

Hydrological Outlook UK

Period: From November 2019

Issued on 11.11.2019 using data to the end of October 2019

SUMMARY

For river flows, the outlooks for November and over the next three months are for normal to above normal flows across the majority of the UK, with above normal flows most likely in central and parts of north-east England. In November, groundwater levels are likely to be below normal across the Chalk aquifer of the Chilterns and East Anglia. Elsewhere, and over the next three months, the outlook for groundwater levels is less clear owing to the impact of recent wet weather on the onset of recharge.

Rainfall:

Rainfall in October was above average across almost all of England and Wales, notably so in Yorkshire, Lincolnshire and the East Midlands. In contrast, rainfall was below average for much of Scotland and Northern Ireland.

The rainfall outlook for November (issued by the Met Office on 24th October) is that the chances of above-average and below-average precipitation are similar. For November-December-January as a whole, above-average precipitation is more likely than below-average precipitation. The probability that UK-average precipitation for November-December-January will fall into the driest of five categories is between 10% and 15% and the probability that it will fall into the wettest of five categories is between 35% and 40% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows in October were above normal or higher across most of England and Wales, notably so in south Wales and south-west England. Flows were exceptionally high across the Midlands and Yorkshire, establishing new records for October mean flows across a wide area. River flows were generally within the normal range in Scotland and Northern Ireland.

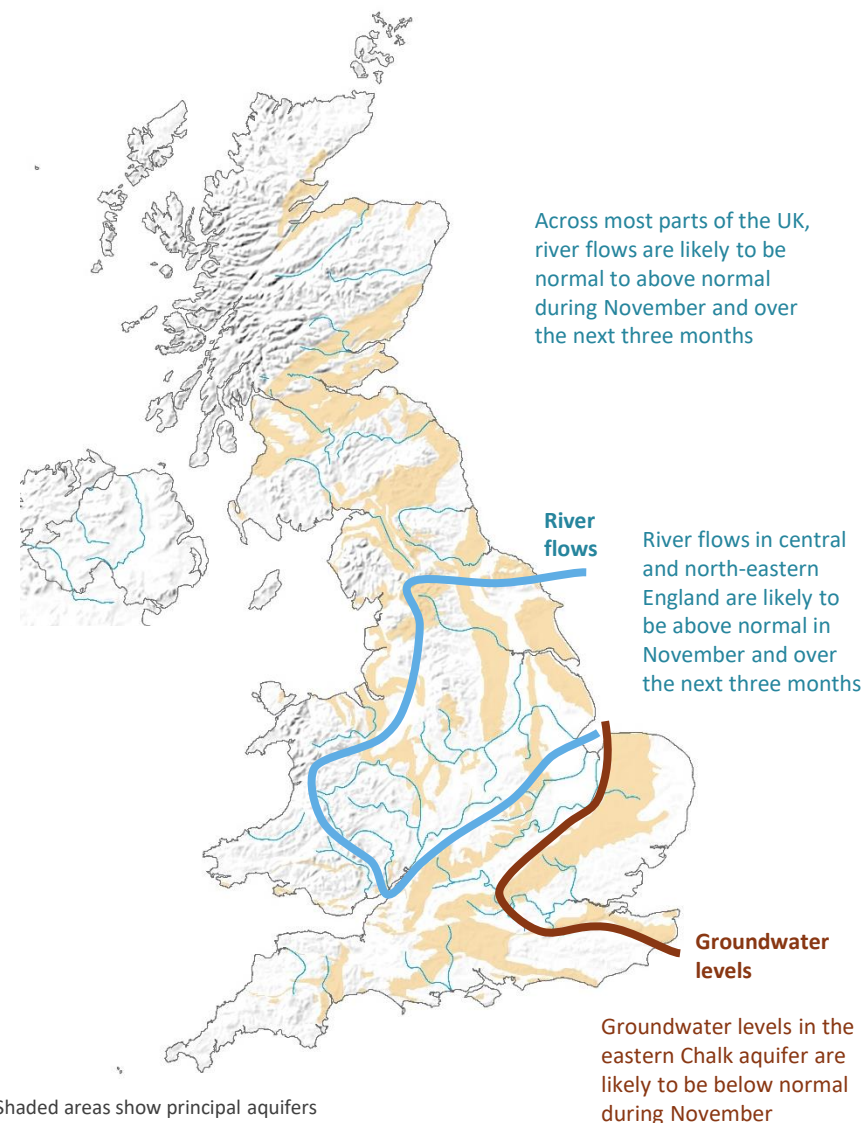
The outlook for November is for above normal river flows throughout the Severn and Trent basins as well as in Yorkshire and Lincolnshire. Elsewhere, river flows are likely to be normal to above normal, although below normal flows might persist in streams draining the Chalk of the Chilterns. The outlook for river flows over the next three months is very similar.

Groundwater:

Groundwater levels in October were below normal in the North Downs and notably or exceptionally low in the Chalk of the Chilterns and East Anglia. In contrast, in other parts of the southern Chalk, levels were above normal or higher. In the limestone and sandstone aquifers, levels were generally above normal or higher, exceptionally so in the Jurassic limestones.

The outlook for November is for below normal levels in parts of the Chalk of south-east England, with notably or exceptionally low levels likely to be recorded in some aquifers. Away from this region, normal to above normal levels are most likely. The three-month outlook is less certain (even in the eastern Chalk); levels over this timeframe will be sensitive to the localised and lagged response to notably wet autumn weather and the corresponding onset of recharge.

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



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

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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, November, 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