Hydrological Outlook UK

Period: From March 2019

Issued on 08.03.2019 using data to the end of February 2019

SUMMARY

Below normal river flows and groundwater levels in parts of central and eastern England are likely to persist through the spring (March – May). For the rest of the UK, March river flows are likely to be in the normal range, except in northeastern Britain where flows are likely to be normal to below normal, and the three month outlook is similar. Groundwater levels across the majority of the UK are likely to be normal to below normal through the spring (March – May).

Rainfall:

The February rainfall was below average for much of the UK, and it was particularly dry in northeast England, eastern Scotland and parts of East Anglia where many areas saw <70% of the typical February rainfall.

For March and March-April-May as a whole, the chances of above- and below-average precipitation are similar. The probability that UK-average precipitation for March-April-May will fall into the driest of five equal categories is 20%, and the probability that it will fall into the wettest is between 20 and 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

February river flows were below normal across a large area of central and eastern England, and some notably and exceptionally low flows were registered in north-east Britain. Elsewhere, flows were largely in the normal range.

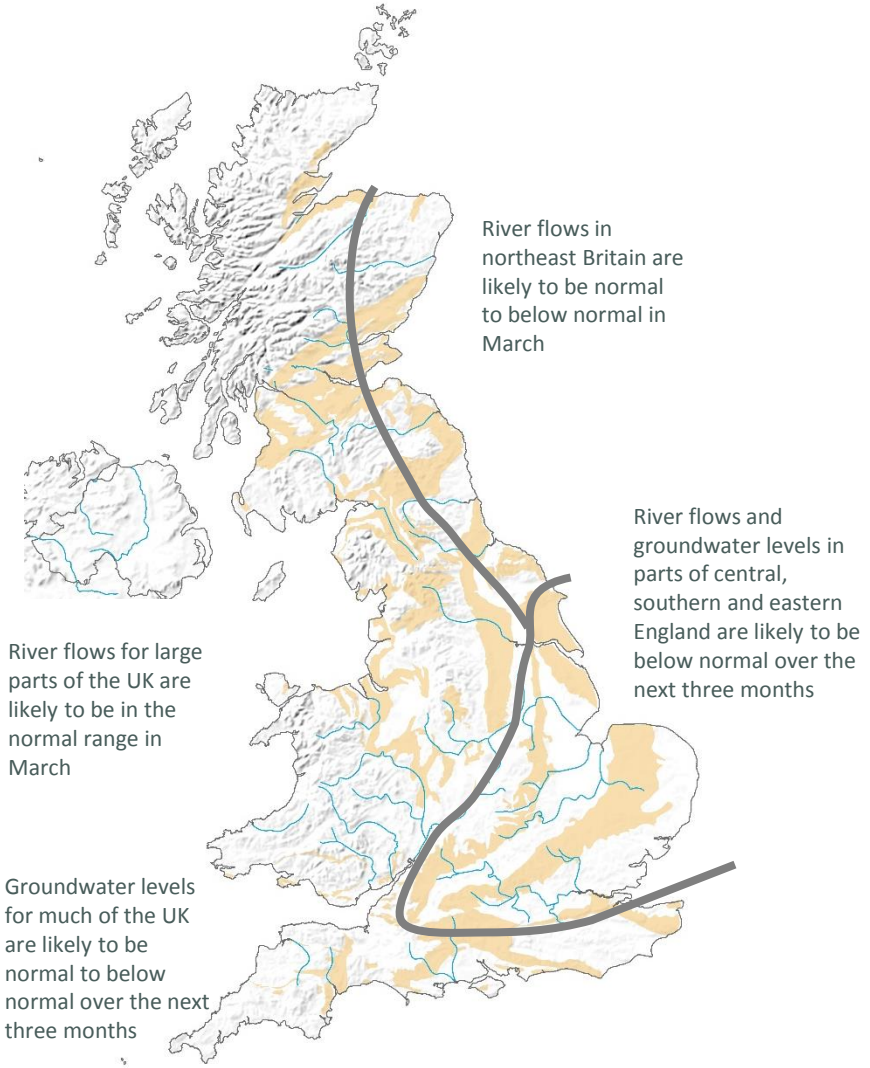
Below normal river flows are likely to persist in parts of central and eastern England through March and for the March-May period as a whole. There is some confidence in this projection given current deficits in this area and agreement between different forecasting methods. For north-east Britain, March flows are likely to be in the normal range or below. Elsewhere, the most likely outcome is for March flows to be in the normal range (although March started wet in some areas and short-term forecasts suggest unsettled conditions for mid-March). The three-month outlook is similar to the one-month outlook but there is high uncertainty, particularly at this time of year.

Groundwater:

Groundwater levels for February were below normal across much of the UK, although normal levels predominated across the south coast. Notably low levels were recorded in some boreholes in the eastern Chalk and the Chilterns.

The current below normal Groundwater levels in the eastern and southern Chalk are likely to persist through the March-May period, while along the south coast levels are likely to be in the normal range. In other aquifers, groundwater levels are likely to be normal to below normal over the next three months, although this is more uncertain. With the typical recharge season drawing to a close, continuation of below-normal levels through the spring could increase the risk of water resource pressures in summer, although spring rainfall can significantly alter the long-term outlook (as occurred in 2018).

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



Shaded areas show principal aquifers

British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL

Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

Met Office

NERC SCIENCE OF THE ENVIRONMENT

Cyfoeth Naturiol Cymru Natural Resources Wales

Department for Infrastructure An Roinn Bonneagair

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 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, 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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From April 2018 the Hydrological Outlook is supported by the Natural Environment Research Council funded UK-SCAPE and Hydro-JULES Programmes.

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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
Centre for Ecology & Hydrology
Wallingford
Oxfordshire
OX10 8BB

t: 01491 692371
e: enquiries@hydoutuk.net

Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2019, March, 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

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