

# Hydrological Outlook UK

Period: From October 2019

Issued on 08.10.2019 using data to the end of September 2019

## SUMMARY

The outlook for October is for normal to below normal river flows in parts of East Anglia and southern central England, with normal to above normal flows elsewhere. A similar pattern is expected to persist for the period to December. Groundwater levels are expected to be below normal in southern and eastern parts of England, and normal elsewhere. Over the period to December it is likely that many groundwater levels will return to normal, with below normal levels persisting in the Chilterns and the Chalk to the north of London.

### Rainfall:

September rainfall totals were generally above average across England and Wales, with the exception of parts of south-east England where rainfall was below normal. In Northern Ireland and southern Scotland rainfall was slightly above normal, but further north and west rainfall was below normal.

The rainfall outlook for October (issued by the Met Office on 26<sup>th</sup> September) is that above average precipitation is slightly more likely than below average precipitation. For October-November-December as a whole, above average precipitation is more likely than below average precipitation. The probability that UK average precipitation for October-November-December will fall into the driest of five categories is around 20% and the probability that it will fall into the wettest of five categories is between 25% and 30% (the 1981-2010 probability for each of these categories is 20%).

### River flows:

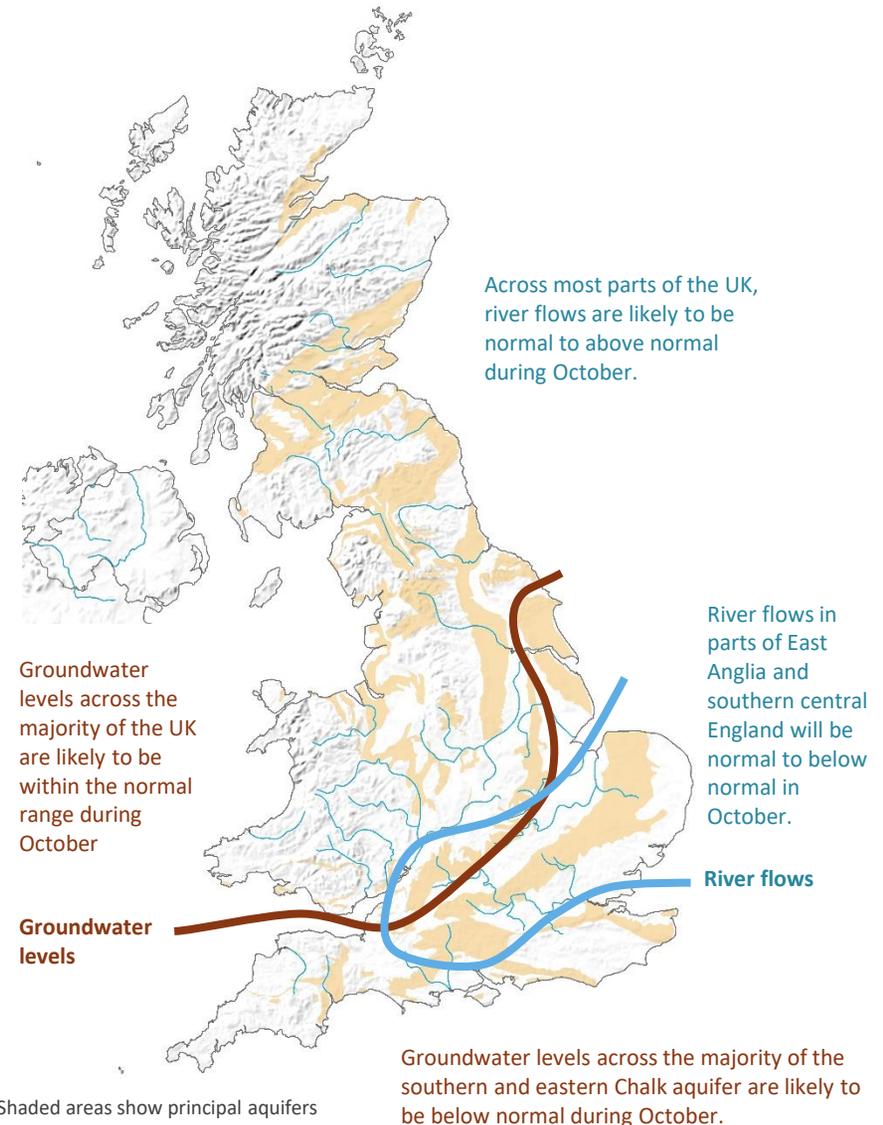
River flows in September were generally above average across the majority of the UK, with some notably high flows in Wales and northern England. Along the south coast of England and in northern Scotland flows were closer to normal, and areas of below normal flows persisted in East Anglia and southern central England.

During October river flows in most parts of the UK will be normal to above normal, with above normal flows most likely to occur in parts of central England. In contrast river flows in East Anglia and parts of southern central England are most likely to be normal to below normal. The same pattern of river flows is likely to persist during the October-December period.

### Groundwater:

Groundwater levels were below normal across the majority of the southern and eastern Chalk aquifer, notably so through the Chilterns into East Anglia. Elsewhere, levels were generally in the normal range, with localised exceptions.

Groundwater levels are expected to be below normal to notably low throughout most of the south-eastern Chalk over one month, but becoming more normal in the three month outlook, particularly along the south coast. In the north-west, levels are likely to be normal to above normal over one month, increasing to notably high levels at a number of sites in the three month forecast. Sites in central England and Wales show predominantly normal levels in both the one and three month forecasts.



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](http://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 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 and GR4J hydrological models. 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

## Disclaimer and liability:

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.

Your use of the Content is entirely at your own risk. We make no warranty, representation or guarantee that the Content is error free or fit for your intended use.

From April 2018 the CEH contribution to the Hydrological Outlook has been supported by the Natural Environment Research Council funded programmes [UK-SCAPE](#) (award number NE/R016429/1) and [Hydro-JULES](#).

## Copyright:

Some of the features displayed on the maps contained in this report are based on the following data with permission of the controller of HMSO.

- (i) Ordnance Survey data. © Crown copyright and/or database right 2005. Licence no. 100017897.
- (ii) Land and Property Services data. © Crown copyright and database right, S&LA 145.
- (iii) Met Office rainfall data. © Crown copyright.

All rights reserved. Unauthorised reproduction infringes crown copyright and may lead to prosecution or civil proceedings.

## 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](mailto:enquiries@hydoutuk.net)

## Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2019, October, 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)