

Hydrological Outlook UK

Period: From July 2018

Issued on 09.07.2018 using data to the end of June 2018

SUMMARY

The outlook for the recent hot and dry weather to continue indicates that in northern and western parts of the UK river flows are likely to be below normal during July and for the next three months. In some places, river flows may be exceptionally low. However, as a consequence of a wet spring, river flows in the south-east, central and eastern parts of England are likely to remain normal in July, although it should be noted that, as the hot and dry weather continues, river flows may fall to below normal over the next three months. Generally, groundwater levels across the UK are likely to be normal to above normal during July and for the next three months.

Rainfall:

June saw exceptionally low rainfall across most of England, Wales and Northern Ireland. Some inland areas extending from the northern Pennines into central Scotland received above average rainfall, but coastal areas of Scotland had below average rainfall. The dry, and hot, weather has continued into the first week of July.

The Met Office 3-month Outlook issued on 21st June indicated that for July, and July-August-September as a whole, below-average precipitation is more likely than above-average precipitation. The probability that UK-average precipitation for July-August-September will fall into the driest of five categories is around 25% and the probability that it will fall into the wettest of five categories is around 10% (the 1981-2010 probability for each of these categories is 20%).

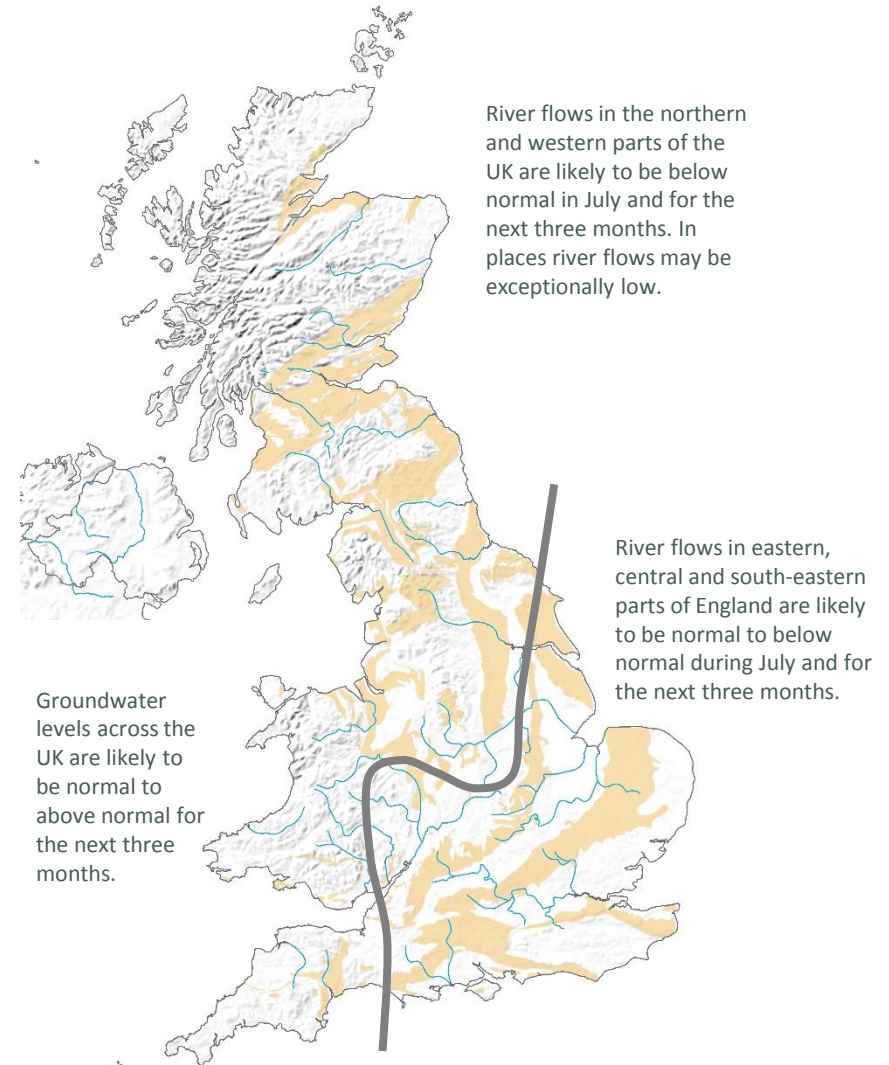
River flows:

Perhaps surprisingly, river flows across much of the UK were in the normal range for June. In Scotland and north-east England this was the consequence of above average rainfall, further south this was the result of flows being maintained by rainfall during a very wet spring. There were parts of the UK where river flows were below normal and in places notably, or even exceptionally low, e.g. northern and eastern Scotland, north west England and the southern Pennines, much of Wales and Northern Ireland, and south west England.

During July and for the next three months, river flows in south-eastern, central and eastern parts England are likely to remain normal as a lasting consequence of the wet spring and the normal to above normal groundwater levels in many aquifers. It is possible, however, that river flows may fall below normal as a result of continuing exceptionally dry and hot weather. Elsewhere in the UK, below normal flows are most likely, and in places these may be exceptionally low.

Groundwater:

Before the summer levels in major aquifers were generally normal to above normal and are likely to remain that way over the next one to three months. The exceptions are where aquifers are particularly responsive; lower than normal levels are expected in Jurassic and Carboniferous limestone aquifers in England and Wales in the next month, and becoming more widespread over three months with below normal levels in parts of NW England, Wales and the south Downs. Minor and isolated aquifers anywhere in the country could have low levels if hot weather persists.



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.hyoutuk.net

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 Centre for Ecology and Hydrology (CEH), 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 CEH 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

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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, 2018, July, 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.

Hydrological Summary for the UK: provides summary of current water resources status for the UK: <https://nrfa.ceh.ac.uk/monthly-hydrological-summary-uk>

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>

UK Met Office forecasts for the UK: www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast