

SUMMARY

The outlook for January is for above normal flows for much of the UK, with the exception of East Anglia, where below normal flows are likely to persist. For the January-March period, normal to above normal river flows are expected for much of the UK. Groundwater levels for the January and the January-March period are likely to be normal to above normal in most of the UK, with above normal levels particularly in the far south of England. However, in the Lincolnshire Chalk aquifer and East Anglia normal to below normal levels are more likely.

Rainfall:

In December, above average precipitation was received in southern England, and along the north-east coast and eastern Scotland, whilst elsewhere it was drier than average, particularly so in western Scotland.

The precipitation forecast (issued by the Met Office on 19.12.2022) shows a slightly increased likelihood of a drier than average January, however precipitation for January so far has been above average for most of the UK and latest forecasts show an increasing likelihood of above average precipitation. The forecast for the January-March period, also shows an increased likelihood of wetter than normal conditions.

River flows:

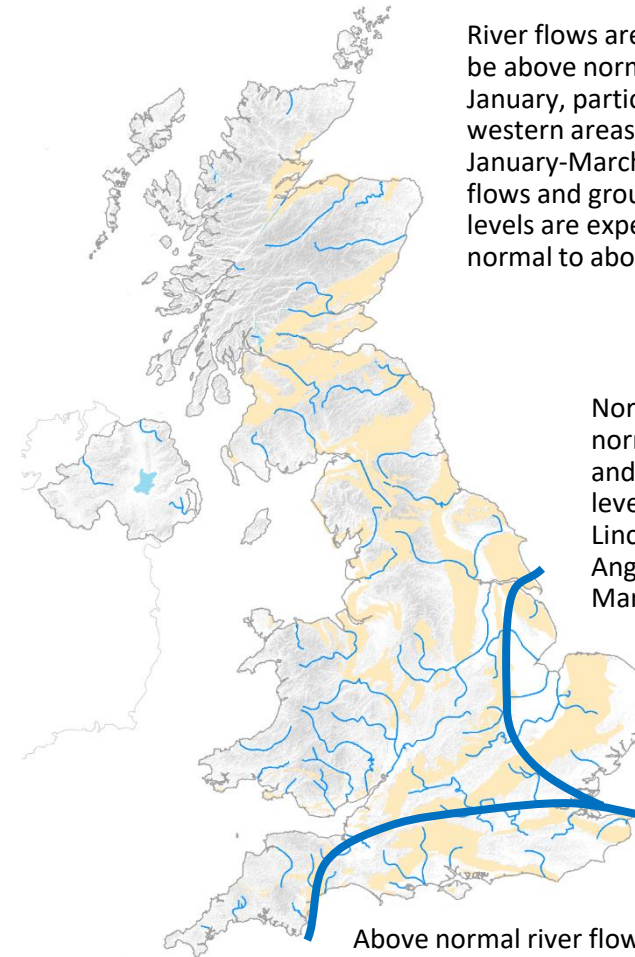
River flows in December were mainly normal for most of the UK, with the exception of East Anglia and the far north of Scotland, where they were below normal, and southern England where they were above normal.

Given the increased likelihood of wetter than normal conditions, river flows in January are likely to be above normal for many western areas of the UK. Over the three-month period, the same pattern is expected with flows in the normal to above normal range. Below normal flows are likely to persist in East Anglia.

Groundwater:

Groundwater levels in December were normal to above normal for most of the UK, particularly so in southern England where levels were notably high. There were some exceptions and levels were normal to below normal in the Chalk aquifer, and also in northern Scotland.

Over the next month and three-month period, the same general pattern is expected to persist over most of the country with most areas being in the normal to above normal range. In Lincolnshire & East Anglia however, levels are likely to be normal to below normal.



River flows are likely to be above normal for January, particularly in western areas. For January-March river flows and groundwater levels are expected to be normal to above normal.

Normal to below normal river flows and groundwater levels expected in Lincolnshire & East Anglia over Jan-March.

Above normal river flows and groundwater levels across southern England during Jan-March.

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

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 |

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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, 2023, January, 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/>