

Hydrological Outlook UK

Period: From September 2020

Issued on 09.09.2020 using data to the end of August 2020

SUMMARY

The outlook for September is for river flows within the normal range in the south-east and groundwater levels below normal to exceptionally low along the south coast, with normal to above normal river flows and groundwater levels elsewhere. The three-month outlook is for a continuation of river flows within the normal range in the south-east with no strong signal elsewhere, and groundwater level outlooks over the seasonal timeframe ultimately determined by the onset of the recharge season.

Rainfall:

Rainfall in August was substantially above average for the majority of the UK, more than 150% of average across Wales, Northern Ireland, central and southern Scotland, and most of England. The only exceptions were Kent, coastal fringes of East Anglia and, notably, the far north of Scotland.

The rainfall outlook (issued by the Met Office on 20 August 2020) is that for September and September-October-November as a whole, above-average precipitation is slightly more likely than below-average precipitation. The probability that UK-average precipitation for September-October-November will fall into the driest of five equal categories is 20% and the probability that it will fall into the wettest category is between 25% and 30% (the 1981-2010 probability for each of these categories is 20%).

River flows:

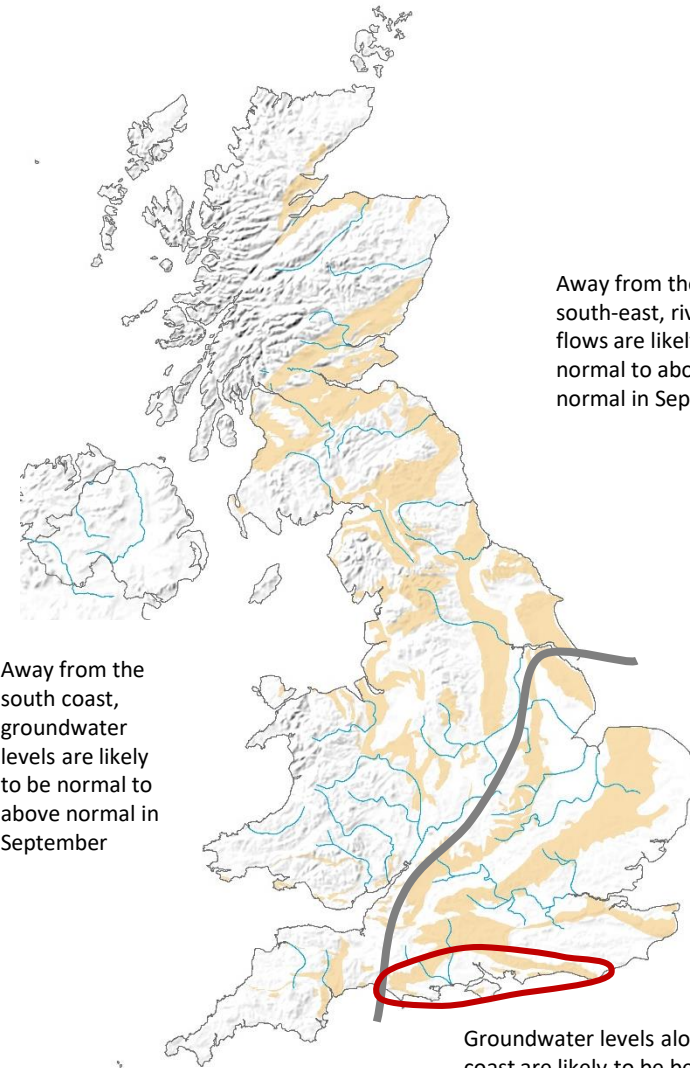
River flows in August were above average across a broad swathe from the south-west to the north-east, notably or exceptionally so in Northern Ireland, Wales and north-west England. Flows were within the normal range in south-east England and below normal or lower in north-east Scotland.

The September outlook is for flows within the normal range in the south-east and normal to above normal flows elsewhere. Nevertheless, in localised catchments of the south-east, either above normal or below normal flows are likely in September. Over the three-month timeframe, a similar eventuality of flows within the normal range is likely. Further north and west, there is no strong signal over three months, so flows within the normal range are most likely.

Groundwater:

Groundwater levels in August were generally below normal in the southern Chalk and normal to above normal in the aquifers further north and west.

For September, there is a strong suggestion that groundwater levels will be below normal to exceptionally low in the Chalk of the south coast. For the remainder of the Chalk and all other aquifers, the one-month outlook is for normal to above normal levels, and locally exceptionally high levels in the sandstones of southern Scotland. Over three months, the outlook is complicated by the timing of recharge, meaning there is some uncertainty.



Away from the south-east, river flows are likely to be normal to above normal in September

Away from the south coast, groundwater levels are likely to be normal to above normal in September

River flows across the south-east of the UK are likely to be within the normal range over the next one-to-three months

Groundwater levels along the south coast are likely to be below normal to exceptionally low in September

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.hydoutuk.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 UK Centre for Ecology and Hydrology (UKCEH), 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 UKCEH 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, 2020, September, UK 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.

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>

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

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

UK Water Resources Portal: monitor the UK hydrological situation in near real-time including rainfall, river flow, groundwater and soil moisture from COSMOS-UK: <https://eip.ceh.ac.uk/hydrology/water-resources/>