

Hydrological Outlook UK

Period: From July 2017

Issued on 11.07.2017 using data to the end of June 2017

SUMMARY

The one month outlook is for river flows to be below normal in the south-east of the UK, and possibly notably low in groundwater fed catchments. These low flows are likely to persist into the autumn. Elsewhere river flows are likely to be in the normal to above normal range both in July and for the coming three months. Much the same regional variation is expected in groundwater levels with the south-east experiencing low to notably low levels until the autumn. In other parts of the UK groundwater levels are most likely to be in the normal range with the exception of aquifers in the border region of Scotland where groundwater levels will remain above normal.

Rainfall:

Rainfall during June showed marked regional variation with Scotland, northern England, Wales and south-west England having above average rainfall, and central England receiving below average rainfall.

The Met Office 3-month Outlook issued on 22nd June said that for July and July-August-September above-average precipitation is slightly more probable than below-average.

The probability that UK precipitation for July-August-September will fall into the driest of our five categories is between 15% and 20% and the probability that it will fall into the wettest of our five categories is around 20% (the 1981-2010 probability for each of these categories is 20%).

River flows:

June river flows showed marked regional differences. In Scotland, Northern Ireland, northern England, and Wales river flows were generally above average. Elsewhere river flows were normal to below normal, with lower flows being more widespread towards the south. The south-west of England experienced a wide range of river flows.

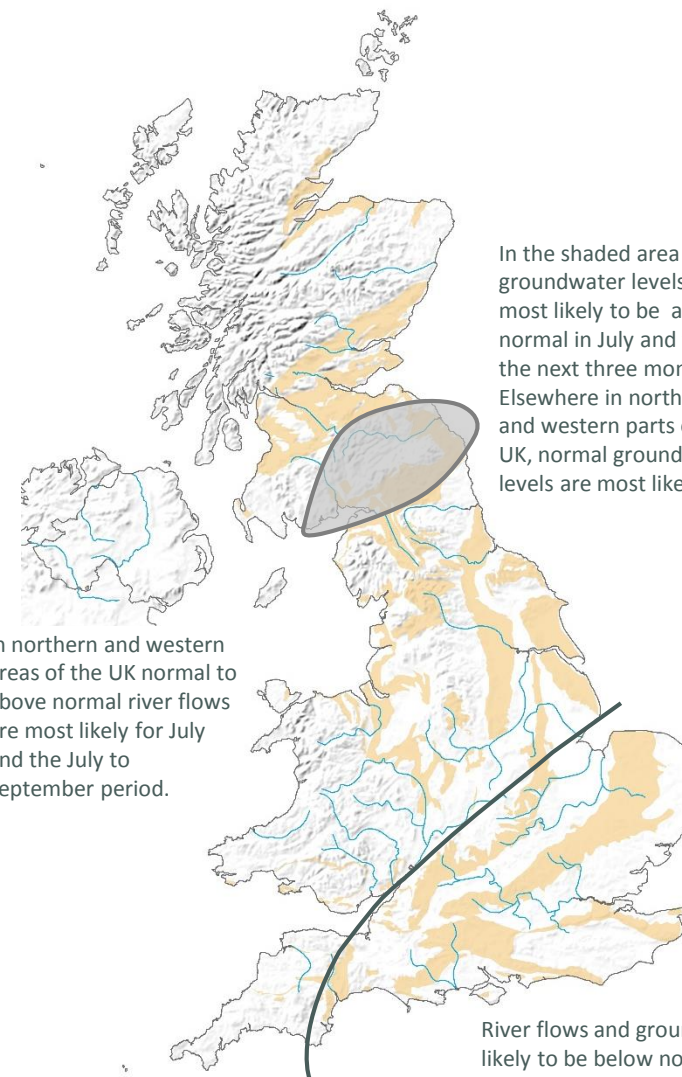
With an outlook for above average rainfall to be slightly more likely than below average rainfall, river flows to north and west will be in the normal to above normal range in July and the next three months. Even with above average rainfall, river flows in south-eastern areas are likely to remain below normal in July and until the autumn. Flows in rivers that are largely fed from groundwater could be notably low.

Groundwater:

Groundwater levels were in the below normal to notably low range in the Chalk aquifers of southern England during June. Elsewhere groundwater levels were normal to below normal apart from in the Permo-Triassic sandstones of southern Scotland, where levels were above normal.

During the summer months any increase in groundwater levels is extremely unlikely even with above average rainfall, and so the current pattern of groundwater levels is likely to persist through the next three months and until the start of the autumn recharge. While there is uncertainty over the timing of autumn recharge it is likely that low groundwater levels will persist in places over at least the next six months. It is possible that in some isolated aquifers groundwater levels will reach exceptionally low levels during this period.

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



In northern and western areas of the UK normal to above normal river flows are most likely for July and the July to September period.

In the shaded area groundwater levels are most likely to be above normal in July and for the next three months. Elsewhere in northern and western parts of the UK, normal groundwater levels are most likely.

Shaded areas show principal aquifers

River flows and groundwater levels are likely to be below normal in south-east England during July and over the next three months.

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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 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 the Northern Ireland Rivers Agency (RA).

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 RA. 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, 2017, 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: http://www.ceh.ac.uk/data/nrfa/nhmp/monthly_hs.html

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