

# Hydrological Outlook UK

Period: From January 2019

Issued on 08.01.2019 using data to the end of December 2018

## SUMMARY

The one-month outlook is for below normal river flows in parts of south-east England, normal to below normal flows in north-east Scotland, and elsewhere flows are most likely to be in the normal range. The outlook is similar for the January-March period, though with normal to below normal flows in south-east England. For groundwater levels in the Chalk of the Chilterns, the outlook over both one- and three-month timeframes is for below normal levels. Elsewhere, over both one- and three-months, the outlook is for groundwater levels within the normal range.

### Rainfall:

Rainfall in December was above average for Wales and most of England, substantially so in eastern England and coastal parts of Wales and southern England. Further north, below average rainfall was registered across Scotland and for the far north of England. Rainfall in Northern Ireland was near average.

For January and January-February-March as a whole, below-average precipitation is more probable than above-average precipitation (based on the rainfall outlook issued on 14th December). The probability that UK-average precipitation for January-February-March will fall into the driest of five equal categories is between 20% and 25% and the probability that it will fall into the wettest of five equal categories is around 15% (the 1981-2010 probability for each of these categories is 20%).

### River flows:

Average river flows for December were within the normal range across most of the UK. Flows were notably high in south-west England but below normal across the far north of Scotland, the eastern Scottish Borders, and parts of central and eastern England.

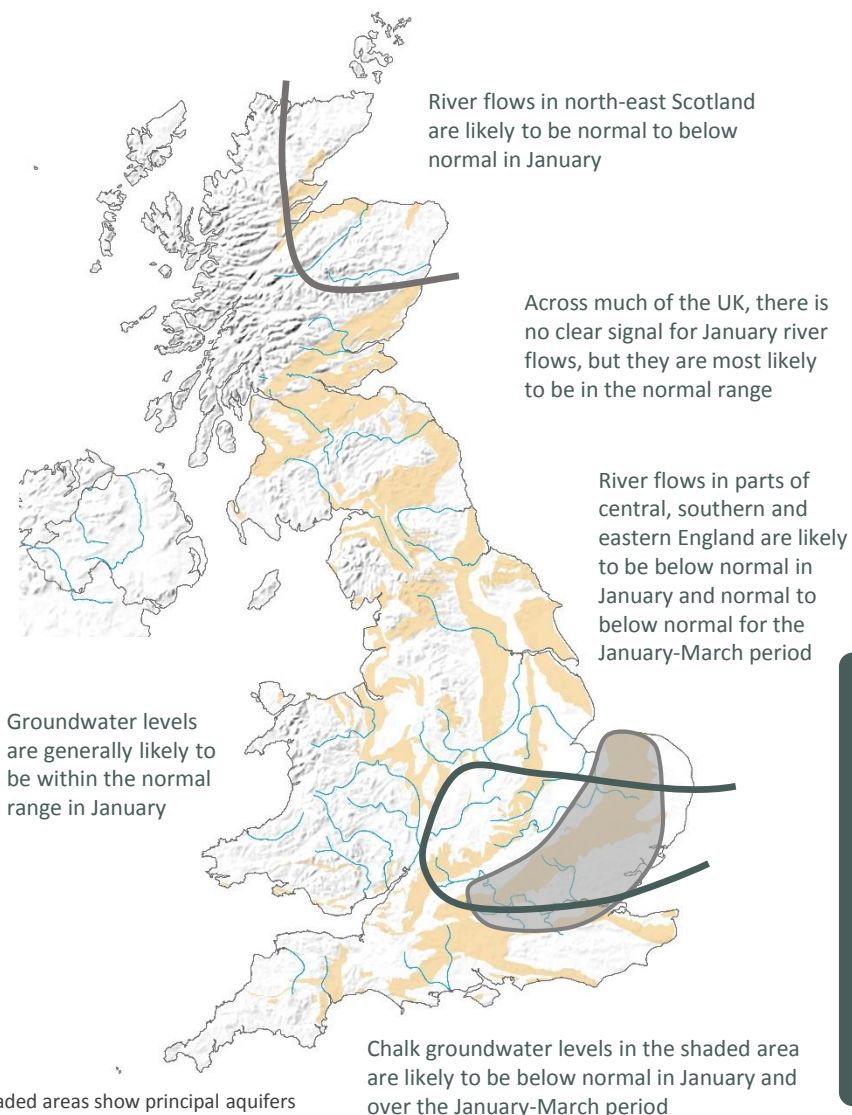
River flows in January are likely to be below normal in most of East Anglia and parts of central and southern England, and normal to below normal in north-east Scotland. Elsewhere, there is no clear signal, with flows in the normal range the most likely scenario. It is possible that flows in the rest of England will be normal to above normal, but minimal rainfall over late December and early January has reduced the likelihood of this eventuality. The three-month outlook is for normal to below normal flows in parts of south-east England, with flows in the normal range the most likely outcome elsewhere.

### Groundwater:

End of December groundwater levels were predominantly normal to below normal across the major aquifers of England, particularly in parts of the southern and eastern Chalk. Above normal levels were recorded in parts of south-west England and south Wales, and notably below normal levels were registered in Northern Ireland and north Wales.

For January, the outlook is predominantly for groundwater levels within the normal range, though levels are likely to be below normal and in some instances notably low in the Chalk of the Chilterns and parts of the North Downs (south of London). Localised instances of high groundwater levels are likely in south Wales, south-west Scotland and parts of south-west England. The three-month outlook is similar, with below normal levels expected in the Chilterns regardless of the amount of rainfall received. However, there is an increased likelihood of above normal groundwater levels in the Chalk of the South Downs.

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](http://www.hydoutuk.net)



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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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## 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, 2019, January, 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](http://www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast)