

SUMMARY The outlook for March is for above normal flows in southeast England, which is likely to persist over the March-May period. In the northwest, normal to above normal flows are likely in March and for March – May. River flows in northeast Britain are likely to be below normal in March and normal to below normal for March-May. Normal to above normal groundwater levels are likely to persist through the March-May period but parts of south Wales and Scotland could see below normal levels in March.

Rainfall:

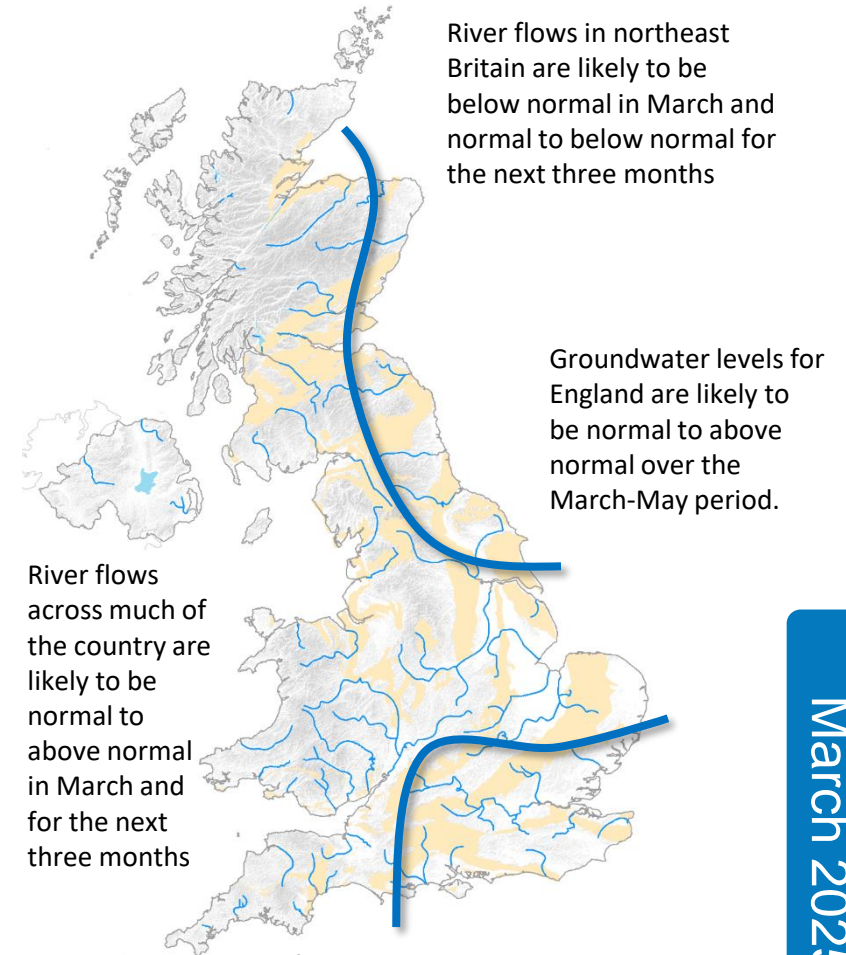
February rainfall for the UK was below average. Some areas of northeast Scotland and northwest England recorded less than half of the February average. In southeast and southwest England, rainfall was average or above average. The forecast for March (issued by the Met Office on 24.02.2025) indicates an increased chance of wet conditions for northern and western parts of the UK. Unsettled conditions are possible in late March, but confidence remains low. The March-May forecast suggests a slightly higher than normal chance of being drier than average, particularly across southern England.

River flows:

River flows in February were below normal in northern Britain, notably or exceptionally so in some cases. Flows for England were in the normal range with some notably to exceptionally high flows in groundwater-dominated catchments across southern England. The outlook suggests above normal to high flows in these catchments are likely to persist in March and for the next three months.. Elsewhere, normal to above normal flows for March are likely for the northwest but below normal flows are more likely for northeast Britain. The March-May outlook shows a similar geographical pattern, with mostly normal to above normal flows across the UK but a slightly higher likelihood of below normal river flows in northeast England.

Groundwater:

Groundwater levels in February were above normal across much of the Chalk aquifer of central and southern England, and mostly normal to above normal elsewhere. Notably low levels were registered at some sites in southern Scotland and Northern Ireland. The outlook for March is for above normal to notably high levels to persist in southern England, with the possibility of below normal levels in parts of south Wales and Scotland. Over the three-month period (March-May), groundwater levels are likely to be normal to above normal, particularly in the Chalk aquifer in southern England.



River flows and groundwater levels in southeast England are likely to remain above normal to exceptionally high for March.

Shaded areas show principal aquifers

The UK Hydrological Outlook provides an outlook for the water situation for the United Kingdom 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 UK 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 & 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 UK 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 and GR6J hydrological models. Hydrogeological modelling uses the AquilMod model run by BGS. Supporting documentation is available from the Outlooks website: <https://hydoutuk.net/about/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

Disclaimer and liability:

The UK Hydrological Outlook partnership aims to ensure that all Content provided is accurate and consistent with its current scientific understanding. However, the science which underlies hydrological and hydrogeological forecasts and climate projections is constantly evolving. Therefore any element of the Content which involves a forecast or a prediction should not be relied upon as though it were a statement of fact. To the fullest extent permitted by applicable law, the UK Hydrological Outlook Partnership excludes all warranties or representations (express or implied) in respect of the Content.

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Further information:

For more detailed information about the UK Hydrological Outlook, and the derivation of the maps, plots and interpretation provided in this outlook, please visit the UK Hydrological Outlook 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. Dynamic access to many of the outputs of the UK Hydrological Portal are available on the [UK Hydrological Outlooks Portal](#).

Contact:

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t: 01491 838800 e: <https://hydoutuk.net/contact>

Reference for the UK Hydrological Outlook:

UK Hydrological Outlook, 13 March 2025, UK Centre for Ecology & Hydrology, Oxfordshire UK, Online, <https://www.hydoutuk.net/latest-outlook/>

Other Sources of Information:

The UK 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>
- Natural Resources Wales: <https://flood-warning.naturalresources.wales/>
- Scottish Environment Protection Agency: <https://www.sepa.org.uk/flooding.aspx>

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

UK Met Office forecasts for the UK: <https://www.metoffice.gov.uk/>

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/>

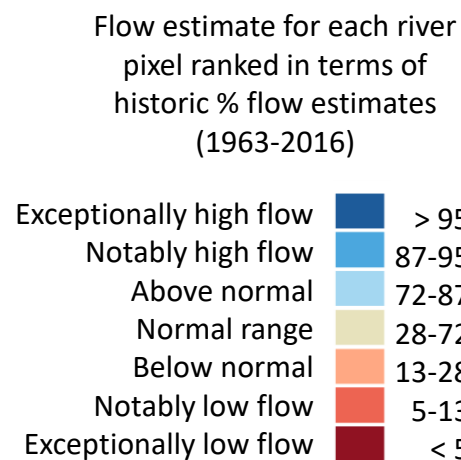
February's mean river flows simulated by the Grid-to-Grid hydrological model

Issue date: 05.03.2025

This map shows the simulated monthly mean flow across Great Britain for last month, ranked in terms of 54 years of historical flow estimates (1963 – 2016).

These flows are produced by the 1km resolution Grid-to-Grid (G2G) hydrological model, which is run up to the end of each calendar month using observed rainfall and MORECS potential evaporation as input.

Note that the G2G model provides estimates of natural flows.



Current Daily Simulated Subsurface Water Storage Conditions

Based on subsurface water storage estimated for 28 February 2025

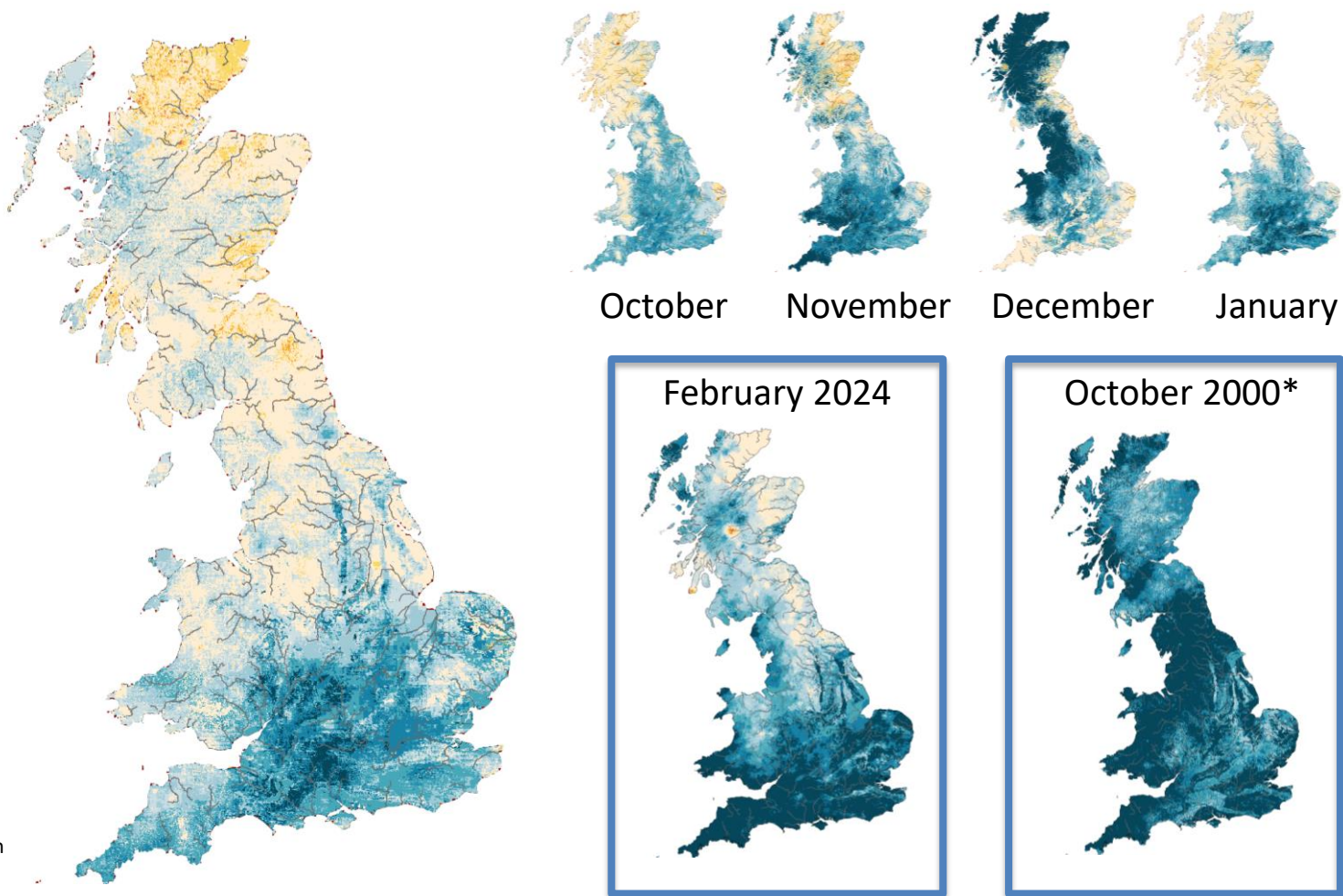
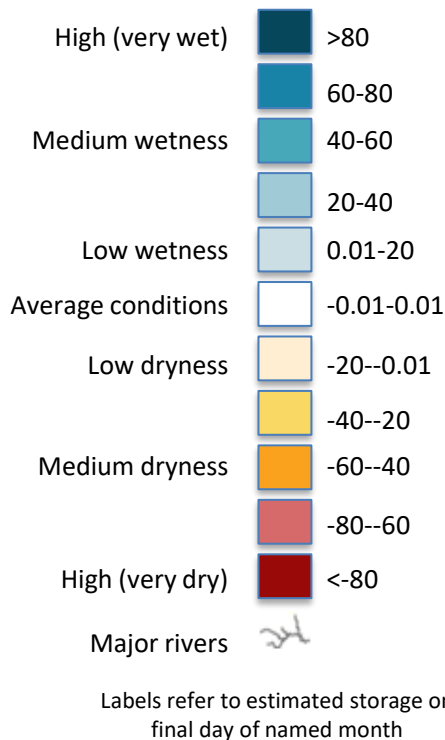
Issue date: 05.03.2025

