
BALLINA GOLF CLUB	-0.5	1.5	0.0	-4.4	-2.9	-12.6	-10.4	-15.0	-14.1	-16.0	-16.0	-8.1	3.0	8.1	6.5	4.0	5.0	4.0	2.0	-4.0	-0.3
CLAREMORRIS 1	-0.7	2.4	-2.2	-6.4	-6.6	-13.0	-12.8	-13.7	-12.1	-14.4	-15.0	-13.0	2.3	7.6	8.9	6.5	6.5	4.9	1.2	-5.4	-5.6
CLAREMORRIS 2	-0.6	2.5	-2.1	-6.2	-6.5	-13.2	-12.9	-13.5	-12.0	-14.5	-15.0	-13.5	2.4	7.7	9.0	6.6	6.5	5.0	1.2	-5.5	-5.5
NEWPORT (Furnace)	0.2	5.1	0.0	-2.5	-2.5	-6.2	-4.2	-8.5	-8.1	-8.4	-9.6	-7.2	3.3	6.8	7.6	7.4	6.0	4.0	2.0	-3.0	-2.5
NEWPORT	-0.3	4.2	0.1	-2.2	-2.0	-6.6	-5.2	-8.8	-8.1	-8.2	-9.0	-7.3	2.9	7.3	8.2	7.4	6.0	4.3	2.2	-3.0	-3.1
MARKREE	-6.4	1.1	-1.6	-8.8	-10.3	-16.0	-15.7	-15.7	-15.6	-16.3	-17.3	-16.1	1.5	6.1	8.4	6.9	5.2	4.7	1.2	-5.7	-5.5
DELPHI LODGE II	-0.5	5.2	0.8	-2.5	-1.4	-7.5	-7.8	-8.5	-7.8	-9.4	-9.3	-7.0	5.1	9.0	9.8	8.2	6.5	5.1	2.5	NA	-4.8
BOYLE (Lowpark)	-1.9	2.6	-1.6	-8.2	-7.5	-13.2	-11.4	-14.0	-11.8	-14.6	-16.0	-14.2	2.2	5.3	8.5	6.6	5.9	4.5	0.5	-5.5	-5.5
BELDERRIG	0.2	5.4	-0.8	-1.0	-7.6	-6.5	-3.6	-7.2	-6.1	-5.5	-4.0	-2.6	3.0	8.5	5.8	3.6	4.0	4.8	2.0	-2.2	-1.5
ARDTARMON	-1.0	5.4	-0.3	-2.9	-2.5	-5.9	-5.0	-6.2	-5.6	-6.1	-6.0	-3.3	2.1	6.7	7.9	6.8	6.2	5.7	2.2	-1.5	-1.0
SLIGO AIRPORT	-1.7	4.2	-2.0	-1.7	-2.2	-10.0	-5.3	-7.7	-10.5	-8.5	-7.7	-5.6	4.0	5.4	7.1	5.9	4.5	4.0	0.0	-3.5	NA
MAAM VALLEY	-0.4	5.8	-0.2	-3.7	-2.9	-7.4	-6.9	-10.1	-7.1	-9.7	-12.2	-3.2	4.4	8.7	9.6	7.1	6.7	5.1	2.1	-4.1	-3.8
CLOOSH (Forest Station)	-2.2	1.6	-3.8	-7.9	-6.1	-7.8	-7.7	-9.6	-8.6	-10.1	-10.6	-8.4	1.5	5.8	6.6	4.9	4.7	2.7	-0.5	-5.2	-4.7
OUGHTERARD (Ardnasillagh)	-1.8	4.8	-0.1	-3.6	-4.3	-9.4	-9.4	-7.7	-8.3	-10.5	-14.4	-12.9	3.9	6.9	9.4	6.0	6.0	5.0	1.8	-3.1	-3.4
ELPHIN	2.2	2.8	-2.3	-7.2	-7.0	-12.2	-12.7	-12.1	-9.4	-12.7	-16.3	-12.9	2.7	6.2	8.5	6.2	6.1	3.7	0.6	-4.0	-3.4
GALWAY (University																					

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Signed:

