



Met Office

# Met Office 3-month Outlook

Period: March - May 2016 Issue date: 18.2.16

The forecast presented here is for March and the average of the March-April-May period for the United Kingdom as a whole. The forecast for March will be superseded by the long-range information on the public weather forecast web page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 26 February 2016.

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

## SUMMARY - TEMPERATURE:

For March on average, near-normal temperatures are more likely than either well-above or well-below normal temperatures. This reflects an increased tendency for fluctuations between mild conditions and colder spells. The chance of a prolonged spell of cold weather appears relatively low, although there remains a risk of cold weather impacts in the shorter cold spells.

Predictions for UK-mean temperature averaged over the period March-April-May are that above-average temperatures are more probable than below-average.

Overall, the probability that the UK-average temperature for March-April-May will fall into the coldest of our five categories is between 10 and 15% and the probability that it will fall into the warmest of our five categories is between 25 and 30% (the 1981-2010 probability for each of these categories is 20%).

## CONTEXT:

A strong, mature El Niño event in the Tropical Pacific Ocean has now entered its declining phase, but remains a significant feature that will continue to have global impacts during the period. This year's event ranks among the strongest on record and is comparable in strength to the 1997-98 and 1982-83 events.

For the UK region, the primary effect of El Niño is to increase the probability of a ridge of high pressure across the Mid-Atlantic and lower pressure across Northern Europe, which would favour northwesterly flow across the UK. In addition, El Niño also increases the risk of a sudden stratospheric warming (SSW) event occurring. SSW events disrupt the stratospheric polar vortex and, more often than not, result in a negative phase of the North Atlantic Oscillation (NAO), which is associated with generally colder- and drier-than-average conditions across the UK in early spring. Whilst the stratospheric vortex has weakened in recent weeks, there has not been a full SSW yet this winter. There are renewed signals for an SSW in early March, however, and whilst the scope to cause impacts is more limited this late in the season, it still has the potential to increase the chances of getting cold weather later in March and early April.

The Madden Julian Oscillation (MJO) is the major fluctuation in tropical weather on weekly to monthly timescales. The MJO can be characterised as an eastward moving 'pulse' of cloud and rainfall near the equator that typically recurs every 30 to 60 days. The MJO is expected to reach a phase in the coming weeks which is conducive to a negative phase of the NAO during early March.

The Quasi-Biennial Oscillation (QBO), an oscillation of the equatorial winds in the stratosphere, remains in a strong 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. The QBO tends to have more influence in the early winter and its effect is expected to continue to diminish during this period.

Consequently there are a number of competing factors that will shape the evolution of the weather across the UK during this period. El Niño and the risk of an SSW event are expected to be the most influential.

For the 1-month period, seasonal forecasting systems, including the Met Office system, indicate an increased tendency for north-westerly flow across the UK. This would not be as cold as a flow from the north or east, which is normally required to get the coldest winter conditions, but at the same time not as mild as a westerly or south-westerly flow. As such, we expect spells of both milder and colder conditions at times. Prolonged cold weather across the UK appears unlikely. Given the likelihood of a sudden stratospheric warming event in early March, the greatest risk of cold weather impacts is in late March and early April. As can be seen in the left-hand graph of figure T2, monthly-mean temperature is more likely to be near-average than above- or below-average.

For the 3-month average, the north-westerly tendency remains present but is less strong. As a result the average temperature for the period is expected to be less affected, resulting in an increased chance of above-average conditions compared to normal (right-hand graph of figure T2).