These maps are based on Grid-to-Grid (G2G) hydrological model simulated subsurface water storage (water in the soil and groundwater), expressed as an anomaly from the historical monthly mean. To highlight areas that are particularly wet or dry, the storage anomaly is presented relative to historical extremes. Rainfall in WET areas with high positive relative wetness could result in flooding in the coming days/weeks. Areas of negative relative wetness indicate locations which are particularly DRY, and little or no rain in these areas could potentially lead to (or prolong) a drought. Maps of soil moisture only are available on the next page.

SUMMARY: Subsurface water stores are still higher (wetter) than normal in Southern England and Wales and the Midlands but are mostly typical for the time of year in northern England and Scotland.

Relative wetness

Water storage anomaly as a % of maximum (positive wetness) or minimum (negative wetness) storage anomaly (zero indicates average value)



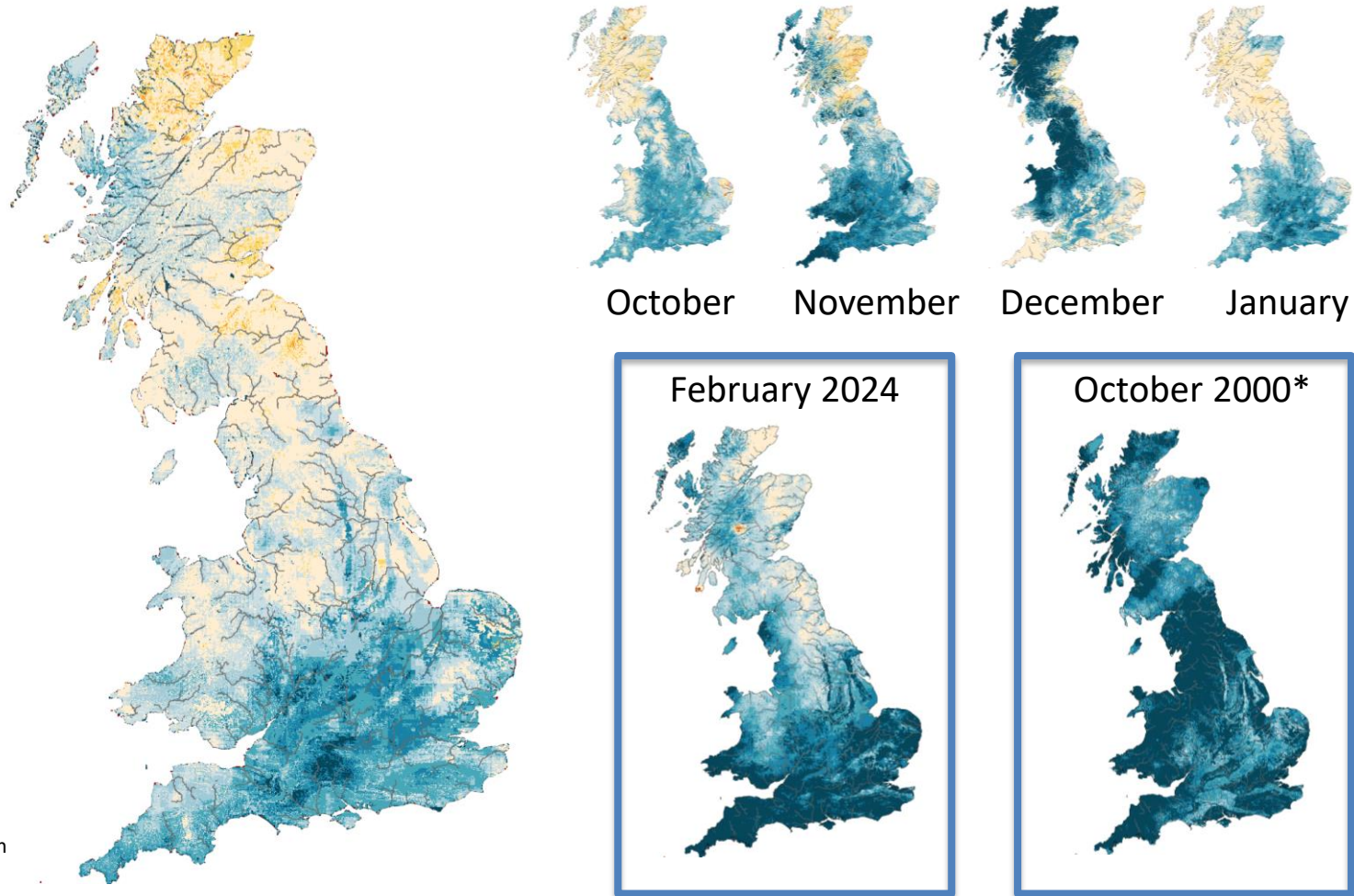
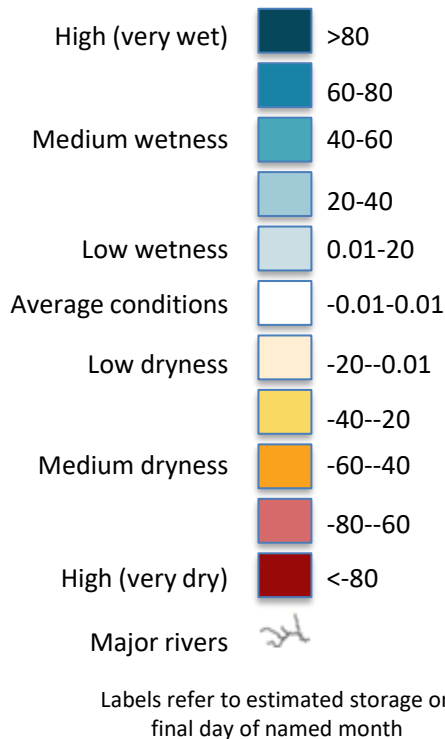
*Example month displaying extreme positive wetness

These maps are based on Grid-to-Grid (G2G) hydrological model simulated soil moisture, expressed as an anomaly from the historical monthly mean. To highlight areas that are particularly wet or dry, the soil moisture anomaly is presented relative to historical extremes. These maps are not a forecast; rather an indication of current conditions. Soil moisture will often look similar to total storage (shown on the previous slide), since total storage comprises both soil moisture and storage in the saturated zone.

SUMMARY: Soil moisture levels are still higher (wetter) than normal in Southern England and Wales and the Midlands but are mostly typical for the time of year in northern England and Scotland.

Relative wetness

Soil moisture anomaly as a % of maximum (positive wetness) or minimum (negative wetness) storage anomaly (zero indicates average value)



*Example month displaying extreme positive wetness

March 2025

Estimate of Additional Rainfall Required to Overcome Dry Conditions

Based on subsurface water storage estimated for 28 February 2025

Issue date: 05.03.2025

These maps show the Grid-to-Grid (G2G) hydrological model simulated subsurface water storage, expressed as an anomaly from the historical monthly mean (1981-2010), presented on a 1km grid and as regional means. Subsurface storage deficits, i.e. where the subsurface water storage anomaly is less than zero, are highlighted in red/pink.

The subsurface storage deficit (mm) can be interpreted as an estimate of additional rainfall that would be required in future months to overcome dry conditions (i.e. rainfall in addition to what is expected on average). Regional mean values of additional rainfall required are provided in the table below.

