Met Office 3-month Outlook

Period: December 2013 – February 2014   Issue date: 21.11.13

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 The forecast for December will be superseded by the long-range information on the public weather forecast web page (http://www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast), starting from 29 November 2013.

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

SUMMARY - TEMPERATURE:

Indications are that December will most likely be colder than average. For December-January-February as a whole uncertainty is quite large but below-average temperatures are more likely than above-average.

Overall, the probability that the UK-mean temperature for December-January-February will fall into the coldest category is between 20 and 25% and the probability that it will fall into the warmest category is between 10 and 15% (the 1981-2010 probability for each of these categories is 20%).

CONTEXT:

The most useful indicator of synoptic type during the winter months is the North Atlantic Oscillation (NAO) which in its positive mode results in stormy winters across the UK with generally milder-than-normal temperatures. A negative NAO is mostly associated with fewer storms than normal, a pre-dominance of high pressure and generally lower-than-normal temperatures as outgoing long-wave radiation overnight is greater than normal.

There are currently no significant sea surface temperature anomalies across the tropical Pacific and therefore neither El Niño nor La Niña conditions prevail. Computer models favour a continuation of near-neutral conditions in the coming months. In the northwest Atlantic sea surface temperatures are mostly above average, whilst further south they are a little below average. The influence of these forcing factors is to weaken the strength of jetstreams in the Atlantic, creating a less conducive environment for storms and more dominant high pressure systems over the UK, that is, negative NAO conditions. However, this year this influence is expected to be weak.

Arctic sea ice has started to increase in area now, but is still below the climatological average for the time of year, especially in the Kara Sea. Indications are that this might support the negative NAO conditions described in the paragraph above, although as yet the predictive association is not fully demonstrated.

The winds in the equatorial stratosphere are currently strong and westerly, indicating the westerly phase of the Quasi –Biennial Oscillation; this phase typically favours the positive phase of the NAO in winter. This influence is currently only weakly represented in most forecast models.

On balance a greater proportion of the drivers that affect UK weather are suggesting a negative NAO winter; indeed, computer models favour higher pressure than normal across the country and blocked atmospheric circulation over the normal eastward moving Atlantic storms. This is reflected in the temperature forecast for December-January-February, with rather colder-than-average outcomes slightly enhanced relative to climatology – as can be seen in figure T2.

Fig T1   **3-month UK outlook for temperature in the context of the observed annual cycle**
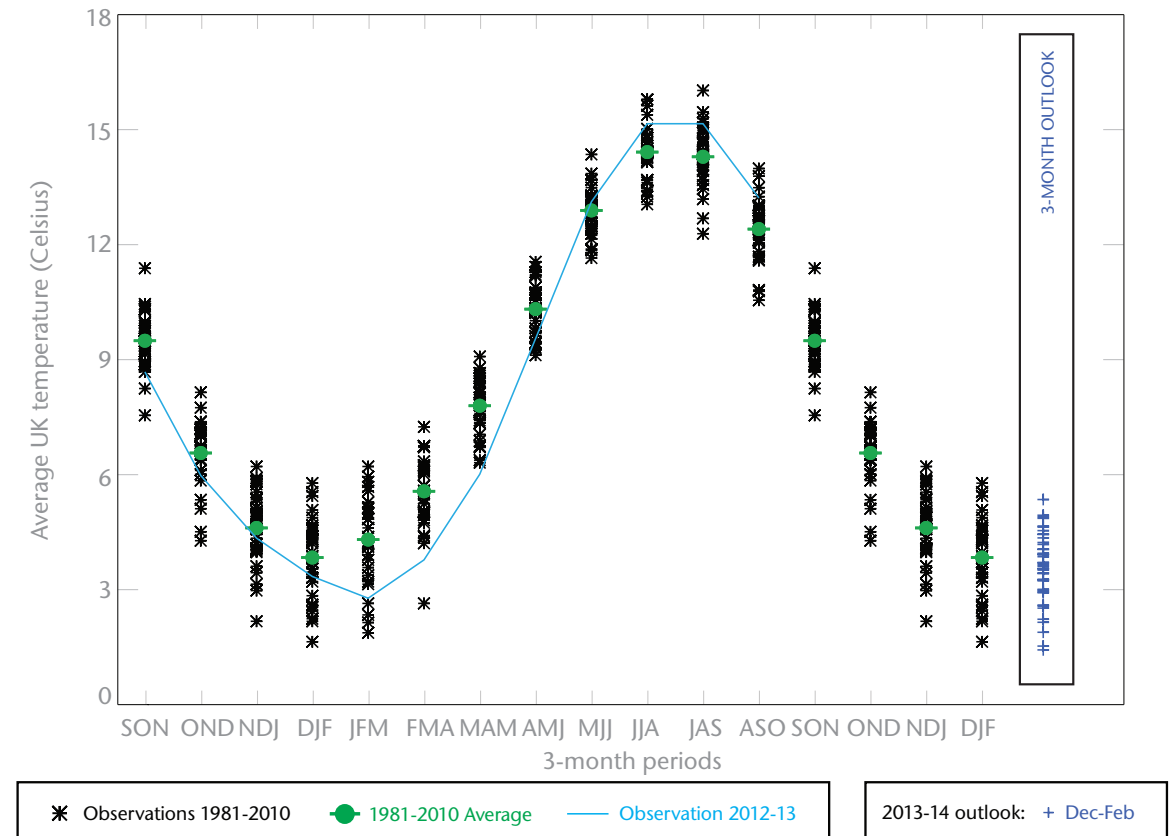

