Met Office 3-month Outlook

Period: November 2017 –January 2018 Issue date: 26.10.17

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 The forecast for November will be superseded by the long-range information on the public weather forecast web page (www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast), starting from 6 November 2017.

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

SUMMARY – TEMPERATURE:

For November and November-December-January above-average temperatures are more probable than below-average temperatures.

Overall, the probability that the UK-average temperature for November-December-January 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 30% and 35% (the 1981-2010 probability for each of these categories is 20%).

CONTEXT:

Sea surface temperatures in the tropical Central and Eastern Pacific have now fallen close to La Niña thresholds. Long-range prediction systems indicate this cooling is very likely to continue in the coming weeks, leading to a full La Niña event over the next few months. La Niña slightly increases the chances of blocking patterns over the North Atlantic and Europe in late autumn and early winter, leading to increased chances of colder-than-average conditions.

The Quasi-Biennial Oscillation (QBO), an oscillation of the equatorial winds in the stratosphere, is in an easterly phase. The QBO is linked to conditions over Western Europe during late autumn and early winter through an influence on the phase of the North Atlantic Oscillation (NAO) at the surface. An easterly phase of the QBO tends to moderately increase the chances of a negative phase of the NAO, which in turn increases the chances of below-average temperatures.

Sea surface temperatures in the North Atlantic are generally above average, consistent with the current high levels of warmth globally. West of the UK, however, temperatures are slightly below average. Nevertheless, warmth beneath the ocean surface, which is expected to have an increasing influence on surface conditions as the period progresses, favours higher-than-normal temperatures for the time of year.

The Madden-Julian oscillation (MJO), a pulse of thundery activity which periodically moves eastward through the tropics, has recently become active. It is now in a phase associated with convection in the tropical West Pacific. When the MJO is in this phase it favours more blocked weather patterns over the North Atlantic region about 10 days later. This implies an increased chance of high pressure and a shift to cooler conditions in early November.

For November, the Met Office seasonal prediction system and systems from other prediction centres around the world show moderate agreement on increased chances of westerly or cyclonic weather patterns for the UK. At this time of year this implies an increased chance of mild conditions (see left-hand graph of figure T2). Nevertheless, there are also indications that blocking high-pressure patterns, possibly linked to the current MJO event, will influence the UK during parts of the month. This tempers to some degree the likelihood of November being milder than average overall.

For November-December-January as a whole, long-range forecast systems generally show an increased chance of westerly air flow over the UK, although some show more likelihood of high-pressure patterns over the North Atlantic implying a greater likelihood of northerly or north-westerly winds. Overall, the outlook shows increased chances of above-average temperatures in the 3-month period (see right-hand graph of figure T2). Despite this, the risk of colder-than-normal conditions remains a significant possibility, with some of the drivers of UK winter weather, such as La Niña, the QBO and the MJO, favouring weather patterns associated with colder-than-normal weather.

