



Met Office 3-month Outlook

Period: December 2018 – February 2019 Issue date: 23.11.18

The forecast presented here is for December and the average of the December-January-February period for the United Kingdom as a whole. The forecast for December will be superseded by the long-range information on the public weather forecast web page (www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast), starting from 3rd December 2018.

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

SUMMARY – TEMPERATURE:

For December, the probabilities of above- and below-average temperatures are similar. For December-January-February as a whole, below-average temperatures are more likely than above-average temperatures, with the highest chances of impacts from cold weather later in the period.

Overall, the probability that the UK-average temperature for December-January-February will fall into the coldest of our five categories is around 25%, and the probability that it will fall into the warmest of our five categories is around 15% (the 1981-2010 probability for each of these categories is 20%).

CONTEXT:

A moderate El Niño event is expected this winter. This increases the likelihood of the negative phase of the North Atlantic Oscillation (NAO) in late winter, implying an increased chance of colder-than-average conditions.

The stratospheric polar vortex is currently stronger than is normal at this point in autumn, but is predicted to become weaker than normal later in winter. Events in the stratosphere can subsequently influence surface weather, resulting in increased chances of mild conditions in December but colder conditions later on. Further, the sun is approaching a minimum in its 11-year cycle of activity, which also increases the likelihood of a weak stratospheric circulation and cold weather later in the winter.

The Quasi-Biennial Oscillation (QBO), an oscillation of the equatorial winds in the stratosphere, will be in its westerly phase this winter.

This phase tends to increase the likelihood of a positive phase of the NAO and milder-than-average conditions.

North Atlantic sea surface temperatures (SSTs) continue to show a

pattern of colder-than-average conditions south of 30°N and north of 50°N, with warmer-than-average conditions in a band in between. This pattern of SST anomalies moderately increases the chances of a positive phase of the NAO and milder-than-average conditions in early winter.

For December, forecasts from long-range prediction systems show a wide range of potential weather patterns. The chances of above- and below-average temperatures are therefore fairly well balanced (see left-hand graph of figure T2).

For December-January-February, long-range prediction systems, including the Met Office system, show a moderate increase in the likelihood of negative NAO overall. For the winter as a whole, therefore, there is a modest increase in the probability of colder-than-normal temperatures (see right-hand graph of figure T2).

Nevertheless, signals for negative NAO increase during the winter, implying that the chances of cold weather related impacts, such as snow, are highest in the later part of the outlook period.

