



December 2019

Mild, bright and breezy

December started mostly dry, cool and settled with high pressure over Ireland. On the 4th, Atlantic weather fronts broke through bringing a milder unsettled westerly airflow with low pressure to the north and high pressure to the south. A deep area of low pressure, Storm Atiyah, passed close to the North of Ireland on the 8th and 9th giving very strong winds and heavy squally showers across the country. A cooler Atlantic dominated pattern became established from the 11th, where Ireland was situated under a deep trough with successive frontal depressions passing close to or over the country in a cyclonic or westerly airflow up to the 24th. One such area of low pressure, associated with Storm Elsa deepened rapidly as it approached the Southwest early on the 18th and moved north along the west coast, bringing widespread rain and very strong winds, with some coastal flooding in the West. Throughout the month, there were some brief dry and calm periods where frost and fog caused disruption. On Christmas Day, a transient area of high pressure kept it dry and calm. The month finished milder as high pressure developed to the south-east.

Rainfall: Variable, lowest in Leinster

Long-Term Average (LTA) monthly rainfall totals were variable across the country for December. LTA values ranged from 65% at Casement Aerodrome, Co Dublin (monthly total 49.3 mm) to 123% at Knock Airport, Co Mayo (monthly total 174.0 mm). The lowest monthly rainfall total was at Dublin Airport, Co Dublin with 47.8 mm (80% of its LTA). The country's highest monthly rainfall total for December was at Newport, Co Mayo with 220.6 mm (121% of its LTA). The highest daily total was 34.8 mm at Valentia Observatory, Co Kerry on Wednesday 18 December 2019. The number of rain days ranged from 15 days at Phoenix Park, Co Dublin to 27 days at Valentia Observatory, Co Kerry. The number of wet days ranged from 7 days at Casement Aerodrome, Co Dublin to 23 days at Belmullet, Co Mayo. The number of very wet days ranged from 1 day at four stations in Counties Carlow, Cavan, Roscommon, Dublin to 9 days at Newport, Co Mayo.

Temperature: Above normal, warmest in Munster

All mean monthly air temperatures across the country were above their Long-Term Average (LTA). Deviations from monthly mean air temperature ranged from 0.1°C (5.8°C and 6.2°C) at Markree, Co Sligo and Cork Airport respectively to 1.1°C (6.1°C) at Claremorris, Co Mayo. Mean monthly temperatures ranged from 5.2°C at Knock Airport, Co Mayo (0.9°C above its LTA) to 8.4°C at Sherkin Island, Co Cork (0.4°C above its LTA). The number of frost days ranged from 1 day at Finner, Co Donegal and Valentia Observatory, Co Kerry to 8 days at Markree, Co Sligo and Dunsany, Co Meath. The number of ground frost days ranged from 4 days at Malin Head, Co Donegal to 19 days at Moore Park, Co Cork.

Sunshine: Above normal, highest in Leinster

Monthly hours of bright sunshine ranged from 38.1 hours at Belmullet, Co Mayo to 68.0 hours at Johnstown, Co Wexford. The percentage of normal for the sunshine monthly totals ranged from 100.0% at Belmullet, Co Mayo to 142.0 % at Johnstown, Co Wexford. The highest daily sunshine total was 7.3 hours of bright sunshine observed at Casement Aerodrome, Co Dublin and Cork Airport on Tue 3rd and Tue 16th respectively. The number of dull days during ranged from 10 days at Casement Aerodrome, Co Dublin to 14 days at Valentia Observatory, Co Kerry and Cork Airport. Thursday 5th, Wednesday 18th and Saturday 28th were sunless at all sunshine observing stations nationwide. There were 25 mostly cloudy days observed at Knock Airport, Co Mayo. December is normally the dullest month in Ireland.

Wind: Strong gales reported

Monthly mean wind speeds ranged from 12 km/h to 34 km/h at Mace Head, Co Galway. Monthly mean wind speeds during December 2019 ranged from 85 % of normal at Dublin Airport, Co Dublin to 117 % of normal at Shannon Airport, Co Clare. The highest daily sustained (10-min mean) wind speeds ranged from 7 km/h to 98 km/h at Mace Head, Co Galway on Wednesday 18th at 21:00 UTC during Storm Elsa. The number of calm days ranged from zero to 10 days at Moore Park, Co Cork. Number of days with gales ranged from zero to 9 days at Malin Head, Co Donegal. The highest daily gust (3-second mean) wind speeds ranged from 13 km/h to 128 km/h at Roches Point, Co Cork on Sunday 8th at 18:46 UTC and at Newport, Co Mayo on Sunday 8th at 21:06 UTC, both during Storm Atiyah.

Fog was reported on 20th and 21st at Shannon Airport, Co Clare, Dublin Airport, Cork Airport and Knock Airport, Co Mayo. Fog was also reported on the 27th at three stations. Fog occurred at Knock Airport on 11 days.

EXTREME VALUES AT SYNOPTIC STATIONS

Rainfall

Highest total: 220.6 mm at Newport, Co Mayo (121% of its LTA)
Lowest total: 49.3 mm at Casement Aerodrome, Co Dublin (80% of its LTA)
Highest daily rainfall: 34.8 mm at Valentia Observatory, Co Kerry (21% of its monthly LTA) on Wed 18th

Temperature

Highest mean monthly temperature: 8.4°C at Sherkin Island, Co Cork (0.4°C above its LTA)
Lowest mean monthly temperature: 5.2°C at Knock Airport, Co Mayo (0.9°C above its LTA)
Highest Air temperature: 14.2°C at Phoenix Park, Co Dublin (5.9°C above its LTA) on Tue 10th
Lowest air temperature: -3.8°C at Moore Park, Co Cork (6.6°C below its LTA) on Tue 17th
Lowest grass minimum: -8.1°C at Mount Dillon, Co Roscommon on Mon 2nd

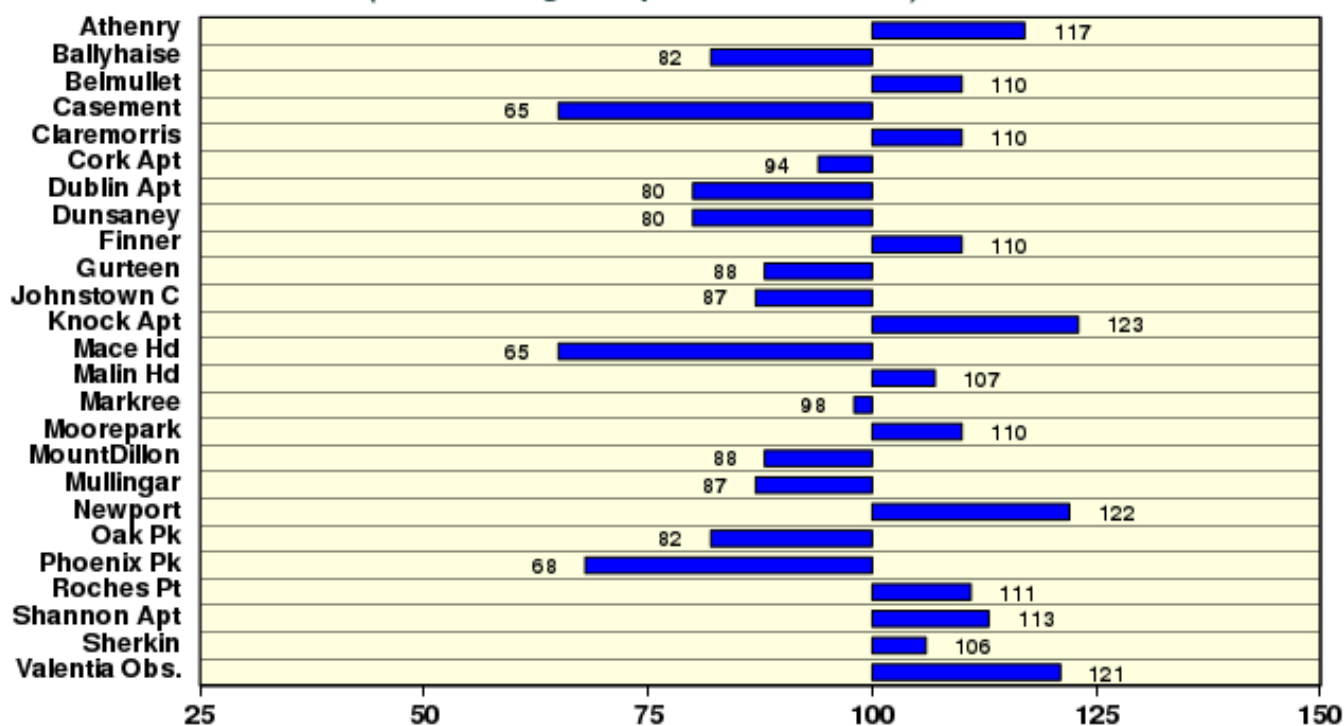
Sunshine

Highest monthly total: 68.0 hours at Johnstown, Co Wexford
Lowest monthly total: 38.1 hours at Belmullet, Co Mayo
Highest daily sunshine: 7.3 hours at Cork Airport, Co Cork (5.6 hours above its LTA) on Mon 16th

