



Winter

(December 2019, January & February 2020)

Mild overall, very wet and windy finish

Meteorological Winter 2019/2020 was dominated by a strongly positive North Atlantic Oscillation phase, meaning both the Azores high and Icelandic Low were stronger than average, tightening the isobars in between and keeping the air flow mostly westerly off the Atlantic. This in turn helped to strengthen the Polar Jetstream, which fed in numerous low-pressure systems and associated fronts across Ireland and much of north-western Europe throughout the season. There were a few periods when the Polar Jetstream moved north allowing high pressure to develop over or close to Ireland, notably at the end of December and beginning of January and also between the 18th and 25th of January, when near record high pressure was recorded over Ireland. It was mild overall but there were some colder periods as the air masses alternated between tropical maritime and polar maritime. Six named storms affected Ireland during the season including Storm Atiyah on the 8th and 9th December, Storm Elsa on the 18th December and Storm Brendan on the 13th January. February was a particularly wet and windy month, with three named storms and record rainfall at a number of our stations, leading to extensive flooding in places, especially along the Shannon catchment. Storm Ciara affected Ireland on the 9th and 10th, Storm Dennis on the 15th and 16th and Storm Jorge on the 29th.

Rainfall: Above average everywhere, highest in the West

All rainfall totals were above their Long-Term Average (LTA) for the season. Percentage of seasonal rainfall values ranged from 110% (seasonal rainfall total of 399.8 mm) at Sherkin Island, Co Cork to 165% (seasonal rainfall total of 578.3 mm) at Claremorris, Co Mayo. Seasonal rainfall totals ranged from 224.1 mm (122% of its LTA) at Dublin Airport to 702.9 mm (148% of its LTA) at Newport, Co Mayo. The highest daily rainfall total was 51.5 mm at Knock Airport, Co Mayo on the 8th Feb. The number of rain days ranged from 52 days at Phoenix Park, Co Dublin to 78 days at a few stations. The number of wet days¹ ranged from 38 days at Casement Aerodrome, Co Dublin to 70 days at Newport, Co Mayo. The number of very wet days³ ranged from 5 days at Phoenix Park, Co Dublin to 29 days at Newport, Co Mayo.

Temperature: Above average everywhere

All mean air temperatures across the country were above their Long-Term Average (LTA) for the season. Deviations from mean air temperature for the season ranged from 0.2 °C (5.7 °C mean temperature) at Markree, Co Sligo to 1.2 °C (6.4 °C mean temperature) at Phoenix Park, Co Dublin. Mean temperatures for the season ranged from 4.8 °C (0.6 °C above its LTA) at Knock Airport, Co Mayo to 8.2 °C (0.6 °C above its LTA) at Sherkin Island, Co Cork. The season's lowest temperatures were recorded on the 19th Jan with the lowest air minimum reported at Mullingar, Co Westmeath with a temperature of -6.1 °C and the lowest grass minimum reported at Oak Park, Co Carlow with -10.7 °C. The highest maximum was reported on the 7th Jan at Newport, Co Mayo with a temperature of 14.4 °C. All stations reported ground frost during the season. The number of days with ground frost ranged from 11 days at Sherkin Island, Co Cork to 55 days at Markree, Co Sligo. More than half of the 25 synoptic stations reported air frost. The number of days with air frost ranged from zero days at a few stations to 19 days at Mount Dillon, Co Roscommon.

Sunshine: Sunniest in the South and East

Nearly all available sunshine totals were above their Long-Term Average (LTA) for the season. Percentage of seasonal sunshine values ranged from 95% (seasonal sunshine total of 141.4 hours) at Knock Airport, Co Mayo to 137% (the season's highest seasonal sunshine total of 236.5 hours) at Johnstown Castle*, Co Wexford. Seasonal sunshine totals were lowest at Belmullet*, Co Mayo with 133.3 hours (No LTA comparison*). The highest number of daily sunshine hours recorded during winter was 9.4 hours at Johnstown Castle*, Co Wexford on the 27th Feb. The number of dull days² ranged from 21 days at Casement Aerodrome, Co Dublin to 40 days at Valentia Observatory, Co Kerry.

Wind: Storm force winds reported during all six named storms for the season

Seasonal mean wind speeds ranged from 7.0 knots (13.0 km/h) at Moore Park, Co Cork to 20.4 knots (37.8 km/h) at Mace Head, Co Galway. There were numerous days with gales and strong gales with up to storm force winds on the 8th Dec, 18th Dec, 13th Jan, 8th Feb, 10th Feb, 11th Feb, 16th Feb and 29th Feb. The number of days with up to strong gales ranged from zero days at a few stations to 18 days at Mace Head, Co Galway. The number of days with storm force winds were up to 7 days at Mace Head, Co Galway. The season's highest gust was reported at Roche's Point, Co Cork on the 13th Jan during Storm Brendan with 73 knots (135 km/h). The season's highest 10-minute mean wind speed was 54 knots (100 km/h) at Mace Head, Co Galway on the 29th Feb during Storm Jorge.

