



Met Office

Met Office 3-month Outlook

Period: November 2015 - January 2016 Issue date: 22.10.15

The forecast presented here is for November and the average of the November-December-January period for the United Kingdom as a whole. The forecast for November will be superseded by the long-range information on the public weather forecast web page (www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast), starting from 30 October 2015.

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

SUMMARY - TEMPERATURE:

For both November and November-December-January above-average temperatures are considered more likely than below-average.

Overall, the probability that the UK-average temperature for November-December-January will fall into the coldest of our five categories is around 10% and the probability that it will fall into the warmest of our five categories is around 30% (the 1981-2010 probability for each of these categories is 20%).

CONTEXT:

A strong, mature El Niño event is currently occurring in the tropical Pacific Ocean. Seasonal prediction systems suggest it will strengthen further over the next 2 months. Using the frequently cited 'Niño 3.4 index' as a measure of El Niño strength, it is more likely than not that the current El Niño will become the strongest event on record by the end of the year. El Niño is already creating wide-ranging weather impacts across the globe. The influence on UK weather, however, is more subtle. El Niño moderately increases the probability of the positive phase of the North Atlantic Oscillation (NAO) in late autumn and early winter and the negative phase of the NAO in late winter. At this time of year, the positive phase of the NAO is associated with milder- and wetter-than-average conditions, whilst the negative phase is associated with colder- and drier-than-average conditions.

The Quasi-Biennial Oscillation (QBO), an oscillation of the equatorial winds in the stratosphere, remains in a westerly phase. The QBO influences winter conditions over Western Europe by modulating the strength of the stratospheric polar vortex and thereby the phase of the NAO at the surface. The westerly phase of the QBO tends to favour a stronger stratospheric polar vortex, leading to a higher likelihood of a positive phase of the NAO.

In the Eastern North Atlantic Ocean, sea-surface temperatures continue to show a strong pattern of cooler-than-average conditions in mid-latitudes

(north of approximately 40°N) and warmer-than-average conditions further south. This corresponds to a strengthened temperature gradient which would be expected to increase the chance of westerly winds, which are usually associated with mild and wet weather in winter. Further west, very warm water near Newfoundland is also expected to enhance the chances of westerly conditions.

The factors described above suggest an increased likelihood of positive NAO, which is supported by predictions from the Met Office seasonal prediction system along with systems from other global forecast centres. Taking all the evidence together, our outlook is illustrated in the graphs below. The right-hand graph in figure T2 shows a clear shift towards milder conditions, with a reduced probability of below-average temperatures and an increased probability of above-average temperatures compared to normal.

While there is an increased chance of above-average temperatures for the 3-month period as a whole, the risk of cold spells should not be discounted entirely. In particular, this risk increases at the end of the 3-month period as that is the time of year when sudden stratospheric warming events occur. These events tend to bring cold weather to the UK, and occur more often in El Niño years than in other years.