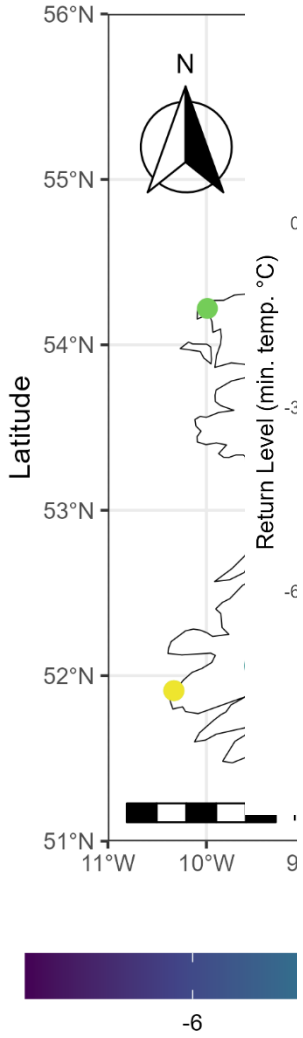
Date:

Record 2 – Observation and Data Analysis

Minimum T... 15th of April 1892

Section 6 – The Observation and Data Analysis

GEV Return-Level Plot for Block Minima
Markree, April, 1875-1998



April Minimum Temperature Record

-7.7°C on the 15th of April 1892, Markree

Daily minimum temperature (°C)

−4 0 4 8 12

Station	05-Apr	06-Apr	07-Apr	08-Apr	09-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
MARKREE	9.1	7.5	6.2	6.2	2.6	1.8	−1.1	−1.6	−0.9	−5.4	−7.7	−6.0	−6.8	−0.8	−4.8	1.8	5.2	6.1	5.6	1.8	4.0
MULLAGHMORE	8.9	8.3	7.2	7.8	6.1	5.0	5.0	5.0	2.2	−0.6	−2.2	0.0	−1.7	1.1	0.6	2.2	6.7	7.2	6.7	6.7	5.6
EDGEWORTHSTOWN G.S.	4.4	4.4	5.6	5.6	6.1	5.6	4.4	1.1	−1.7	−5.0	−5.0	−5.0	−3.9	−0.6	−3.1	−1.1	4.4	6.1	3.1	1.1	2.8
ARLEY	8.3	7.2	4.8	6.2	4.6	4.4	1.8	0.9	−1.3	−6.3	−4.9	−6.5	−4.3	−0.4	−3.2	5.6	5.0	6.7	4.5	1.2	1.8
BELMULLET	8.3	7.2	6.1	8.3	8.3	7.2	7.8	7.2	1.7	−1.1	−1.7	0.0	0.6	1.7	3.3	3.9	8.3	8.3	8.3	3.9	5.6
GALWAY (University College)	NA	−1.7	6.7	7.8	5.6	6.1	5.0	5.0	1.1	−1.1	−2.2	−2.2	−2.8	1.7	0.0	3.3	7.2	6.1	6.1	2.2	5.0
DERRY	9.4	8.8	7.1	6.4	4.7	3.0	2.9	1.9	0.3	−1.7	−1.4	−1.6	−1.1	−1.1	−1.3	3.8	5.7	7.1	6.4	4.9	4.2
BIRR CASTLE	7.8	8.3	2.8	6.7	6.7	4.2	−0.4	2.2	0.0	−4.4	−6.1	−4.4	−5.4	−0.6	−3.3	3.9	6.1	8.9	5.3	1.7	3.0
BIRR CASTLE (SOO)	7.4	7.7	2.3	6.1	3.9	3.8	−1.0	1.8	−0.6	−5.2	−6.9	−5.1	−5.9	−1.2	−4.1	6.6	5.7	6.7	4.6	1.0	2.6
MALIN HEAD	8.3	6.1	6.1	6.7	6.7	5.0	6.1	5.6	2.2	1.1	0.0	−0.6	0.6	1.1	1.1	4.4	7.2	7.2	6.1	6.1	5.6
PHOENIX PARK	6.2	6.0	5.1	5.3	3.6	3.2	0.4	−0.2	0.0	−4.1	−2.7	−1.8	−3.8	−1.5	−5.4	6.7	7.2	8.3	4.6	1.9	3.6
ROYAL BOTANIC GARDENS Glasnevin	6.7	6.7	5.6	5.0	4.4	3.9	1.1	0.0	0.6	−3.9	−5.6	−1.7	−3.9	−1.1	−4.7	7.2	7.2	7.8	5.0	1.7	3.9
BOTANIC GARDENS NLI	6.7	6.7	5.6	5.0	4.4	3.9	1.1	0.0	0.6	−3.9	−5.6	−1.7	−3.9	−1.1	−4.7	7.2	7.2	7.8	5.0	1.7	3.9
DUBLIN (Fitzwilliam Square)	7.8	7.7	6.8	7.3	6.2	5.6	3.8	3.3	1.2	−2.2	−2.6	−0.6	−2.2	0.7	−1.5	7.4	7.8	9.4	6.7	3.8	4.5
FOYNES (Vocational School)	9.8	7.2	7.1	7.3	6.6	5.8	5.7	0.0	−2.0	−2.1	−0.9	−2.2	1.4	0.4	5.3	8.9	9.9	6.8	5.1	5.0	6.4
KILKENNY CASTLE	7.2	8.3	5.0	7.2	7.2	5.0	1.7	1.1	1.7	−3.3	−4.4	−1.1	−1.7	−1.1	−5.0	5.6	6.7	10.0	3.3	1.7	5.0
KILLARNEY (St.Finan's Hospital)	10.2	11.1	9.7	10.4	7.7	9.5	4.4	4.4	3.8	−3.3	−3.9	−2.8	−4.9	−2.2	−1.7	8.6	8.4	8.3	1.7	2.8	6.7
WATERFORD (Brook Lodge)	7.5	8.1	7.2	6.1	6.1	6.7	3.9	1.7	2.5	−3.6	−3.1	−1.7	−1.7	−1.1	−3.9	7.2	6.7	8.9	4.2	3.3	5.8
ROCHES POINT	7.2	7.8	8.9	8.3	7.8	8.9	6.7	6.1	3.3	0.6	−0.6	1.1	0.0	1.7	3.3	7.2	8.9	10.0	6.1	6.1	6.7
VALENTIA OBSERVATORY	9.4	8.3	10.0	10.6	11.1	12.8	6.1	3.9	1.7	−0.6	−1.1	−0.6	0.0	0.6	0.6	6.7	6.7	10.0	4.4	3.9	7.2
VALENTIA OBSERVATORY (SOO)	9.2	8.3	9.9	11.2	12.1	10.0	6.7	4.4	2.4	−0.2	−0.2	0.2	0.9	1.1	0.9	7.3	9.8	6.5	5.4	4.3	7.2

