

Hydrological Outlook UK

Period: From March 2021

Issued on 09.03.2021 using data to the end of February 2021

SUMMARY

The outlook for March is for normal to above normal river flows in south-east England, with flows within the normal range the most likely scenario in northern and western areas. Groundwater levels in March are likely to be normal to exceptionally high across the UK. The three-month outlook is very similar to the one-month outlook for both river flows and groundwater levels.

Rainfall:

Rainfall in February was above average across central and southern Scotland, northern England, south Wales and eastern Northern Ireland. Below average rainfall was generally limited to parts of south-east England and particularly the far north of Scotland.

The rainfall outlook for March (issued by the Met Office on 22.02.2021) is that the chance of below-average precipitation is higher than normal. For March-April-May as a whole, below-average precipitation is slightly more likely than above-average precipitation. The probability that UK-average precipitation for March-April-May will fall into the driest of five categories is around 25% and the probability that it will fall into the wettest of five categories is around 15% (the 1981-2010 probability for each of these categories is 20%).

River flows:

February river flows were above normal or higher across the majority of England and Wales, notably or exceptionally so in south Wales and eastern England, and establishing new monthly flow maxima in some catchments draining into the North Sea.*

River flows in March are likely to be normal to above normal in south-east England, with above normal flows particularly likely in less responsive, often groundwater-influenced catchments. Further north and west, flows within the normal range are most likely. Over the three-month timeframe, the outlook is almost identical to that for March, once again with above normal flows more likely in slowly responding catchments of the south-east.

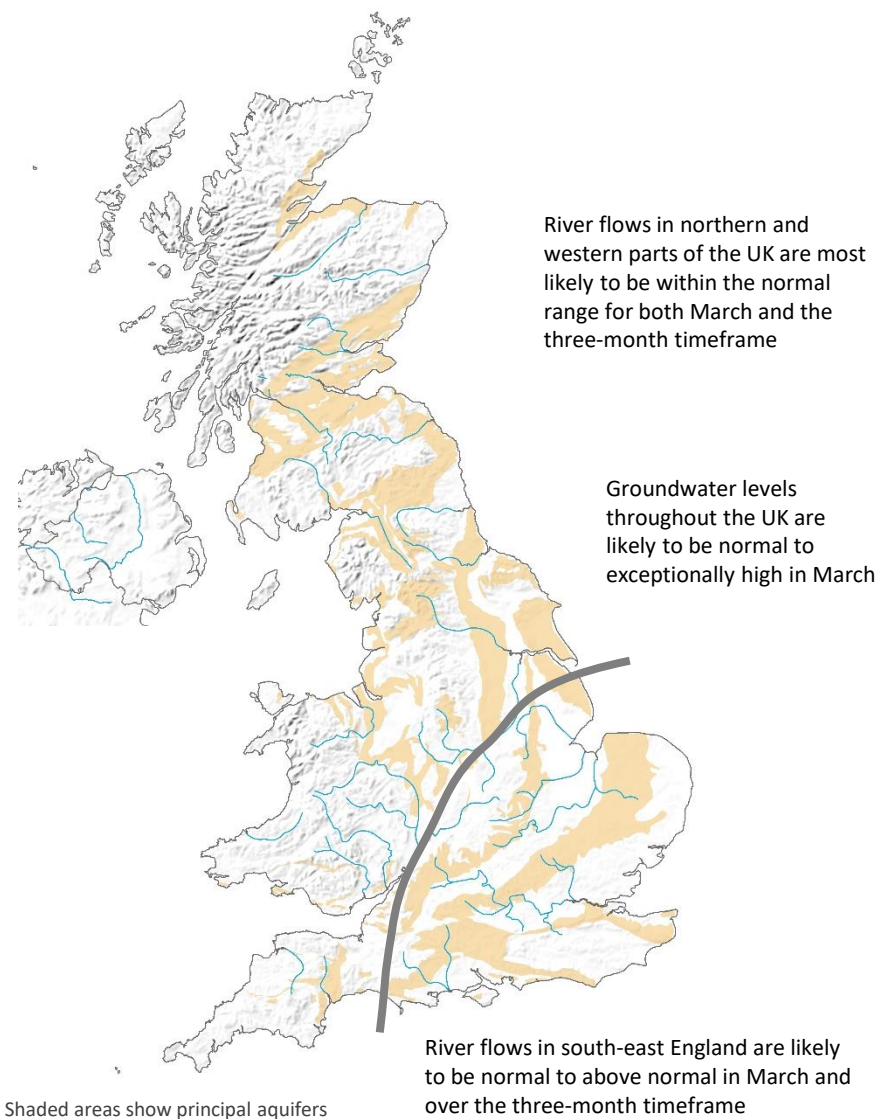
Groundwater:

Groundwater levels in February were above normal or notably high throughout the Chalk of southern England, and exceptionally high in aquifers of central and eastern England, where some boreholes established new February maximum levels.*

In most boreholes across England and Wales, March groundwater levels are likely to continue to span all categories from the normal range to exceptionally high. There is a strong likelihood of exceptionally high levels in some boreholes (particularly those around the Scottish borders) even under the driest rainfall scenarios. The outlook for the three-month timeframe is similar to that for March, although perhaps with more of a tendency towards levels within the normal range.

* Note: Due to unforeseen circumstances 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



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

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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, 2021, March, 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://nfa.ceh.ac.uk/monthly-hydrological-summary-uk>

UK Met Office forecasts for the UK: 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/>