

## SUMMARY

River flows in December are likely to be normal to above normal in northern Britain, and normal to below normal in the south. Groundwater levels are likely to be normal to above normal across the country. Over the three month period to February 2022, river flows expected to be normal to above normal in the north and normal in the south. Groundwater levels are most likely to be in the normal range over this period.

### Rainfall:

November saw below normal rainfall across most of the UK, with only the far north of Scotland receiving above normal rainfall. It was particularly dry across southern Britain.

The rainfall outlook (issued by the Met Office on 29.10.2021) suggests that the chance of dry and wet conditions for December is evenly balanced. That there is a higher than normal chance of wet conditions over the period to February.

### River flows:

River flows in November were largely below normal in Wales, southwest England and Northern Ireland and were mostly in the normal range elsewhere, with above normal flows in a few catchments in southern England (note that data are unavailable for Scotland).

The outlook for December is for normal to above normal flows for much of northern Britain, contrasting with normal to below normal flows in the south.

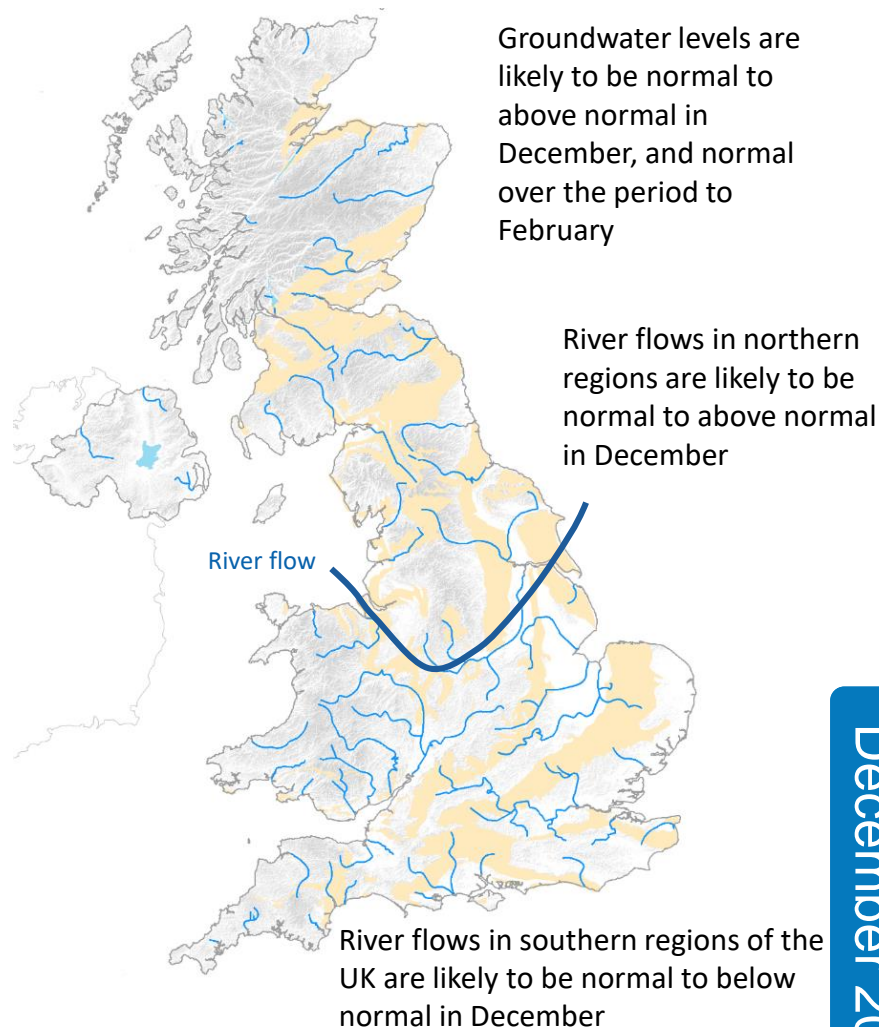
In the three months to February, a similar contrast emerges, but with river flows likely to be normal to above in the north, but normal in the south.

### Groundwater:

Groundwater levels in November were largely in the normal range in aquifers in central and eastern England, and above normal in northern England, with below normal levels in the Carboniferous limestone of south Wales.

During December, normal to above normal levels are likely across the country.

Over the three months to February, groundwater levels are expected to be in the normal range across the country, with below normal levels possible in some boreholes.



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

## 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 UK Centre for Ecology and Hydrology (UKCEH), 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 UKCEH 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: <https://www.hydoutuk.net/about/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 Hydrological Outlook is supported by the Natural Environment Research Council funded [UK-SCAPE](#) and [Hydro-JULES](#) Programmes.

## 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, 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, 2021, December, UK Centre for Ecology and Hydrology, Oxfordshire UK, Online, <https://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.

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>

Natural Resources Wales: <https://flood-warning.naturalresources.wales/>

Scottish Environment Protection Agency: <https://www.sepa.org.uk/flooding.aspx>

Hydrological Summary for the UK: provides summary of current water resources status for the UK: <https://nfa.ceh.ac.uk/monthly-hydrological-summary-uk>

UK Met Office forecasts for the UK: <https://www.metoffice.gov.uk/#?tab=regionalForecast>

UK Water Resources Portal: monitor the UK hydrological situation in near real-time including rainfall, river flow, groundwater and soil moisture from COSMOS-UK: <https://eip.ceh.ac.uk/hydrology/water-resources/>