Regional estimate of additional rainfall required (mm)

SCOTLAND

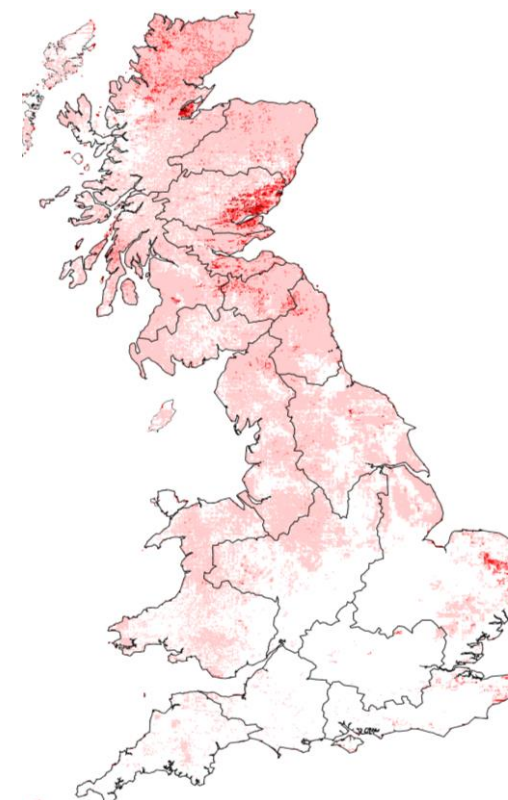
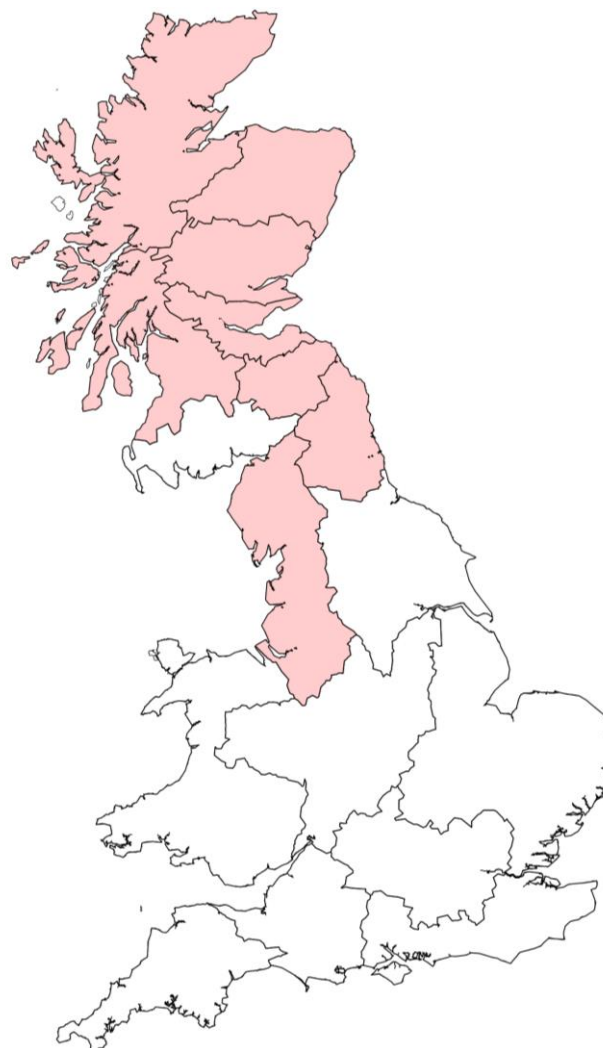
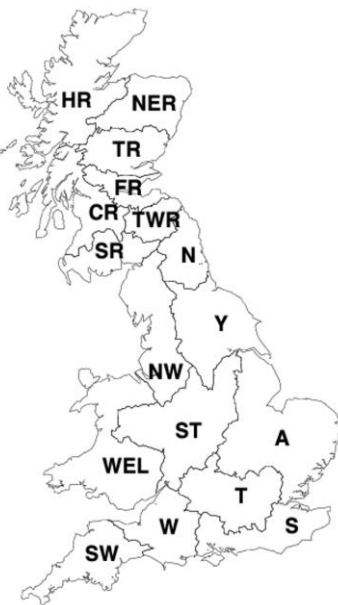
- 8 HR Highlands Region
- 8 NER North East Region
- 11 TR Tay Region
- 9 FR Forth Region
- 4 CR Clyde Region
- 9 TWR Tweed Region
- 0 SR Solway Region

ENGLAND

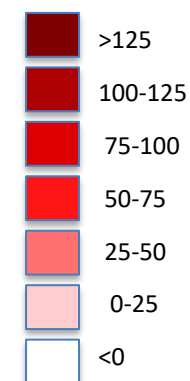
- 4 N Northumbria
- 2 NW North West
- 0 Y Yorkshire
- 0 ST Severn Trent
- 0 A Anglian
- 0 T Thames
- 0 W Wessex
- 0 S Southern
- 0 SW South West

WALES

- 0 WEL Welsh



Water storage deficit (anomaly; mm)



Return Period of Rainfall Required to Overcome Dry Conditions

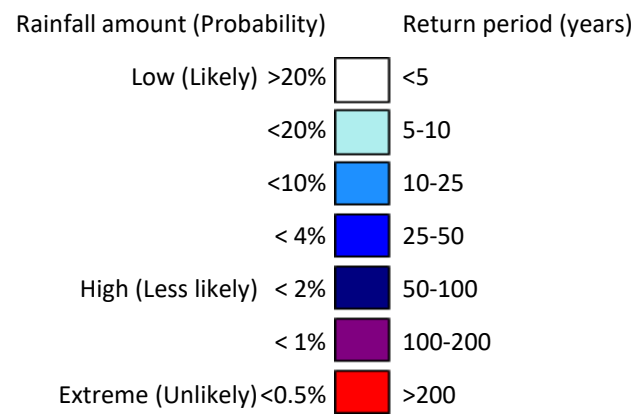
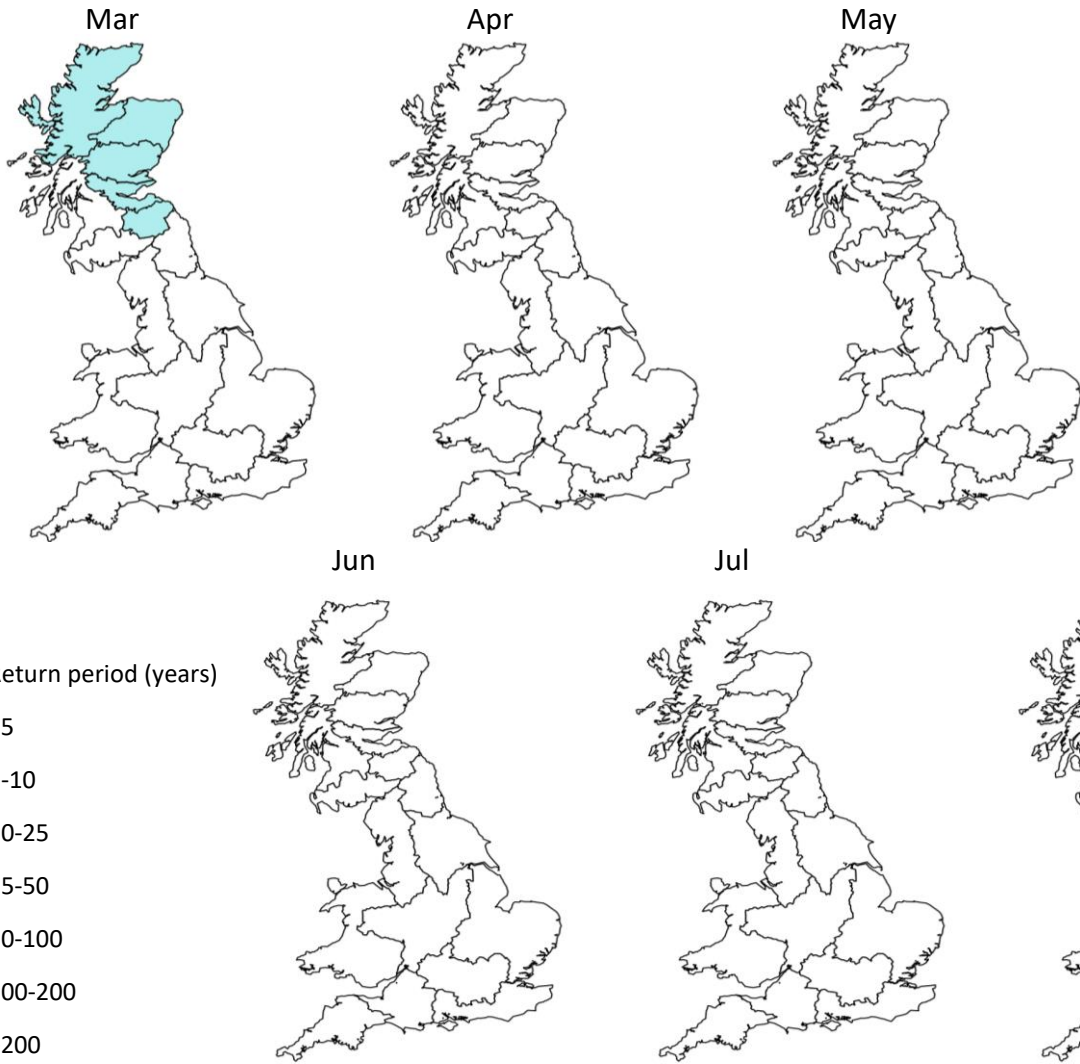
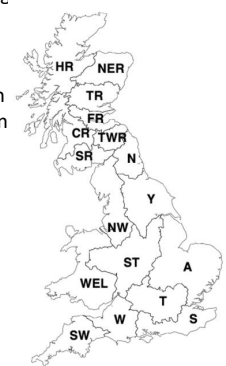
Period: March 2025 - August 2025

Issue date: 05.03.2025

These maps show the return period of the rainfall required to overcome dry conditions simulated using the Grid-to-Grid (G2G) hydrological model. The maps are coloured according to the return period of accumulated rainfall required to overcome the estimated current subsurface water storage deficit over the next one to six months (areas with no storage deficit will always be white). These maps do not provide a drought forecast; instead they indicate whether particularly heavy rainfall would be required to return to normal conditions for the time of year.

SUMMARY:
Subsurface water storage deficits exist in Scotland and parts of northern England. However, only northern and eastern Scotland requires unusual (>5 year return period) amounts of rainfall to replenish.

