

Hydrological Outlook UK

Period: From April 2016

Issued on 12.04.2016 using data to the end of March 2016

SUMMARY

The outlook for the coming months appears rather complex but reflects the differing conditions at the start of the month and the varying response times of river catchments and aquifer units. In general river flows are likely to be above normal in the south-east of the UK and normal in the north and west. The exception to this is for chalk-fed rivers in the south-east which are also most likely to be in the normal range. Groundwater levels are likely to remain normal across most of the UK with two exceptions; groundwater levels in the northern Permo-Triassic sandstones are likely to be notably high for some months, and levels in parts of the southern Chalk are likely to be above normal. Whereas this variation in groundwater levels is likely to persist, perhaps until early autumn, river flows are more responsive to rainfall and the longer term outlook is less settled.

Rainfall: [based on projections released by the Met Office on 23rd March]

For April, and April-May-June as a whole, above-average precipitation is considered more probable than below-average.

Overall, the probability of the UK-average precipitation for April-May-June falling into the driest of our five categories is between 15 and 20%. The probability of UK-average precipitation falling into our wettest category is around 25% (the 1981-2010 probability for each of these categories is 20%).

River flows:

River flows in April are likely to show a clear north-west/south-east contrast with normal flows to the north and west, and above average flows to the south and east. This pattern is driven by the rainfall distribution in March combined with a forecast for April of average to above-average rainfall. The exception to this pattern is for chalk-fed streams in the south and east which are likely to have normal flows. This pattern of flows is likely to continue in the coming months.

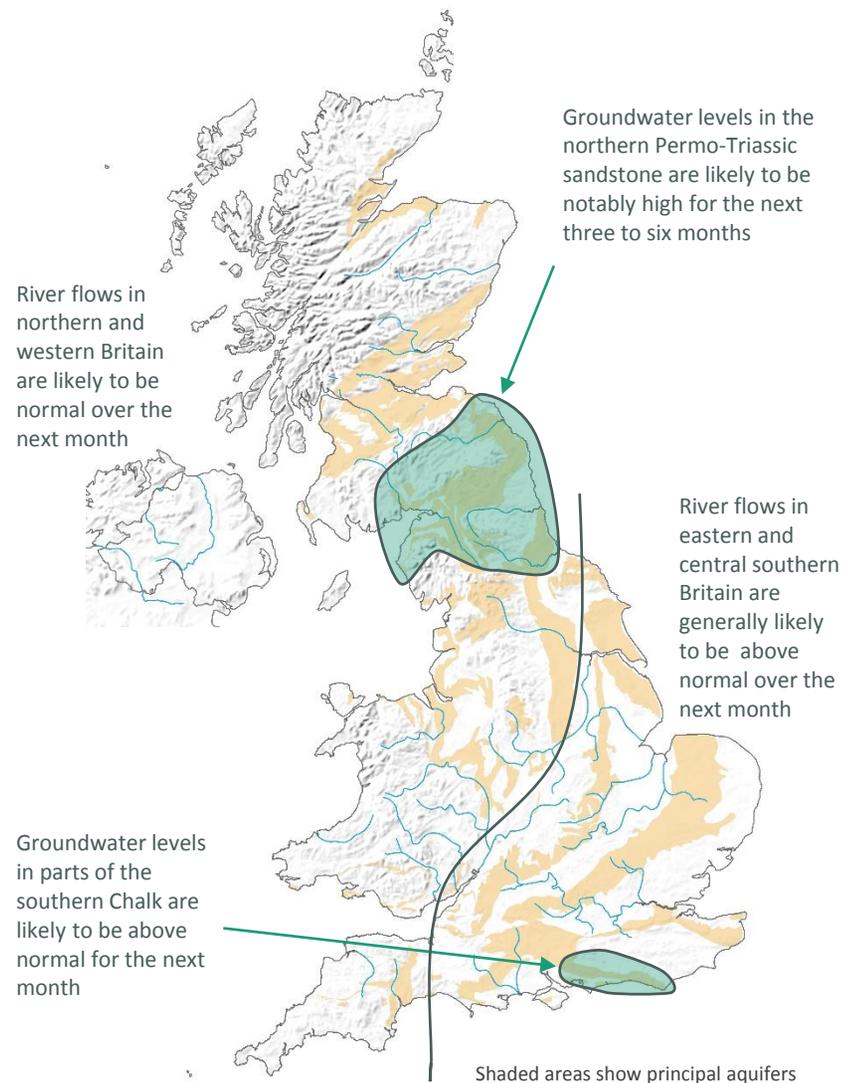
At the start of April it seemed possible that flows in Scotland might be below average, but significant rainfall in the first ten days of April in southern and eastern Scotland means that this is now unlikely to be the case except in the most northerly parts.

Groundwater:

As the winter recharge ends, and spring recessions begin to be established, levels across the Chalk aquifers are likely to remain normal, or above normal over the next months. Levels in the North East, raised by March rainfall, are recessing, and also likely to be near normal. In other aquifers, responsive limestones, are likely to be high over the next month, and then return to seasonal norms over the summer. High levels in the northern Permo-Triassic sandstone will drop slightly over the same period.

Groundwater conditions present in April tend to persist until early autumn, in the absence of dramatic recharge events, so most outlooks show a high probability of normal to above normal conditions until October for fast responding Chalk aquifers, and later in the Permo-Triassic sandstones.

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



About the Hydrological Outlook UK

About the 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. More information is available from the Outlooks website:

<http://www.hydoutuk.net/methods>

Disclaimers:

This document aims to provide an indicative outlook for the water situation using the most comprehensive and up-to-date hydrological data, and modelling techniques. The Outlooks are intended to provide guidance on the likely water situation in the UK over the coming months, and should not be used in isolation, but alongside other sources of information such as flood warnings and meteorological forecasts (see links right).

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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:

Hydrological Outlook UK, 2016, January, Centre for Ecology and Hydrology, Oxfordshire UK, Online, <http://www.hydoutuk.net/archive/april-2016/>

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