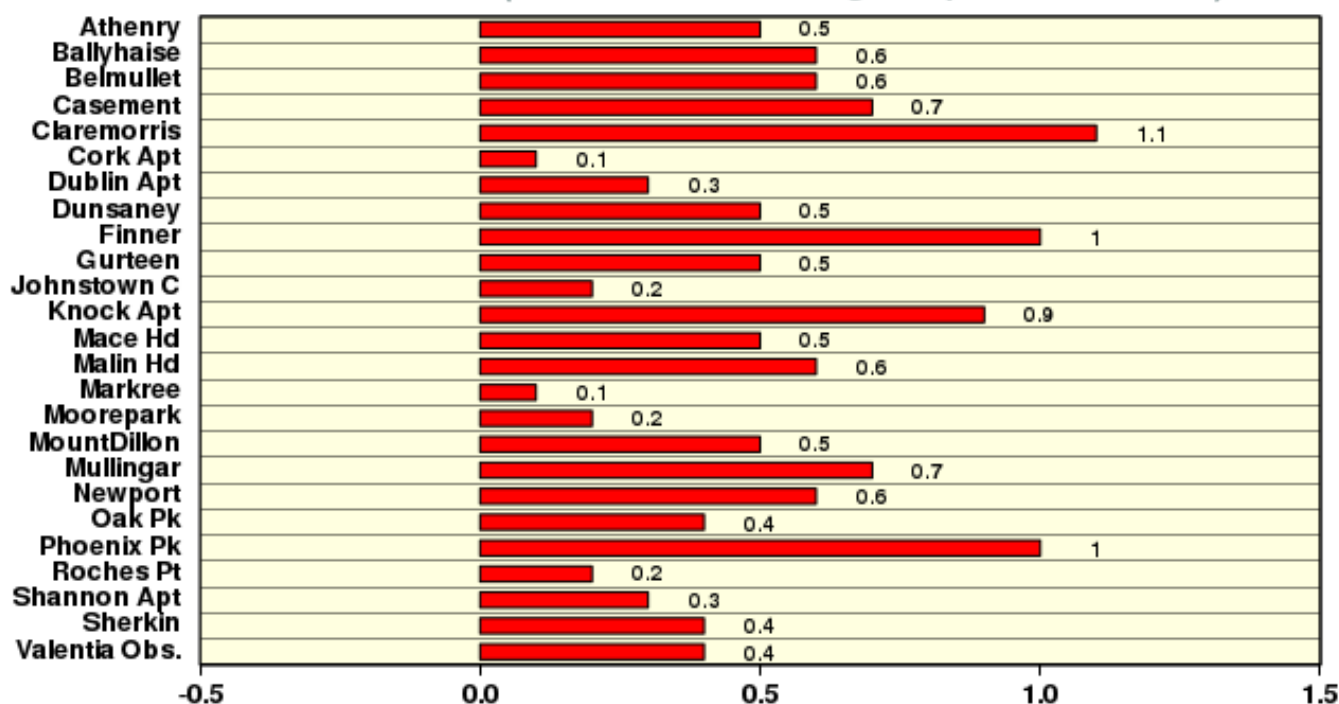
December 2019

Based on Data from 1-31 December 2019 on whole month basis

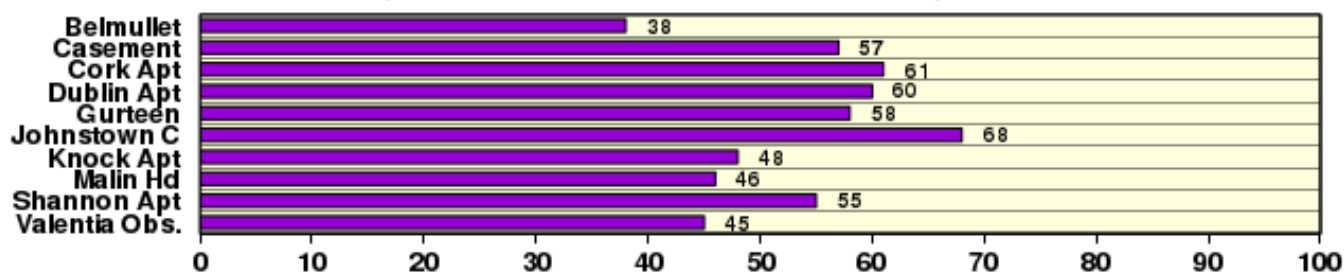
Rainfall (% of average for period 1981-2010) on whole month basis



