

SUMMARY

The outlook for January is for above normal river flows in eastern Britain, and normal to above normal river flows in western Britain. The three-month outlook is for normal to above normal river flows for the whole of the UK. Groundwater levels are likely to be notably high to exceptionally high for January, and normal to notably high in January-March over the next three months.

Rainfall:

December 2023 rainfall was above average across the UK. Widespread areas, including central and northern England, eastern Scotland and south Wales, received more than 170% of the average rainfall.

The forecast (issued by the Met Office on 18.12.2023) shows the chances of a drier than average January are slightly higher than usual, and for the January–March period there is a moderate reduction in the chances of wet conditions. The start of January was very wet following Storm Henk, with some areas of England and Wales registering more than half of the average January rainfall in the first few days of the month.

River flows:

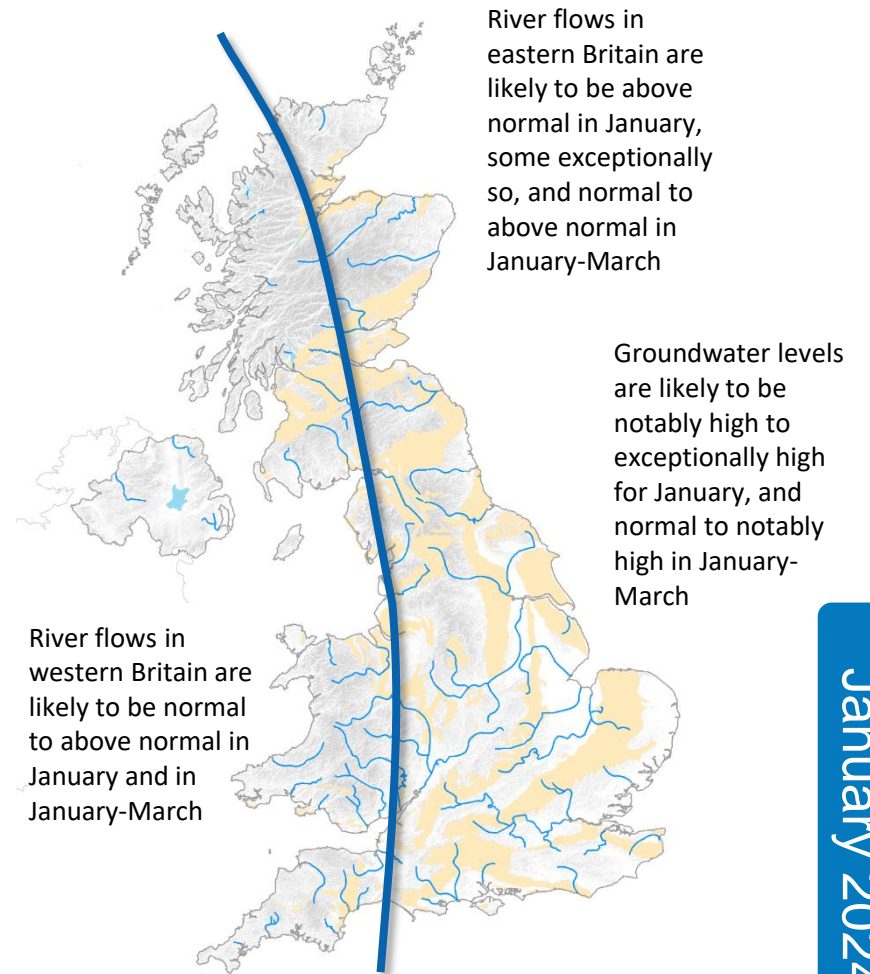
River flows in December were above normal across much of the country, apart from western Scotland where they were normal. Elsewhere, exceptionally high flows were registered across the country, with some rivers recording their highest December monthly flows on record in England and eastern Scotland.

The outlook for January is for above normal river flows in eastern Britain, and particularly in larger catchments, where we have already seen extensive flooding, some of these will be notably or exceptionally high. In western parts, flows are likely to be normal to above normal. The rainfall forecast suggests river flows will continue to recede through the remainder of January, though any intense rainfall is likely to prompt a rapid response. Over the three-month period (January to March), river flows are likely to be normal to above normal for the UK.

Groundwater:

Groundwater levels in December were mainly above normal, many exceptionally high, with record December levels recorded in some parts of the Jurassic Limestones.

The outlook for January is for notably high to exceptionally high levels across much of the UK, particularly so in the Wessex Chalk, Yorkshire Chalk, South Downs Chalk, and the Jurassic Limestones. In these areas there is potential for groundwater flooding. Over the three-month period (January to March), groundwater levels are likely to remain above normal to notably high, although more mixed, with some normal levels in southern England.



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.hydoutuk.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

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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](#).

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Reference for the UK Hydrological Outlook:

UK Hydrological Outlook, 10 January 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://nra.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/>