

# Hydrological Outlook UK

Period: From May 2020

Issued on 11.05.2020 using data to the end of April 2020

## SUMMARY

Following recent prolonged dry weather, river flows in northern and western parts of the UK are likely to be below normal in May, with exceptionally low flows likely in some areas. The three month outlook is similar, albeit with less confidence. Elsewhere, in parts of the Midlands and south-east England, flows are likely to be normal to below normal over the next three months, with the exception of parts of central southern England where normal to above normal flows are likely. Groundwater levels are likely to be normal to above normal in May across all aquifers, with a similar picture for the next three months but with more aquifers returning to the normal range.

### Rainfall:

April was a very dry month, with 40% of the typical rainfall for the UK as a whole. It was exceptionally dry (less than 25% of average) across northern England and large areas of Scotland – it was the driest April on record in some of these areas.

The rainfall outlook (issued by the Met Office on 23<sup>rd</sup> April 2020) is that for May, below-average precipitation is moderately more likely than above-average precipitation. For May-June-July as a whole, below-average precipitation is more likely than above-average precipitation. The probability that UK-average precipitation for May-June-July will fall into the driest of five equal categories is around 30% and the probability that it will fall into the wettest of these categories is 10% (the 1981-2010 probability for each of these categories is 20%).

### River flows:

River flows in April were notably or exceptionally low across most of northern and western Britain, with new April minima registered in a number of catchments. In southeast England, flows were mostly in the normal range, with above normal flows in a few catchments.

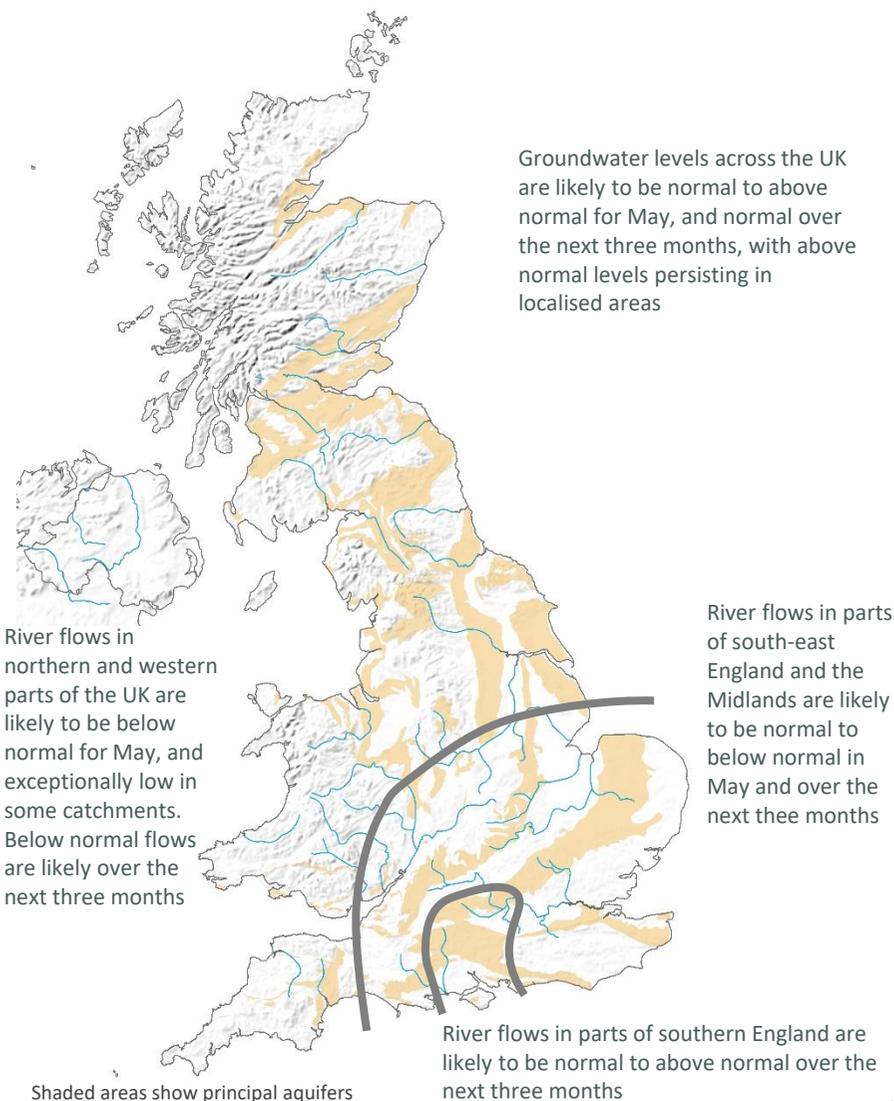
The outlook for May is for below normal flows to continue across northern and western Britain, with a high likelihood of notably or exceptionally low flows in Scotland and north-east England. In parts of the Midlands and across south-east England, the outlook is for normal to below-normal flows. The exception is for parts of central southern England where normal to above-normal flows are likely, generally in Chalk catchments where the exceptional winter rainfall continues to sustain flows. The outlook for May-July suggests a very similar contrast between northern and western/southern and eastern areas, although there is less confidence in the three-month projections for responsive western catchments at this time of year.

### Groundwater:

Generally, groundwater levels declined across the UK in April. However, levels were mostly normal or above normal, with exceptionally high (sometimes record breaking) levels in the Permo-Triassic sandstones of central and northern England.

The outlook is for groundwater levels across the UK to continue receding in most areas, but the current normal to above normal levels are likely to persist through May. Over the three month period (May-July), levels are generally expected to return to their normal range across the UK, however above normal levels are likely to persist in parts of the southern Chalk and in the Permo-Triassic sandstones.

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)



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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 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

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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, May, 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/>