Fig T1

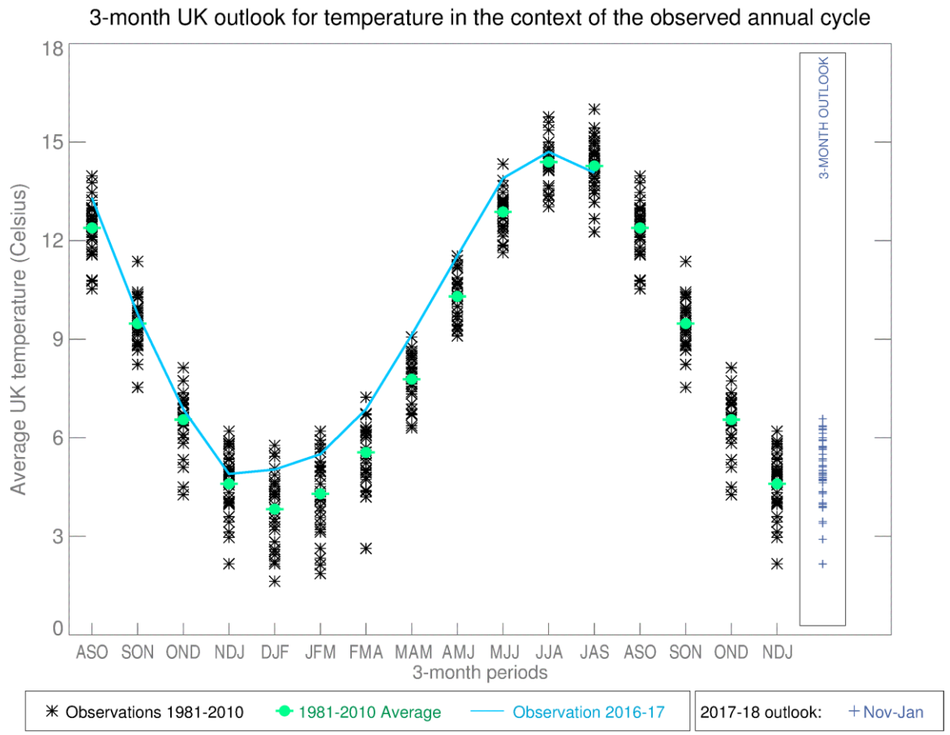


Fig T2

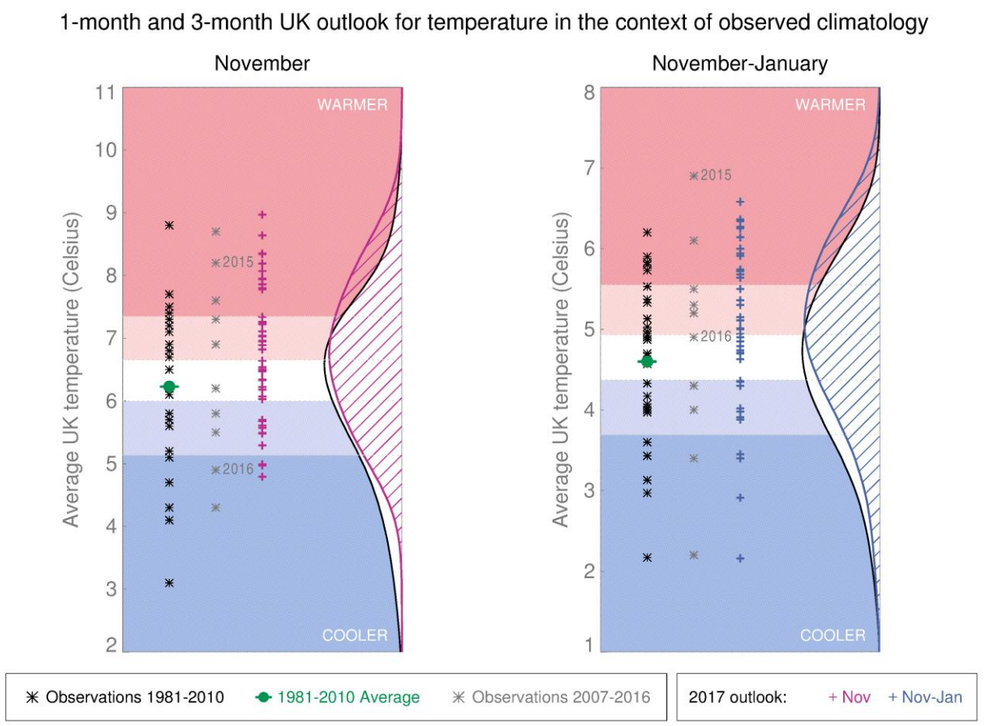
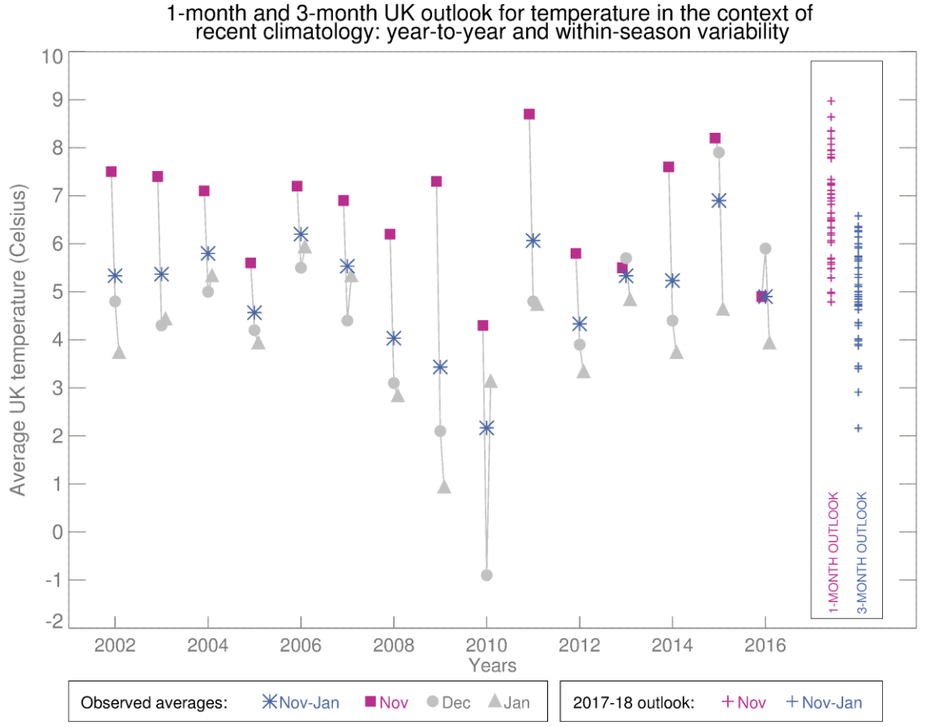


Fig T3



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.