

Hydrological Outlook UK

Period: From November 2016

Issued on 11.11.2016 using data to the end of October 2016

SUMMARY

Following an exceptionally dry October across the majority of the UK, the outlook for November is for river flows to be below normal to normal across the UK, with below normal flows more likely in the south and east. Below normal to normal flows are likely to persist across the south and east of the UK over the next three to six months. Groundwater levels are expected to be within the normal range, except in areas of the southern Chalk which are likely to be below normal over the next three months.

Rainfall:

Rainfall over October was unseasonably low. Western and southern parts of the UK saw rainfall totals from less than 30% to 50% of the 1971-2000 average, whilst localised areas in coastal Norfolk, Northumberland and north-eastern Scotland saw above average rainfall. October has been the fourth consecutive month of drier than average rainfall totals across the UK. South-east England has seen the least rainfall over this period.

For November, below-average precipitation is more probable than above-average values. For the period November-December-January as a whole, the chances of below-average precipitation are also higher than those of above-average values. The probability that UK precipitation for November-December-January will fall into the driest of five equal categories is between 20 and 25% and the probability that it will fall into the wettest of the five categories is around 15% (the 1981-2010 probability for each of these categories is 20%).

River flows:

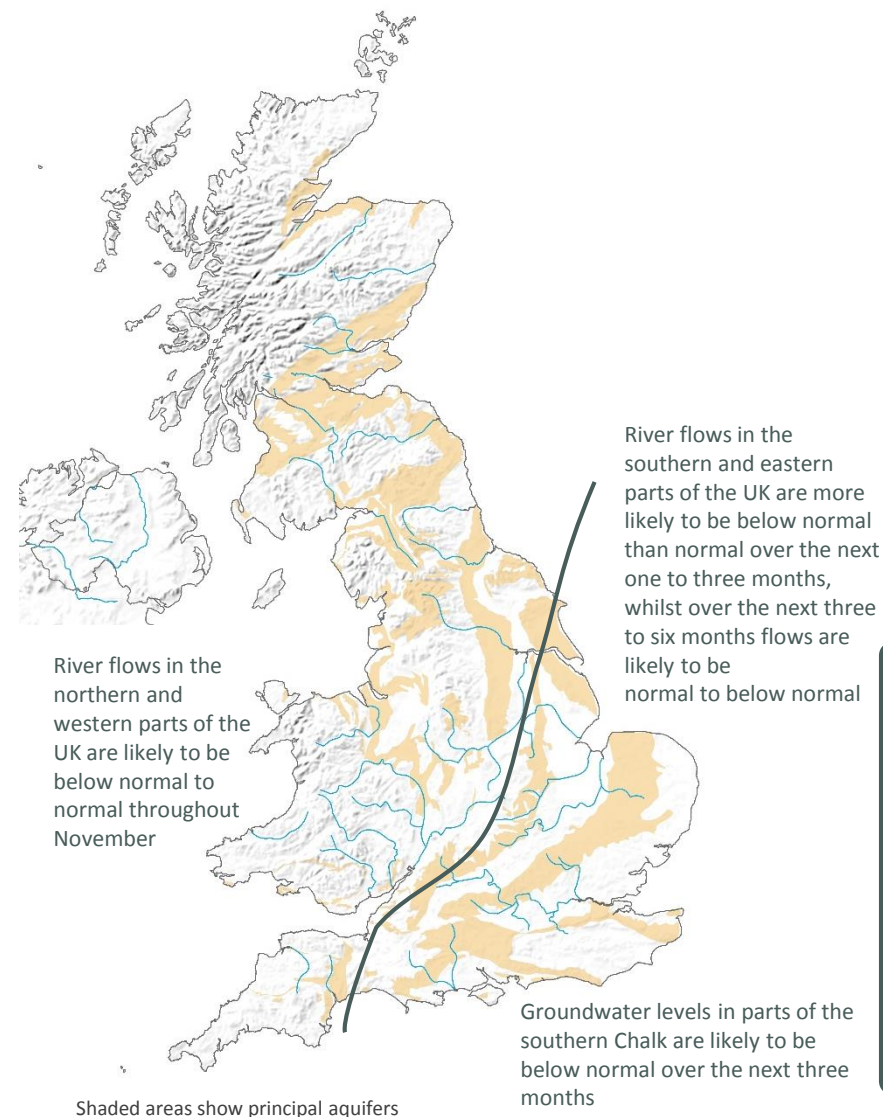
Reflecting the dry nature of October's rainfall, river flows in western parts of the UK have been below normal to exceptionally low, with several rivers exhibiting record low flows for the month. Normal to below normal flows were recorded across eastern parts of the UK.

The outlook for November indicates that river flows in the northern and western parts of the UK are likely to be below normal to normal. In southern and eastern parts of the UK, a combination of slower streamflow response to rainfall due to groundwater influence, as well as high soil moisture deficits, contribute to a longer term low river flow outlook. Here, flows are more likely to be below normal than normal over the next one to three months, with a continuation of a normal to below normal outlook over the next three to six months.

Groundwater:

Groundwater levels generally continued receding into October, delaying the usual recharge of aquifers at this time of year. The northern Permo-Triassic sandstone aquifers returned to normal levels after a prolonged period of above average levels following winter 2015/2016. Groundwater levels for October were generally within the normal range, with a few southern boreholes recording below normal levels.

The outlook for November to January is for groundwater levels to be within the normal range, though parts of the southern Chalk aquifer are likely to be below normal 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.hydoutuk.net

Hydrological Outlook UK

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, 2016, July, 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