Met Office 3-month Outlook

Period: December 2011 – February 2012 Issue date: 29.11.11

The forecast presented here is for December and the average of the December-January-February period for the United Kingdom as a whole. This forecast is based on information from observations, several numerical models and expert judgement.

SUMMARY - TEMPERATURE:

Although a spell of severe wintry weather this December remains a possibility, the Met Office is now certain that the average UK temperature during December will not be as low as it was last year.

For the winter as a whole (December-January-February) there is only a low risk that average temperatures will match the low levels observed in the last two winters. This means that there is likely to be less snow and ice across the UK than observed in those winters, although snow and ice are still expected at times.

The probability that mean UK temperature for December-January-February will fall into the coldest of our five categories is about 15%, whilst the probability that it will fall into the warmest of our five categories is about 25% (the climatological probability for each of these categories is 20%).

CONTEXT:

Although many of the individual December predictions on the left panel of Figure T2 (pink crosses) show rather cold average temperatures compared to the 1971-2000 average (green marker), none of these even come close to matching last December (grey star labelled 2010). This means that there is a fair chance that the average UK temperature in December will be below the climatological average, but that despite this we are now certain that it will not be as cold as last December.

In producing the 3-month Outlook we focus on the influence that external factors can have on the atmosphere. Two of these factors – Arctic sea ice, and sea surface temperatures, including the persisting La Niña – continue to have a similar structure to this time last year, although the signals are not as strong. This slightly favours colder-than-average conditions for the UK. However output from computer models is now telling a different story for the December-January-February period. High pressure in these forecasts tends to be situated to the southwest of the UK through the winter, which would be conducive to enhanced westerly flow, overall, and temperatures above average. So the outlook represents a compromise, showing slightly enhanced probability, compared to climatology, of above-average temperatures. For northern Europe too a mild winter is the most probable outcome.

On average a moderate La Niña, such as we have now, tends to be conducive to below-average temperatures in northern Europe in early winter, and above-average in late winter. However the overall influence of La Niña is small, with many years in the historical record not conforming to the standard picture.

The underlying surface – land or sea – modulates the temperature of airmasses reaching the UK. Due to near-record warmth during the autumn, sea temperatures around the UK are now above normal at the surface, and also at depth. This tilts the balance of probabilities for the winter very slightly towards warm. Meanwhile in Scandinavia and over the near continent autumn has also been anomalously mild, and snow cover is minimal. By contrast in late November last year northern Europe was already very cold, with widespread snow cover. This means that if easterly or northeasterly winds occurred in early winter conditions would be less cold than they were last year.