Fig T2

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

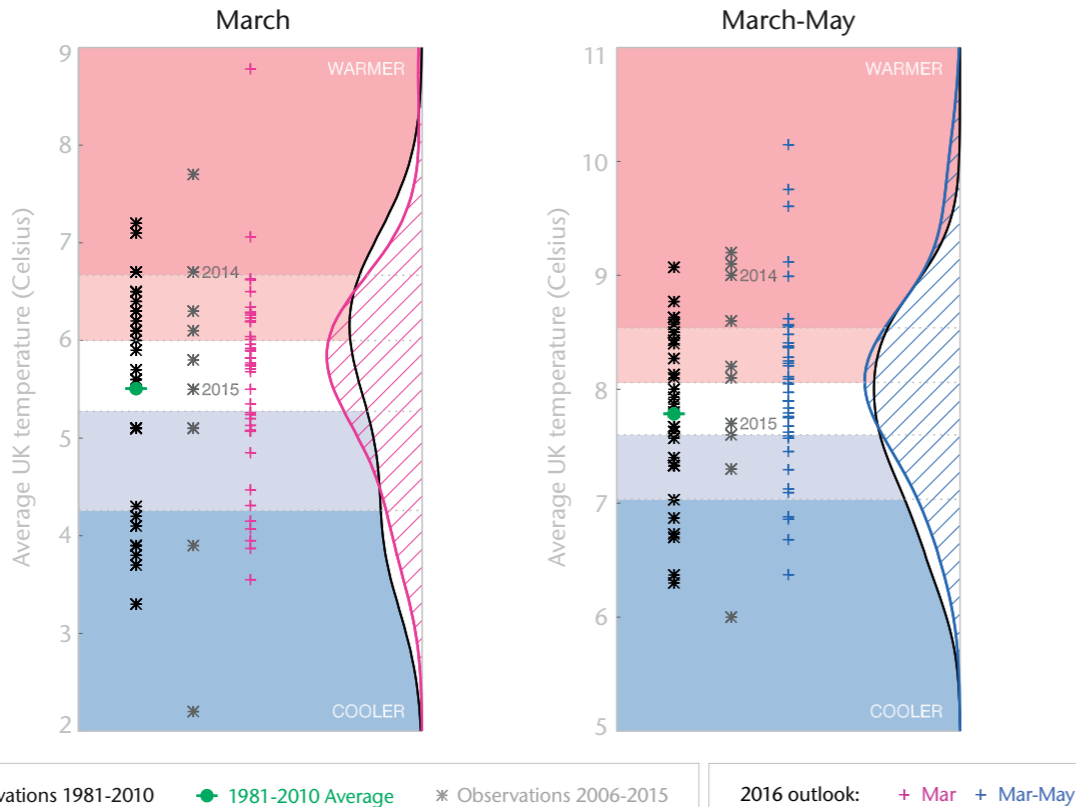


Fig T1

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

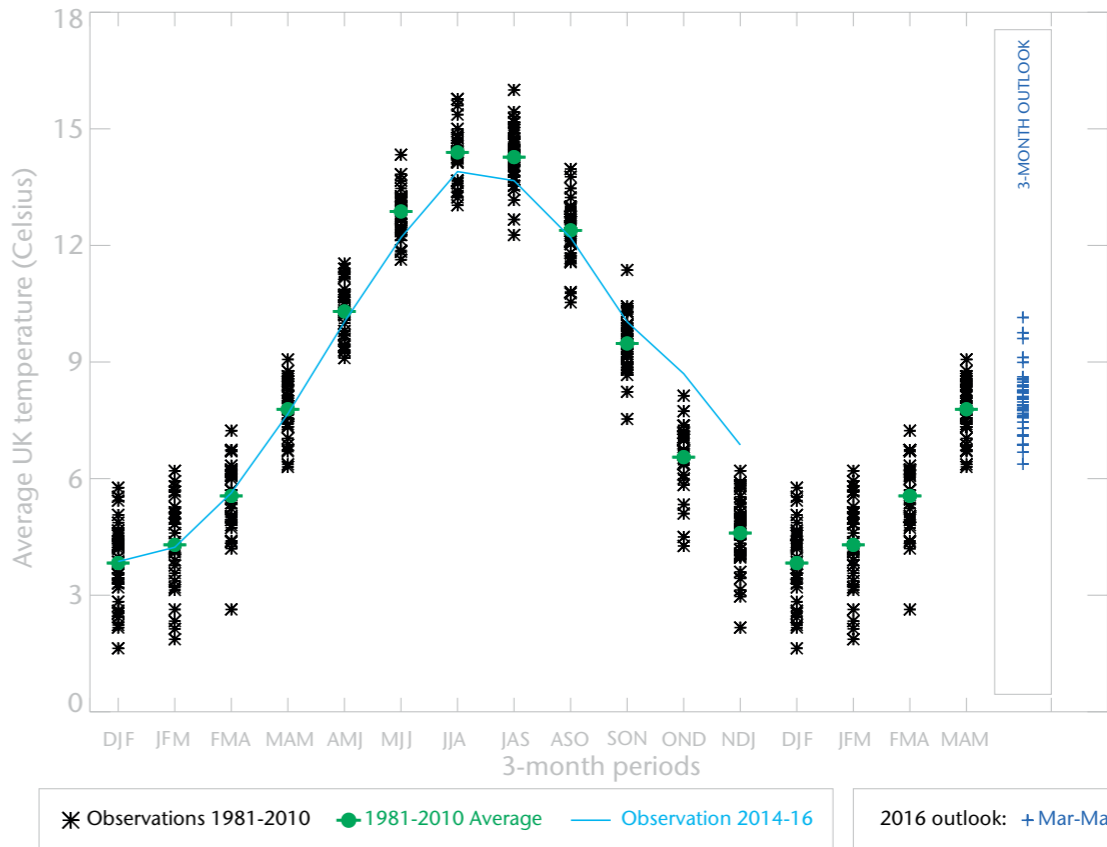
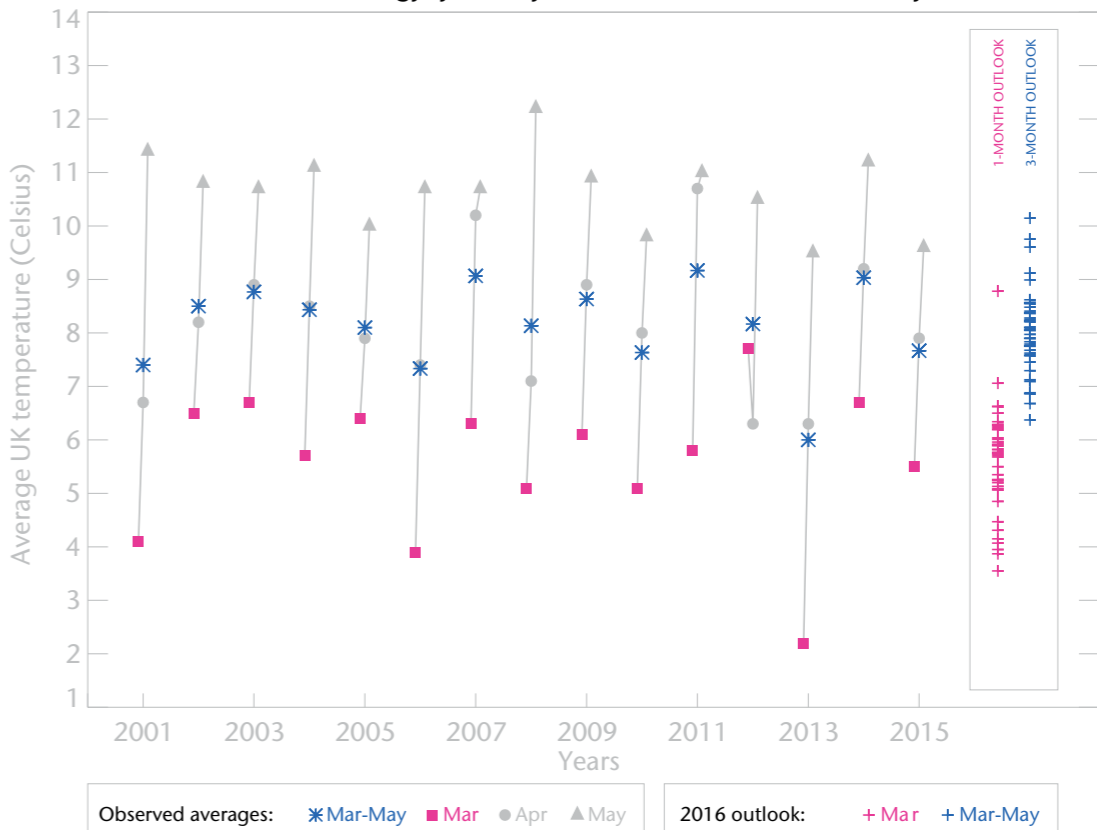


Fig T3

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.