

Hydrological Outlook UK

Period: From November 2017

Issued on 09.11.2017 using data to the end of November 2017

SUMMARY

The outlook for November is for river flows to be within the normal range across the UK, except in the south-east where flows are likely to be below normal for November and the next three months. Groundwater levels in the Chalk aquifer of the south-east are likely to be below normal for the next three months, whilst groundwater levels elsewhere across the UK are likely to be normal to above normal.

Rainfall:

Rainfall during October was generally low across much of the UK. Parts of the south-east saw less than 30% of the 1981-2010 average for October. Less than 90% of the average rain fell on southern and central England, north Northern Ireland, and eastern England and Scotland. Localised areas of up to 150% of the average fell on north-western England, Northumberland and western Scotland.

The Met Office 3-month Outlook issued on 26th October indicated that above-average precipitation is more probable than below-average precipitation for November-December-January.

The probability that UK precipitation for November-December-January will fall into the driest of five categories is around 15% and the probability that it will fall into the wettest of five categories is between 25% and 30% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows in October were spatially variable, with normal to above normal flows across the majority of the UK. Above normal and notably high flows were prevalent across northern and western England, and western Scotland. Following a dry October in the south-east, river flows generally fell reaching notably and exceptionally low levels in some catchments.

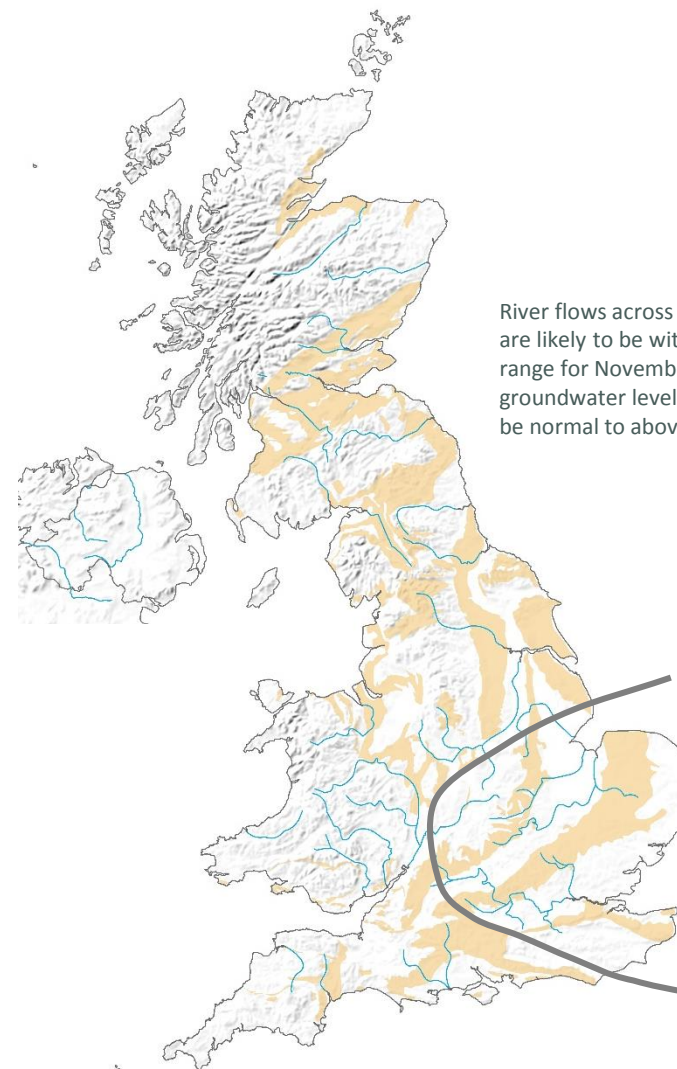
River flows in the south-east are likely to remain below normal for the next three months, with low river flows expected in some catchments. As this period covers the winter months, that are critical in the UK for soil moisture and groundwater recharge, this forecast could have implications on the longer term into 2018. Elsewhere in the UK, river flows are expected to be normal for November, with some indications for above normal flows. The forecast for this area over the next three months exhibits considerable uncertainty.

Groundwater:

Groundwater levels in October remained below normal to notably low across the majority of the southern Chalk aquifer. Elsewhere, groundwater levels were within the normal range, with the exception of south-western Scotland where levels remained exceptionally high.

Over the next three months, groundwater levels in the south-eastern Chalk aquifer are likely to remain below normal. Elsewhere in the UK, groundwater levels are likely to be normal to above normal for November. The notably high groundwater levels that have persisted throughout the year in the Permo-Triassic sandstones in northern England are likely to return to normal to above normal levels over the next three months.

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.hyoutuk.net



River flows across most of the UK are likely to be within the normal range for November, and groundwater levels are likely to be normal to above normal.

In the south-east, river flows and groundwater levels in the Chalk aquifer are likely to be below normal in November and for the next three months.

Shaded areas show principal aquifers

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About the Hydrological 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 Met Office, 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 Met Office. 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. Supporting documentation is available from the Outlooks website: <http://www.hydoutuk.net/methods>

Presentation:

The language used in the summary presented overleaf generally places flows and groundwater levels into just three classes, i.e. below normal, normal, and above normal. However, the underpinning methods use as many as seven classes as defined in the graphic to the right, i.e. the summary uses a simpler classification than some of the methods. On those occasions when it is appropriate to provide greater discrimination at the extremes the terminology and definitions of the seven class scheme will be adopted.

	Percentile range of historic values for relevant month
Exceptionally high flow	> 95
Notably high flow	87-95
Above normal	72-87
Normal range	28-72
Below normal	13-28
Notably low flow	5-13
Exceptionally low flow	< 5

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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 for the Hydrological Outlook:

Hydrological Outlook UK, 2017, October, Centre for Ecology and Hydrology, Oxfordshire UK, Online, <http://www.hydoutuk.net/latest-outlook/>

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: <https://flood-warning-information.service.gov.uk/map>
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