Hydrological Outlook UK

Period: From June 2017

Issued on 09.06.2017 using data to the end of May 2017

SUMMARY

With above average rainfall in the south-east in May after a prolonged period of below average rainfall, the outlook is for normal to above normal river flows across the UK for June. However, this period is expected to be short-lived, and river flows over June-July-August as a whole are likely to return to being normal to below normal. Groundwater levels in the south-east of England are likely to be below normal to notably low over the next one to three months, whilst levels in southern Scotland are likely to be above normal or higher over this period.

Rainfall:

Rainfall across the UK has been average in total for May. However there has been a strong north-west to south-east gradient, with the south-east seeing above average rainfall and the north-west seeing below average rainfall. In parts of North Wales, Northumberland and Scotland rainfall was as low as 30% of the 1981-2010 average, whilst parts of East Anglia, the south coast and the Humber estuary saw over 150% of average.

The rainfall outlook for June (released by the Met Office on 25th May 2017) is for above average precipitation being moderately more likely than below average. For June-July-August the chances of above and below average precipitation are fairly balanced. The probability that UK-average precipitation for June-July-August will fall into the driest of five equal categories is between 15% and 20% and the probability that it will fall into the wettest of the five categories is around 20% (the 1981-2010 probability for each of these categories is 20%).

River flows:

Following above average rainfall across the south-east in May, river flows in many catchments increased from notably low levels in April. Normal to notably low flows were observed across England and Wales and notably to exceptionally low flows were seen in north-eastern England and East Scotland, with record lows for May recorded in the English Tyne and the Spey.

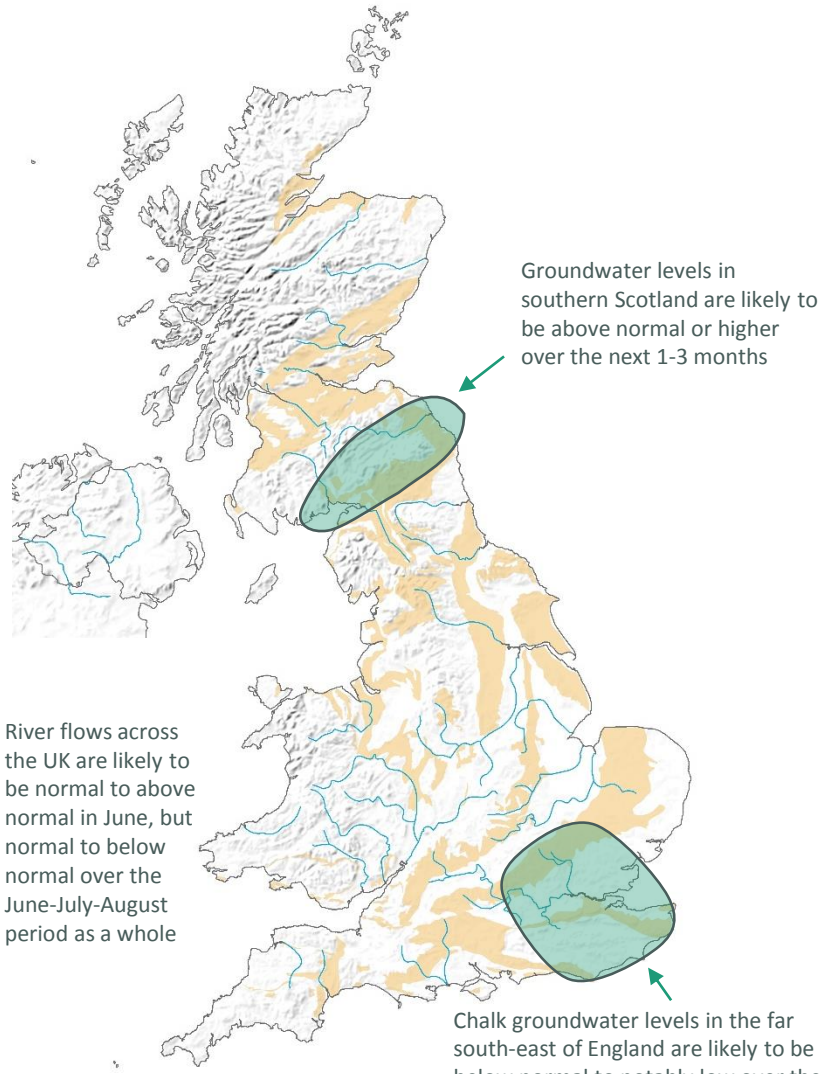
Despite below average rainfall in the north-west in May, the above average rainfall forecast for June with heavy rainfall already seen in early June across northern England and Scotland, indicates that June river flows are likely to be normal to above normal for the whole of the UK. This is likely to be a brief interlude however, as the prolonged period of below average rainfall that has predominated since last autumn has depleted soil moisture and groundwater storage. Therefore, the outlook for the next three months is for river flows to be normal to below normal across the UK.

Groundwater:

Groundwater levels in the Chalk aquifer of southern England were below normal in May, with some notably low levels observed. In the Permo-Triassic sandstones, levels were below normal in south-west England, normal or below in central England but above normal or notably high in southern Scotland.

For June, the groundwater outlook is for below normal levels in most of the Chalk. While Chalk in the south-west may see a slight trend to normal levels, areas of notably low levels are likely to persist in the north of London and the south-east. This pattern is likely to continue over the next 3 months. Permo-Triassic sandstones will stay in their current range. In other aquifers there is considerable variability, but normal to below normal levels are expected in the limestones of Wales and the Midlands.

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



Shaded areas show principal aquifers

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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 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

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