Fig T1

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

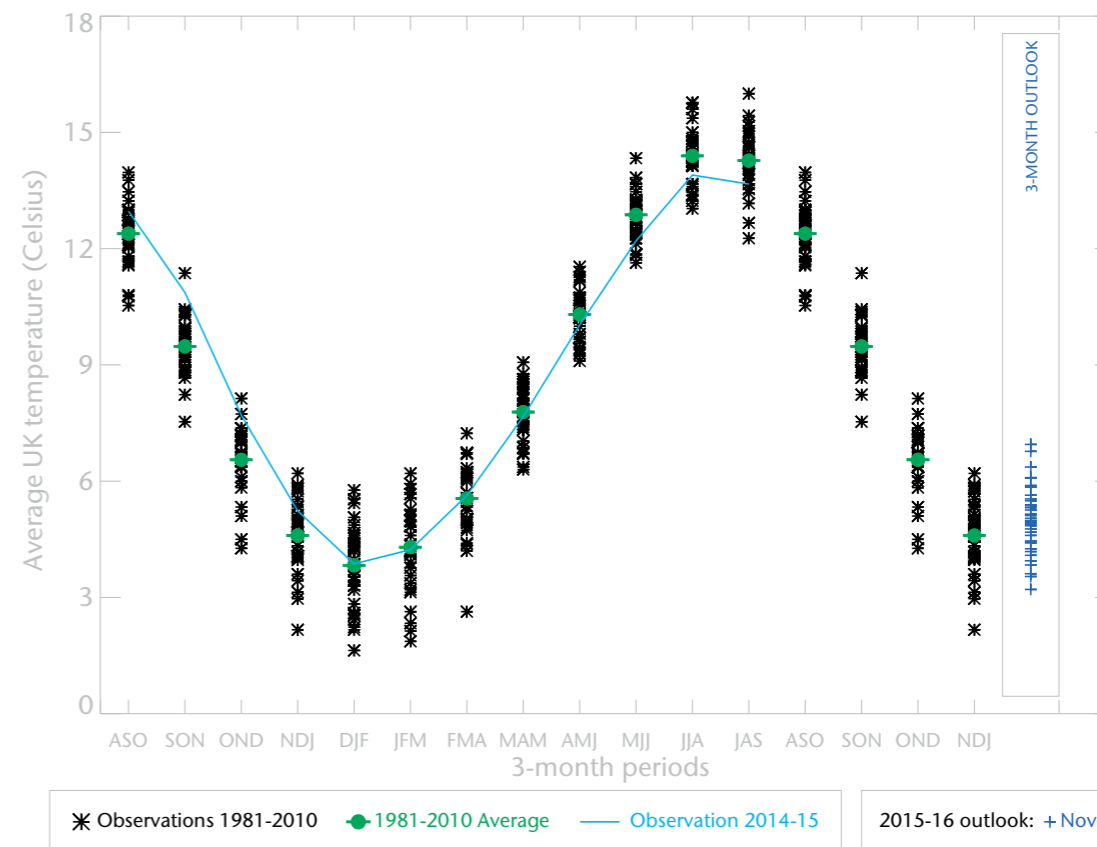


Fig T2

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

