

Hydrological Outlook UK

Period: From August 2019

Issued on 08.08.2019 using data to the end of July 2019

SUMMARY

The outlook is for a continuation of below normal river flows across southern England and East Anglia throughout August. Over the next three months, flows in this area are likely to be normal to below normal. Conversely, in central England, flows in the majority of catchments are likely to be above normal for August, and normal to above normal over the three month period August-October. Elsewhere across the northern and western parts of the UK, flows are expected to be within the normal range. Groundwater levels across the southern and eastern Chalk aquifer are likely to be below normal for August. Elsewhere, groundwater levels are most likely to be within the normal range for August.

Rainfall:

Over July, significant volumes of rain fell over central and northern England and Scotland, with most of the region of the Trent/Mersey catchments seeing over 170% of average. The majority of Wales, southern England and East Anglia however received less than 70% of July average rainfall.

The rainfall outlook for August (issued by the Met Office on 25th July) indicates wetter-than-average conditions are marginally more likely than drier-than-average. For August-September-October as a whole, the chances of above- and below-average precipitation are similar. The probability that UK-average precipitation for August-September-October 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 five categories is around 20% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows for July were variable across the UK. Flows continued to be below normal in many catchments of southern England and south Wales, whilst extreme rainfall towards the end of the month brought above normal flows to central England along with localised flooding. Flows in northern Scotland were also above normal.

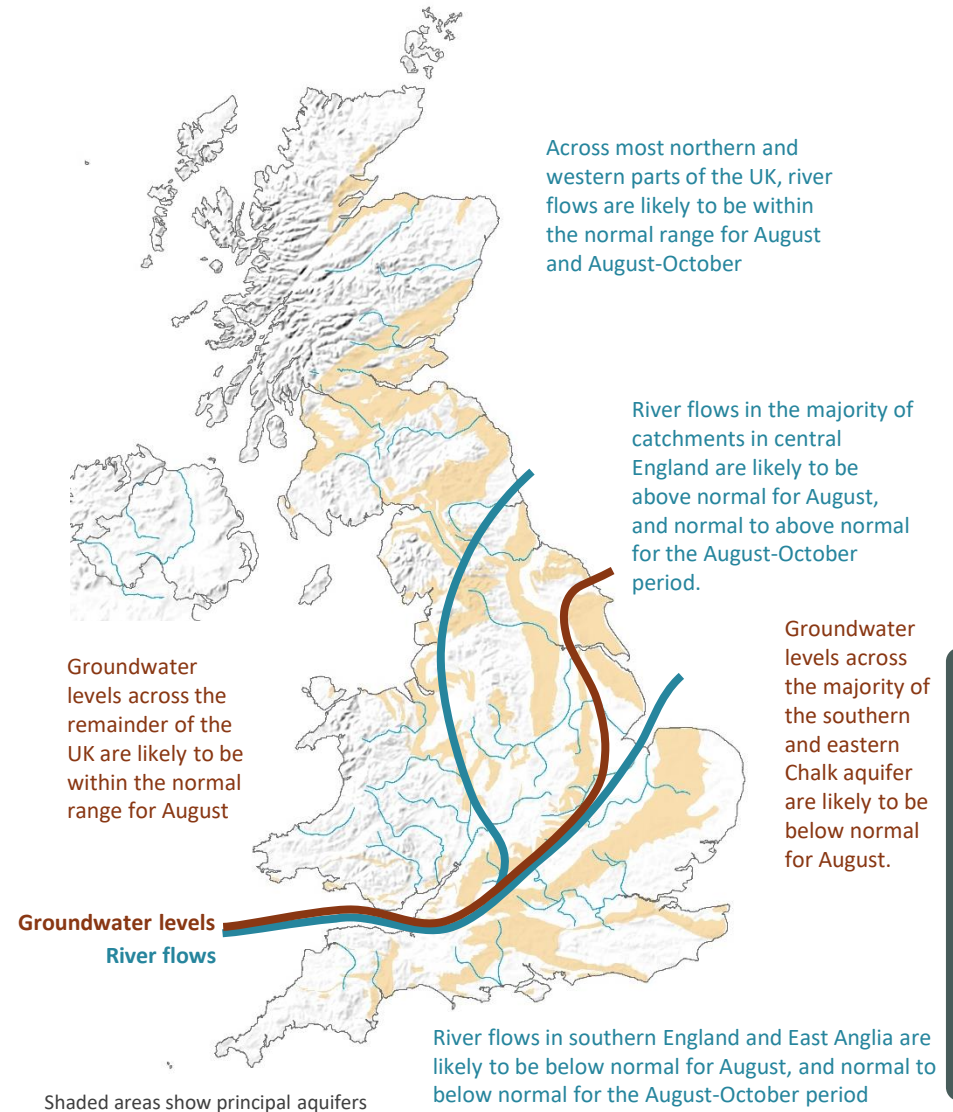
This spatial pattern of flow volumes is likely to persist over August and, to a lesser extent, over the August-October period. Therefore, flows over southern England and East Anglia are likely to be below normal for August, and normal to below normal over the next three months. Flows in the majority of catchments in central England are likely to be above normal for August, and normal to above normal over August-October. River flows elsewhere, across northern and western parts of the UK, are expected to be within the normal range for the next three months. The outlook for northern Scotland is uncertain, as predictability of flows in this region at this time of year is heavily dependent on rainfall patterns.

Groundwater:

Groundwater levels for July were in the normal range in some boreholes of northern and central England, and were above normal in the Jurassic limestones. However, the majority of groundwater levels across southern, eastern and north-eastern England were below normal to notably low.

Over August, groundwater levels in the southern and eastern Chalk aquifer are likely to be below normal, with notably low levels expected over the Chilterns and East Anglia. Elsewhere, groundwater levels are likely to be within the normal range for August. This pattern is likely to continue over August-October, though as we enter the recharge season, the outlook for the three month period is less certain.

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



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 for Northern Ireland, the Department for Infrastructure – Rivers (DfIR).

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 DfIR. 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 and GR4J hydrological models. 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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From April 2018 the CEH contribution to the Hydrological Outlook has been supported by the Natural Environment Research Council funded [UK-SCAPE](#) and [Hydro-JULES](#) Programmes.

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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, 2019, August, 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: <https://nrfa.ceh.ac.uk/monthly-hydrological-summary-uk>

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