UK Hydrological Outlook

Delivered in partnership by: UK Centre for Ecology & Hydrology

Period: From January 2022 Issued on 11.01.2022 using data to the end of December 2021

SUMMARY

River flows in January, and the three month period to March, are likely to be in the normal range throughout the UK, with some possible exceptions as noted in the text below. Groundwater levels are likely to be normal to above normal during January, and this will continue to be the case in most areas over the period to the end of March, although with some fall in level in the Chalk of north London perhaps to below normal.

Rainfall:

December rainfall was generally close to the long-term average across the UK. Areas where rainfall was below normal included central southern England and western Scotland. There was above average rainfall across central parts of England and Wales, and the border area of northeast England and southeast Scotland

The rainfall outlook (issued by the Met Office on 20.12.2021) suggests that the chance of above normal rainfall in January is less than normal, and that over the period to March there is a below normal chance dry conditions.

River flows:

River flows in December were normal or below normal in southwest and southeast England. Further north river flows were normal to above normal (note that data are currently unavailable for Scotland and Wales).

The outlook for January is for flows to be in the normal range throughout the UK. Possible exceptions to this are the central southern England and northeast Scotland where there is a chance of below normal flows, and the border region of northeast England and southeast Scotland where flows may be above normal.

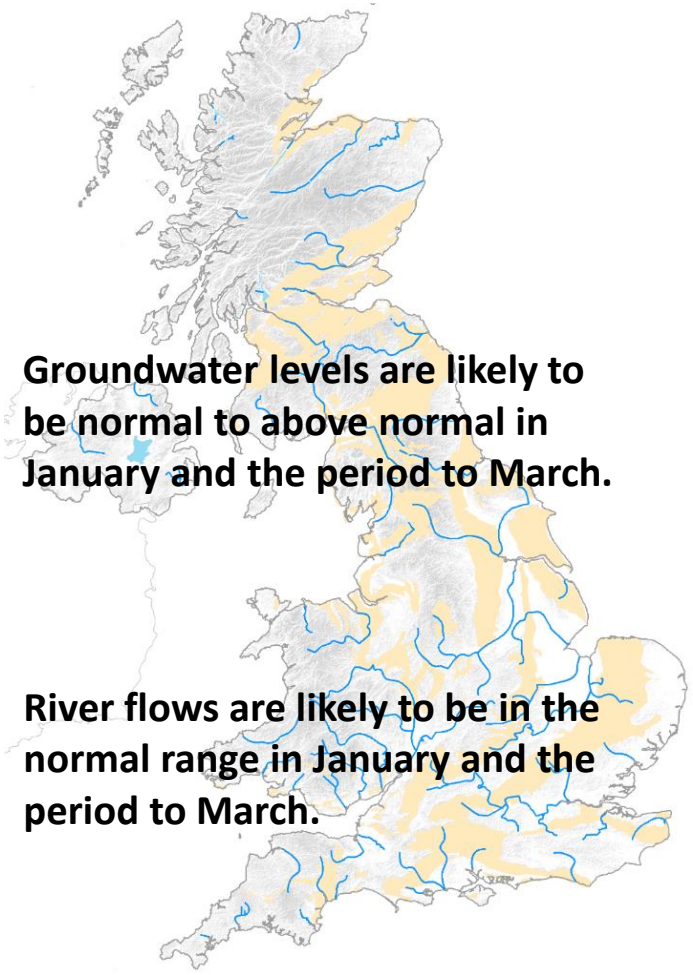
The outlook to the end of March is similar, although with an increased chance of above normal flows.

Groundwater:

Observed groundwater levels in December, were in the normal to above normal range throughout the UK, although it should be noted that fewer observations than normal are available because of Covid-19 related access restrictions and IT issues in Scotland and Wales.

Groundwater levels in January are expected to be in the normal range in the Chalk aquifers, and normal to above normal elsewhere in the UK. Levels will remain similar in the period to March, although levels in the Chalk of north London may fall below normal.

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



Shaded areas show principal aquifers

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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:

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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.

Contact:

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Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2022, 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://nrfa.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/

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