



Autumn 2019 Ireland

(Sep, Oct, Nov)

Cool, drier in the Northwest, wet elsewhere

Overall, meteorological autumn was cool and unsettled with southerly tracking low pressure systems bringing a lot of rain to the South and East as the dominant feature of the season was the movement of the Jetstream to the south of Ireland during October and November. September was warm, sunny and wet with high pressure to the south and low pressure to the north in a mostly westerly airflow. There was a settled spell from start of the month to about the 20th September as high pressure moved slowly from west to east over the country. It became unsettled again towards the end of the month as Atlantic frontal depressions dominated again. October and November were cooler than normal everywhere with Ireland on the cooler northern side of the Jetstream for the most part. October was also wetter than normal in the South but drier than normal elsewhere. It was a sunny month everywhere. November was dull and very wet in the East as frequent frontal depressions stalled over the country. It stayed relatively dry in the Northwest, away from the active stalled frontal systems in the East.

Rainfall: Above average for most, drier in the Northwest

The majority of seasonal rainfall totals were above their Long-Term Average (LTA). Percentage of seasonal rainfall values ranged from 75% (seasonal rainfall total of 304.6 mm) at Mace Head, Co Galway to 168% (seasonal rainfall total of 354.8 mm) at Dublin Airport. Seasonal rainfall totals for the season ranged from 299.0 mm (92% of its LTA) at Malin Head, Co Donegal to 551.0 mm (117% of its LTA) at Valentia Observatory, Co Kerry. The highest daily rainfall total was 56.2 mm at Moore Park, Co Cork on the 14th Oct. The number of rain days ranged from 60 days at Dublin (Phoenix Park) to 75 days at Belmullet, Co Mayo. The number of wet days¹ ranged from 44 days at both Dublin (Phoenix Park) and Roche's Point, Co Cork to 66 days at Newport, Co Mayo. The number of very wet³ days ranged from 6 days at a few stations to 21 days at Newport, Co Mayo.

Temperature: Cooler than average everywhere

All mean air temperatures across the country were below their Long-Term Average for the season. Deviations from mean air temperature for the season ranged from -1.0 °C at Ballyhaise, Co Cavan (9.0 °C mean temperature), Athenry, Co Galway (9.3 °C mean temperature) and Shannon Airport, Co Clare (10.2 °C mean temperature) to -0.1 °C (10.0 °C mean temperature) at Dublin (Phoenix Park). Mean temperatures for the season ranged from 8.7 °C (0.3 °C below its LTA) at Knock Airport, Co Mayo to 11.5 °C (0.5 °C below its LTA) at Sherkin Island, Co Cork. The season's highest temperature was reported at Dublin (Phoenix Park) and Moore Park, Co Cork on the 3rd Sep and Athenry, Co Galway on the 19th Sep with a temperature of 22.1 °C. Both the season's lowest air and grass minimum temperature were recorded on the 18th Nov at Mount Dillon, Co Roscommon. The lowest air minimum was -5.5 °C while the lowest grass minimum was -10.6 °C. All stations reported ground frost during the season. The number of days with ground frost ranged from 2 days at Malin Head, Co Donegal to 42 days at Mount Dillon, Co Roscommon. More than half of stations reported air frost. The number of days with air frost ranged from zero days at a few stations to 17 days at Mount Dillon, Co Roscommon.

Sunshine: Above average in most places

Percentage of seasonal sunshine values ranged from 98% (seasonal sunshine total of 298.5 hours) at Dublin Airport*, Co Dublin to 116% (the highest seasonal sunshine total of 346.5 hours) at Johnstown Castle*, Co Wexford. Seasonal sunshine totals were lowest at Malin Head, Co Donegal with 243.2 hours (No LTA comparison*). The highest number of daily sunshine hours recorded this season was 11.9 hours at Johnstown Castle*, Co Wexford on the 14th Sep. The number of dull days² ranged from 23 days at both Johnstown Castle, Co Wexford and Valentia Observatory, Co Kerry to 31 days at Malin Head, Co Donegal.