Created with Datawrapper

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An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

Other steps

- We also look at the synoptic situation, the forecast, the instrumentation, the site metadata and any other relevant information (omitted for brevity!)
- The team then reach a decision on the balance of evidence and decide whether to accept or reject the record

Summary

- Reassessed Ireland's all-time maximum and minimum air temperature records – stand-alone projects
- Subsequently developed an SOP to streamline the process of reassessing historical climate extremes – adapting WMO approach to a national level
- Currently working on monthly maximum temperature and wind records; followed by precipitation, pressure and sunshine
- Plan to publish approach and results
- Also of interest: Run focused reanalysis experiments to help reassess specific events

Making Ireland Weather and Climate Prepared

Thank you for your attention

EUMETNET – Data Management Workshop
Developing an SOP for the re-evaluation of historical national climate records

John O'Sullivan*, Mary Curley, and Colin Evans

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

Historical case study: 26th of June, 1887

Historical case study: 26th of June, 1887

International Journal of Climatology

International Journal of Climatology RMetS

RESEARCH ARTICLE

Re-Investigating Ireland's Maximum Air Temperature Record—Kilkenny Castle, 26 June 1887

Ciarán Kelly | John O'Sullivan | Jonathan McGovern | Mary Curley

Climate Services Division, Met Éireann, Dublin, Ireland

Correspondence: John O'Sullivan (john.osullivan@met.ie)

Received: 26 September 2024 | **Revised:** 16 December 2024 | **Accepted:** 27 January 2025

Funding: The authors received no specific funding for this work.