Fig T1

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

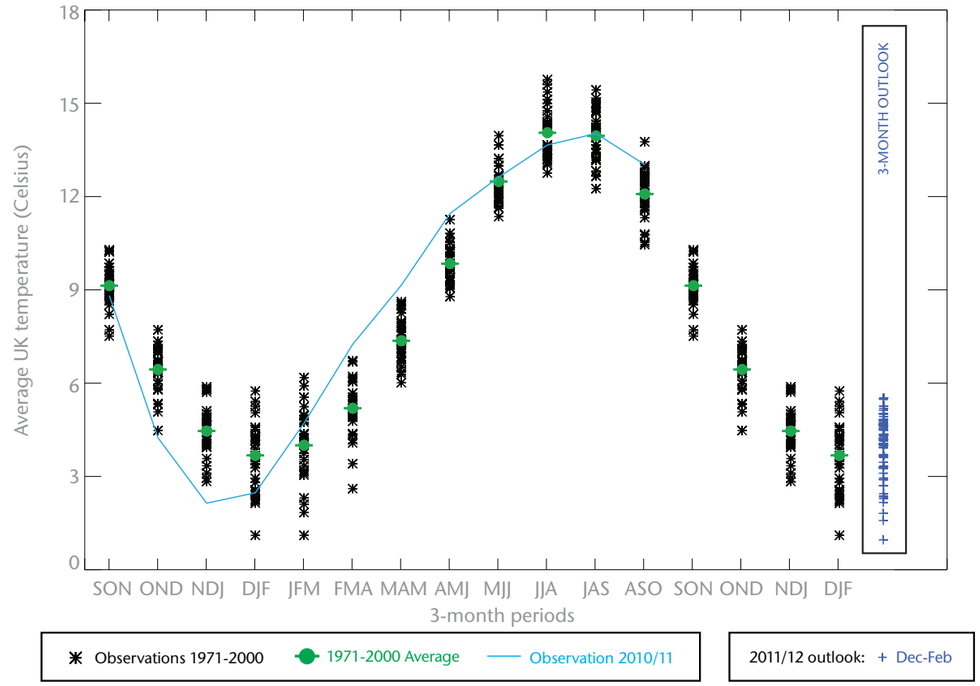


Fig T2

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

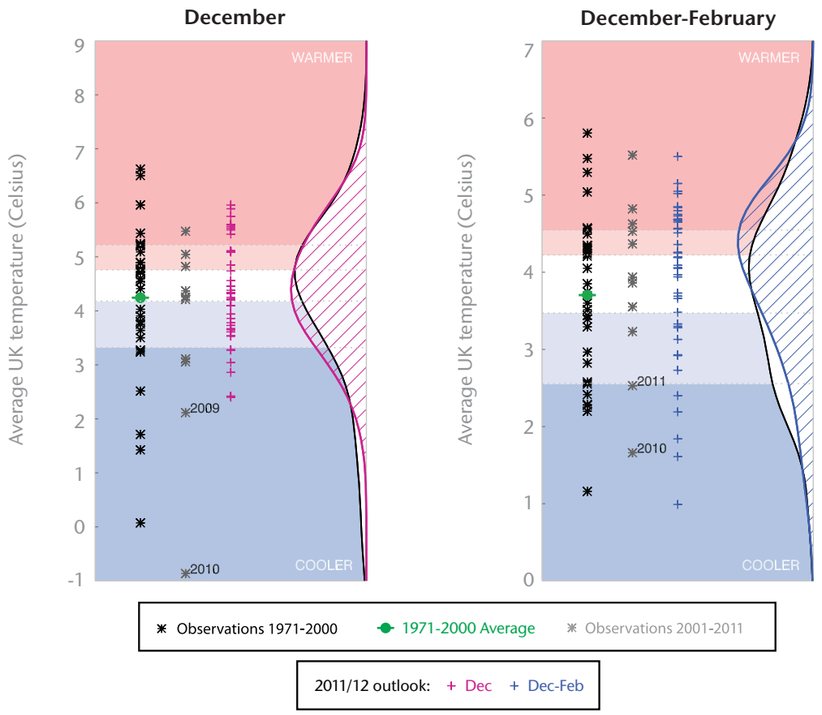
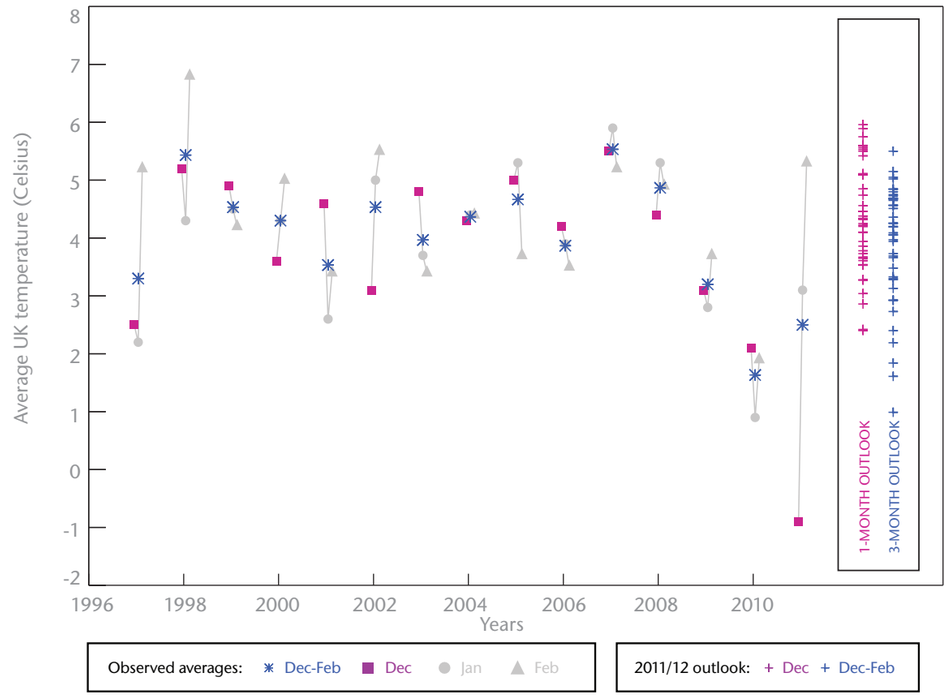


Fig T3

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.