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



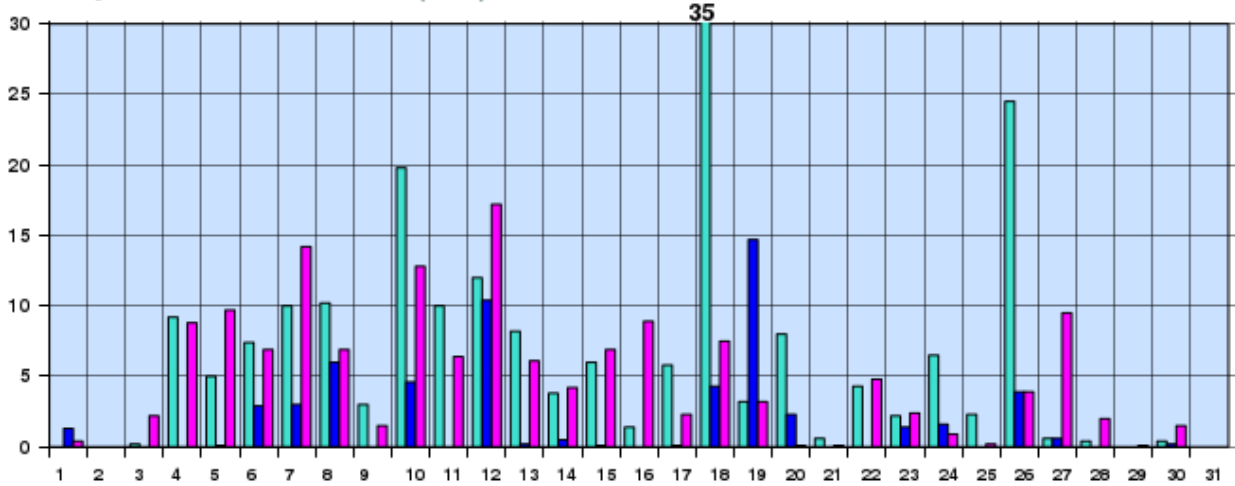
Sunshine (Number of monthly sunshine hours)



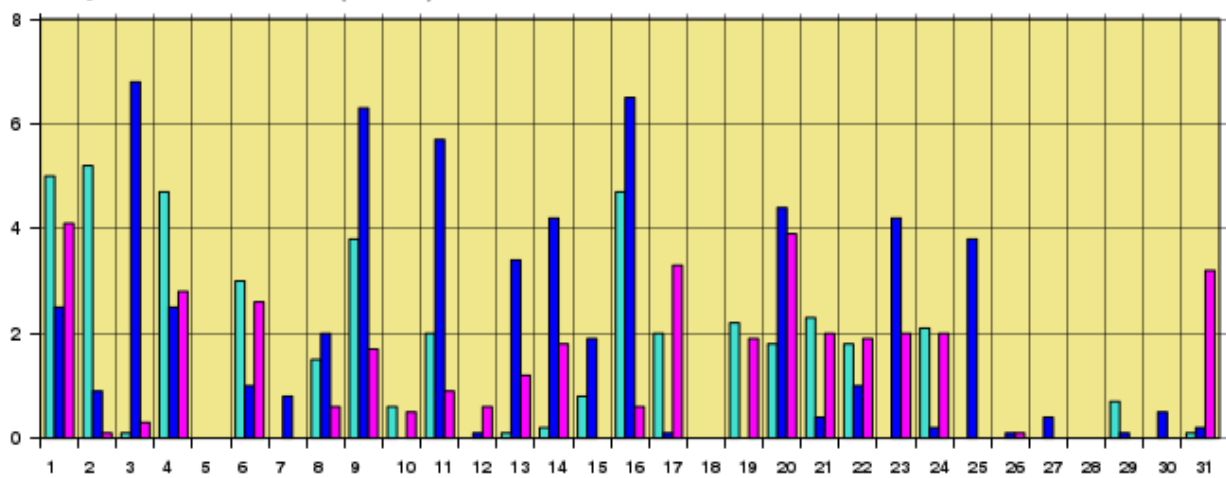
December 2019 Daily Values at selected synoptic stations