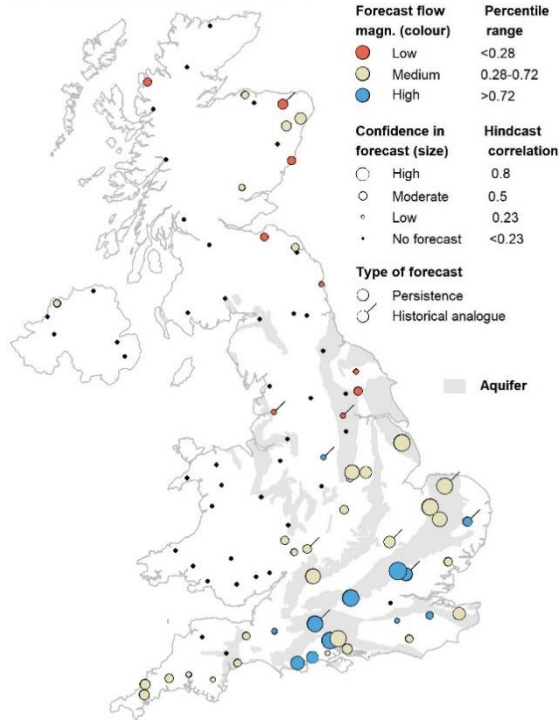
- SCOTLAND**
 HR Highlands Region
 NER North East Region
 TR Tay Region
 FR Forth Region
 CR Clyde Region
 TWR Tweed Region
 SR Solway Region
- ENGLAND**
 N Northumbria
 NW North West
 Y Yorkshire
 ST Severn Trent
 A Anglian
 T Thames
 S Southern
 W Wessex
 SW South West
- WALES**
 WEL Welsh



SUMMARY:

The March outlook indicates river flows across central and southern Britain are likely to be normal to above normal. Further north, river flows are likely to be in the normal to below normal range. Please note there are very few forecasts available for the north and west of Britain.

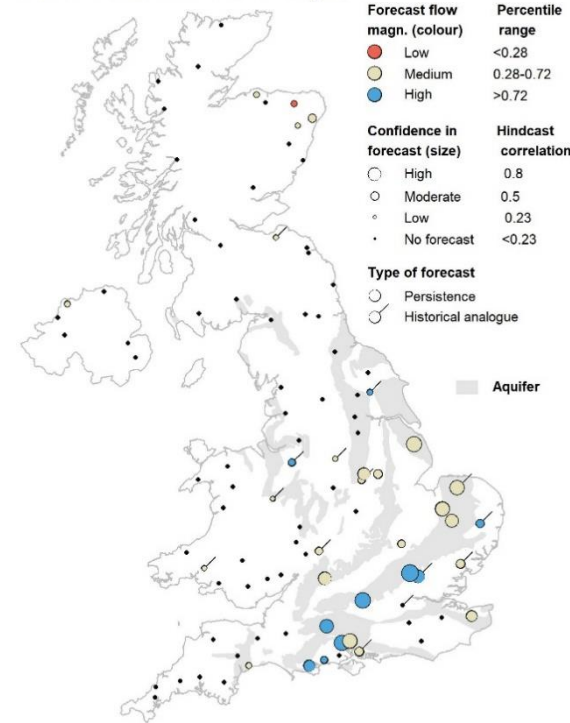
River flow outlook for Mar 2025



1-month flow outlook

Outlooks from hydrological analogues are based on a comparison of river flow during recent months with flows during the same months in previous years at a set of approximately 90 sites from across the UK. These sites are depicted on the two maps. Years with observed flows that most closely resemble current conditions are identified as the best analogues and the outlook is based on extrapolating from current conditions based on these analogues.

River flow outlook for Mar - May 2025



3-month flow outlook

It is, however, often the case that a simpler forecast based on the persistence of river flow provides a better forecast than provided by analogy. This is particularly true for slowly responding catchments associated with aquifer outcrops.

Both methods are considered at each site and the forecast from the method with the higher confidence is presented. A simple classification of flows is used (high, medium and low) as indicated by the colours of the dots, with the confidence

of the forecast being represented by the size of the dot. A tag on the dot indicates which method has been used in each instance.

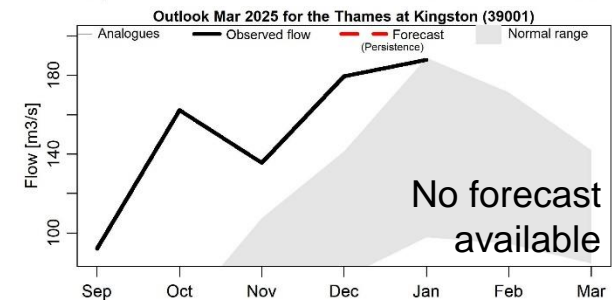
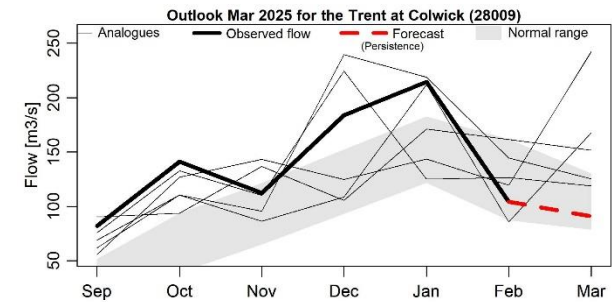
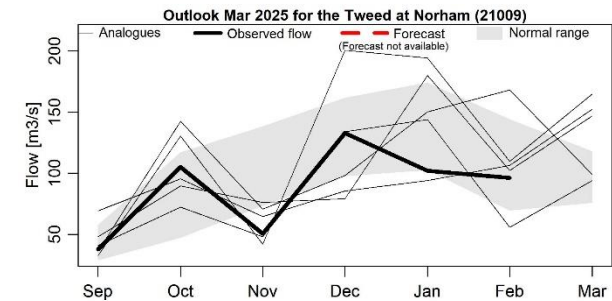
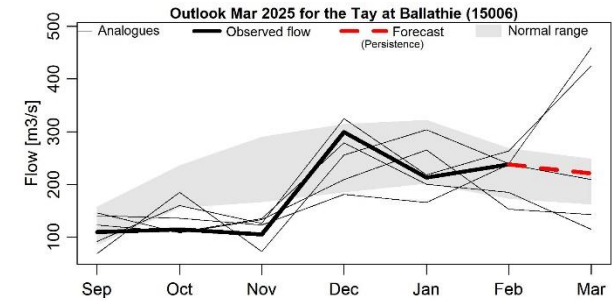
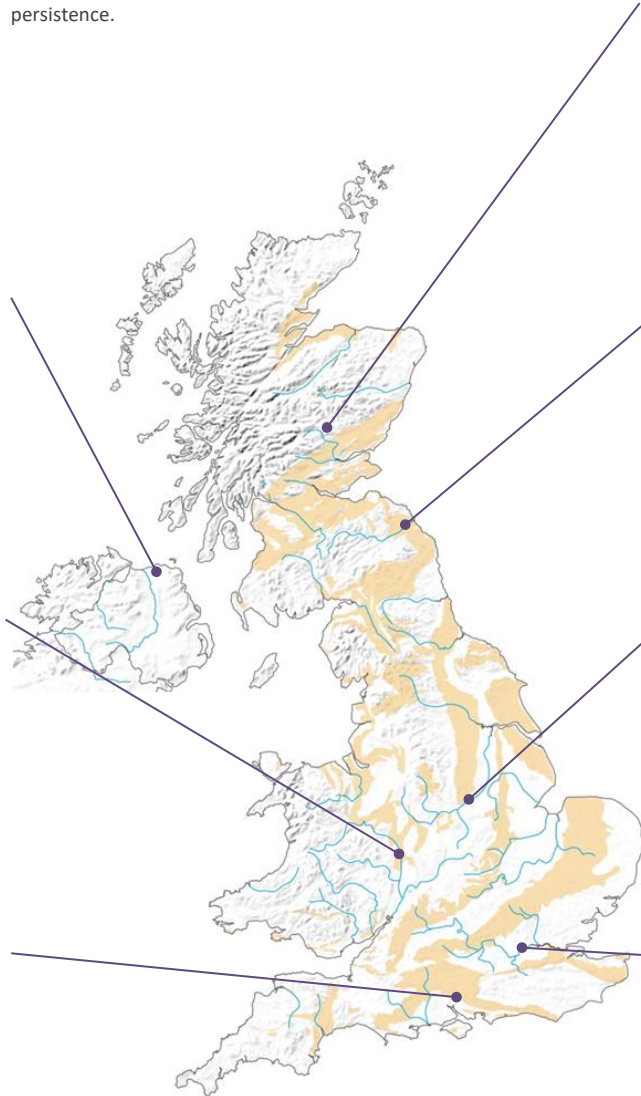
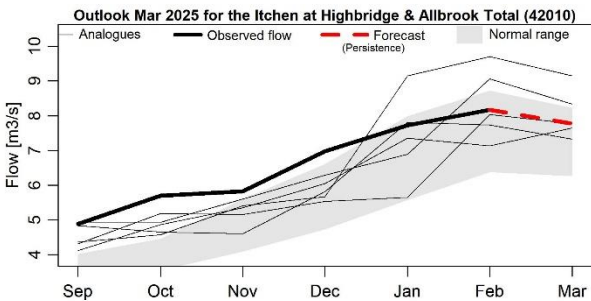
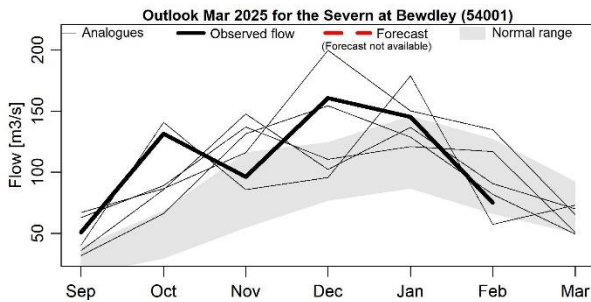
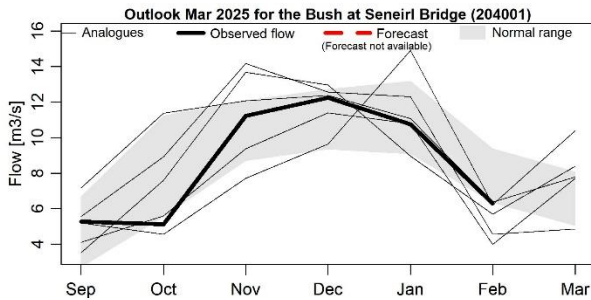
Period: March 2025

Issued on 10.03.2025 using data to the end of February 2025

These figures provide insight into the hydrological analogue methodology for a set of sites from across the UK.