Keywords: 1887 | climate extremes | drought | heatwave | historical records | Ireland | *Kilkenny Castle* | maximum air temperature | record re-evaluation | WMO

ABSTRACT

In this study, data rescue and analysis of available station archives from the late 19th and the early 20th century were carried out to re-investigate Ireland's maximum air temperature record of 33.3°C at Kilkenny Castle on 26 June 1887. In addition to analysing this data in detail, we also conducted a comprehensive investigation of newspaper archives and meteorological documents published at the time of the record. The year 1887—and the month of June in particular—was exceptional in Ireland, with unprecedented drought and heat conditions across the island. Many places saw high temperatures during this period, with several stations recording temperatures in excess of 30°C. We also investigated inspectors' reports and station metadata for Kilkenny Castle, which lend support to the record temperature. A thorough analysis of the rescued data showed that for some measures (such as the temperature spread across the island on the day of the record), the data support the record temperature; but for some other measures (such as the monthly mean of maximum temperatures), the difference between Kilkenny and the neighbouring stations appears to be anomalous. Following a careful consideration of all of the evidence from both the metadata and the data analysis, our recommendation is that the long-standing record maximum air temperature value of 33.3°C for Kilkenny Castle on 26 June 1887 should continue to stand, but with some reservations noted.

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

Modern case study: 18th of July, 2022

RTÉ NEWS SPORT ENTERTAINMENT BUSINESS LIFESTYLE CULTURE PLAYER TV RADIO

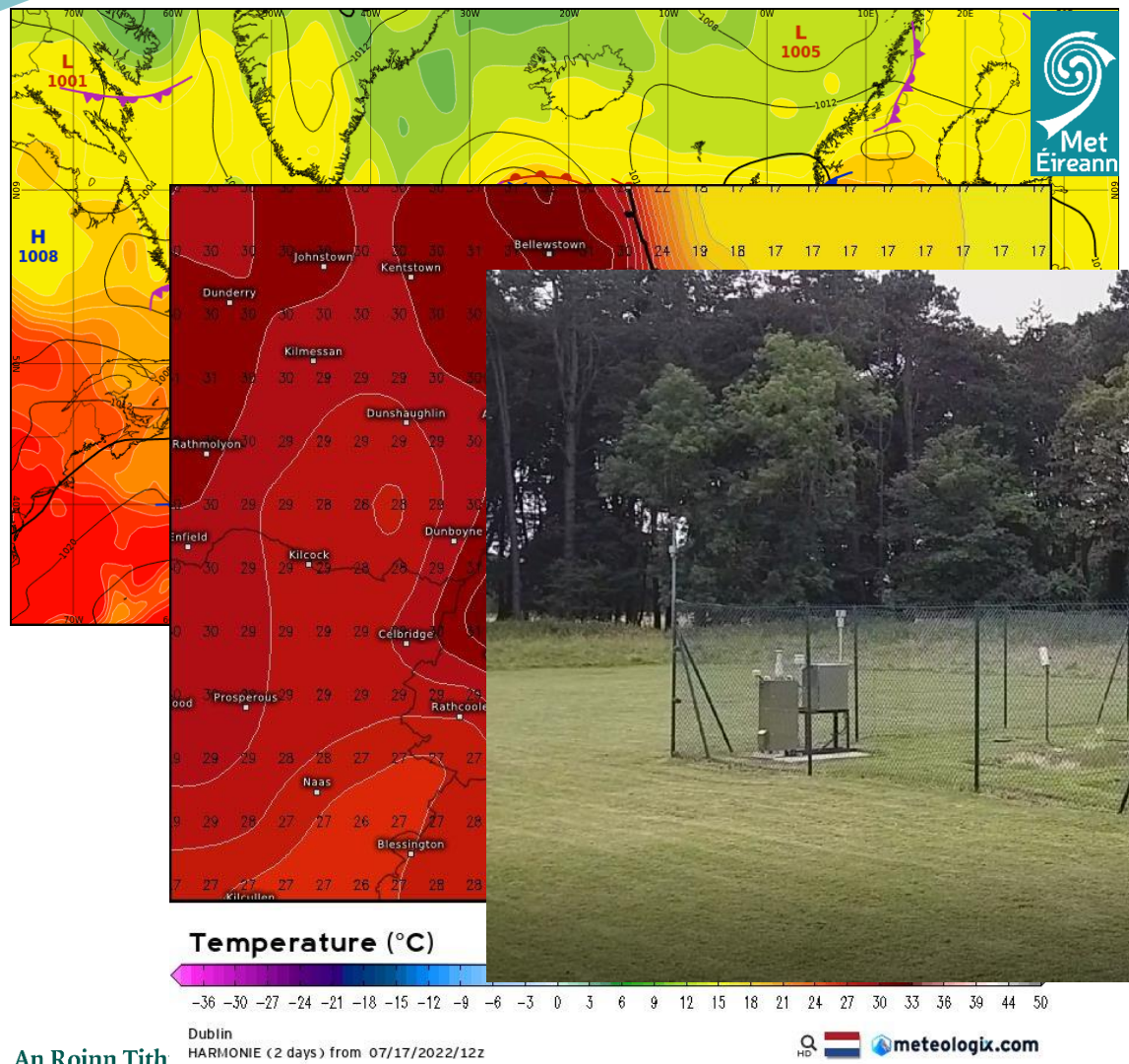
NEWS ▸ WEATHER ▸ Latest Weather Weather Team Photo Competition

