

Hydrological Outlook UK

Period: From Dec 2014

Issued on 10.12.2014 using data to the end of November

SUMMARY

Although November rainfall for the UK overall was near-average, there were notable regional variations. Southern and eastern areas of the country were much wetter than average, causing above normal river flows and groundwater levels in responsive catchments and boreholes. Below average rainfall in northern and western parts of the UK caused below normal river flows within these areas. The one month outlook for December is for both river flows and groundwater levels to be within the normal range for most of the UK apart from lowland England, where river flows are likely to be above normal. The three month outlook suggests a similar pattern, but with an increased likelihood of above normal groundwater levels in the Permo-Triassic sandstones of north-west England.

Rainfall:

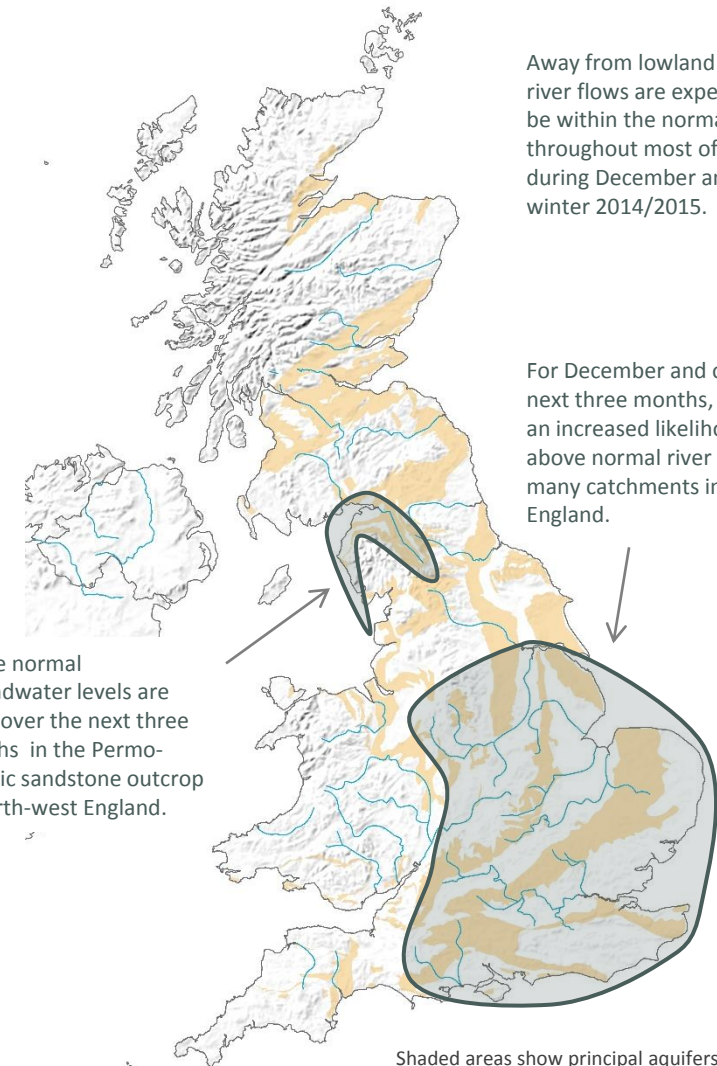
Latest predictions for UK-mean precipitation favour near-to or above-average rainfall for December and for the December-January-February period as a whole. The probability that UK precipitation for December-January-February will fall into the driest of five equal categories is between 10% and 15% and the probability that it will fall into the wettest category is around 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

November river flows were above normal for many catchments in eastern Scotland and southern, central and eastern England, closely corresponding with those areas which experienced above average rainfall. Similarly, below normal flows were registered in northern and western parts of England, Scotland and Wales in response to below average rainfall in November. The one month outlook suggests that river flows in all regions apart from lowland England will fall within the normal range in December. The most likely outcome for many catchments in lowland England is for river flows to be above normal. For the three month outlook, the situation is broadly similar. River flows within the normal range are most likely for the majority of the UK, but there is a higher likelihood of above normal flows in parts of lowland England.

