

## SUMMARY

River flows in northern and western areas are likely to be normal to below normal in both September and September-November, whereas river flows in the south-east are likely to be normal to above normal over both timeframes. Groundwater levels in most boreholes of the UK are likely to be normal to above normal in September, but normal to below normal during September-November.

### Rainfall:

Rainfall in August was below average across the vast majority of the UK, notably so in parts of central and eastern England, and the Scottish Highlands. Above average rainfall was generally limited to parts of Northern Ireland and eastern Scotland.

The rainfall outlook for the UK for September (issued by the Met Office on 23.08.2021) is that near-average rainfall is the most likely outcome. For September-October-November as a whole, it is more likely to be dry than wet.

### River flows:

River flows in August were generally below average across Northern Ireland, Wales, and most of England (except for the south-east). Flows were notably low in catchments draining the northern Pennines and in western Wales.

The outlook for September is for normal to above normal river flows in the south-east and for normal to below normal river flows further north and west. Although the signal is dampened, this pattern is also suggested for the September-November timeframe.

### Groundwater:

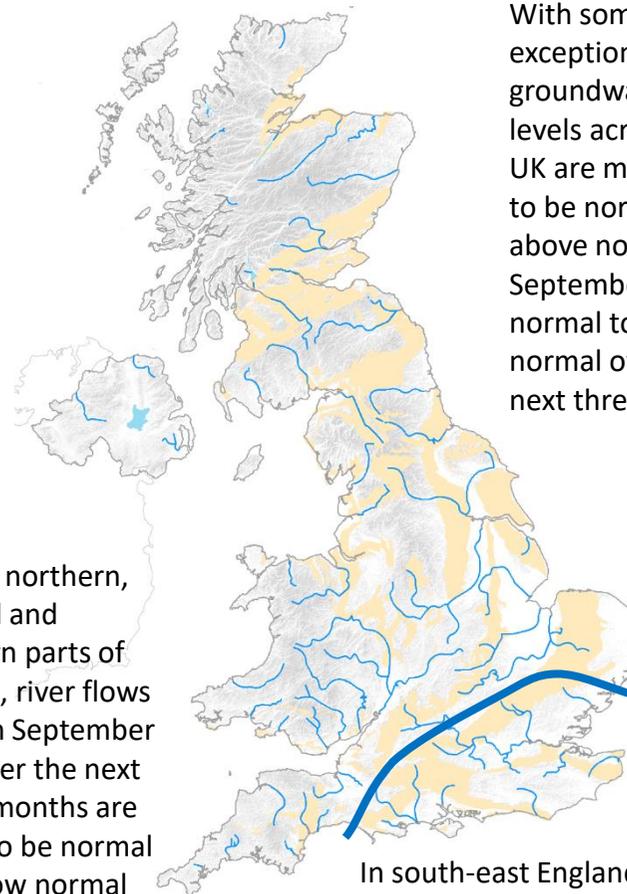
Groundwater levels in August were normal to above normal across most of the UK, and exceptionally high in some localised boreholes along the south coast and in parts of northern Britain. Conversely, levels were low in Northern Ireland and south Wales.

The outlook for September is for normal to above normal groundwater levels across most of the UK. Conversely, levels are likely to be below normal in south Wales. Over the September-November timeframe, the outlook is for normal to below normal groundwater levels, though some boreholes in southern England remain likely to be above normal.

Note that due to continuing issues with data access, no data are available for Scotland.

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)

Across northern, central and western parts of the UK, river flows in both September and over the next three months are likely to be normal to below normal



Shaded areas show principal aquifers

With some exceptions, groundwater levels across the UK are most likely to be normal to above normal in September and normal to below normal over the next three months

In south-east England, river flows in both September and over the next three months are likely to be normal to above normal

## 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: <https://www.hydoutuk.net/about/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:

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## Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2021, September, UK Centre for Ecology and Hydrology, Oxfordshire UK, Online, <https://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>

Natural Resources Wales: <https://flood-warning.naturalresources.wales/>

Scottish Environment Protection Agency: <https://www.sepa.org.uk/flooding.aspx>

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

UK Met Office forecasts for the UK: <https://www.metoffice.gov.uk/#?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/>