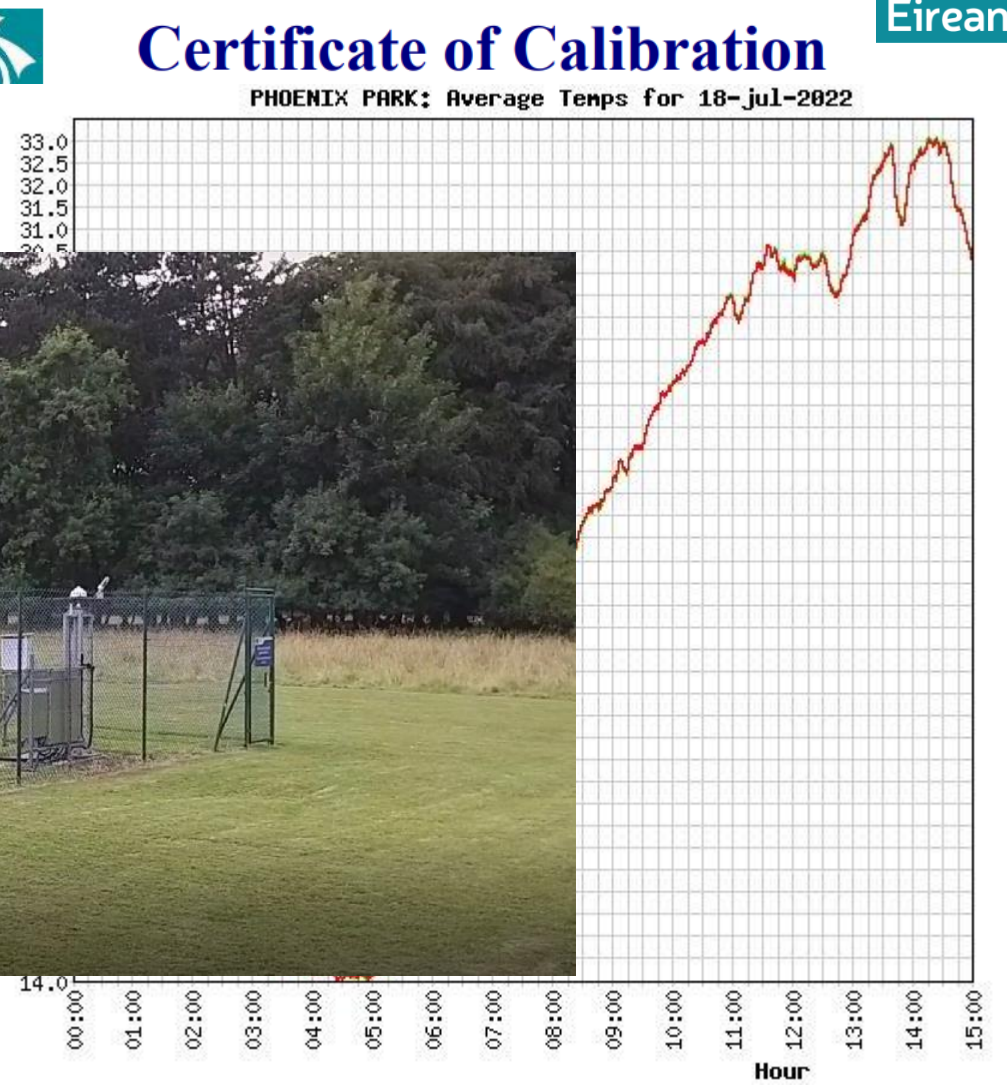
Highest temp in over a century as mercury hits 33C in Dublin

Updated / Tuesday, 19 Jul 2022 06:04

A temperature of 33C was reported from the weather station at Phoenix Park in Dublin at 1pm on Monday, Met Éireann has said.