Groundwater:

Groundwater recharge commenced in November, and groundwater levels were normal to above normal throughout the UK. Levels in the Chalk were in the normal range or higher, with above normal levels recorded in more responsive Chalk boreholes. Levels in the Permo-Triassic sandstones of western England and Wales continued to be above normal, exceptionally so for some boreholes in the south-west and the Midlands. The one month outlook is for normal to above normal levels, with some localised exceptions below normal in December. Despite some uncertainty, over the three month timeframe it is unlikely that groundwater levels will be below normal except for the most extreme dry rainfall scenarios. Similarly, levels in the Permo-Triassic sandstones of north-west England are likely to be above normal for winter 2014/15.



The Hydrological Outlook UK provides an outlook for the water situation for the UK over the next three months and beyond. For guidance on how to interpret the outlook, a wider range of information, and a full description of underpinning methods, please visit the website: www.hydoutuk.net

About the Hydrological Outlook UK

About the Outlook:

This document presents an outlook for the UK water situation for the next 1 – 3 months and beyond, using observational datasets, meteorological forecasts and a suite of hydrological modelling tools. The outlook is produced in a collaboration between the Centre for Ecology and Hydrology (CEH), British Geological Survey (BGS), the UK Met Office (UKMO), the Environment Agency (EA), Natural Resources Wales (NRW), the Scottish Environment Protection Agency (SEPA), and the Northern Ireland Rivers Agency (RA).

Data and Models:

The Hydrological Outlook depends on the active cooperation of many data suppliers. This cooperation is gratefully acknowledged. Historic river flow and groundwater data are sourced from the UK National River Flow Archive and the National Groundwater Level Archive. Contemporary data are provided by the EA, SEPA, NRW and RA. These data are used to initialise hydrological models, and to provide outlook information based on statistical analysis of historical analogues.

Climate forecasts are produced by the UKMO. Hydrological modelling is undertaken by CEH using the Grid-to-Grid, PDM and CLASSIC hydrological models and by the EA using CATCHMOD. Hydrogeological modelling uses the R-groundwater model run by BGS and CATCHMOD run by the EA. More information is available from the Outlooks website: <http://www.hydoutuk.net/methods>

Disclaimers:

This document aims to provide an indicative outlook for the water situation using the most comprehensive and up-to-date hydrological data, and modelling techniques. The Outlooks are intended to provide guidance on the likely water situation in the UK over the coming months, and should not be used in isolation, but alongside other sources of information such as flood warnings and meteorological forecasts (see links right).

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Further information:

For more detailed information about the Hydrological Outlook, and the derivation of the maps, plots and interpretation provided in this outlook, please visit the Hydrological Outlook UK website.

The website features a host of other background information, including a wider range of sources of information which are used in the preparation of this Outlook.

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Reference:

Hydrological Outlook UK, 2014, December, Centre for Ecology and Hydrology, Oxfordshire UK, Online, <http://www.hydoutuk.net/archive/december-2014/>

Other Sources of Information:

The Hydrological Outlook should be used alongside other sources of up-to-date information on the current water resources status and flood risk.

Hydrological Summary for the UK: provides summary of current water resources status for the UK: http://www.ceh.ac.uk/data/nrfa/nhmp/monthly_hs.html

Environment Agency Water Situation Reports: provides summary of water resources status on a monthly and weekly basis for England: <https://www.gov.uk/government/collections/water-situation-reports-for-england>

Flood warnings are continually updated, and should be consulted for an up-to-date and localised assessment of flood risk:

Environment Agency: <http://www.environment-agency.gov.uk/homeandleisure/floods/31618.aspx>
Scottish Environment Protection Agency: <http://www.sepa.org.uk/flooding.aspx>

UK Met Office forecasts for the UK: www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast