

**SUMMARY** The outlook for December is for above normal river flows in south-east England, some of which will be exceptionally high. In eastern Scotland, river flows are likely to be normal to below normal, and elsewhere river flows are likely to be in the normal to above normal range. For groundwater levels, above normal levels are expected, with the exception of East Yorkshire, Lincolnshire, and Dumfries where normal levels are most likely. For December–February, the outlook is similar, although flows in eastern Scotland are likely to tend towards the normal range.

**Rainfall:**

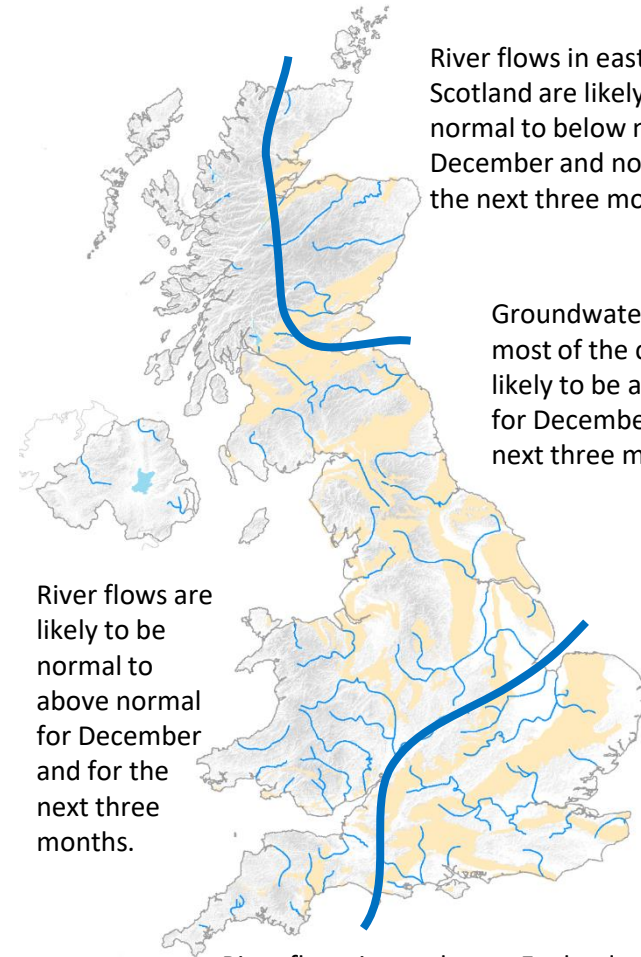
November rainfall for the UK was below average. Scotland, Wales and Northern Ireland saw below average rainfall, with some areas of eastern and southern Scotland recording less than 30% of the November average. In central and southern England, and south Wales, rainfall was average or above average. In the second half of the month, storm ‘Bert’ brought exceptional rainfall across south Wales and south-west England. The forecast (issued by the Met Office on 02.12.2024) shows for December–February, there is an increased chance of wetter and windier conditions compared to normal. These unsettled conditions are most likely in northern and western parts of the UK.

**River flows:**

River flows in November were above normal in central and southern England, notably so at many groundwater-dominated sites in this area. Elsewhere, flows in Scotland, Northern Ireland, northern England and north Wales were below normal, notably so in many cases. The outlook for December is for normal to above normal flows in most areas, with flows expected to be above normal or exceptionally high in south-east England. In eastern Scotland, river flows are likely to be normal to below normal in December. For December–February, the outlook is similar, with normal to above normal flows in most areas, although flows in eastern Scotland are likely to tend towards the normal range.

**Groundwater:**

Groundwater levels in November were generally normal or above normal across the country. Exceptionally high November groundwater levels were registered at sites in Shropshire, Cambridgeshire, the Cotswolds, and Dorset. The outlook for December is for above normal levels, for most of the UK. At some sites in the Chalk of East Yorkshire, Lincolnshire, Kent and Sussex, and the Permo-Triassic sandstone in Dumfries and South Wales, levels are expected to be normal. For the three-month outlook, levels are likely to be in the above normal range across the country, although in parts of East Yorkshire, Lincolnshire and County Durham, they are generally expected to remain normal.



River flows in eastern Scotland are likely to be normal to below normal in December and normal for the next three months.

Groundwater levels for most of the country are likely to be above normal for December and for the next three months.

River flows are likely to be normal to above normal for December and for the next three months.

River flows in south-east England are likely to be above normal to exceptionally high for December and for the next three months.

Shaded areas show principal aquifers

The UK Hydrological Outlook provides an outlook for the water situation for the United Kingdom 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.hydroutuk.net](http://www.hydroutuk.net)

## About the UK 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 & 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 UK 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 and GR6J hydrological models. Hydrogeological modelling uses the AquilMod model run by BGS. Supporting documentation is available from the Outlooks website: <https://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 UK 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 UK Hydrological Outlook Partnership excludes all warranties or representations (express or implied) in respect of the Content.

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## Further information:

For more detailed information about the UK Hydrological Outlook, and the derivation of the maps, plots and interpretation provided in this outlook, please visit the UK Hydrological Outlook 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. Dynamic access to many of the outputs of the UK Hydrological Portal are available on the [UK Hydrological Outlooks Portal](#).

## Contact:

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## Reference for the UK Hydrological Outlook:

UK Hydrological Outlook, 09 December 2024, UK Centre for Ecology & Hydrology, Oxfordshire UK, Online, <https://www.hydoutuk.net/latest-outlook/>

## Other Sources of Information:

The UK 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://nrfa.ceh.ac.uk/monthly-hydrological-summary-uk>

UK Met Office forecasts for the UK: <https://www.metoffice.gov.uk/>

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/>