Hydrological Outlook UK

Period: From July 2020

Issued on 07-07-2020 using data to the end of June 2020

SUMMARY

During July river flows are likely to be normal to above normal in western parts of the UK, and normal to below normal in eastern areas. Over the period to September, flows are likely to return to normal in all areas, although some below normal flows may persist in south-east England. Groundwater levels in July, and the period to September, are most likely to be in the normal range in the south-east of the UK; elsewhere the existing patterns of variability are likely to be maintained, with some aquifers having high levels, and some low.

Rainfall:

There was a strong east-west gradient in rainfall totals for June. Most western parts of the UK had above average rainfall, while the east coast of the UK and south-east England had below average rainfall. While this was the general pattern there were local exceptions.

The rainfall outlook for July and July-August-September as whole (as issued by the Met Office on 25th June 2020), is that above-average precipitation is slightly more likely than below-average precipitation.

The probability that UK-average precipitation for July-August-September will fall into the driest of five categories is between 20% and 25% and the probability that it will fall into the wettest of five categories is 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

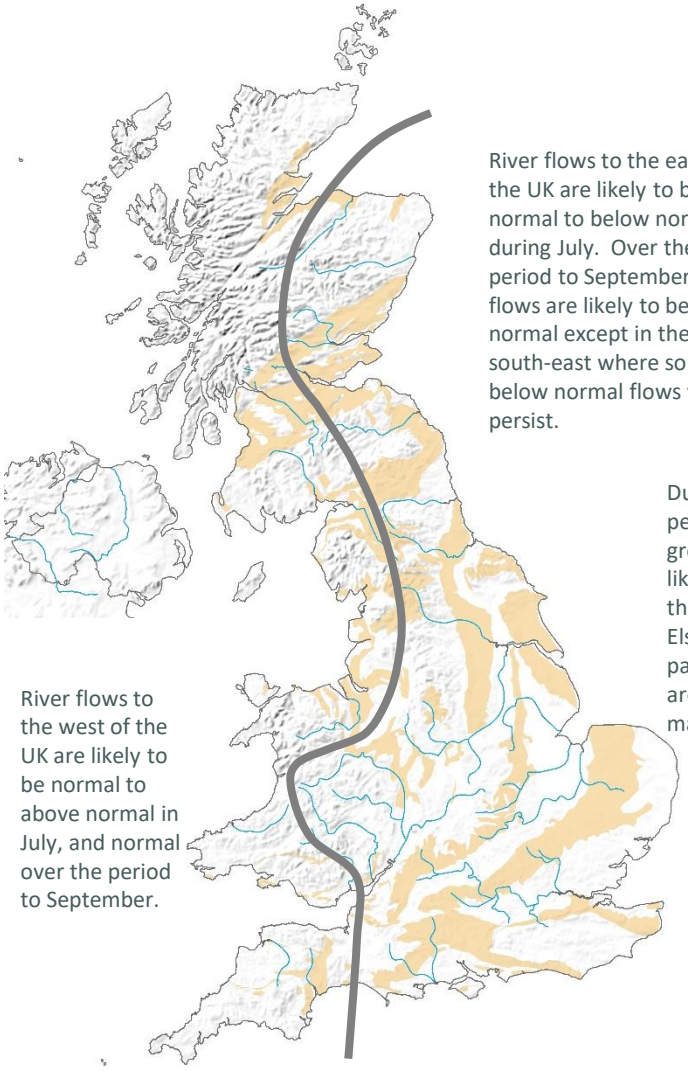
River flows in June reflected closely the rainfall distribution with the western half of the UK seeing normal to above normal flows, while the eastern half had normal to below normal flows. Again there were exceptions to this, e.g. flows were below normal in mid-Wales and eastern parts of Northern Ireland.

The outlook for July is that pattern of river flows seen during June will be maintained, with normal to above flows in the west, and normal to below normal flows in the east. Over the period to September, flows in the west are likely to be normal, but in the east, the normal to below normal flows are likely to persist, especially in south-east England.

Groundwater:

June groundwater levels were generally normal to the east and south of England. Elsewhere groundwater levels were extremely mixed, ranging from exceptionally high to exceptionally low, with considerable spatial variability.

Normal groundwater levels are predicted in the Chalk aquifer of England under all rainfall scenarios. Some exceptionally high groundwater levels are predicted at sites in the Permo-Triassic sandstones of the north-west of England and Scotland. However, nearby sites also show below normal levels in both the one and three month forecast. Over three months, normal conditions are predicted to prevail throughout the UK, with above normal levels predicted in some Chalk sites in the south of England.



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

UK Centre for Ecology & Hydrology | British Geological Survey | Department for Infrastructure An Roinn Bonneagair www.infrastructure-ni.gov.uk | Environment Agency | Met Office | Cyfoeth Naturiol Cymru Natural Resources Wales | SEPA Scottish Environment Protection Agency

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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:
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.

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Reference for the Hydrological Outlook:

Hydrological Outlook UK, 2020, July, 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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