

Hydrological Outlook UK

Period: From May 2017

Issued on 09.05.2017 using data to the end of April 2017

SUMMARY

The outlook for May is for low river flows in south-east England, with flows elsewhere most likely to be below normal. Over the next three months, river flows are likely to be below normal or lower in south-east England and normal to below normal for the rest of the UK. The one- and three-month outlooks for groundwater levels are similar. Below normal or lower levels are likely in the Chalk of south-east England, particularly in the far south-east. Elsewhere, levels are likely to be normal to below normal, with the exception of above normal levels expected in southern Scotland.

Rainfall:

April was an exceptionally dry month. Most of the UK received less than half the long-term average rainfall, and large parts of southern England registered less than 20% of average. Rainfall deficits now span the last nine months for the whole of the UK, and are particularly acute in the far south-east.

The rainfall outlook for May (released by the Met Office on 27th April 2017) suggests that below-average precipitation is considered more probable than above-average. For May-June-July, above-average precipitation is considered slightly more probable than below-average, on balance. Overall, the probability that the UK-average precipitation for May-June-July will fall into the driest of five equal categories is 20% and the probability that it will fall into the wettest of five equal categories is around 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

Average river flows in April were below normal or lower for most of the UK, notably so in Northern Ireland, central and eastern Scotland, and parts of northern and southern England. A number of rivers in the English Lowlands registered no more than half their average flow for the time of year.

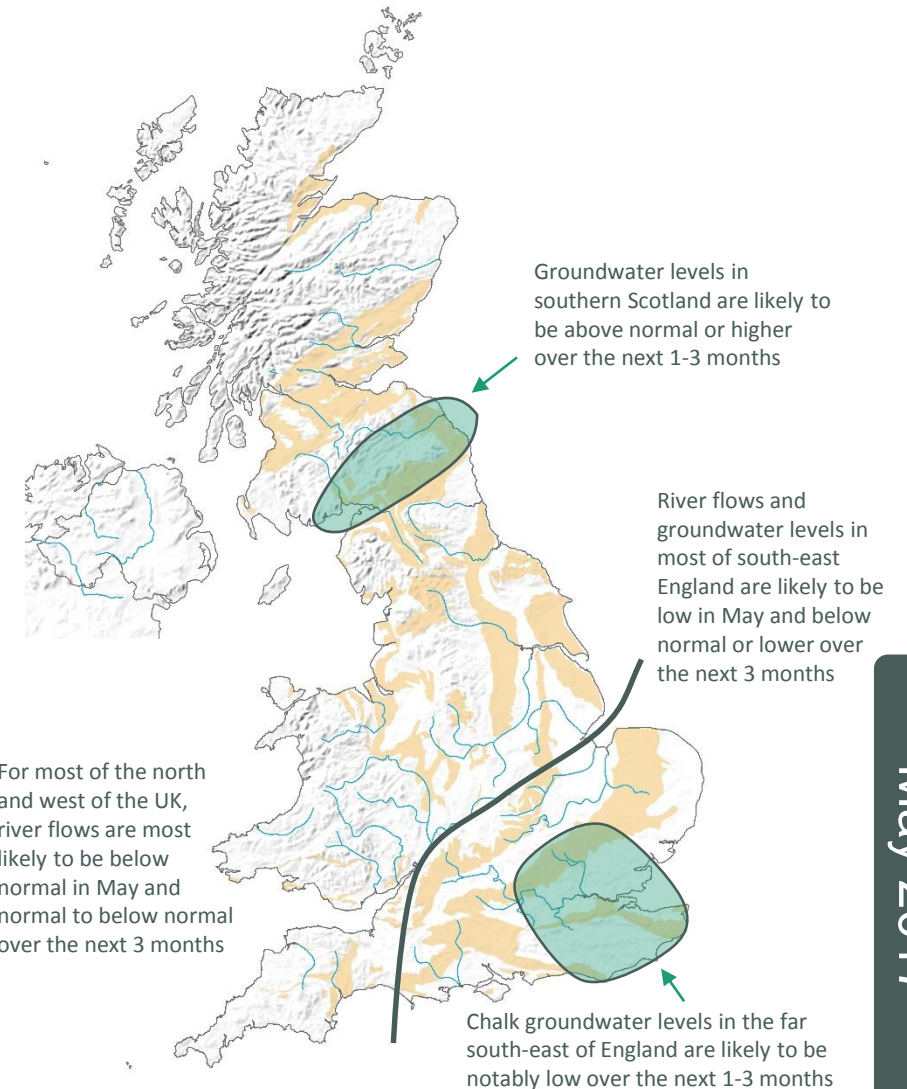
In May, river flows are likely to be below normal or lower for most of the UK. The signal is particularly strong in parts of the English Lowlands, where flows are very likely to be low. The outlook for the next three months is similar, with below normal flows more likely than above normal flows for most of the UK. The signal is strongest in the south-east of England, where average flows over the next six months are likely to be below normal or lower. In this region, average flows over both the one- and three-month timeframes are unlikely to be above normal even for the wettest rainfall forecast scenarios.

Groundwater:

Groundwater levels in the Chalk aquifer of southern England were below normal in April. In the Permo-Triassic sandstones, April levels were below normal in south-west England but above normal or notably high in southern Scotland.

For May, the groundwater outlook is for normal to below normal levels for England and Wales and above normal levels for southern Scotland. Notably low levels are likely along the south coast and in the Carboniferous Limestone of the Peak District. In north-east England, levels are expected to be below normal or lower. The outlook is similar over the three-month timeframe. Below normal to notably low levels are likely in the Chalk aquifer, particularly in the far south-east, though in parts of central southern England levels are likely to return to normal. These outlooks are robust to the wide range of rainfall forecast scenarios.

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.hydroutuk.net



Shaded areas show principal aquifers

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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, 2016, 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