Modern case study: 18th of July, 2022





New records

Every Monday morning, we have a briefing:

- general forecast for each day of the coming week
- flood forecast
- climate statistics for the month to date

If it looks like a record could be broken

- Document produced for forecasters on current record
- Team monitor the possible record-breaking event
- If the record is broken, provisional record announced to media and work commences to validate the provisional record

What are the differences?

- Synoptic situation
- ~~Forecasts~~
- Instrumentation - limited information on make and calibration
- Data analysis
  - comparison with neighbouring stations (but network is more sparse)
  - extreme value analysis
- Metadata
  - station inspection reports
  - exact site location is unknown

Historical case study

Ireland's Maximum Air Temperature Records			
21st century record	33.0°C	18th July 2022	Phoenix Park, Co. Dublin
20th century record	32.5°C	29th June 1976	Boora, Co. Offaly
National record			

Task: Reassess Kilkenny Castle record maximum air temperature of 92°F
(91.5 – 92.5°F ≈ 33.1 – 33.6°C)

Climate National Records

Template for Evaluating Irish National Records - Version 1_2022 *(Paul Moore)*

Met Éireann, The Irish Meteorological Service

Parameter, Record for Evaluation, Date:

Station type, Location:

Met Éireann officially evaluates past weather and climate observation extremes at all the national weather observing stations in Ireland. Currently the divisions within Met Éireann with the responsibility for assessing these extremes are the Climate Services Division & Observations Division. Weather extremes are expected to become more frequent as our climate changes in a warming world; therefore (and in line with WMO practices), a new template within Met Éireann has been initiated to evaluate and certify all New National Records.

Instructions:

Step 1: When a provisional New National Record is observed, the head of Climate Services Division will appoint a project leader to complete the below instructions. This will involve the support of appropriate experts in Climatology/Meteorology, Instrumentation and Observations. The appointed experts will complete their assigned box below and supply relevant supporting documentation to be included in the appendix. When all steps are complete, the report, along with the project leaders recommendation, will be passed to the head of the Climate Services Division to accept or reject certification of the New National Record. ***(Head of Climate Services Division)***

Step 2: The project leader will assign each of the below sections to an appropriate expert for completion:

- **Section 1** - The synoptic situation during the event, regional weather, and local factors (i.e. Föhn wind effect, and/or any notable unusual or unique information concerning the observation). ***(Meteorologist/Climatologist)***

- supporting documentation to include: Synoptic charts, air mass charts, satellite charts and radiosonde ascents etc.

Meteorologist/Climatologist Name and Division:

1. *Brief description of the synoptic situation during the event:*

2. ***Other relevant information regarding the event:***

3. *List of supporting documentation supplied:*

4. *Did the synoptic setup support the record broken?*

Yes:	No:	Comment:

Signed: *Date:*

1

- **Section 2** - Did the forecast support the new record? ***(Meteorologist)***

- supporting documentation to include: Harmonie and/or other model forecast charts supporting the new record.

Meteorologist Name:

1. *What was the forecast (for the relevant parameter) in the area where the record was broken:*

2. *Other relevant information regarding the forecast:*

3. *List of supporting documentation supplied:*

4. *Did the forecast support the record broken?*

Yes:	No:	Comment:

Signed: *Date:*

2

- **Section 3** - The type of instrumentation used to make the observation (including specifics on its calibration, maintenance, operation, is there a correction factor needed etc.) ***(Instrumentation Expert)***

- supporting documentation to include: calibration certificates, spreadsheet for sensor installations (current & historical), instrumentation test results, photos etc.

