

# Hydrological Outlook UK

Period: From August 2020

Issued on 11.08.2020 using data to the end of July 2020

## SUMMARY

The outlook for August is for a continuation of the north-west to south-east UK contrast that has been seen both in rainfall and river flows in July. River flows in the north and west are likely to be normal to above normal this month, whilst groundwater levels in this region are expected to vary significantly. Both river flows and groundwater levels in the south and east are likely to be normal to below normal for the next one to three months.

### Rainfall:

Rainfall in July showed a marked north-west to south-east contrast. Parts of the north-west, and eastern Scotland saw over 170% of average July rainfall, whilst areas of southern England and the Welsh-English border received between 30 and 70%. Very little of the UK received an average amount of rainfall for July.

The rainfall outlook (issued by the Met Office on the 23<sup>rd</sup> July 2020) is that for August and August-September-October as a whole, above-average precipitation is slightly more likely than below-average precipitation. The probability that UK-average precipitation for August-September-October will fall into the driest of five equal categories is around 20% and the probability that it will fall into the wettest category is between 20 and 25% (the 1981-2010 probability for each of these categories is 20%).

### River flows:

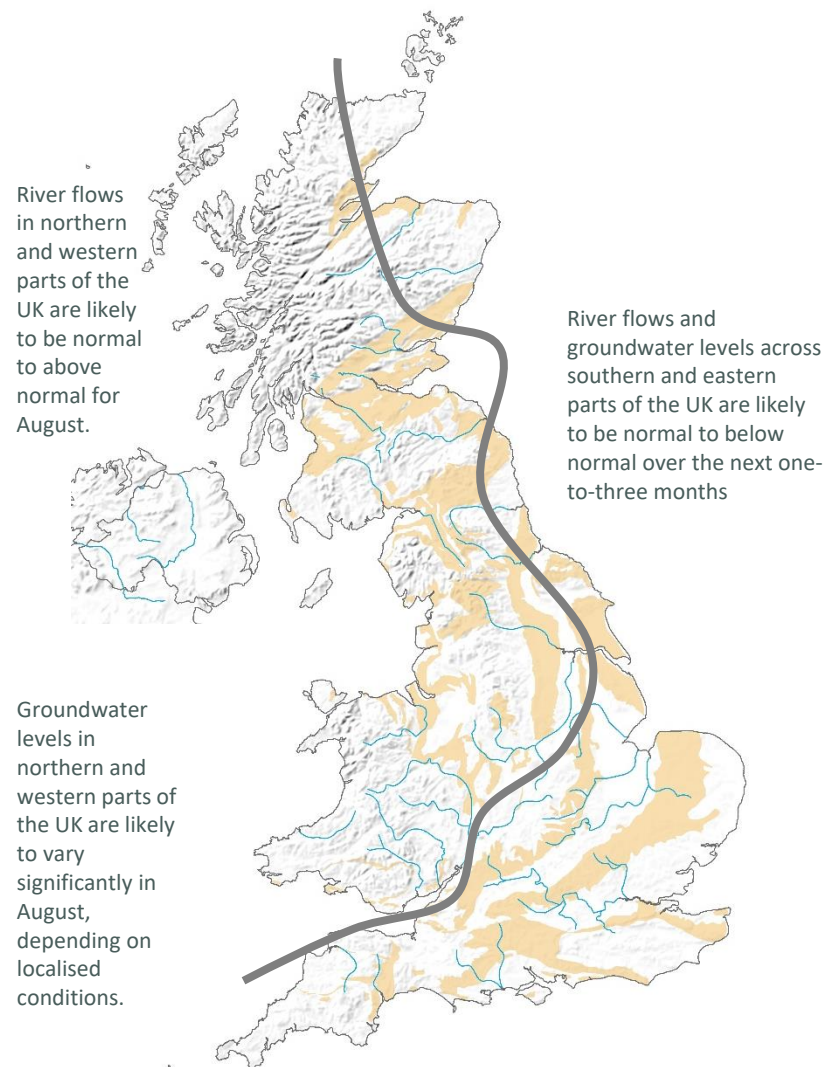
River flows in July strongly reflected the rainfall pattern for the month. Flows across the west, with the exception of the south-west, were above normal to exceptionally high. Record breaking high flows were experienced in several catchments in north-west England and south-west Scotland. Elsewhere along the east-coast and across central and southern England, flows were mostly normal to below normal, with a few localised catchments recording notably low flows.

The forecast is for river flows to continue to demonstrate this north-west south-east contrast throughout August. Flows in the north and west are likely to continue to be normal to above normal this month, with high and notably high flows being possible in some localised areas. Three month river flow forecasts in the north-west are less certain at this time of year. In the south (including the south-west) and east, however, flows are expected to remain normal to below normal for August and August-September-October as a whole.

### Groundwater:

Groundwater levels in the UK were predominantly normal to below normal for July, but were notably and exceptionally high in the Permo-Triassic sandstones.

The outlook is for groundwater levels in the south-east to remain normal to below normal for August, with some locations falling to notably low levels over the August-October three-month period. Forecasts for groundwater levels in the Permo-Triassic sandstones of northern England and Scotland show a mixed spatial pattern with some above normal/notably high, and some below normal/notably low levels expected depending on location.



Shaded areas show principal aquifers

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](http://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 UK Centre for Ecology and Hydrology (UKCEH), 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 UKCEH 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

## Disclaimer and liability:

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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:

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## Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2020, August, UK 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.

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>

Hydrological Summary for the UK: provides summary of current water resources status for the UK: <https://nrfa.ceh.ac.uk/monthly-hydrological-summary-uk>

UK Met Office forecasts for the UK: [www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast](http://www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast)

UK Water Resources Portal: monitor the UK hydrological situation in near real-time including rainfall, river flow, groundwater and soil moisture from COSMOS-UK: <https://eip.ceh.ac.uk/hydrology/water-resources/>