EXTREME VALUES FOR WINTER AT SYNOPTIC STATIONS

Rainfall

Highest seasonal total: 702.9 mm at Newport, Co Mayo (148% of its LTA)
Lowest seasonal total: 224.1 mm at Dublin Airport, Co Dublin (122% of its LTA)
Highest daily rainfall: 51.5 mm at Knock Airport, Co Mayo (50% of its monthly LTA) on Sat 8th Feb

Temperature

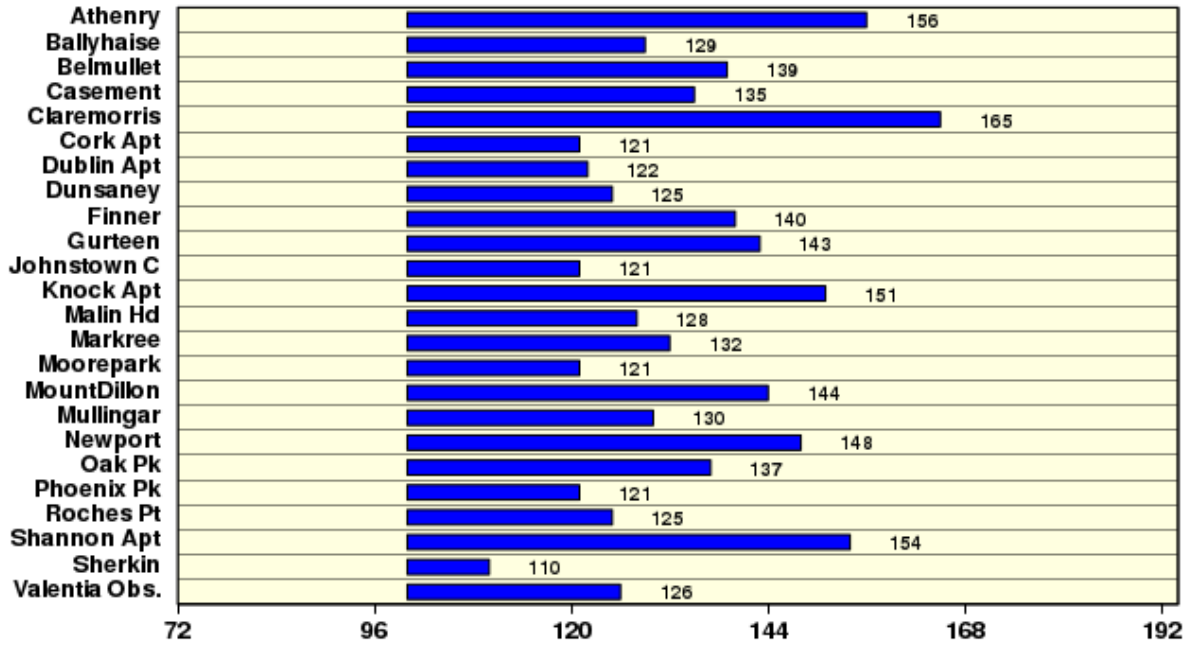
Highest mean seasonal temperature: 8.2°C at Sherkin Island, Co Cork (0.6°C above its LTA)
Lowest mean seasonal temperature: 4.8°C at Knock Airport, Co Mayo (0.6 above its LTA)
Highest air temperature for the season: 14.4°C at Newport, Co Mayo on Tue 7th Jan
Lowest air temperature for the season: -6.1°C at Mullingar, Co Westmeath on Sun 19th Jan
Lowest grass minimum for the season: -10.7°C at Oak Park, Co Carlow on Sun 19th Jan