Instrumentation Expert Name:

1. *Name of the instrument and/or equipment used for the new record measurement:*
2. *Date of last calibration/inspection for the instrument/equipment used:*
3. *Date of installation of the instrument/equipment used for the observation:*
4. *Has the instrument been retested since the record was broken and what was the result:*
5. *What is the expected accuracy of the instrument in the field:*
6. *Other relevant information regarding the instrumentation:*
7. *List of supporting documentation supplied:*
8. *Did the equipment/instrumentation used pass all relevant tests and calibration procedures?*

Yes:	No:	Comment:

Signed: *Date:*

3

- **Section 4** - The observation itself (Tucson graph or photo of observation), nearby station observations at the same time to compare. ***(Project leader)***

- supporting documentation to include - Tucson graphs, photos, tables, before and after observation to be included, nearby observations where available.

Project Leader name:

1. *The new record and where and when the observation was recorded:*
2. *Other relevant nearby observations:*
3. *List of supporting documentation supplied:*
4. *Did the nearby observations support the new record measurement?*

Yes:	No:	Comment:

Signed: *Date:*

4

- **Section 5** - Site metadata: Site visit by observations expert. Specifics on site/location, observation practices, site layout, site condition, site exposure, changes of location, changes nearby to station etc. Does the site meet WMO standards? ***(Observations and Site Expert)***

- supporting documentation to include: Aerial map with measurements to nearby objects (car parks, buildings, fences), photos of the site, video of site (if available), written analysis and opinion about the site by the observations expert.

Observations/Site Expert Name:

1. *Name of site and co-ordinates:*

2. *Name of instruments used for the new record:*

3. *Measurements from instrument used to nearby objects, including height of nearby objects and instruments used:*

   Please supply - a rough aerial map with measurements and nearby objects such as boundary walls etc.

   - 360° panorama of the station (photos and video if available)

   - Analysis and opinion regarding the site and instrumentation used for the new record

4. *Where there any events in the vicinity of the station at the time/or before the record which could have impacted on it's accuracy:*

5. *Station class according to WMO standards:*

6. *List of supporting documentation supplied:*

7. *At the time of the measurement, did the site and instrumentation comply with WMO relevant standards?*

Yes:	No:	Comment:

Signed: *Date:*

Step 3: When Sections 1 - 5 are complete, the project leader will convene a meeting between all the experts that contributed to the report to discuss all aspects of the potential record, addressing five key questions:

1. Is there need for more raw data or documentation on this event to determine its validity or invalidity? Is there other data or other analyses corresponding to this time/place extreme event?
2. Are there any concerns as to equipment, calibration, measurement procedures, site location or other processes/ procedures associated with the measurement of the event?
3. Are there any concerns associated with the nature of the event (synoptic setup) that would raise questions regarding the validity of the record?
4. Are there any other concerns associated with the event?
5. Fundamentally, does the documentation support or refute this new weather record?

Step 4: Project leader completes the report (including section 6) and sends it, along with their recommendations, to the head of the Climate Services Division for sign off and certification.

- **Section 6** - Conclusions and recommendations for head of the Climate Services Division to accept or reject the new National Record. Verification box with date for the head of Climate Services to sign, which will conclude the verification process and the record will be certified as a National Record or rejected.

Project Leader name:

1. *Conclusions and recommendations to accept or reject the new record:*

Section	Yes	No	Maybe	Comment
1.Synoptic				
2.Forecast				
3.Instrumentation				
4.The observation				
5.Station location and condition				

2. *Other relevant issues or concerns:*

3. *Does all the expert analysis and documentation support the verification and certification of the New National Record?*

Yes:	No:	Comment:

Signed: *Date:*

Parameter, Record for evaluation, Date:

Station type, Location:

New National Record certification accepted: Yes: | No:

Signed (Head of Climate Services Division): *Date : .....*

Head of Climate Services Division name:

Step 5: If the head of division deems it necessary, the report and decision will be published on the Met Éireann website.

Additional information or comments:

Appendix:

Other sources of information?

- Newspapers
- *Symons's Monthly Meteorological Magazine*
- *Journal of the Statistical and Social Inquiry Society of Ireland*
- *The Monthly Weather Report of the Meteorological Office for the Year 1887*
- *The Daily Weather Reports of the Meteorological Office* (1887)
- *The Weekly Weather Report of the Meteorological Office* (1887)
- *British Rainfall 1887*
- Station inspection reports

Other sources of information?

- NAO
- Sea surface temperatures
- Comparison with similar events in more recent times
- ?