

Hydrological Outlook UK

Period: From February 2017

Issued on 10.02.2017 using data to the end of January 2017

SUMMARY

For both river flows and groundwater levels, the outlook is for a normal to below normal signal across south-eastern England over the next one to three months. River flows in northern and western parts of the UK are less certain, although flows within the normal range are most likely for February.

Rainfall:

The typical rainfall gradient across the UK was reversed in January, with dry conditions over the north and west, and slightly wetter than average conditions in the south-east. The driest areas of the UK saw precipitation less than 30% of the January average, whilst larger areas of northern England, Scotland and Northern Ireland received less than 50% of average. Rainfall over the past 6 months has been 50-90% of average for the majority of the UK.

The rainfall outlook for February (issued by the Met Office on 26th January) suggests that above-average precipitation is more probable than below-average. For February-March-April as a whole, above- and below-average precipitation are equally probable. The probability that UK-average precipitation for February-March-April will fall into the driest of five equal categories is 20% and the probability that it will fall into the wettest of the five categories is around 20% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows in January were below normal across the majority of the UK, with the exception of northern Scotland where flows were normal. Following the return of near-normal rainfall in southern England, flows in this area generally increased from December's exceptionally low levels, however, flows were still below normal in January, and were notably low in the south-west. Notably low flows were also seen across Wales, northern England and southern Scotland.

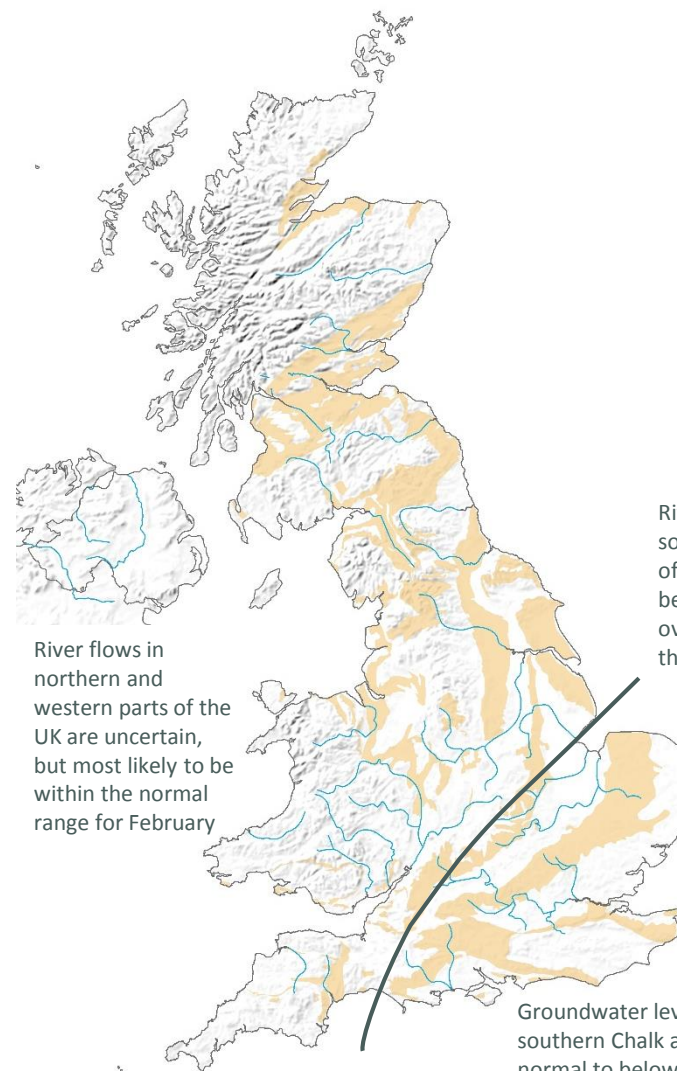
This below normal river flows are expected to continue for the next one to three months across most of the south-east of England, despite a forecast for above average rainfall for February. Many catchments in this area are groundwater influenced, and tend to have a slow response to rainfall. In the catchments of the north and western parts of the UK, which are likely to respond more quickly to rainfall, there is considerable uncertainty in the outlook for February; however flows are most likely to be within the normal range.

Groundwater:

Groundwater levels across the southern and eastern Chalk remained below normal for January, with notably and exceptionally low levels in central-southern England. Elsewhere, levels in the Permo-Triassic sandstones and Jurassic limestones were generally within the normal range.

Groundwater levels across the southern Chalk are likely to remain normal to below normal for the next one to three months. Groundwater levels elsewhere are expected to be within the normal range.

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



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, 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