In each of the time series graphs the bold black line represents the observed flow during the past six months. The grey band indicates the normal flow range (the normal band includes 44%

of observed flows in each month). The selected analogues are shown as thin lines and the trajectories that flows took in the following month are also shown. The forecast is shown as the dashed red line, and in each plot it states whether this has come from the analogues or has been generated on the basis of persistence.



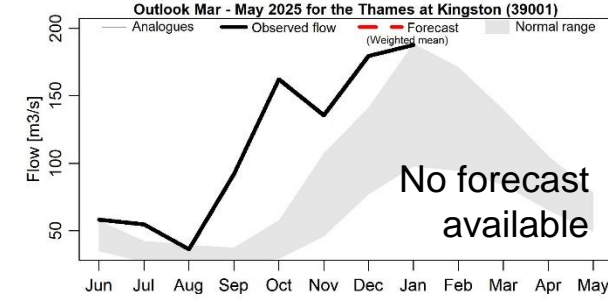
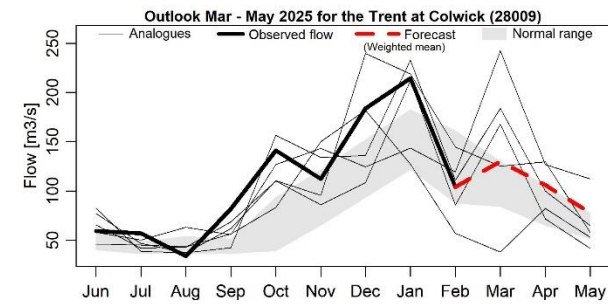
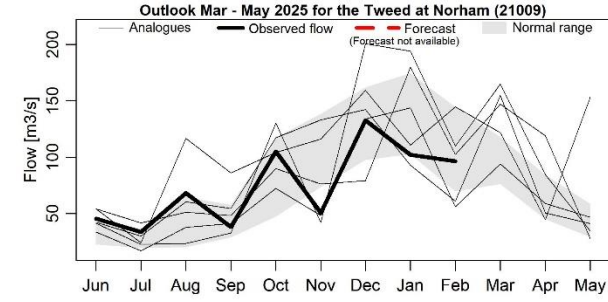
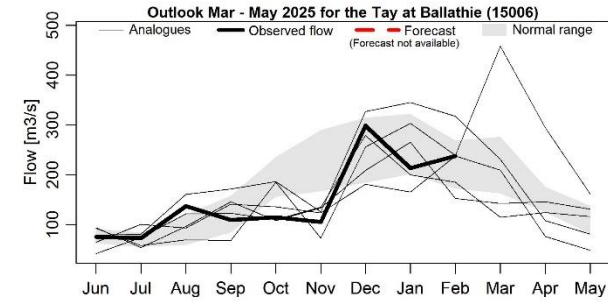
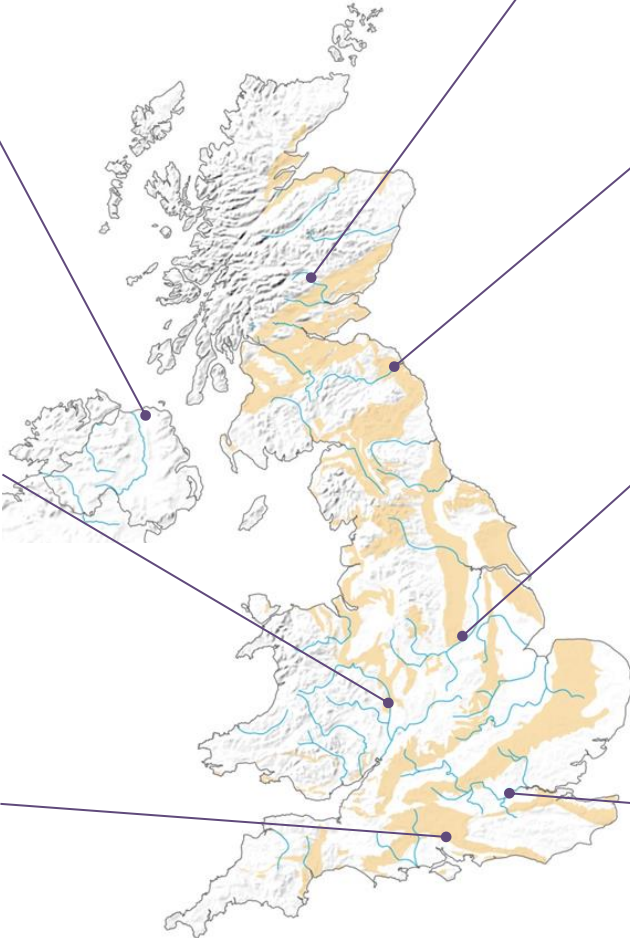
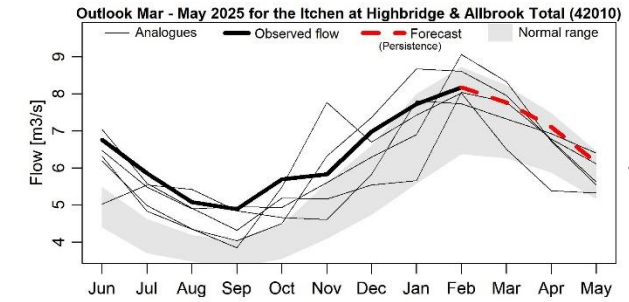
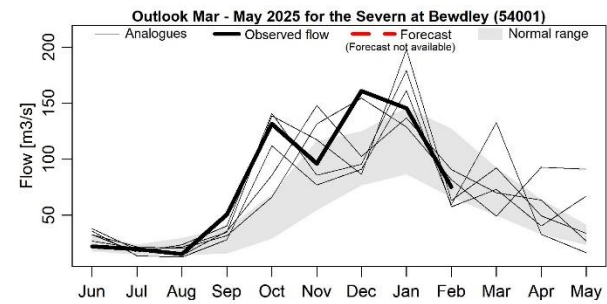
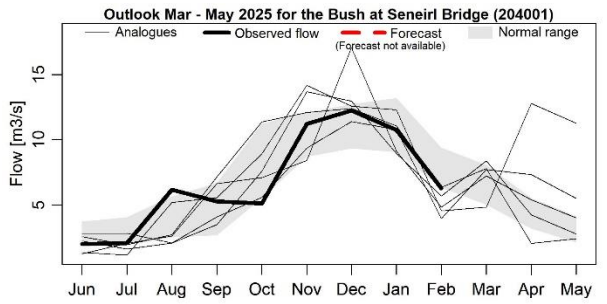
Period: March 2025 – May 2025

Issued on 10.03.2025 using data to the end of February 2025

These figures provide insight into the hydrological analogue methodology for a set of sites from across the UK.

In each of the time series graphs the bold black line represents the observed flow during the past nine months. The grey band indicates the normal flow range (the normal band includes 44%

of observed flows in each month). The selected analogues are shown as thin lines and the trajectories that flows took in the following three months are also shown. The forecast is shown as the dashed red line, and in each plot it states whether this has come from the analogues or has been generated on the basis of persistence.

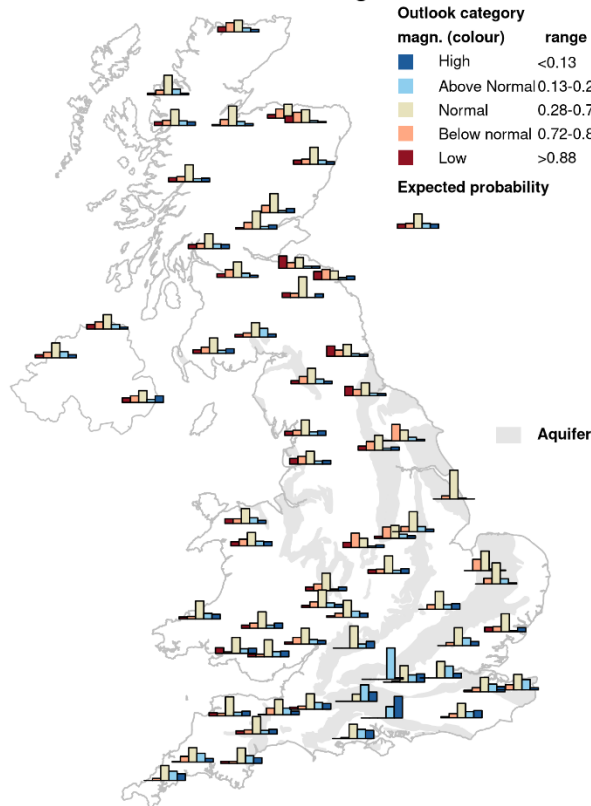


Period: March 2025 – June 2025

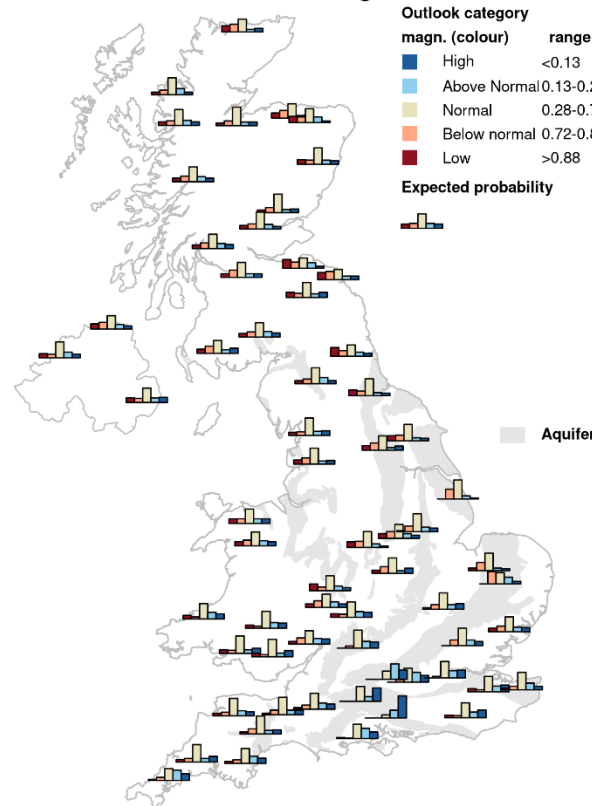
Issued on 05.03.2025 using data to the end of February 2025

The outlook for March indicates that flows are likely to be normal to above normal across southern England. River flows in north eastern England and eastern Scotland are likely to be normal to below normal. Elsewhere in the UK flows are likely to be in the normal range. The March to May outlook indicates that this pattern is likely to persist over the coming few months with a shift towards more normal flows.