Based on data from 1-31 December 2019 on a pro rata basis

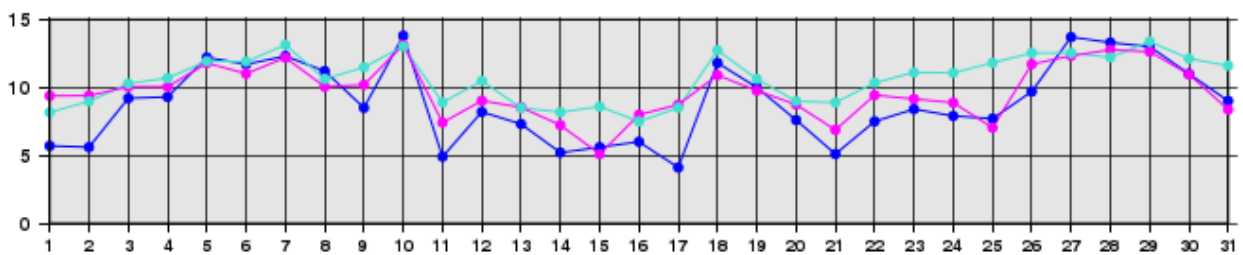
Daily 00-24h rainfall values(mm)



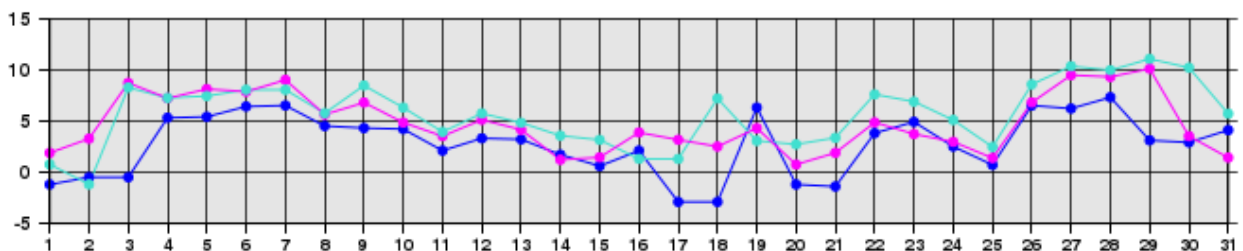
Daily sunshine values(hours)



Daily 00-24h maximum temperature (°C)



Daily 00-24h minimum temperature (°C)



- Valentia Observatory - Dublin Airport - Belmullet

Source: newR/WXBULL/CurrentMonthlyTemp.R Plotted Thu Jan 2 22:00:32 2020

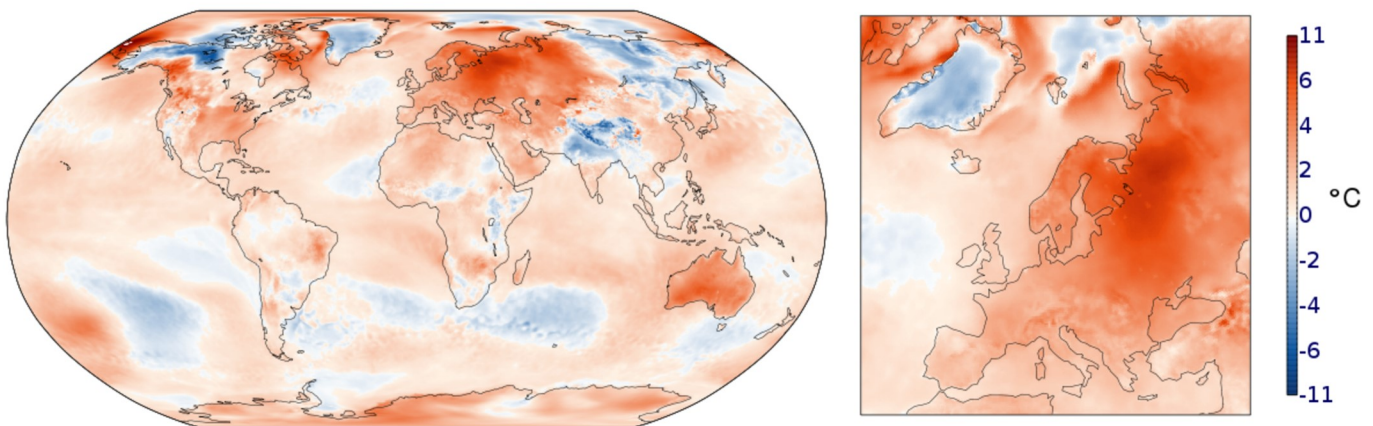
Issued by Met Éireann on Friday 3 December 2019. This report is based on available preliminary data from 25 principal weather stations operated by Met Éireann. Synoptic station data is midnight to midnight UTC. Long-Term Averages (LTAs) and “average” refer to the period 1981-2010. ‘Dry spell’ is a period 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). ¹A wet day is a day with 1.0 mm or more of rainfall. ²A dull day is a day with less than 0.5 hours of sunshine. ³A 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

