Hydrological Outlook UK

Period: From March 2020

Issued on 10.03.2020 using data to the end of February 2020

SUMMARY

Following the exceptional rainfall and associated flooding in February, the outlook for March is for a continuation of above normal (and locally notably high) flows across large parts of southern and central England and Wales. Elsewhere, March flows are likely to be normal to above normal. Groundwater levels are likely to remain above normal across most of the UK, with normal levels most likely in East Anglia and the Chilterns. For the three month outlook, normal to above normal flows are most likely across the UK, with many more rivers entering the normal range. Groundwater levels are also likely to return to normal in many areas, with above normal levels persisting in parts of the southern Chalk and some northern areas.

Rainfall:

With a succession of severe storms bringing persistent heavy rainfall, February 2020 was the wettest on record, in a series dating back to 1862, with 237% of average rainfall for the UK as a whole, bringing to a close the 5th wettest winter on record.

The rainfall outlook for March (issued by the Met Office on 20th February) indicates below-average precipitation is slightly more likely than above-average precipitation. For March-April-May as a whole, above-average precipitation is slightly more likely than below-average precipitation. The probability that UK-average precipitation for March-April-May will fall into the driest of five equal categories is around 15% and the probability that it will he wettest category is 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows for February were notably or exceptionally high across almost the entire country, with many rivers across Wales and northern England registering the highest February flows on record. Correspondingly, severe flooding was widespread and prolonged.

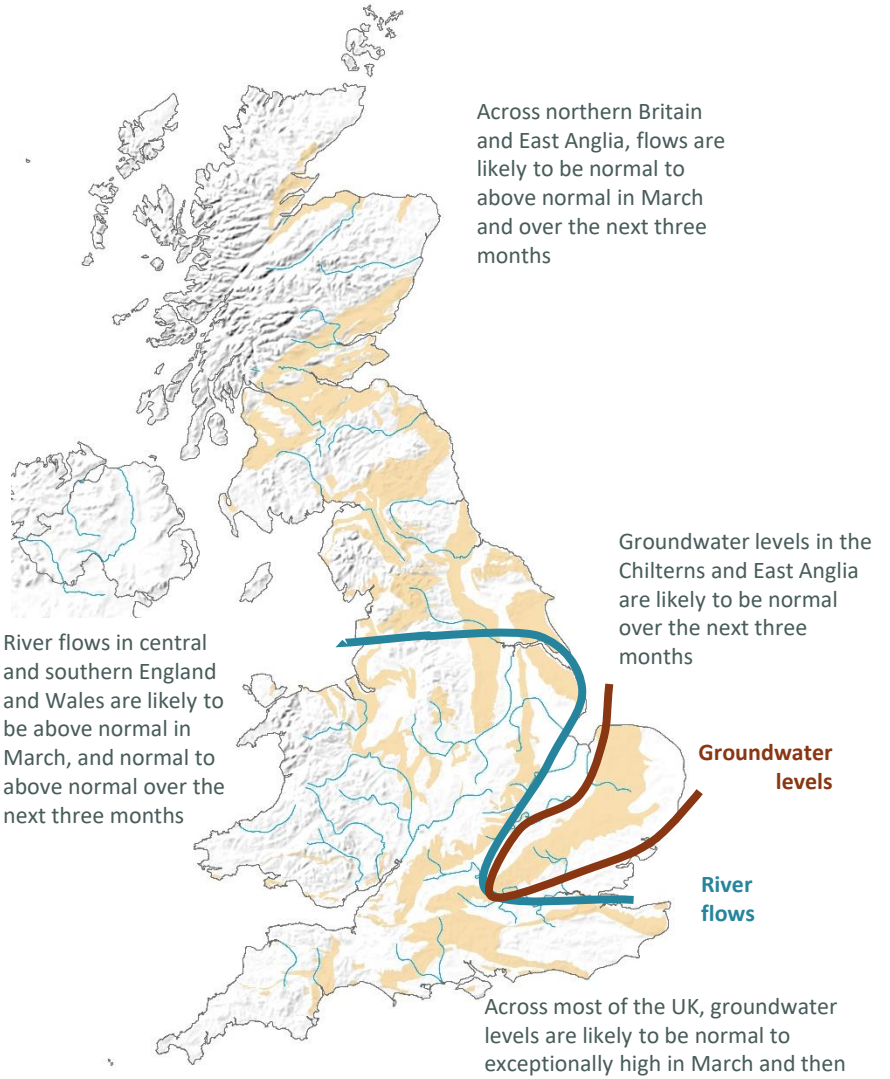
The outlook for March is for above normal flows to continue across much of central and southern England and Wales, with notably or exceptionally high flows possible in some catchments. For northern Britain and eastern England, the outlook is more mixed, indicating normal to above normal flows, with normal flows most likely in groundwater dominated catchments in the east. For the three month outlook, more catchments are likely to drop into the normal range and the outlook is for normal to above normal flows across the UK.

Groundwater:

Groundwater levels for February were mostly above normal, with widespread exceptionally high levels and the highest February levels on record in some boreholes in central and northern England. However, for the Chalk of the Chilterns and East Anglia, levels were normal or below.

The outlook for March is for a continuation of the current situation, with above normal to exceptionally high levels across a range of aquifers, but particularly in the southern Chalk. For the Chilterns and East Anglia, normal levels are most likely. The three month outlook is for normal to above normal levels. Normal levels are likely to be more prevalent, but above normal levels are likely to persist in parts of the southern Chalk and the sandstone aquifers of northern England and southern Scotland.

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



HYDROLOGICAL OUTLOOK UK

March 2020

UK Centre for Ecology & Hydrology

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Environment Agency

Met Office

Cyfoeth Naturiol Cymru
Natural Resources Wales

SEPA
Scottish Environment Protection Agency

Hydrological Outlook UK

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:
http://www.hydoutuk.net/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.

Contact:

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Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2020, March, UK Centre for Ecology and Hydrology, Oxfordshire UK, Online,
http://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
Scottish Environment Protection Agency: http://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:
www.metoffice.gov.uk/public/weather/forecast/#?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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