

Hydrological Outlook UK

Period: From March 2018

Issued on 09.03.2018 using data to the end of February 2018

SUMMARY

The outlook for March and for the spring as a whole indicates that river flows and groundwater levels across the majority of the UK are likely to be within the normal range. Below normal flows and groundwater levels are more likely in some parts of south-east England over this period. Current outlooks suggest this is relatively localised, but spring rainfall will be influential in determining the extent of below normal flows and groundwater levels going into the summer.

Rainfall:

February was notably dry for much of the UK, with particularly low rainfall in parts of Scotland and central and southern Britain. There was significant snowfall across much of the country in the final week, which continued into early March.

The Met Office 3-month Outlook issued on 22nd February indicated that for March, below-average precipitation is more likely than above-average precipitation. For March-April-May as a whole, above-average precipitation is slightly more likely than below-average precipitation. The probability that UK-average precipitation for March-April-May will fall into the driest of five equal categories is between 15-20% and the probability that it will fall into the wettest of these categories is between 25% and 30% (the 1981-2010 probability for each of these categories is 20%).

River flows:

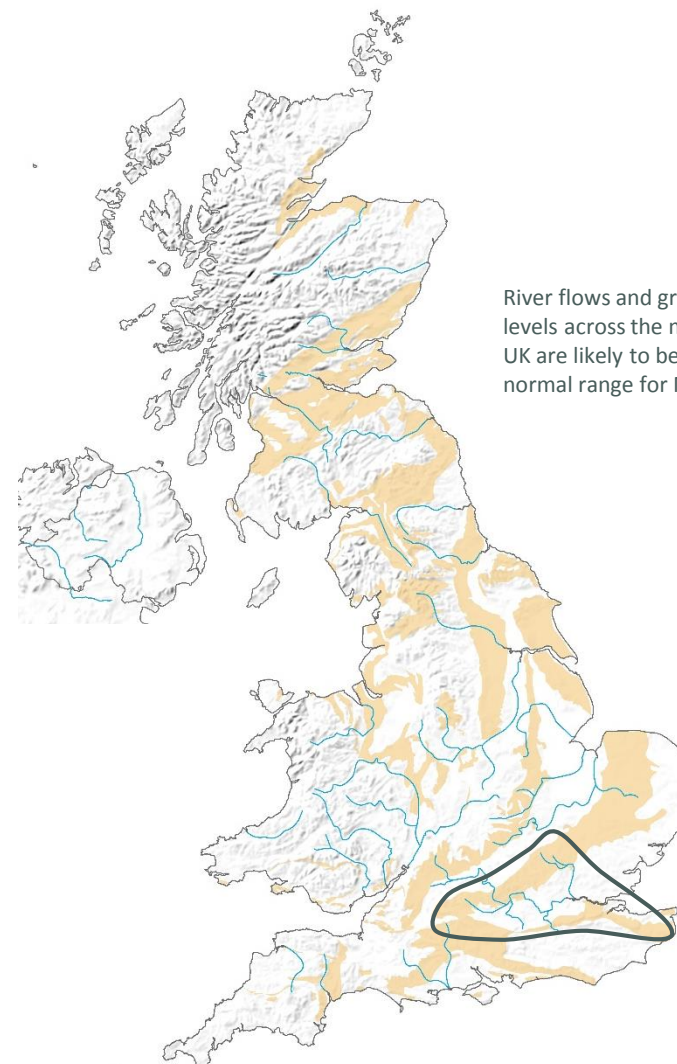
River flows for February were predominantly in the normal range across much of the UK, with below normal flows in parts of central England and northern Scotland.

For the majority of the UK, river flows in March are likely to be in the normal range. The three-month outlook also indicates that normal flows are the most likely outcome for spring as a whole for much of the country, although there is less confidence in the forecasts. In some areas of south-east England, below normal flows are most likely in March and these are likely to persist over the next three months, particularly in groundwater dominated catchments. The one-month outlook also suggests below normal flows may persist in northern Scotland, although following recent major snowfall this outcome will be influenced by the timing of snowmelt.

Groundwater:

Groundwater levels in a majority of Chalk boreholes were in the normal range in February. Below normal levels continued in some boreholes in the Chilterns and eastern England. In other aquifers, levels were mostly normal or below normal, although above normal levels continued in some northern boreholes.

Groundwater levels are likely to be in the normal range or below normal in most areas in March, with below normal levels likely to persist in parts of the Chalk in south-east England. This is likely to continue over the next three months, and there is some indication that below normal levels will become more widespread, but there is significant uncertainty in this forecast. Above normal levels are likely in some aquifers in northern England and southern Scotland over the next three months.



River flows and groundwater levels across the majority of the UK are likely to be within the normal range for March

Groundwater levels, and flows in groundwater-dominated rivers, are likely to be below normal over the next three months in parts of south-east England.

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.hyoutuk.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 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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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, 2017, December, 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