Sunshine

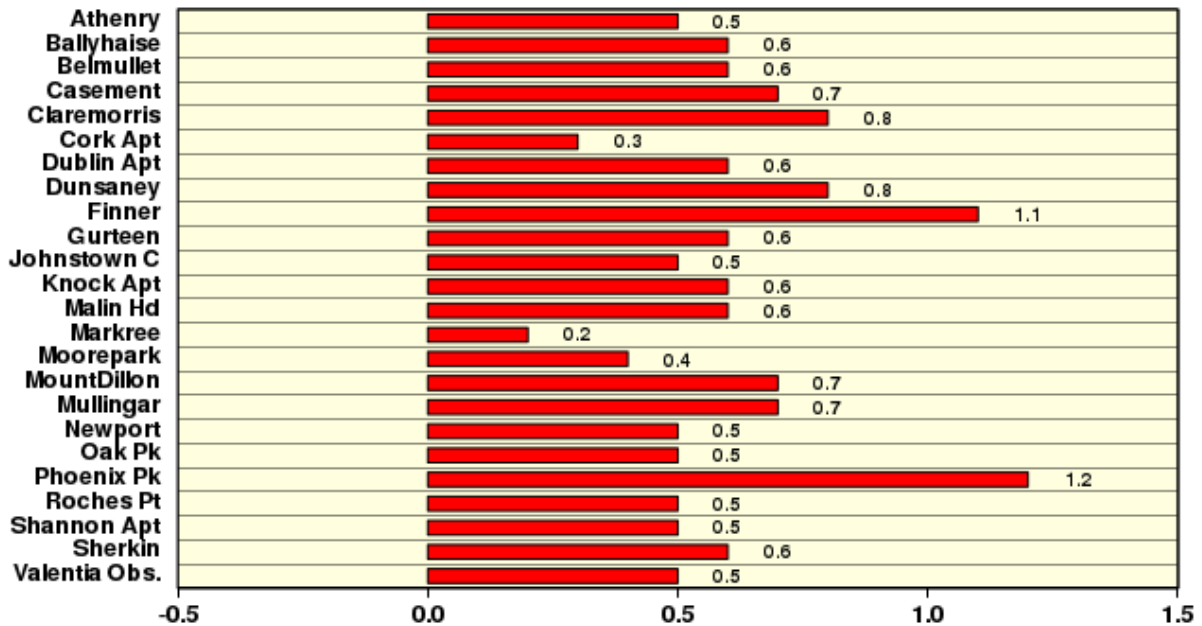
Highest seasonal total: 236.5 hrs (daily mean 2.60 hrs/day) at Johnstown Castle, Co Wexford
Lowest seasonal total: 133.3 hrs (daily mean 1.46 hrs/day) at Belmullet, Co Mayo
Highest daily sunshine for the season: 9.4 hours at Johnstown Castle, Co Wexford on Thu 27th Feb

Winter 2019/2020

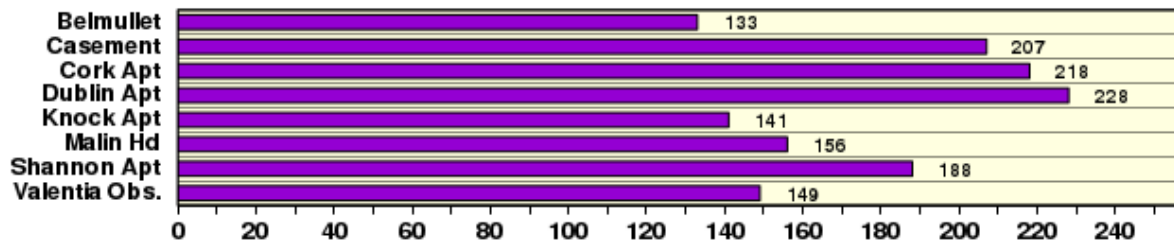
Rainfall (% of average for period 1981-2010) on whole season basis



Temperature (°C) (difference from average for period 1981-2010)



Sunshine (Number of seasonal sunshine hours)



Issued by the Climatology and Observations Division of Met Éireann on Wednesday 4th March 2020. This report is based on available preliminary data from 25 principal weather stations operated by Met Éireann. Synoptic station data is midnight to midnight UTC. Long-Term Averages (LTAs) and “average” refer to the period 1981-2010. ¹ ‘Dry spell’ is a period of 15 or more consecutive days to none of which is credited 1.0 mm or more of precipitation (i.e. daily tot < 1.0 mm). ² A wet day is a day with 1.0 mm or more of rainfall. ³ A dull day is a day with less than 0.5 hours of sunshine. ⁴ A very wet day is a day with 10.0 mm or more of rainfall. *Sunshine data is from the Autosol Network. LTAs for these sites are currently not used for comparison purposes. For more information, contact Met Éireann at 01-8064200 or e-mail: enq@met.ie