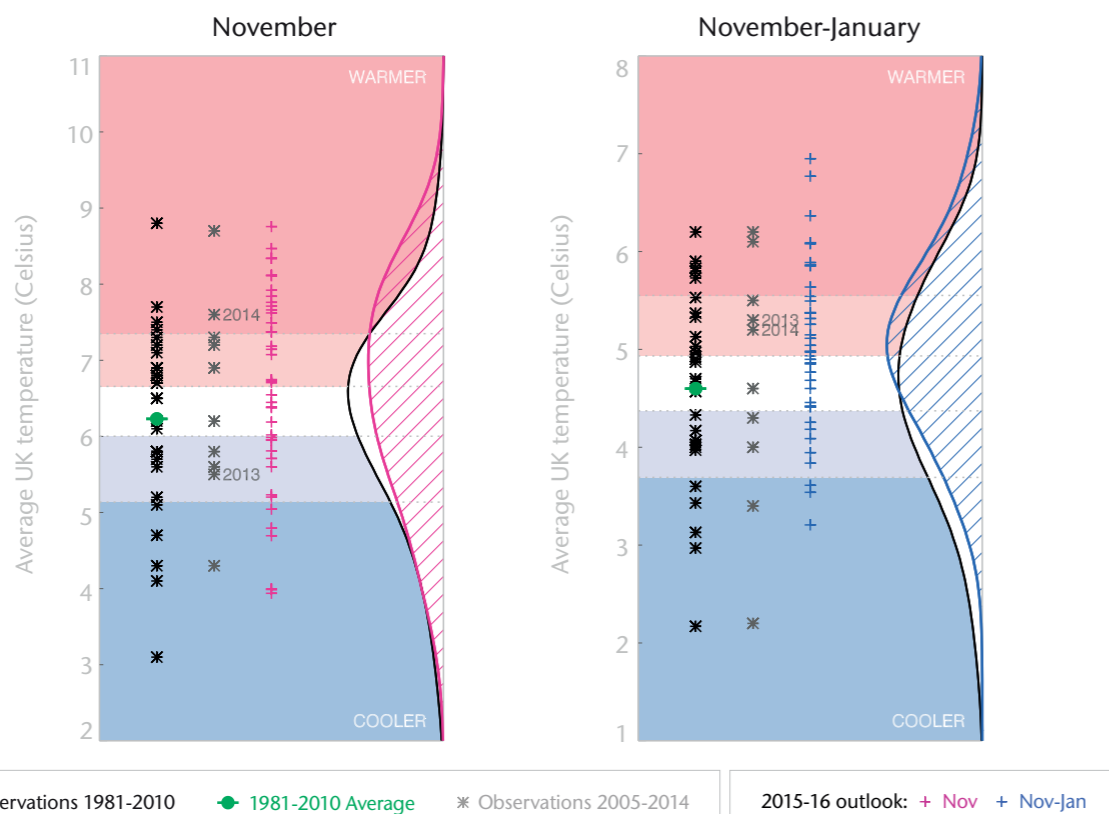
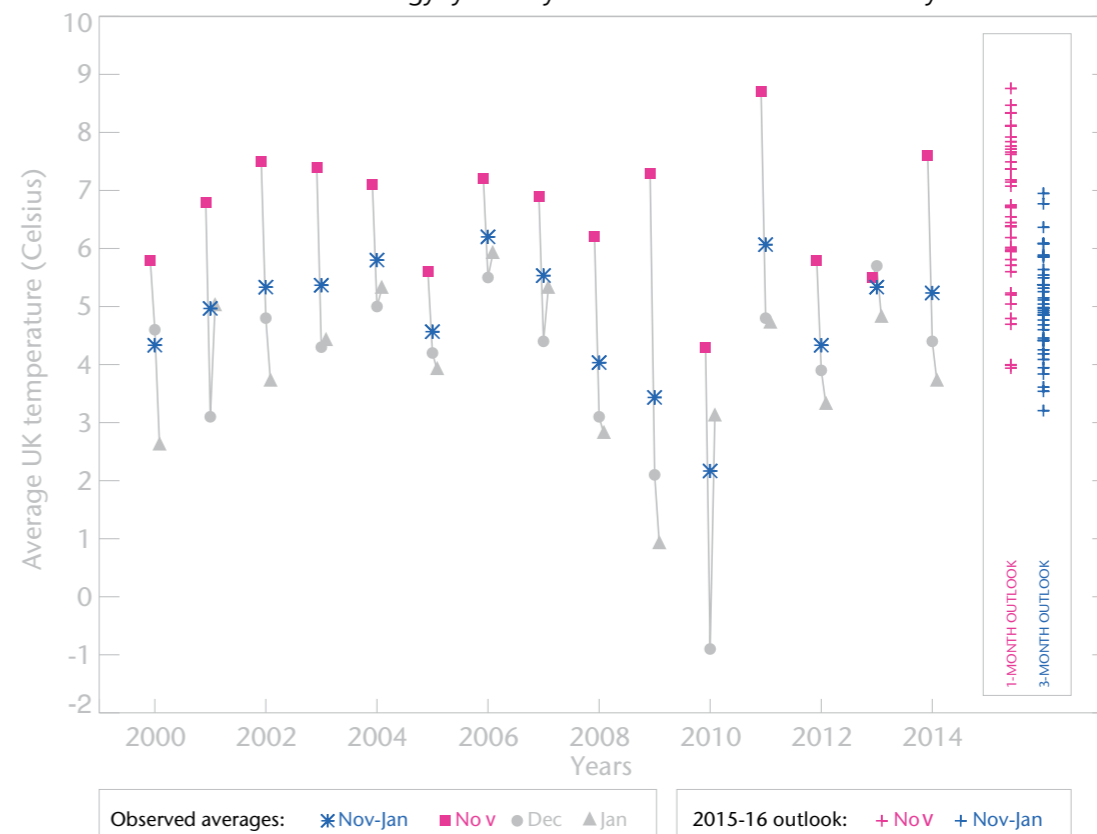


Fig T3

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.