

# Hydrological Outlook UK

Period: From October 2017

Issued on 09.10.2017 using data to the end of September 2017

## SUMMARY

River flows are likely to be normal to above normal across most of the UK during October, with above normal flows most likely in the north-west of the UK. Only in parts of south-east England are flows likely to be normal to below normal in October, and in this area flows are likely to remain in this range for the next three months. Elsewhere there is considerable uncertainty concerning river flows over the next three months. Groundwater levels are likely to be normal during October with the exception of parts of south-east England, in which below normal levels are most likely, and in southern Scotland, where above normal levels are likely to continue in October.

### Rainfall:

Rainfall during September was spatially variable but much of the country saw above average rainfall (the UK rainfall was approximately 120% of average). The main areas with below average rainfall were south-east England, and north-west and central Scotland.

The Met Office 3-month Outlook issued on 28<sup>th</sup> September indicated that for October and October-November-December above-average precipitation is more probable than below-average precipitation.

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

### River flows:

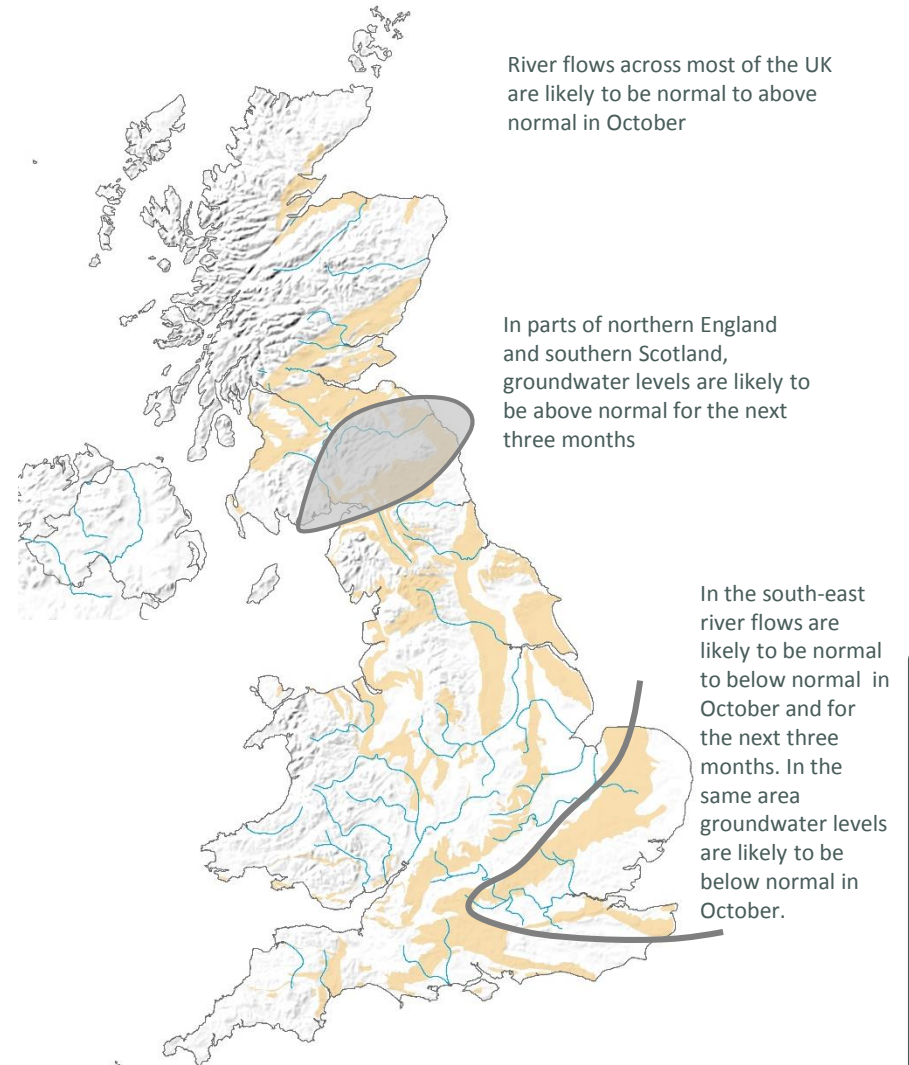
There was great variation in river flows during September with notably high flows in many rivers in south-west England, Wales, Northern Ireland and north-east Scotland. Elsewhere flows were generally normal except for parts of south east England where there were below normal flows.

While normal to below normal flows are likely to persist in south-east England, elsewhere flows are expected to be normal to above normal, with above normal flows most likely in the north-west of the UK.

### Groundwater:

Groundwater levels were normal to below normal in most parts of the UK during September, but above normal in west Wales, Northern Ireland and southern Scotland.

Over the next month a continuation of mixed levels in the Chalk aquifer is likely. Responsive parts of the aquifer, especially in the south and west will trend towards normal, or even above normal levels in some locations, but slower responding parts of the aquifer will continue to exhibit low levels in Kent and north of London. In the Yorkshire Chalk and Midland aquifers levels will be normal, with higher levels further north. Over 3 months the outlook is for normal to above normal levels in most aquifers, apart from the slowly responding Chalk.



Shaded areas show principal aquifers

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](http://www.hyoutuk.net)

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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](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](http://www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast)