



# Met Office 3-month Outlook

Period: January – March 2020 Issue date: 12.12.19

The forecast presented here is for January and the average of the January-February-March period for the United Kingdom as a whole. The forecast for January will be superseded by the long-range information on the public weather forecast web page ([www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast](http://www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast)), starting from 2<sup>nd</sup> January 2020.

This forecast is based on information from observations, several numerical prediction systems and expert judgement.

### SUMMARY – TEMPERATURE:

For January and January-February-March as a whole, above-average temperatures are more likely than below-average temperatures. Impacts from cold weather remain possible, but they are less likely than normal.

Overall, the probability that the UK-average temperature for January-February-March will fall into the coldest of our five categories is 5% and the probability that it will fall into the warmest of our five categories is around 50% (the 1981-2010 probability for each of these categories is 20%).

### CONTEXT:

The El Niño-Southern Oscillation (ENSO) is currently in a neutral phase, with little likelihood of a significant El Niño or La Niña event developing during the Outlook period. It is therefore not expected to influence UK weather patterns.

The Indian Ocean Dipole (IOD) remains in a positive phase, with warmer-than-average sea surface temperatures (SSTs) in the western part of the Tropical Indian Ocean and cooler-than-average temperatures in the east. The IOD is expected to continue disrupting rainfall patterns in the Tropics in the first part of the 3-month period. These changes have an influence on the European region, increasing the chances of mild, westerly winds.

Sea surface temperatures in the North Atlantic continue to show a pattern that increases the likelihood of the positive phase of the North Atlantic Oscillation (NAO). Positive NAO in winter is associated with milder-than-average conditions. Patterns of predicted rainfall in the tropical Atlantic Ocean, however, increase the chances of a negative phase of the NAO.

The Stratospheric Polar Vortex (SPV) – the circulation of winds in the stratosphere above the Arctic – is currently strengthening and has an increased likelihood of remaining stronger than average in the first part of the Outlook period. A strong SPV favours a more active jet stream across the Atlantic, increasing the likelihood of milder-than-average conditions. On the other hand, the sun is close to a minimum in its 11-year cycle of activity, which increases the chances of weakening of the SPV in late winter.

For January and January-February-March as a whole, the Met Office long-range prediction system and systems from other centres around the world are in good agreement in showing an increased chance of the positive phase of the NAO. This is consistent, on balance, with the influences outlined above. Along with the warming of climate, it contributes to an increase in the probability of above-average temperatures (see graphs of figure T2). Note that below-average temperatures remain possible, although less likely.

Fig T1

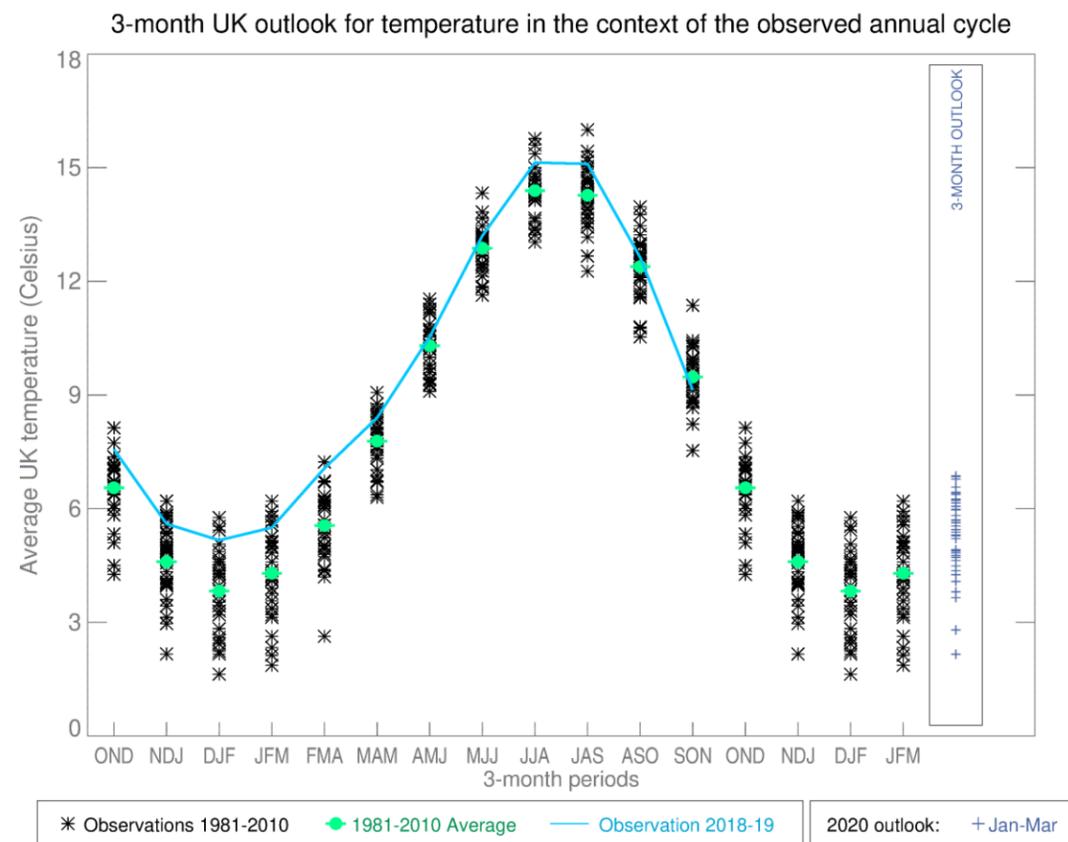


Fig T2

1-month and 3-month UK outlook for temperature in the context of observed climatology

