

# Hydrological Outlook UK

Period: From April 2020

Issued on 08.04.2020 using data to the end of March 2020

## SUMMARY

The outlook is for river flows in northern and western parts of the UK to be normal to below normal for April and over the next three months. Flows across central southern England and the East Midlands are likely to be normal to above normal for April, and within the normal range for the three month period April-June. Both river flows and groundwater levels are expected to be within the normal range in East Anglia for April and over the three months to June. Elsewhere, groundwater levels are likely to be normal to above normal for April, and normal over the next three months, with a few localised exceptionally high levels expected in the Permo-Triassic sandstones.

### Rainfall:

Rainfall in March was a stark contrast to the record-breaking wet February, with drier than average weather seen across much of the UK. The vast majority of the UK saw less than 90% of average rainfall, whilst much of the eastern UK saw less than 50% of average.

The rainfall outlook (issued by the Met Office on 26th March 2020) is that for April, the likelihoods of above- and below-average precipitation are similar. For April-May-June as a whole, below-average precipitation is moderately more likely than above-average precipitation. The probability that UK-average precipitation for April-May-June will fall into the driest of five equal categories is 25% and the probability that it will fall into the wettest of the five categories is around 15% (the 1981-2010 probability for each of the categories is 20%).

### River flows:

River flows in March generally dropped from the exceptionally high levels seen in February and though reduced, flows still remained above normal to exceptionally high across much of the UK. Flows in East Anglia and most of Scotland were generally within the normal range for March, and a few catchments in north-eastern Scotland and Northern Ireland were below normal.

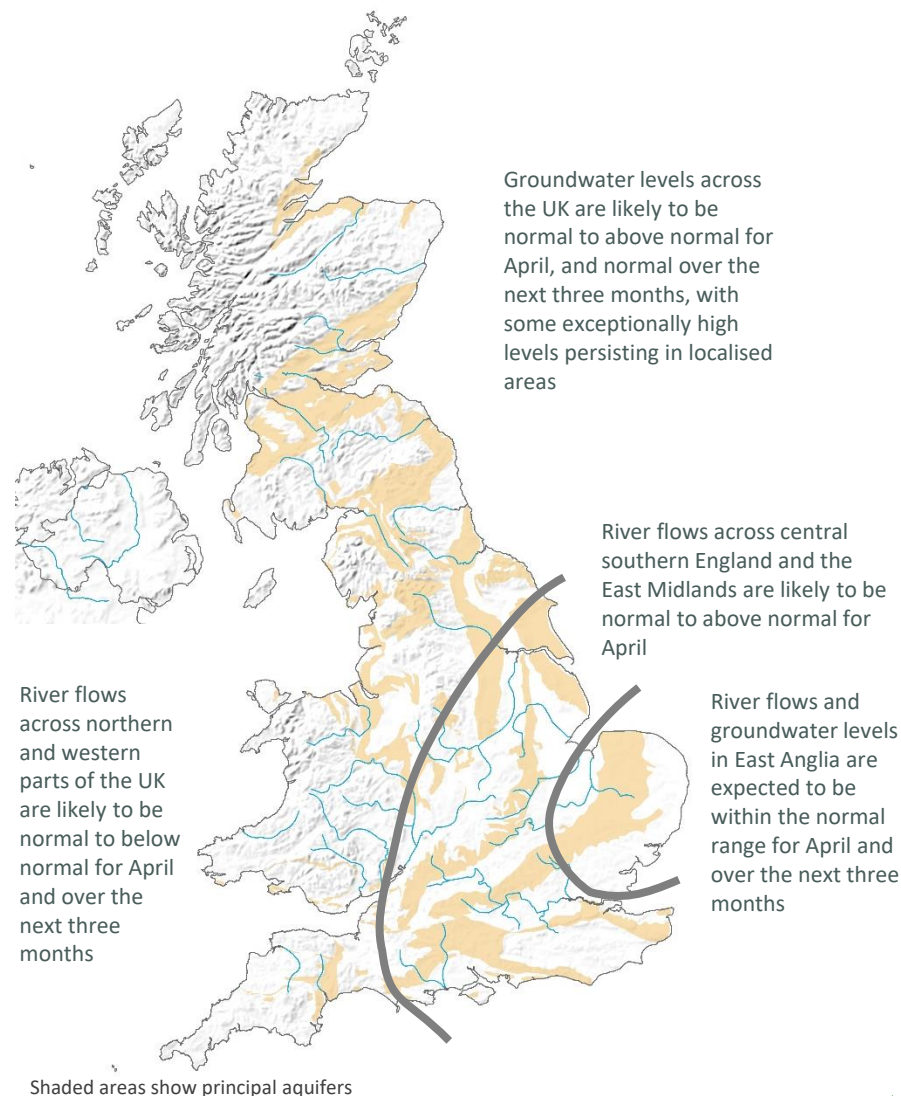
Following the dry weather in February, that is likely to continue over the next three months, the outlook is for flows to continue to drop across the northern and western parts of the UK. Flows in this region are therefore likely to be normal to below normal over for April and over the next three months to June. River flows across central southern England and the East Midlands are likely to remain normal to above normal for April, but river flows in this area, as well as East Anglia, are likely to be within the normal range for April-May-June as a whole.

### Groundwater:

As with river flows, groundwater levels dropped in many boreholes across the UK in March. However several aquifers still recorded exceptionally high and record breaking high levels, in particular in the Permo-Triassic sandstones of central and northern England, and the Chalk aquifers of southern England. Groundwater levels in East Anglia were normal to below normal.

The outlook is for groundwater levels across the UK to continue recessing in most areas, to be normal to above normal for April, though levels in East Anglia are most likely to be within their normal range. Over the three month period April-June, levels are generally expected to return to being within their normal range across the UK, however some localised aquifers are expected to remain exceptionally high, particularly 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)



# 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, April, 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/>