Hydrological Outlook UK

Period: From February 2020

Issued on 10.02.2020 using data to the end of January 2020

SUMMARY

River flows and groundwater levels are likely to be normal to above normal during February, and in the three months to April, throughout the UK.

Following heavy rain associated with storm Ciara, many flood warnings and alerts are in place across the UK. Up to date flood information is available from the sites listed overleaf.

Rainfall:

In January the spatially averaged rainfall for the UK was close to normal, but as usual there were considerable regional variations, notably in north-east Scotland and Northern Ireland where rainfall was below average.

The rainfall forecast issued by the Met Office on 24.01.2020, is that for February, the likelihoods of above-and below-average precipitation are similar. For February-March-April as a whole, below-average precipitation is slightly more likely than above-average precipitation.

The probability that UK-average precipitation for February-March-April 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 between 15% and 20% (the 1981-2010 probability for each of these categories is 20%).

However, heavy rainfall associated with storm Ciara on the 8th and 9th February means that many parts of the UK, and especially northern England, have already had, or will have, above average rainfall for the month as a whole.

River flows:

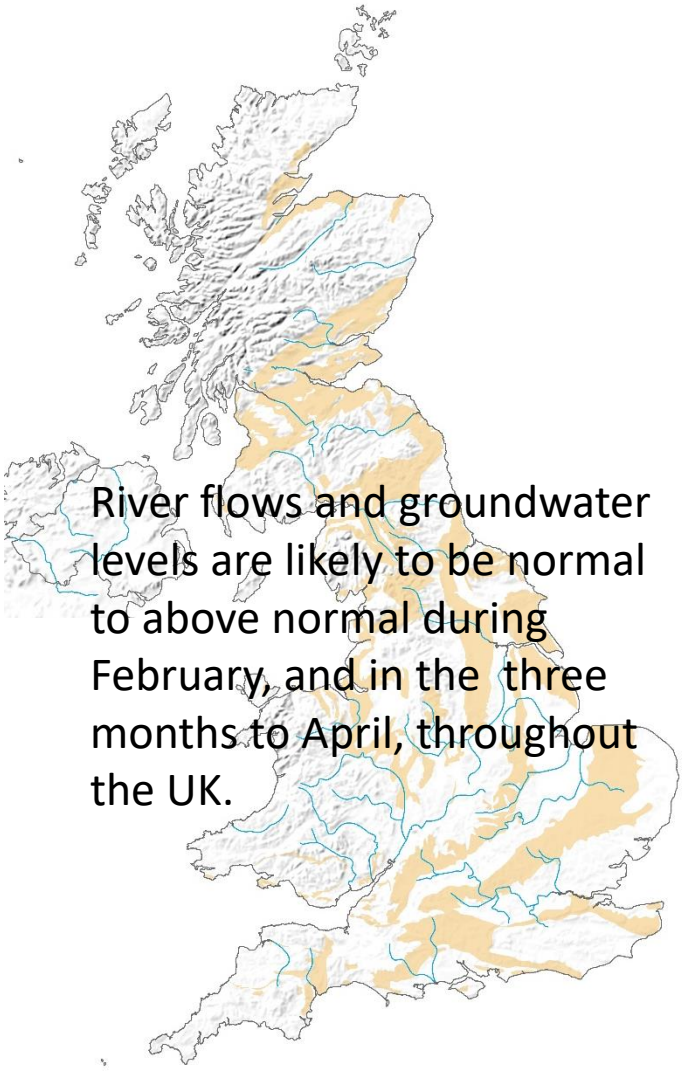
River flows were normal in most parts of the UK during January. The exceptions were north-east Scotland and Northern Ireland where flows were below average, and western Scotland and the chalk-fed streams of south and east England where flows were above average.

During February, and for the period to April, river flows are most likely to be normal to above normal throughout the UK. The possible exceptions are Northern Ireland and north-east Scotland where flows may remain in the normal to below normal range.

Groundwater:

Groundwater levels were generally normal to above normal during January, with some exceptionally high levels. However, in the Chalk aquifer to the north of London groundwater levels remained bellow normal.

Groundwater levels are expected to be normal to above normal across most of the UK over both the one and three month forecasts. Notably high and exceptionally high levels are forecast for the sandstone aquifers of northern England and southern Scotland. Notably high levels are also forecast across the Chalk of Wessex and the south coast of England in the next month, but trend towards more normal levels in the three month forecast.



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

UK Centre for Ecology & Hydrology | British Geological Survey, Natural Environment Research Council | Department for Infrastructure, An Roinn Bonneagair, www.infrastructure-ni.gov.uk | Environment Agency | Met Office | Cyfoeth Naturiol Cymru Natural Resources Wales | SEPA Scottish Environment Protection Agency

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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:

Hydrological Outlooks UK, UK Centre for Ecology & Hydrology, Wallingford, Oxfordshire, OX10 8BB
t: 01491 692371 e: enquiries@hydoutuk.net

Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2020, February, 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
Natural Resources Wales: https://naturalresources.wales/flooding/check-flood-warnings/
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

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/

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