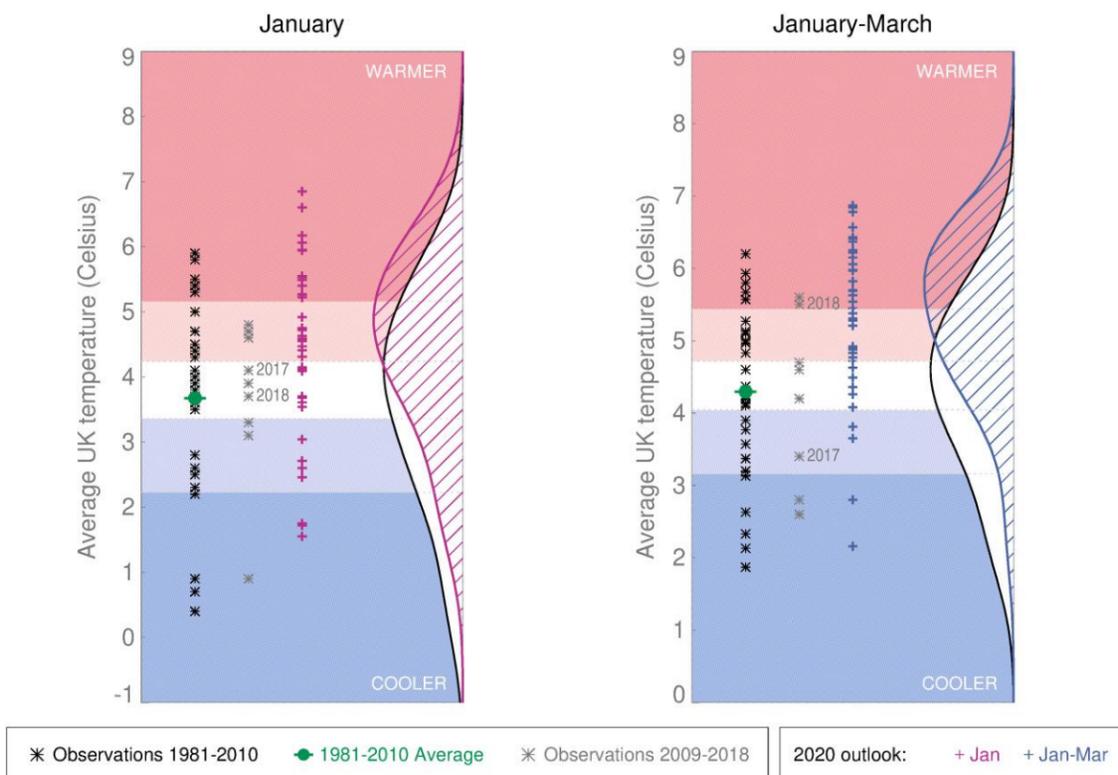
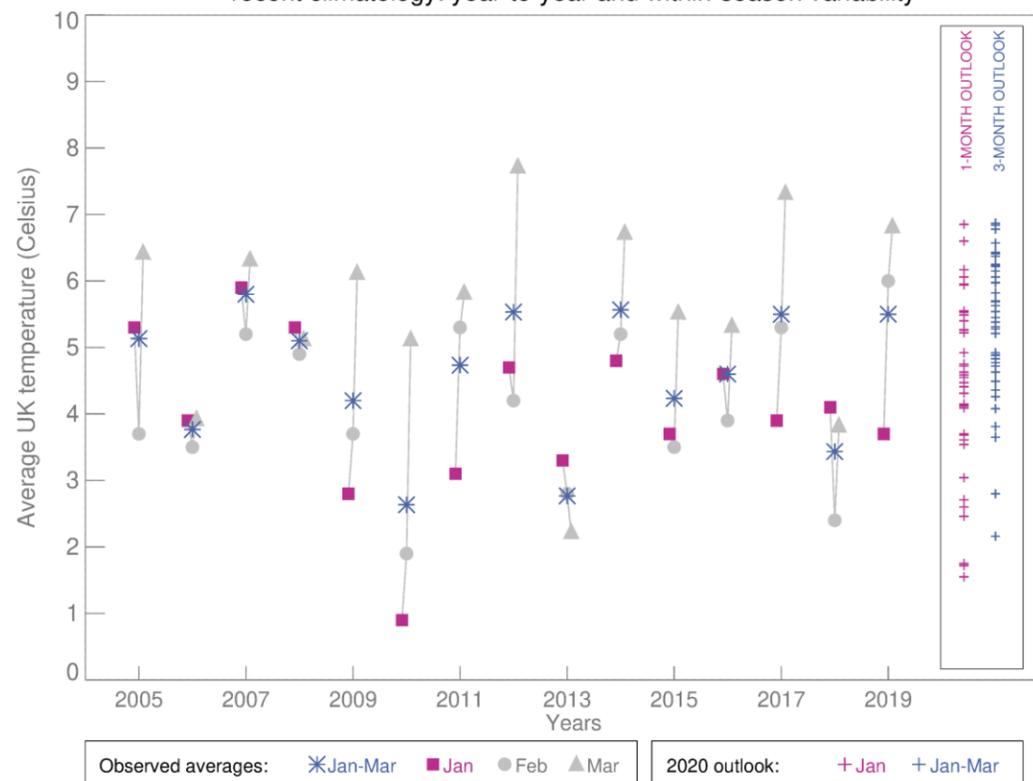


Fig T3

1-month and 3-month UK outlook for temperature in the context of recent climatology: year-to-year and within-season variability



This Outlook provides an indication of possible temperature and rainfall conditions over the next 3 months. It is part of a suite of forecasts designed for contingency planners.

The Outlook should not be used in isolation but should be used with shorter-range and more detailed (30-day, 15-day and 1-to-7-day) forecasts and warnings available to the contingency planning community from the Met Office.