

**SUMMARY** The Outlook for March and for March-April-May as a whole is for river flows and groundwater levels to be normal to below normal across the UK. Notably low river flows and groundwater levels may persist across large parts of central and southern England. Above normal groundwater levels are likely in some parts of the Chalk and Permo-Triassic sandstones.

### Rainfall:

Rainfall for February has been extremely low, with less than 30 percent of average seen across almost the entirety of central and southern England and Wales. Below average rainfall was also seen across the rest of the UK, with the exception of the northern Scottish highlands that saw average to slightly above average rainfall for February.

The forecast (issued by the Met Office on 27.02.2023) shows a higher than average likelihood (1.5 times the normal chance) that March, and March-April-May will be dry for the UK overall, with a decreased likelihood of a wet March and spring. Despite this UK-wide context, there is a greater chance of wetter spells of weather over southern parts of the UK in March, with north and north-eastern areas more likely to be drier than average.

### River flows:

River flows in February closely followed the rainfall pattern received, with normal to exceptionally low flows across the UK, with the exception of parts of the Scottish highlands. Record breaking low flows were recorded in the Trent, Warleggan and Annacloy, with exceptionally low flows seen across large parts of central and south-western England.

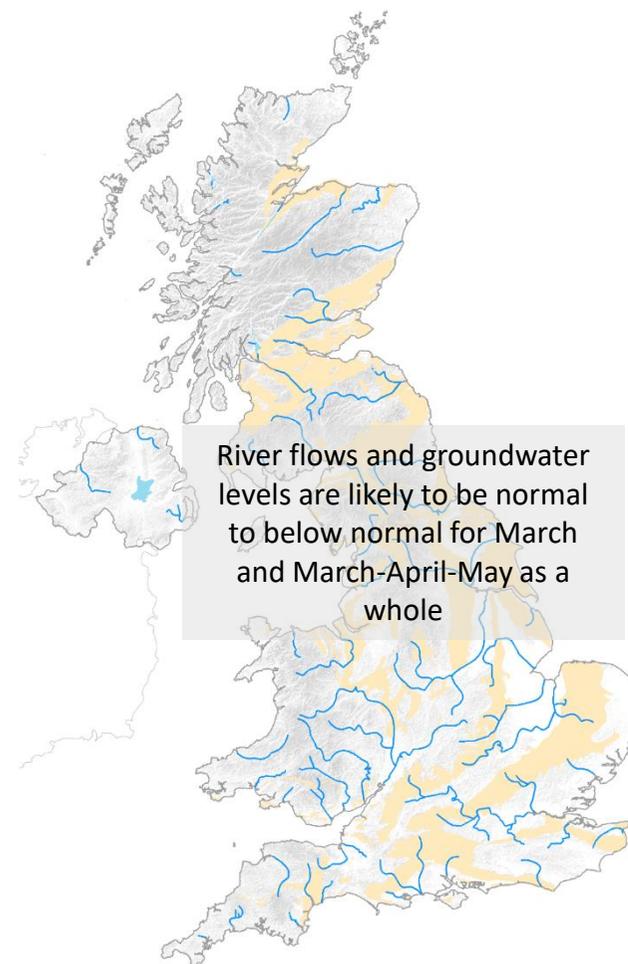
River flows for March and March-April-May as a whole are likely to remain normal to below normal, with a high chance of exceptionally low flows in places. Flows in southern England and Wales may increase from their February levels in March due greater amounts of rainfall anticipated in these regions.

### Groundwater:

Groundwater levels in February were generally normal to below normal, with some above normal levels recorded in the south-eastern Chalk and sandstones of central England. Levels responded quickly to February's low rainfall and started an early recession at several sites. Record breaking low levels were recorded in Greenfield Grange in south Wales.

Groundwater levels are likely to be normal to below normal across most of England and Wales for the next three months, and likely notably low in parts of the Chalk of southern England and the Jurassic limestones. Above normal levels are expected to continue in the eastern South Downs Chalk and northern Permo-Triassic sandstones.

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)



Shaded areas show principal aquifers

## 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.

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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, March, 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/>