

Hydrological Outlook UK

Period: From April 2019

Issued on 08.04.2019 using data to the end of March 2019

SUMMARY

River flows and groundwater levels are likely to be in the normal range across most of the UK during April and for the period to June. The exception to this is an area of central, southern and eastern England where below normal river flows and groundwater levels are likely for the same period.

Rainfall:

March rainfall was above average across most of the UK, and very much above average in Wales, northwest England, Northern Ireland and southern Scotland. It was notable that the rain fell in the first half of March, with the second half of the month being largely dry.

The rainfall outlook for April, and April-May-June as a whole (released by the Met Office on 21st March 2019), is that below-average precipitation is slightly more likely than above-average precipitation. The probability that UK-average precipitation for April-May-June will fall into the driest of our five categories is between 20% and 25% and the probability that it will fall into the wettest of our five categories is between 15% and 20% (the 1981-2010 probability for each of these categories is 20%).

River flows:

There were notably and exceptionally high flows during March in those areas noted above as having very much above rainfall. In contrast, river flows in parts of central, southern and eastern England, were below normal. In the remainder of the UK flows were within the normal range.

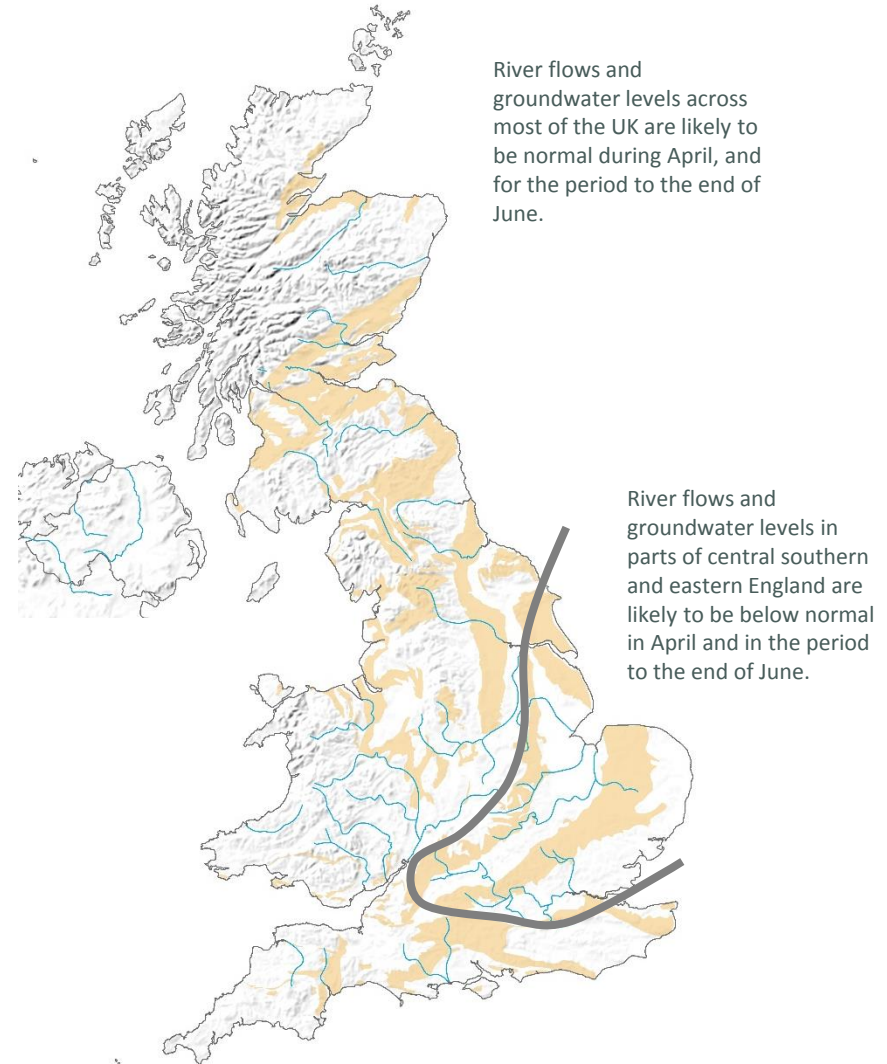
Given that the high flows seen in March were caused by rainfall early in the month, and a forecast indicating that rainfall is more likely to be below normal than above normal, it is likely that flows will be in the normal range for most of the UK for April and the period to June.

The exception to this is an area of central, southern and eastern England where the low flows observed during March are likely to persist during April and beyond.

Groundwater:

Groundwater levels were below normal during March in an area corresponding to where low river flows were observed as described above. Outside this area, groundwater levels were generally normal although with considerable local variability.

Groundwater levels across much of the Chalk aquifer are expected to be below normal over one and three months, apart from the South Downs and Wessex where normal levels are likely over the next month, with localised lower levels during the next three months. Elsewhere levels are expected to be mainly within the normal range, and be normal to above normal in the north.



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

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.

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Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2019, April, 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