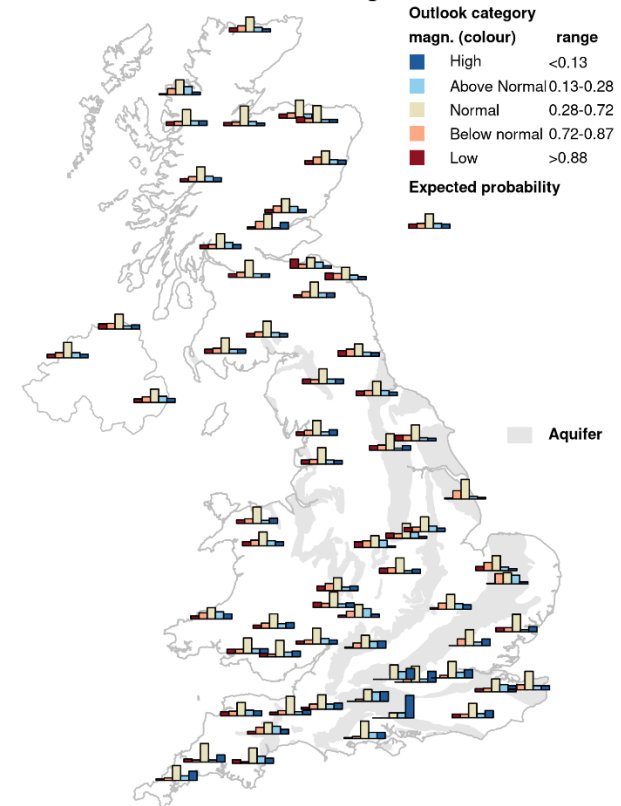
1-month river flow outlook starting Mar 2025



3-month river flow outlook starting Mar 2025



6-month river flow outlook starting Mar 2025



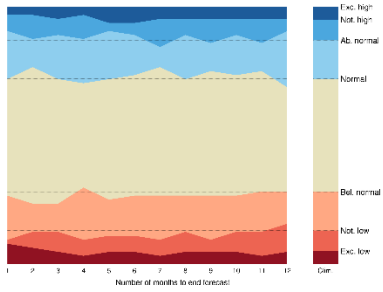
This outlook is based on monthly ensembles of historical sequences of observed climate (rainfall and potential evapotranspiration) that form input to a hydrological model. The outputs are probabilistic simulations of the average river flow over the forecast period (1 to 12 months ahead), at each location. The simulations are generated by the GR6J conceptual rainfall-runoff model from INRAE (France) calibrated on observed or naturalised flows.

The bar plot maps show the outlook distribution for 1, 3 and 6-month period for 64 catchments across England and Wales. Each bar plot represents the probabilistic distribution of the simulated river flow compared to the historical river flow, for the same n-month period. The probabilities fall within five categories, classified as: low, below normal, normal, above normal and high.

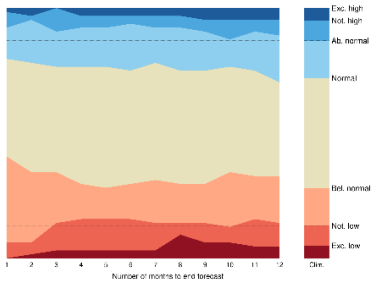
This outlook is based entirely on historical sequences and therefore does not contain any knowledge of the state of the atmosphere and ocean. It is hence possible that some of the historical sequences used might be inconsistent with current large-scale atmospheric conditions and would therefore be unlikely to occur in the next few months.

Please note that *Outlooks based on modelled flow from historical climate* from October 2023 onwards were generated using GR6J model, whereas until September 2023, they were produced using GR4J model. For more details, please see the section on River flow from historical climate at this link: <https://hydoutuk.net/about/methods/river-flows>

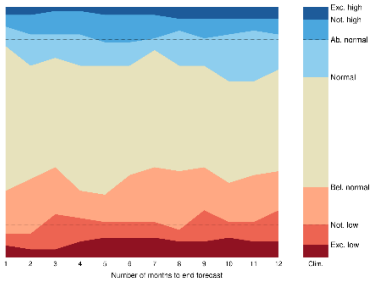
Mourne
201010



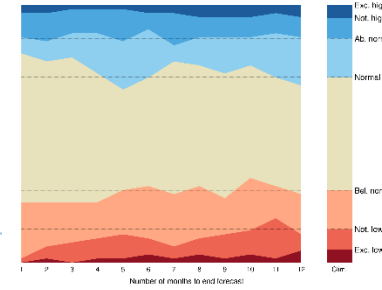
Trent
28009



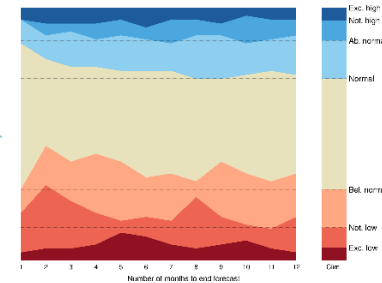
Severn
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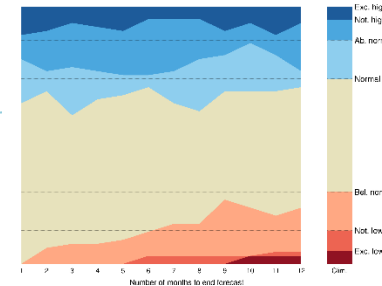
Tay
15006



Tweed
21009



Thames
39001



This outlook is based on monthly ensembles of historical sequences of observed climate (rainfall and potential evapotranspiration) that form input to a hydrological model. The outputs are probabilistic simulations of the average river flow over the forecast period (1 to 12 months ahead), at each location. The simulations are generated by the GR6J conceptual rainfall-runoff model from INRAE (France) calibrated on observed or naturalised flows.

The stack diagrams show the variation over time of the outlook distribution for a number of individual catchments. Each graph represents variation over time of the number of simulated river flows, in each month ensemble, that fall within each of seven categories: exceptionally low, notably low, below normal, normal, above normal, notably high and exceptionally high. The categories represent cumulative flow conditions, e.g. For 3-month, the simulated total 3-month flow compared to the historical 3-month flow distribution. The monthly variations can be compared to the long-term average distribution of river flows (shown as columns on

the right of each timeline graph).

This outlook is based entirely on historical sequences and therefore does not contain any knowledge of the state of the atmosphere and ocean. It is hence possible that some of the historical sequences used might be inconsistent with current large-scale atmospheric conditions and would therefore be unlikely to occur in the next few months.

Period: March 2025 – May 2025

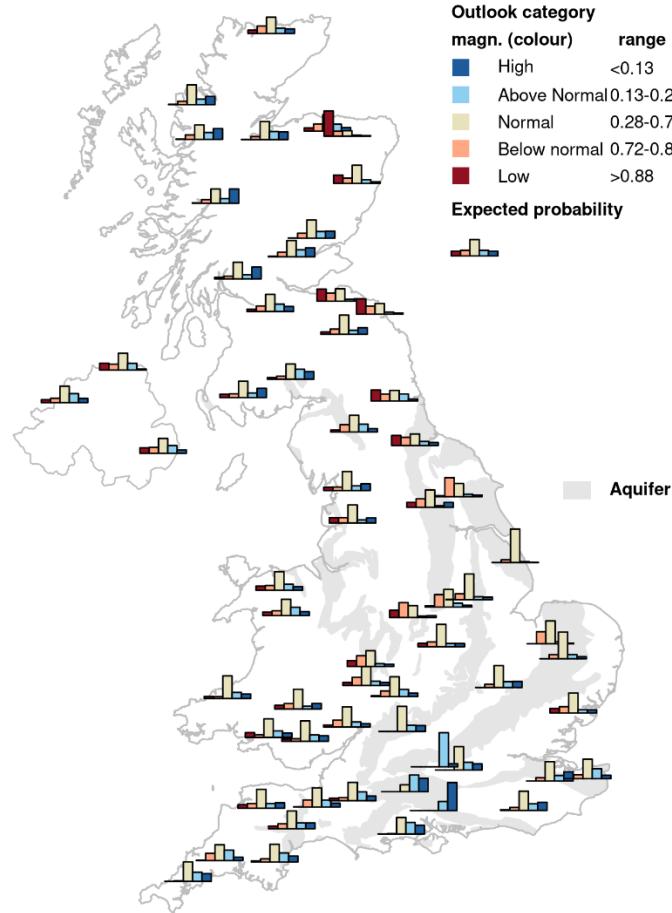
Issued on 05.03.2025 using data to the end of February 2025

The outlook for March indicates that river flows in eastern Scotland, and north-eastern and central England are likely to be normal to below normal. In western Scotland and central southern England flows are likely to be normal to above normal, with some catchments likely to experience high flows. Elsewhere flows are likely to be in the normal range. The March to May outlook suggests a continuation of this pattern, with a shift towards below normal flows in southern and central regions.