Fig T1

3-month UK outlook for temperature in the context of the observed annual cycle

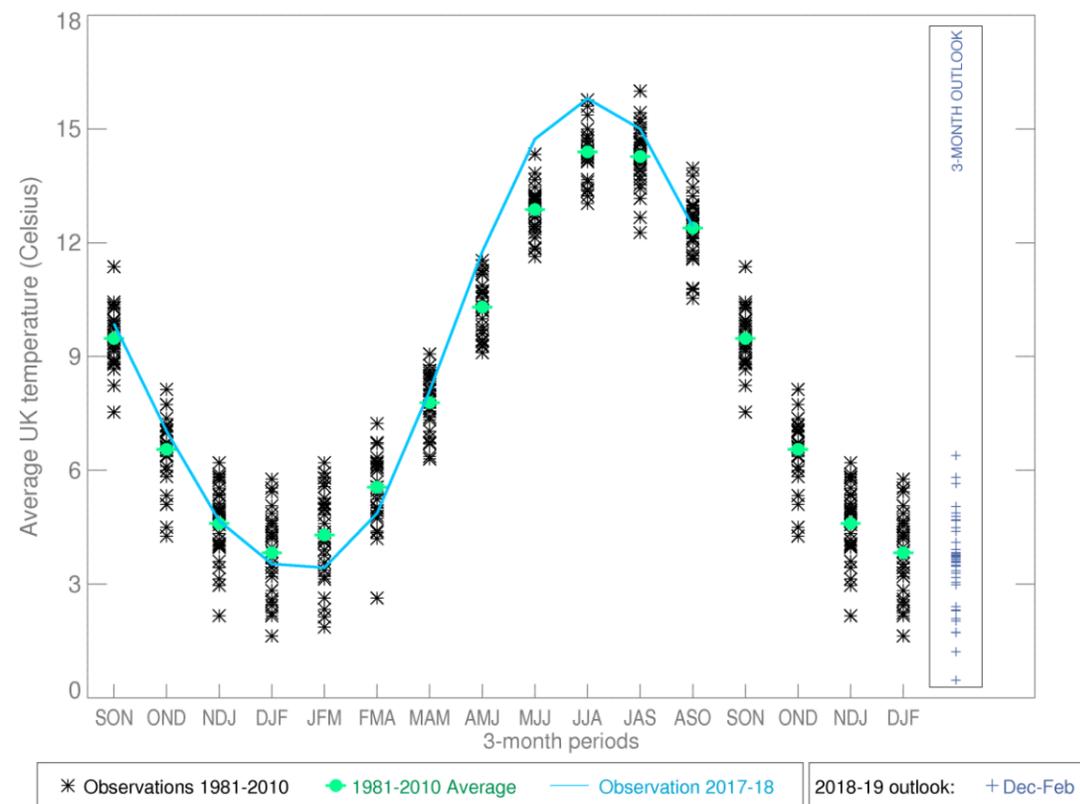


Fig T2

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

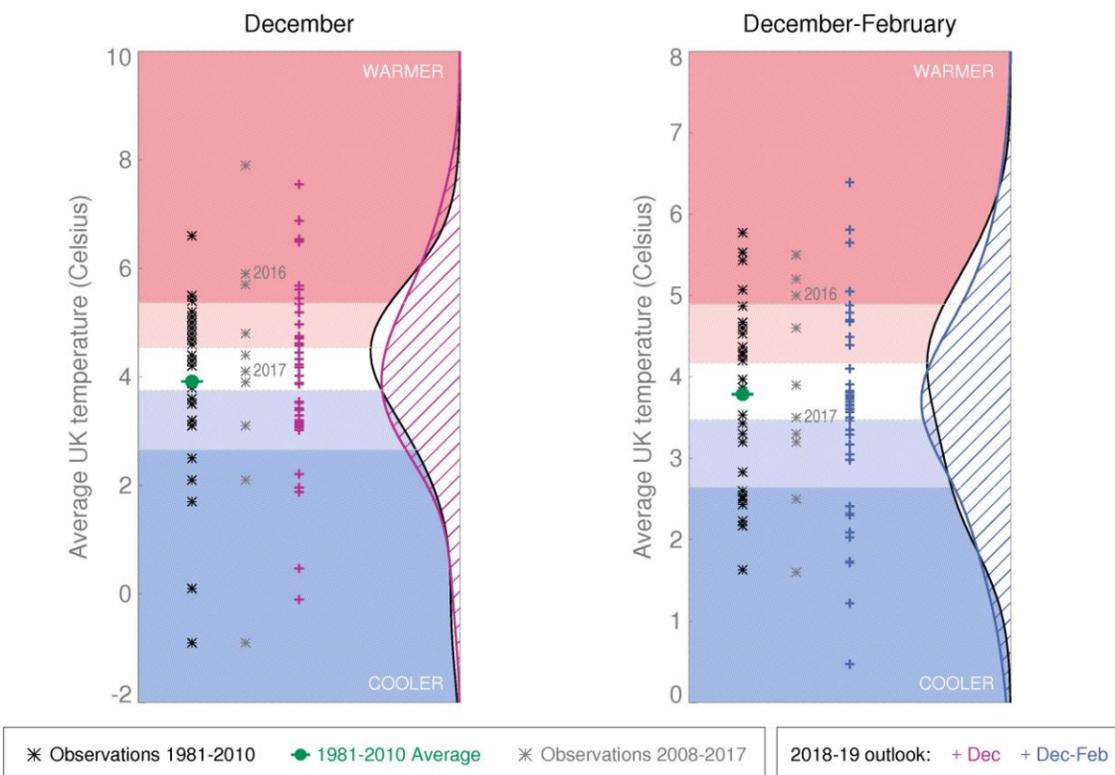
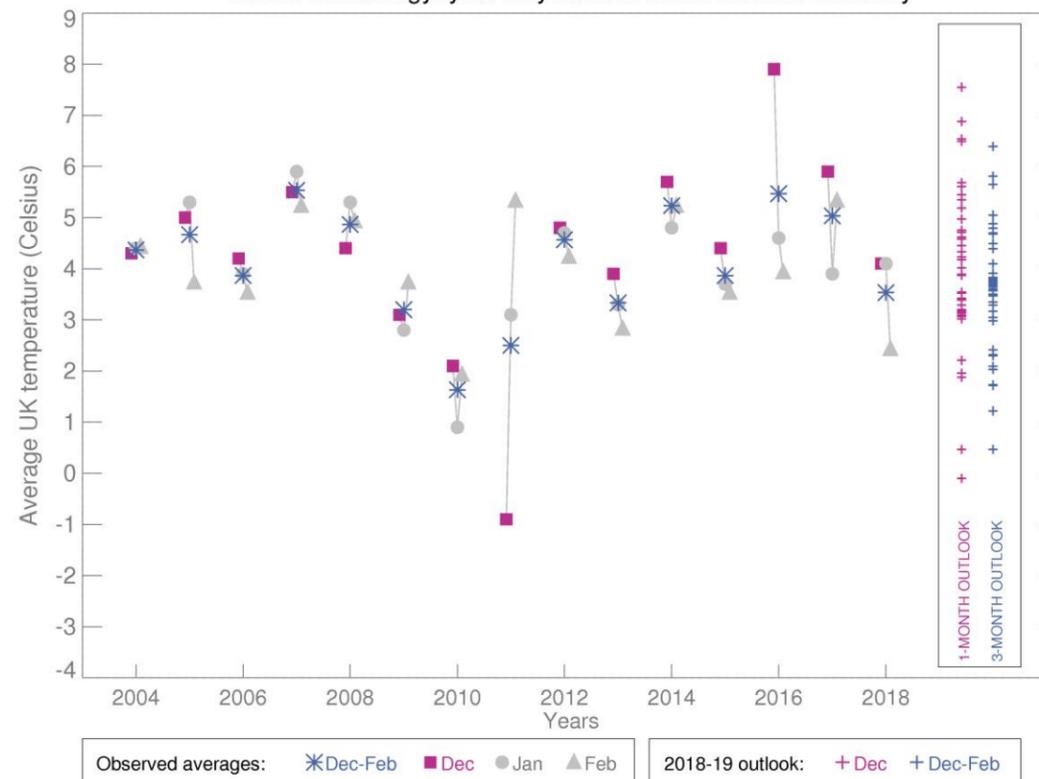


Fig T3

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-5-day) forecasts and warnings available to the contingency planning community from the Met Office.