Wind: Storm force winds reported

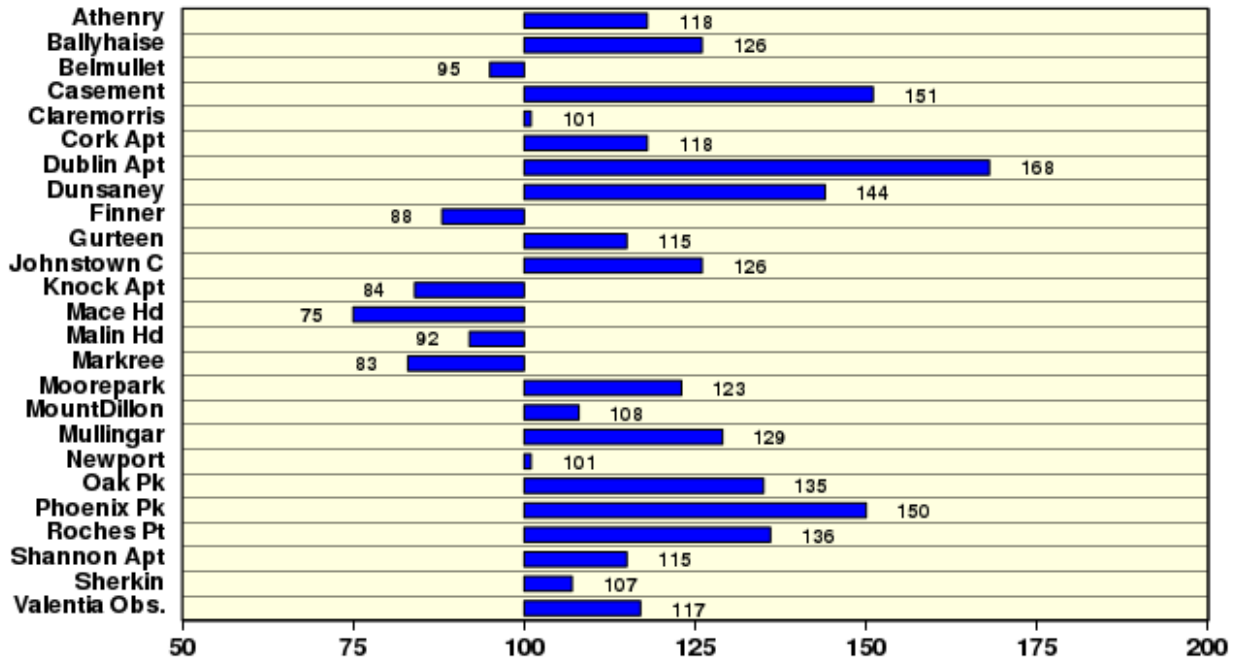
Seasonal mean wind speeds ranged from 5.5 knots (10.2 km/h) at Ballyhaise, Co Cavan and Mullingar, Co Westmeath to 15.1 knots (28.0 km/h) at Malin Head, Co Donegal. Gales were reported on 8 days during the season with strong gales reported on the 3rd Oct, 11th Nov, and the 12th Nov. Storm force winds were reported on the 4th Oct at Macehead, Co Galway during Storm Lorenzo. The number of days with gales ranged from zero days at a few stations to 8 days at Malin Head, Co Donegal. The number of days with strong gales ranged from 1 day at Malin Head, Co Donegal to 3 days at Mace Head, Co Galway. The number of days with storm force winds was 1 day at Mace Head, Co Galway. Both the season's highest gust and 10-minute mean wind speed was reported at Mace Head, Co Galway. The highest gust was on the 4th Oct and 3rd Oct, respectively with 58 knots (107 km/h) while the season's highest 10-minute mean wind speed was 48 knots (89 km/h) on the 4th Oct.

