

Hydrological Outlook UK

Period: From September 2019

Issued on 09.09.2019 using data to the end of August 2019

SUMMARY

The outlook for September is for normal to above normal river flows in the north of the UK, flows within the normal range in central regions, and below normal flows in the south-east. Groundwater levels are likely to be below normal in September in the southern and eastern Chalk, and generally within the normal range elsewhere. The three-month outlook is for river flows in the south-east to be normal to below normal, and in the normal range elsewhere. Groundwater levels across the UK are likely to be in the normal range for the September-November period.

Rainfall:

August rainfall totals were above average across much of northern, central and western regions of the UK, substantially so in Scotland where rainfall approached twice the average. East Anglia and parts of North Yorkshire were the only areas to receive below average rainfall.

The rainfall outlook for September (issued by the Met Office on 22nd August) indicates the chances of wetter- and drier-than-average conditions are similar. For September-October-November as a whole, above-average precipitation is slightly more likely than below-average precipitation. The probability that UK-average precipitation for September-October-November will fall into the driest of five categories is between 15% and 20% and the probability that it will fall into the wettest of five categories is 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

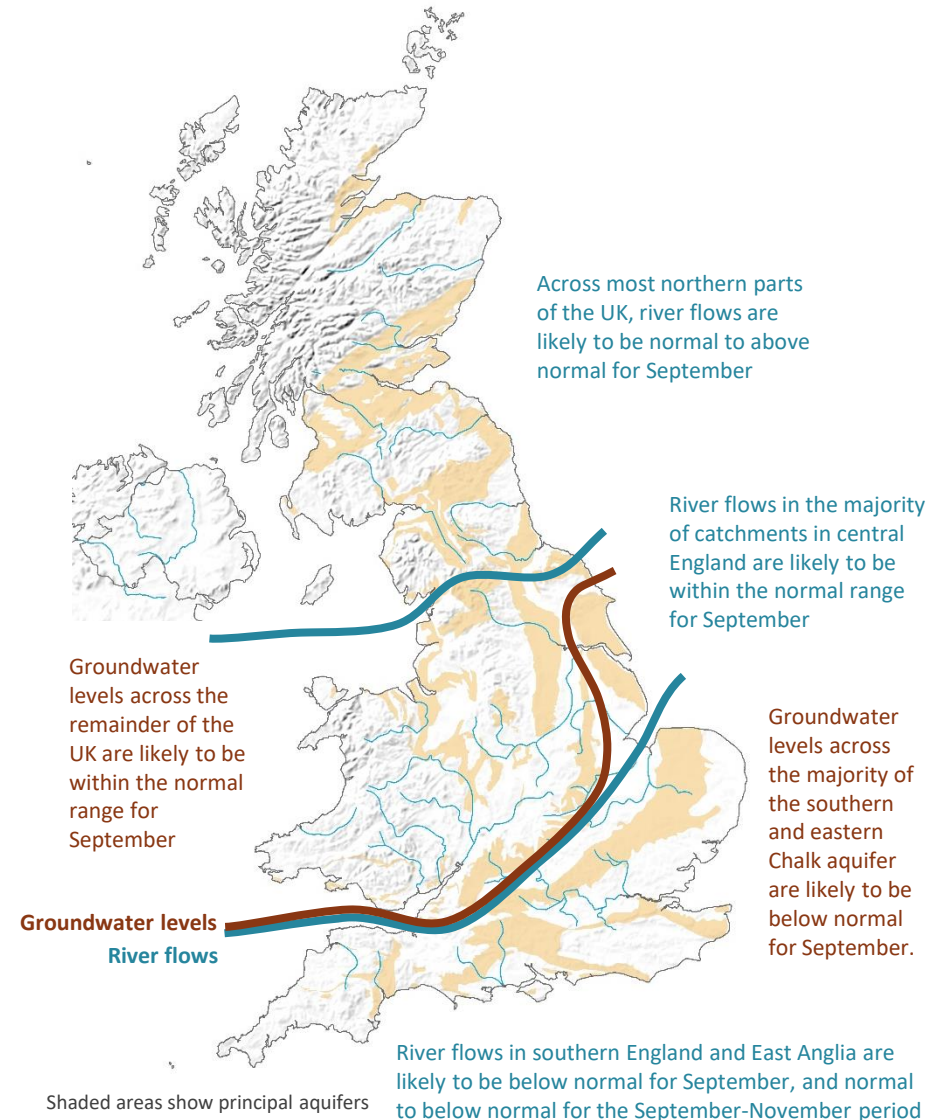
River flows in August were above average across the majority of the northern and central UK, most notably in northern and central England where exceptionally high flows and new monthly maxima were recorded. Areas of below normal flows persisted in East Anglia and central southern England.

The September outlook for river flows exhibits a notable north-south divide, with normal to above normal flows likely in the north and below normal flows likely in the south. River flows in central areas are most likely to be within the normal range, though there is an increased likelihood of above normal flows in the Trent catchment. River flows in southern England and East Anglia are likely to be normal to below normal for the September-November period.

Groundwater:

Groundwater levels were below normal across the majority of the southern and eastern Chalk aquifer, notably so through the Chilterns into East Anglia. Elsewhere, levels were generally in the normal range, with localised exceptions.

The outlook for groundwater levels in September is for below normal levels throughout the Chalk aquifer of southern and eastern England, with notably below normal levels likely in the Chilterns. Levels are likely to be above normal or higher around the Scottish Borders. Moving into the typical recharge season, the three-month outlook exhibits substantial groundwater level variability, including for most of the Chalk in which some levels are notably low at present.



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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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.

Contact:

Hydrological Outlooks UK
Centre for Ecology & Hydrology
Wallingford
Oxfordshire
OX10 8BB

t: 01491 692371
e: enquiries@hydoutuk.net

Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2019, September, 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