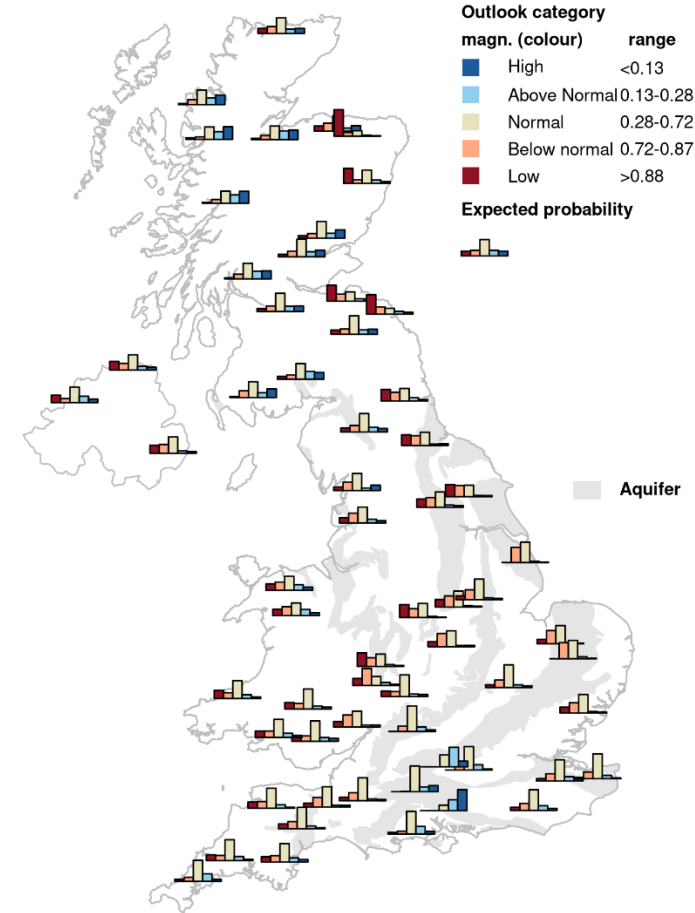
The historical weather analogues method uses Met Office predictions of average weather 1 and 3 months ahead to provide inputs to a hydrological model. Like the ESP method, observed rainfall and temperature data from past years are used to drive the predictions, however, the analogue method constrains the selection of past rainfall using the weather conditions in the meteorological forecasts (which are summarised for this forecast in the Met Office likelihood of impacts blocks underneath the maps). For each member of the Met Office forecast ensemble, the 10 analogues that best match the predicted average weather pattern (surface pressure map) over the forecast period are selected. Precipitation and temperature sequences constructed from the selected analogue scenarios are corrected to account for historic trends and used as inputs to hydrological models. Here, the GR6J model is run using these inputs, creating an ensemble of hydrological forecasts.

The outputs shown in the maps are the likelihoods of different outcomes for the average river flow over the one-month and three-month forecast periods at each location. The outlooks maps show the distribution for 64 catchments across the United Kingdom. Each bar plot represents the likelihood of the simulated river flow compared to the historical river flow, for the same n-month period. The probabilities fall within five categories, classified as: low, below normal, normal, above normal and high. The expected climatological probability of ensemble members in each of these categories is shown under the legend.

1-month river flow outlook starting Mar 2025



3-month river flow outlook starting Mar 2025



Met Office 1-month likelihood of precipitation impact



Met Office 3-month likelihood of precipitation impact



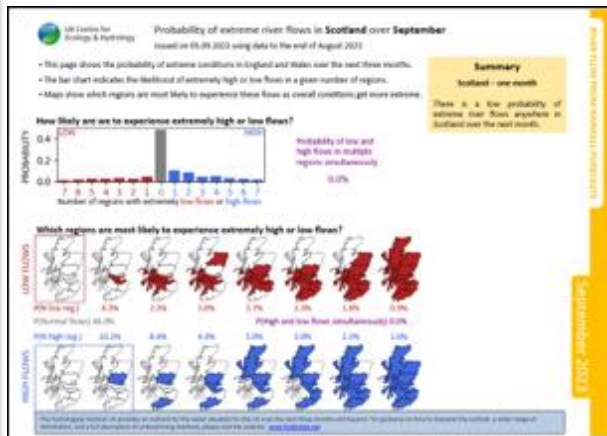
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Forecasts of river flows using Met Office rainfall forecasts

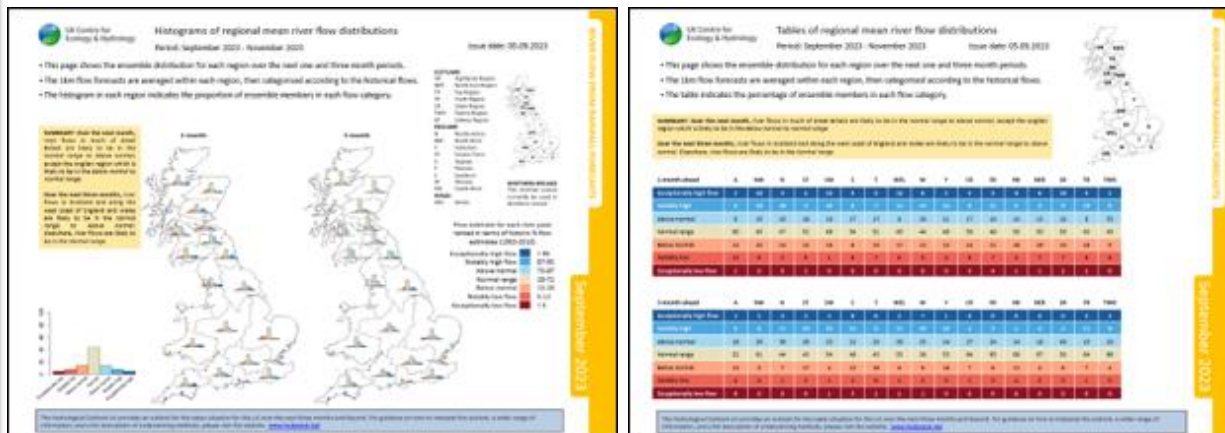
- These (yellow edged) pages summarise river flow forecasts produced by the UKCEH Water Balance Model.
- This model uses an ensemble of rainfall forecasts provided by the Met Office and a hydrological model to forecast river flows for the next one- and three-months ahead.
- A detailed description of these forecast products can be found on the final page, and a full technical description is given in the documentation available via the Hydrological Outlook website.
- Additional forecast products are available on the Hydrological Outlook Portal, via the website.

Probability of extreme river flows



- Use these pages if you are interested in extreme conditions across multiple regions.
- These pages summarise the risk of extremely high or low flows being observed across GB.
- The four pages show the risk for **Scotland** and for **England & Wales** over the next one and three months.
- The slides indicate the **probability of widespread extreme conditions** and which regions are most likely to experience extremely high or low flows.

Regional mean river flow distributions



- Use these pages if you are interested in the ensemble distribution in a single region.
- The first page shows the ensemble distribution as a histogram for each region.
- The second page shows the percentage of ensemble members in each band for each region.

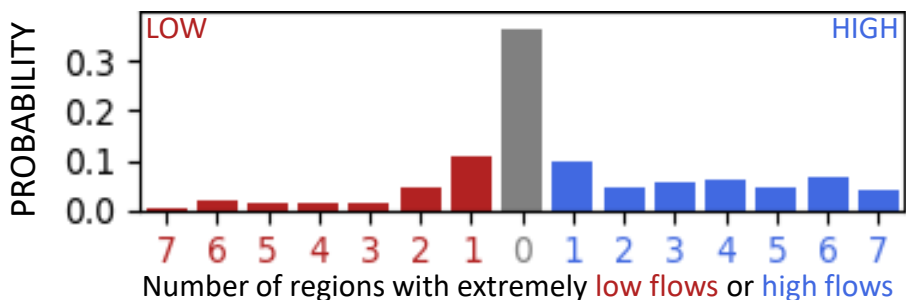
This page shows the **probability of extreme conditions in Scotland** over the next month. The bar chart indicates the likelihood of extremely high or low flows in a given number of regions. Maps show which regions are most likely to experience these flows as overall conditions get more extreme.

Summary

Scotland – one month

River flows in Scotland are unlikely to be extremely high or low over the next month. If extremely high flows are observed, they are most likely to occur in the southeast of the country.

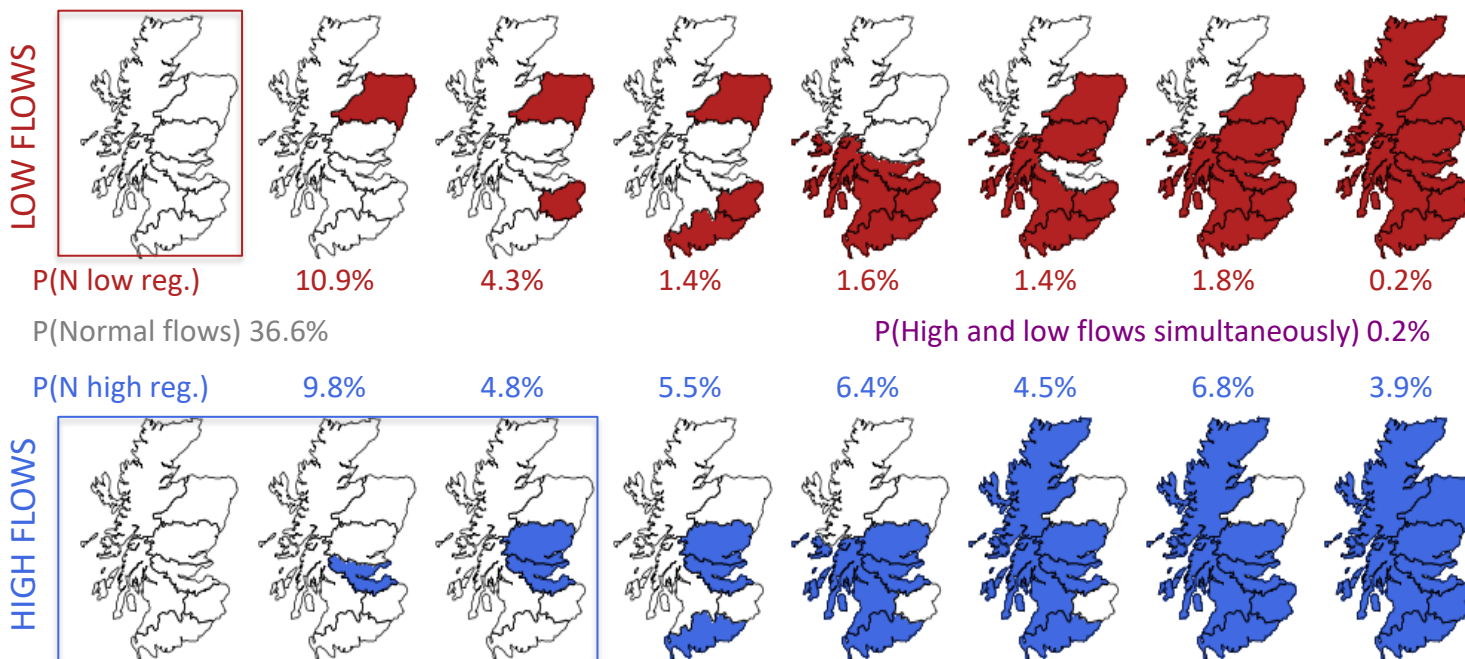
How likely are we to experience extremely low or high flows?