Fig T2   **1-month and 3-month UK outlook for temperature in the context of observed climatology**
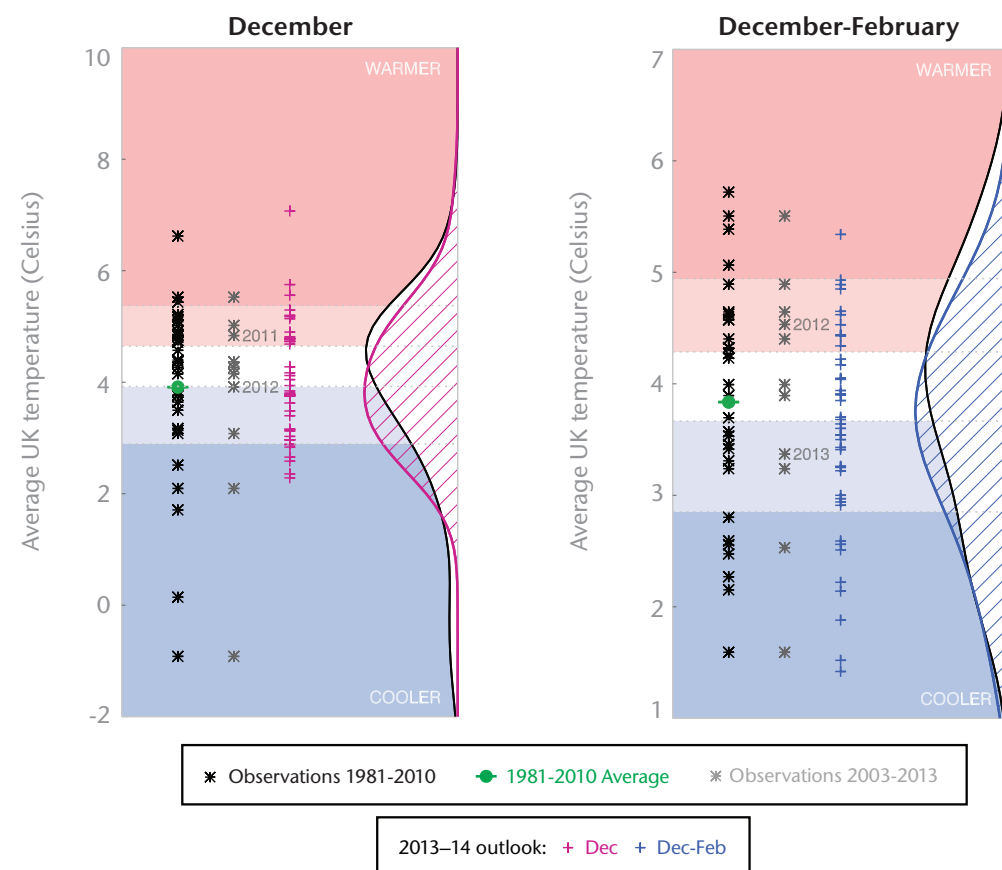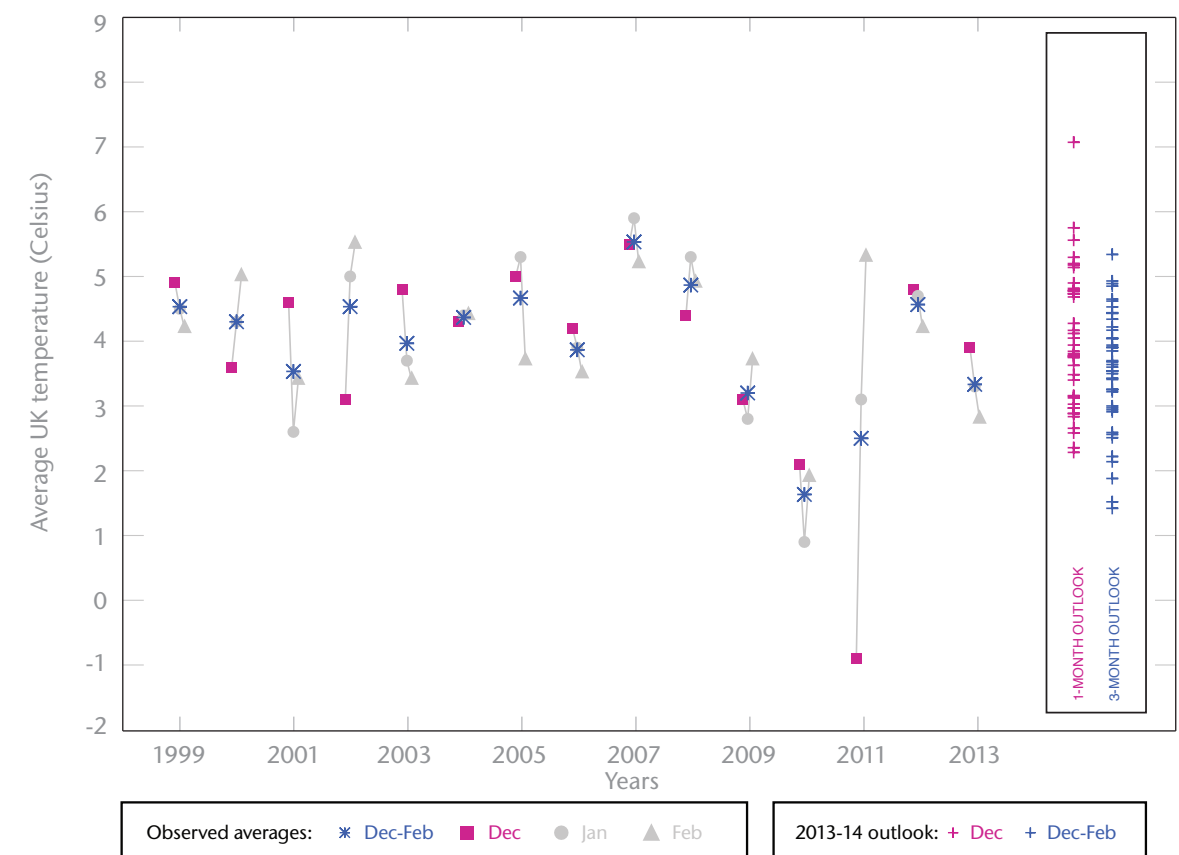

Fig T3   **1-month and 3-month UK outlook for temperature in the context of recent climatology: year-to-year and within-season variability**

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.