Hydrological Outlook UK

Period: From March 2017

Issued on 10.03.2017 using data to the end of February 2017

SUMMARY

The one month outlook indicates flows are likely to be in the normal range for much of the country, but with normal to above normal flows in parts of northern Britain which received higher rainfall in February (the wet start to March increases the likelihood of flows being above normal) and normal to below normal flows in south-east England. The outlook is for normal to below normal flows and groundwater levels to persist in south-east England over the next three months, with below normal flows and levels most likely across the Chalk aquifer. Elsewhere, flows and levels are most likely to be in the normal range over the next three months.

Rainfall:

Rainfall in February was moderately above average for the UK as a whole. It was drier than average in south-west England, parts of central England and the far north of Scotland, but significantly wetter than average in north Wales and parts of northern England and Scotland.

The rainfall outlook for March (issued by the Met Office on 23rd February) indicates that above- and below-average precipitation are almost equally probable. For March-April-May as a whole, above-average precipitation is slightly more probable than below-average. The probability that UK-average precipitation for March-April-May will fall into the driest of five equal categories is 15% and the probability that it will fall into the wettest of five equal categories is between 20% and 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows in February were in the normal range across much of the country, with below normal flows in some catchments in south-east England and the far north of Scotland, and above normal flows elsewhere in Scotland, mainly the south-west.

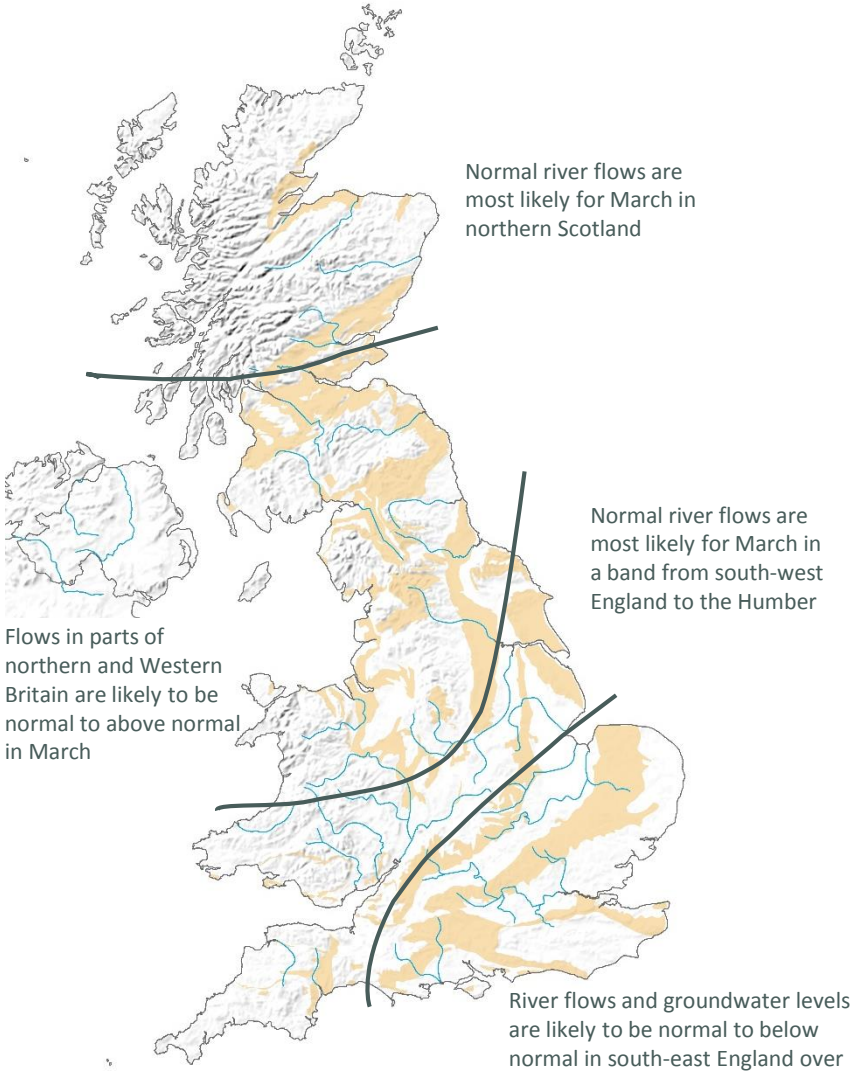
The one month outlook favours a continuation of normal flows in many areas, but with normal to above normal flows in parts of northern and western Britain, and normal to below normal flows in south-east England – with below normal flows more likely in groundwater-dominated catchments across the Chalk aquifer. In the south-east, this situation is likely to continue for the next three months. Elsewhere, normal flows are most likely over the next three months.

Groundwater:

While February saw some delayed recharge, groundwater levels across the southern and eastern Chalk remained below normal for February. Levels in other aquifers were more mixed, although mostly normal or below normal.

The outlook suggests that groundwater levels across the Chalk aquifer are likely to remain normal to below normal for the next one to three months. The signal for below normal levels is stronger for the three month period than for March; while the climate forecast slightly favours wetter conditions, there is a significant shift towards warmth, meaning higher evapotranspiration. In other aquifers a mixed picture emerges: normal levels predominate but below normal levels are likely to persist in some areas, and above normal levels are likely in some northern 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



Shaded areas show principal aquifers

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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 the Northern Ireland Rivers Agency (RA).

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 RA. 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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The Hydrological Outlook partnership aims to ensure that all Content provided is accurate and consistent with its current scientific understanding. However, the science which underlies hydrological and hydrogeological forecasts and climate projections is constantly evolving. Therefore any element of the Content which involves a forecast or a prediction should not be relied upon as though it were a statement of fact. To the fullest extent permitted by applicable law, the Hydrological Outlook Partnership excludes all warranties or representations (express or implied) in respect of the Content.

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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, 2016, July, 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:
http://www.ceh.ac.uk/data/nrfa/nhmp/monthly_hs.html

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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