EXTREME VALUES FOR AUTUMN AT SYNOPTIC STATIONS

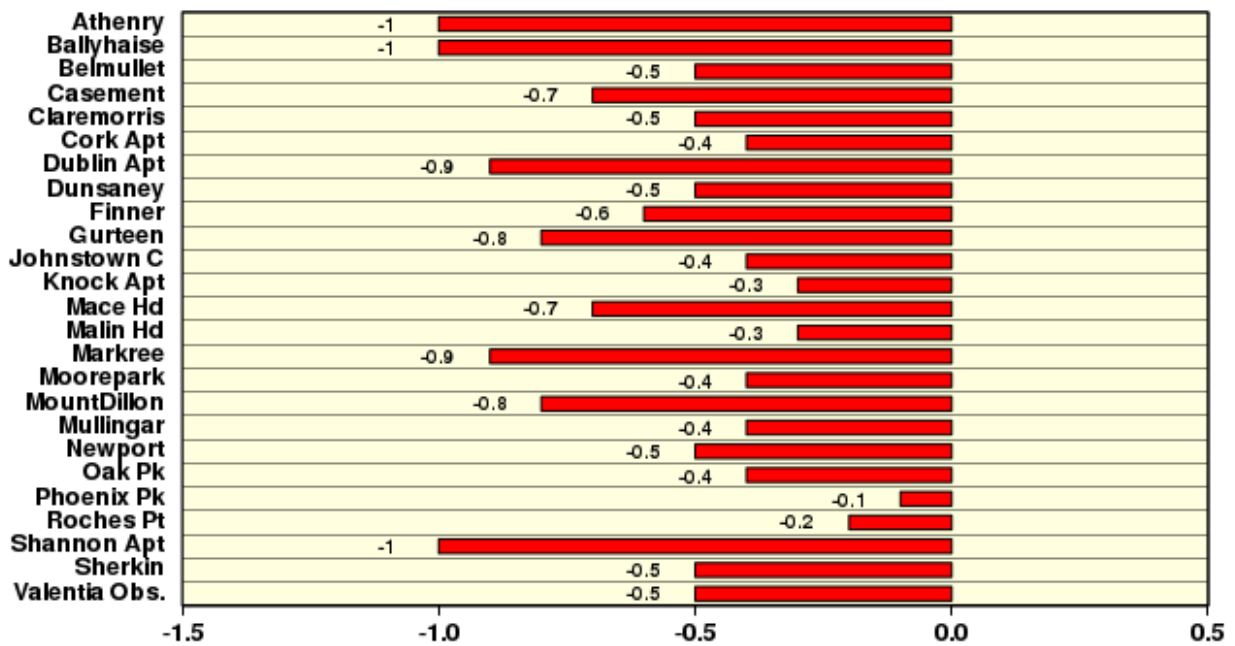
Rainfall	Highest seasonal total: 551.0 mm (117% of LTA) at Valentia Observatory, Co Kerry Lowest seasonal total: 299.0 mm (92% of LTA) at Malin Head, Co Donegal Highest daily rainfall: 56.2 mm at Moore Park, Co Cork on October 14th (<i>its highest daily fall for Autumn since 2000</i>)
Temperature	Highest seasonal mean temperature: 11.5°C at Sherkin Island, Co Cork (0.5 below its LTA) Lowest seasonal mean temperature: 8.7°C at Knock Airport, Co Mayo (0.3°C below its LTA) Highest Air temperature: 22.1°C at Dublin (Phoenix Park) and Moore Park, Co Cork on the 3rd Sep and Athenry, Co Galway on the 19th Sep Lowest air temperature: -5.5°C at Mount Dillon, Co Roscommon on the 18th Nov Lowest grass minimum: -10.6°C at Mount Dillon, Co Roscommon on the 18th Nov
Sunshine	Highest seasonal total: 346.5 hrs (daily mean 3.81 hrs/day) at Johnstown Castle*, Co Wexford Lowest seasonal total: 243.2 hrs (daily mean 2.67 hrs/day) at Malin Head*, Co Donegal Highest daily sunshine: 11.9 hrs at Johnstown Castle*, Co Wexford on Sep 14th

Autumn 2019

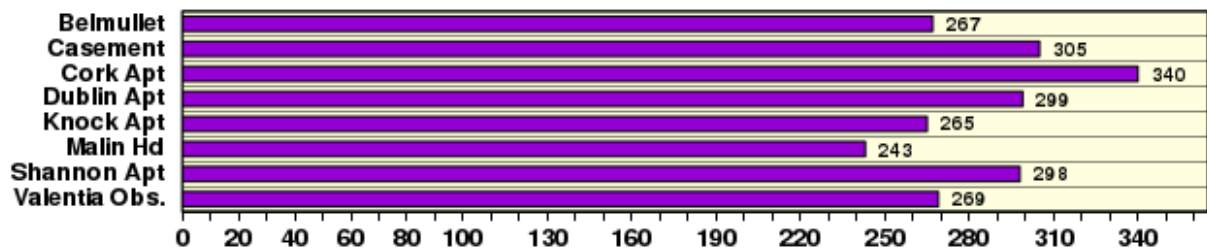
Rainfall (% of average for period 1981-2010) on whole season basis



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



Sunshine (Number of seasonal sunshine hours)



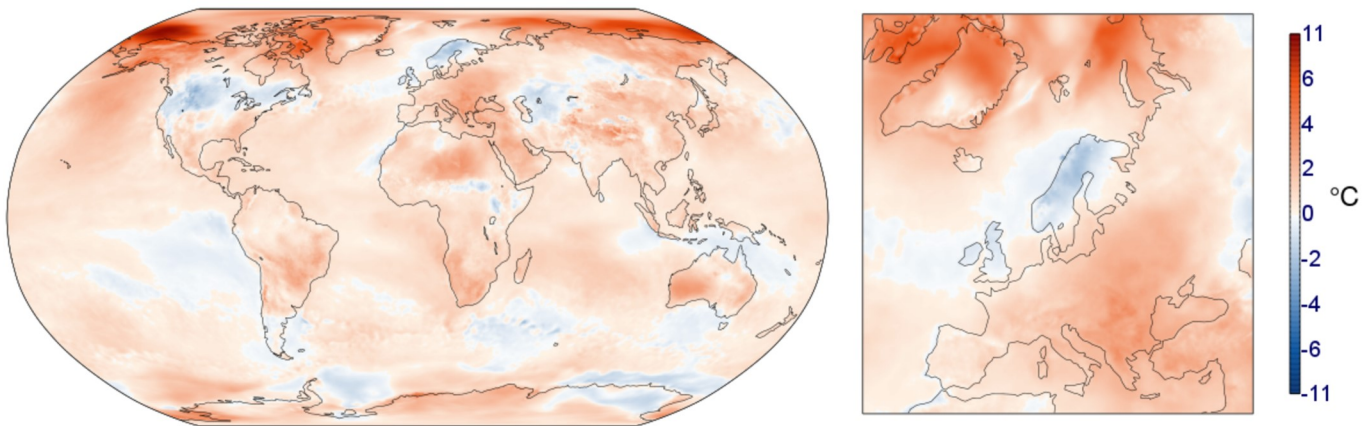
Issued by the Climatology and Observations Division of Met Éireann on Wednesday December 4th 2019. This report is based on available preliminary data from 25 principal weather stations operated by Met Éireann. Synoptic station data is midnight to midnight UTC. Long-Term Averages (LTAs) and "average" 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

Autumn 2019 Global

Surface air temperature: Boreal autumn (September-November) 2019

Globally, autumn saw above average temperatures over most continents. The regions that saw much above average temperatures included large parts of eastern Europe, western Alaska, the northernmost parts of east Canada and northern Greenland, northern central Siberia, southern Africa, and southwestern Australia. Regions with below average temperature included most of Ireland, the United Kingdom and Scandinavia, a region east of the Caspian Sea, as well as northern USA and southern Canada.

Surface air temperature anomaly for September 2019 to November 2019 relative to 1981-2010

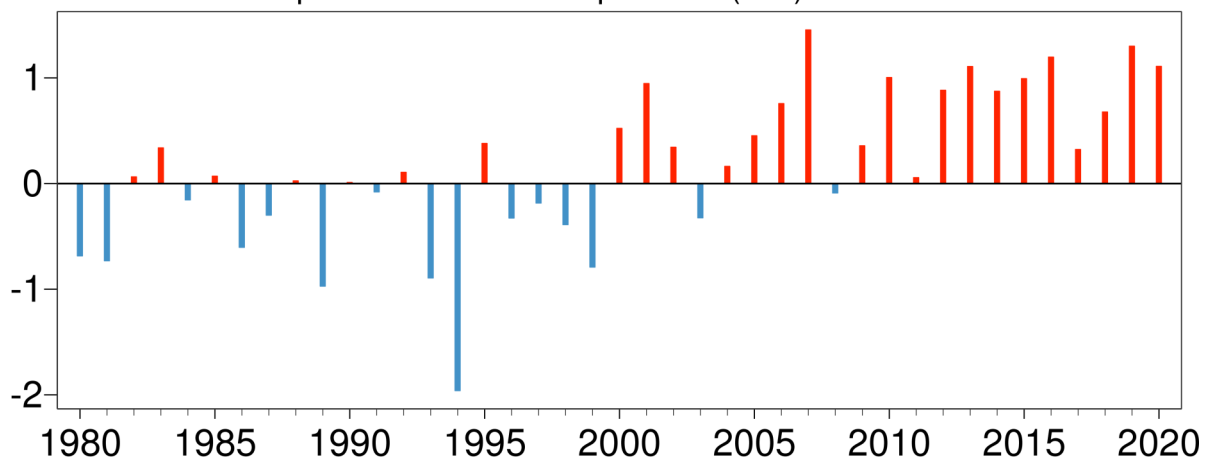


Surface air temperature anomaly for boreal autumn (September to November) 2019 relative to the average for 1981-2010. Data source: ERA5. Credit: Copernicus Climate Change Service/ECMWF. <https://climate.copernicus.eu/surface-air-temperature-november-2019>

Temperature: Autumn European surface air temperature

The September-November average temperature for Europe was close to 1.1°C above the 1981-2010 norm, making it the 4th warmest autumn, since at least 1979, exceeded only in 2006, 2015 and 2018.

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



Autumn (September to November) averages of European-mean surface air temperature anomalies relative to 1981-2010, from 1979 to 2019. Data source: ERA5. Credit: Copernicus Climate Change Service/ECMWF. <https://climate.copernicus.eu/surface-air-temperature-november-2019>