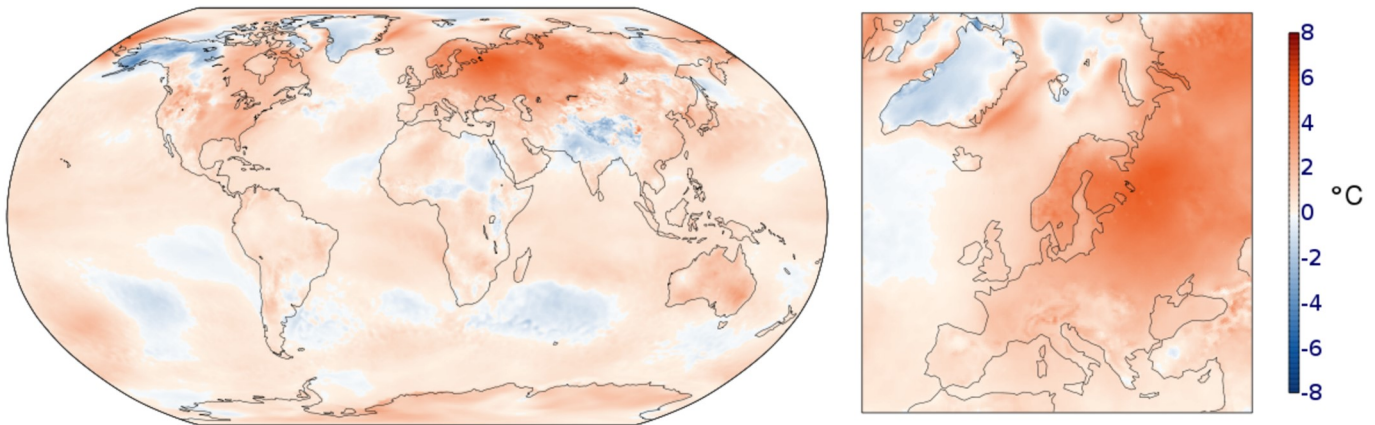
Winter Global

(December 2019, January & February 2020)

Surface air temperature: Boreal Winter (December 2019, January and February 2020)

The boreal winter season 2019/2020 was by far the warmest winter season ever recorded in Europe. Globally, the regions with highly anomalous temperatures in February tended to persist throughout the period from December to February. Exceptions include the USA and Australia, which were generally warmer in the winter average than in the average for February alone.

Surface air temperature anomaly for December 2019 to February 2020 relative to 1981-2010

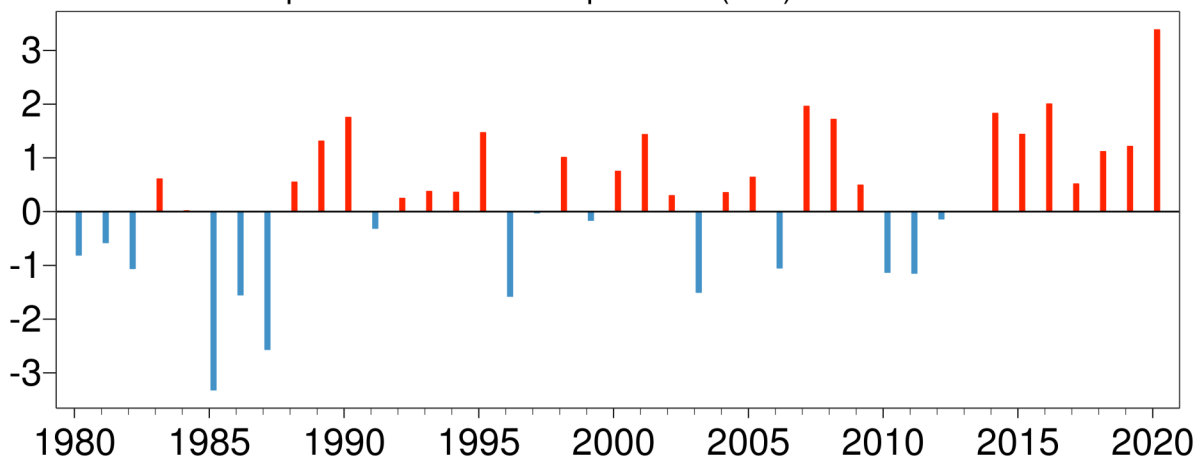


Surface air temperature anomaly for the boreal winter from December 2019 to February 2020 relative to the average for 1981-2010. Data source: ERA5. Credit: Copernicus Climate Change Service/ECMWF. <https://climate.copernicus.eu/surface-air-temperature-february-2020>

Temperature: Winter European surface air temperature

With persistent mild weather over Europe, particularly in the north and east, the past winter was 3.4 °C warmer than the average winter for the period 1981-2010. The temperature was almost 1.4°C higher than that of the previous warmest winter, 2015/16. Observed temperatures for Helsinki reported by the Finnish Meteorological Institute for January and February 2020 are on average more than 6°C higher than the 1981-2010 climatological average and TASS, the Russian News Agency reports that winter 2019/20 has been the warmest in a 140-year observational record for Moscow, by a margin of 2.5°C over the previous warmest winter.

Winter European surface air temperature (° C) relative to 1981-2010



Winter (December, January, February) averages of European-mean surface air temperature anomalies relative to 1981-2010, from 1979/80 to 2019/20. Data source: ERA5. Credit: Copernicus Climate Change Service/ECMWF. <https://climate.copernicus.eu/surface-air-temperature-february-2020>