

Hydrological Outlook UK

Period: From September 2017

Issued on 13.08.2017 using data to the end of August 2017

SUMMARY

The one month outlook is for river flows to be normal to above normal across the UK, and a similar situation is most likely over the next three months, except in some localised parts of central southern England where flows may be below normal. The one month and three month outlooks for groundwater suggest a continuation of above normal levels in some northern aquifers, and below normal levels in parts of the Chalk of south-east England, suggesting the recharge season will commence from a below normal baseline in some areas.

Rainfall:

Rainfall during August was very variable, spatially, but much of the country saw above average rainfall (the UK rainfall was 120% of average) and it was particularly wet in Scotland and south-east England.

The Met Office 3-month Outlook issued on 24th August indicated that for September the chances of above- and below-average precipitation are fairly balanced. For September-October-November as a whole, above-average precipitation is considered slightly more probable than below-average precipitation.

The probability that UK precipitation for September-October-November will fall into the driest of five equal categories is 20% and the probability that it will fall into the wettest of these categories is around 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

August river flows were mostly in the normal range or above normal, with above normal flows particularly prevalent in northern and western Britain and a more mixed pattern in lowland England. Below normal flows were observed in some catchments in central southern England.

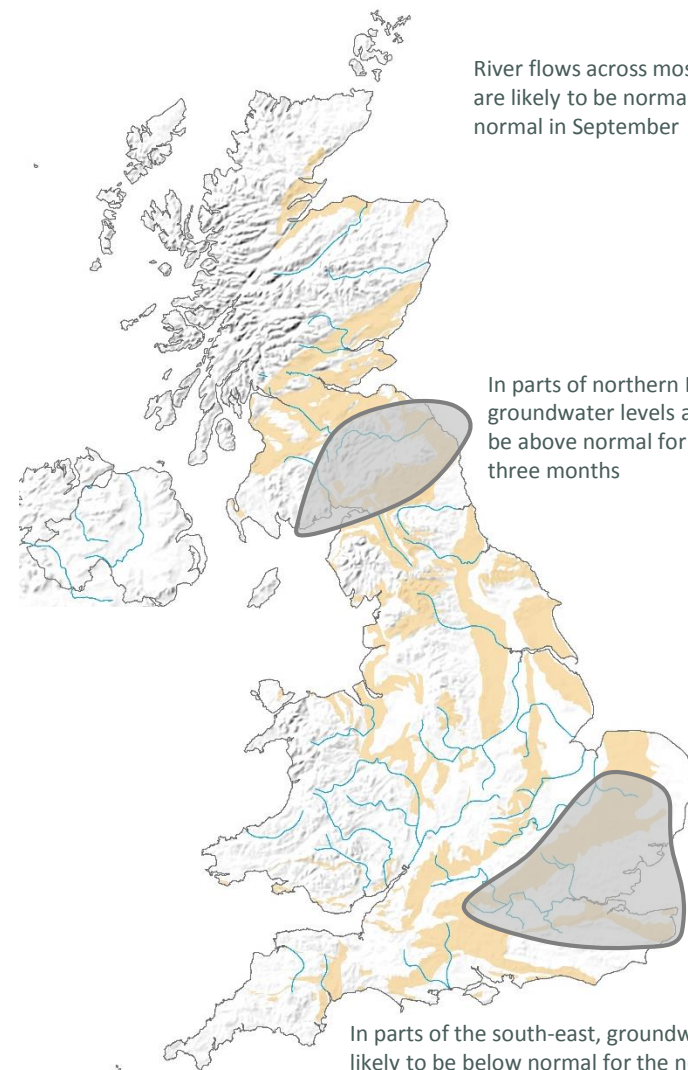
The one month outlook is for normal flows to predominate across most of the country. However, there is a slight signal for above normal flows in most regions, reflecting the wet August, particularly in central and eastern Scotland; a wet start to September increases the likelihood of flows being above the normal range. The three month outlook suggests normal to above normal flows in all regions of the UK. In some groundwater-fed catchments in central southern England where flows are currently low, below normal flows may persist over the next three months.

Groundwater:

Across much of the Chalk aquifer, August groundwater levels were below normal or notably low, although recovery was evident in some boreholes. In other aquifers, levels were normal or below normal except in some northern boreholes where levels were above normal or exceptionally high.

The one month outlook is for a broadly similar situation to persist. The three month outlook is also similar, although levels in the western Chalk may return to the normal range. Below normal levels are likely to persist through autumn in the Chilterns, parts of east Anglia and the North Downs. Above normal levels are likely in some northern aquifers. However, over this period, autumn rainfall will become influential in determining the long-term groundwater outlook.

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 normal to above normal in September

In parts of northern Britain, groundwater levels are likely to be above normal for the next three months

In parts of the south-east, groundwater levels are likely to be below normal for the next three months. Below normal flows are possible in some groundwater dominated catchments

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, 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