December 2019 Global

Surface air temperature for December 2019

Globally, December 2019 was more than 0.7°C warmer than the December average for 1981-2010, on a par with 2015, making these two months jointly the warmest Decembers in the data record. It was 3.2°C warmer over Europe than the average for 1981-2010, making it, by a narrow margin, the warmest December on record for Europe. Temperatures over Australia stand out as very much above average. Following many dry months, unusually hot and windy summer weather, including its hottest day on record nationally, provided the conditions for development of intense and widespread bushfires.

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

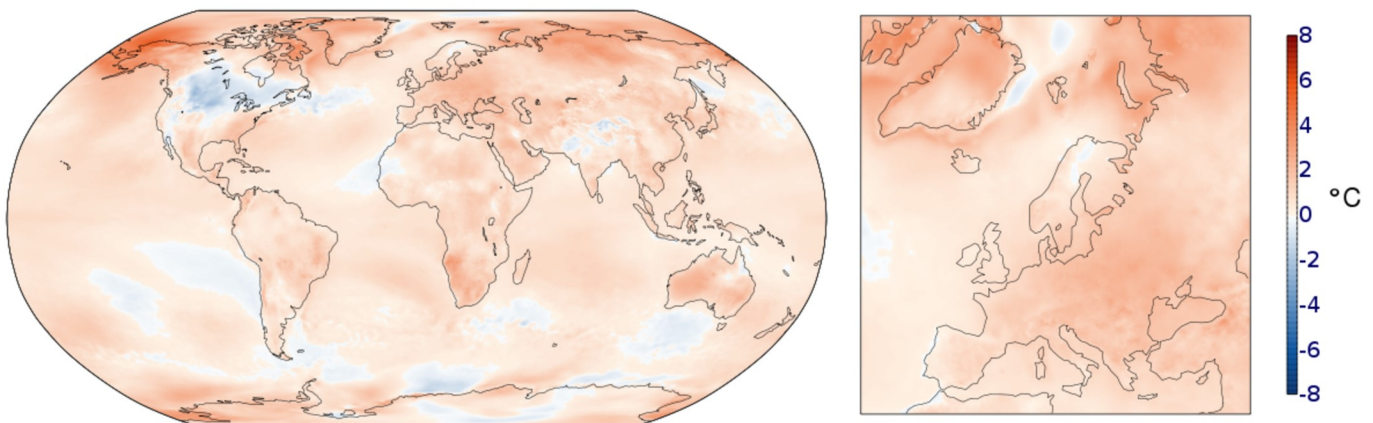


Surface air temperature anomaly for December 2019 relative to the December average for the period 1981-2010. Data source: ERA5. Credit: Copernicus Climate Change Service/ECMWF. <https://climate.copernicus.eu/surface-air-temperature-december-2019>

The last 12 months - January 2019 to December 2019

Temperatures averaged over the calendar year 2019 were much above the 1981-2010 average over most of the Arctic, peaking over and near Alaska, over the far northeast of Canada, and over central parts of northern Siberia. Above average over almost all of Europe, Above average over most other areas of land and ocean, especially so over the Middle East, southern Africa, Australia and some parts of the Antarctic. Below average over some land and oceanic areas, most notably over central and south-eastern Canada.

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



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