Probability of low and high flows in multiple regions simultaneously

0.2%

Which regions are most likely to experience extremely low or high flows?



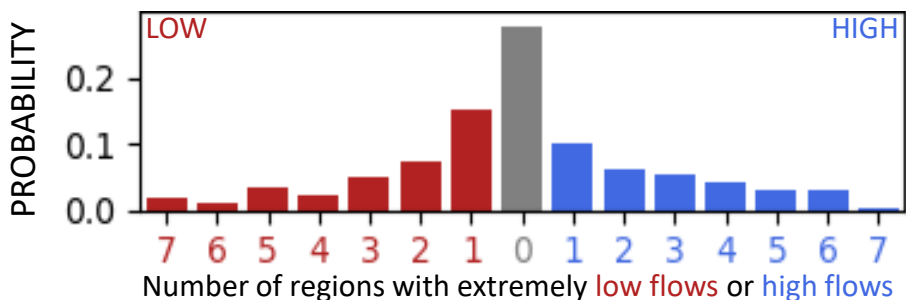
This page shows the **probability of extreme conditions in Scotland** over the next three months. The bar chart indicates the likelihood of extremely high or low flows in a given number of regions. Maps show which regions are most likely to experience these flows as overall conditions get more extreme.

Summary

Scotland – three months

River flows in Scotland are unlikely to be extremely high or low over the next three months. If extremely high flows are observed, they are most likely to occur in the northwest of the country, whereas if extremely low flows occur, these are most likely in the east.

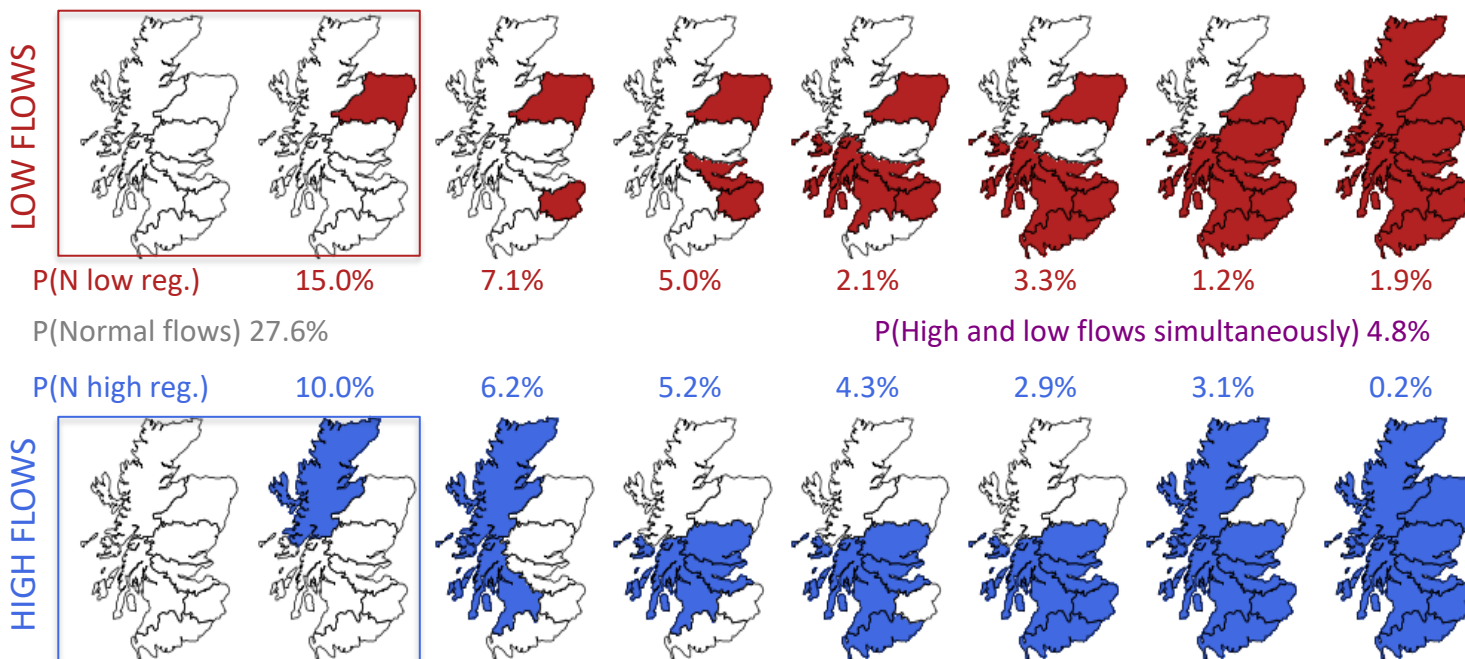
How likely are we to experience extremely low or high flows?



Probability of low and high flows in multiple regions simultaneously

4.8%

Which regions are most likely to experience extremely low or high flows?



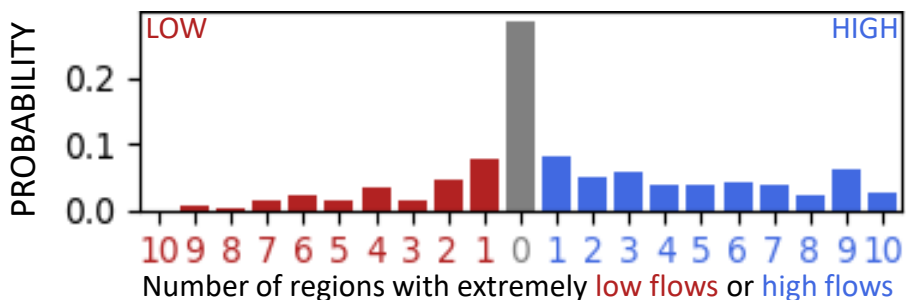
This page shows the **probability of extreme conditions in England and Wales** over the next month. The bar chart indicates the likelihood of extremely high or low flows in a given number of regions. Maps show which regions are most likely to experience these flows as overall conditions get more extreme.

Summary

England and Wales – one month

Extreme river flows are unlikely to occur in England and Wales over the next month. If extremely high flows are observed, they are most probable in central southern England.

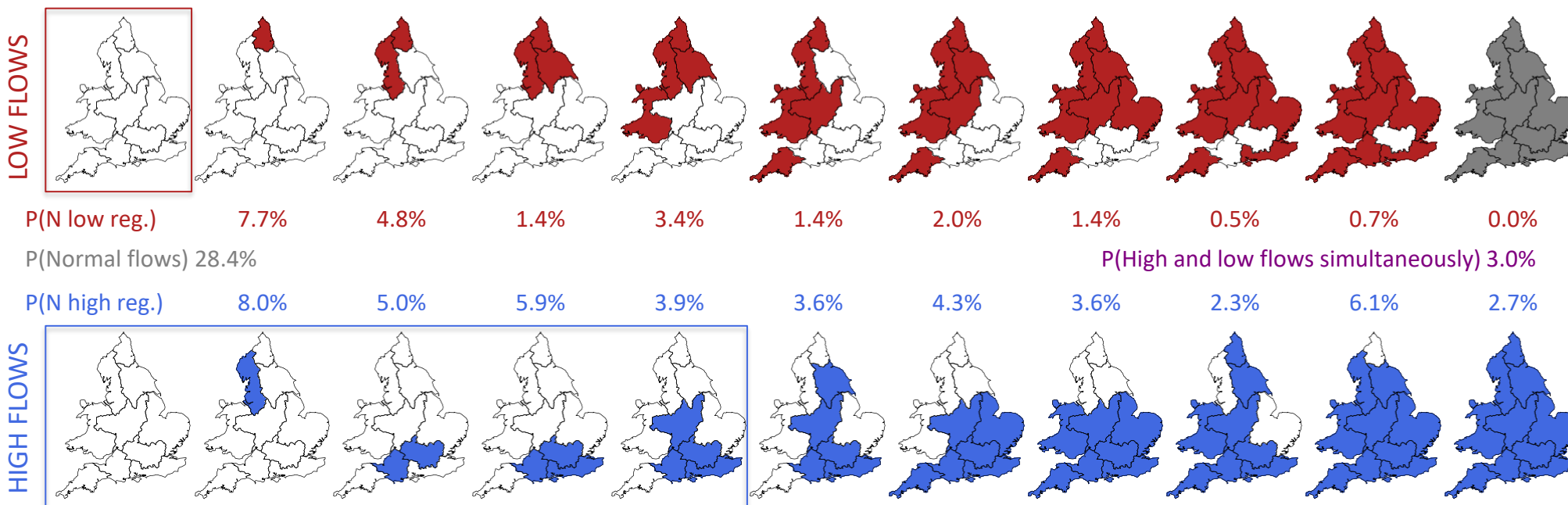
How likely are we to experience extremely low or high flows?



Probability of low and high flows in multiple regions simultaneously

3.0%

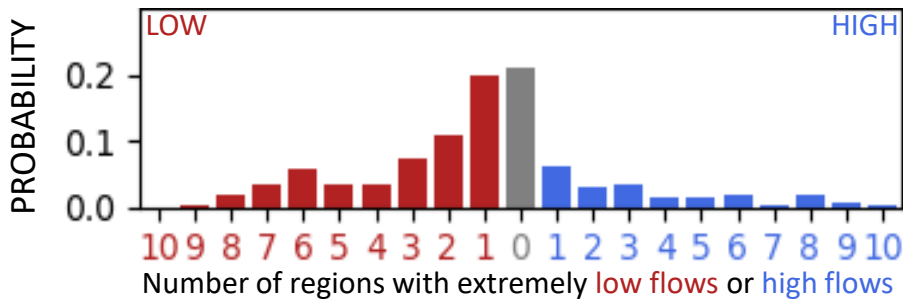
Which regions are most likely to experience extremely low or high flows?



This page shows the **probability of extreme conditions in England and Wales** over the next three months. The bar chart indicates the likelihood of extremely high or low flows in a given number of regions. Maps show which regions are most likely to experience these flows as overall conditions get more extreme.

Summary
England and Wales – three months
 Extremely low river flows may occur in northeast England over the next three months. Extremely high flows are unlikely.

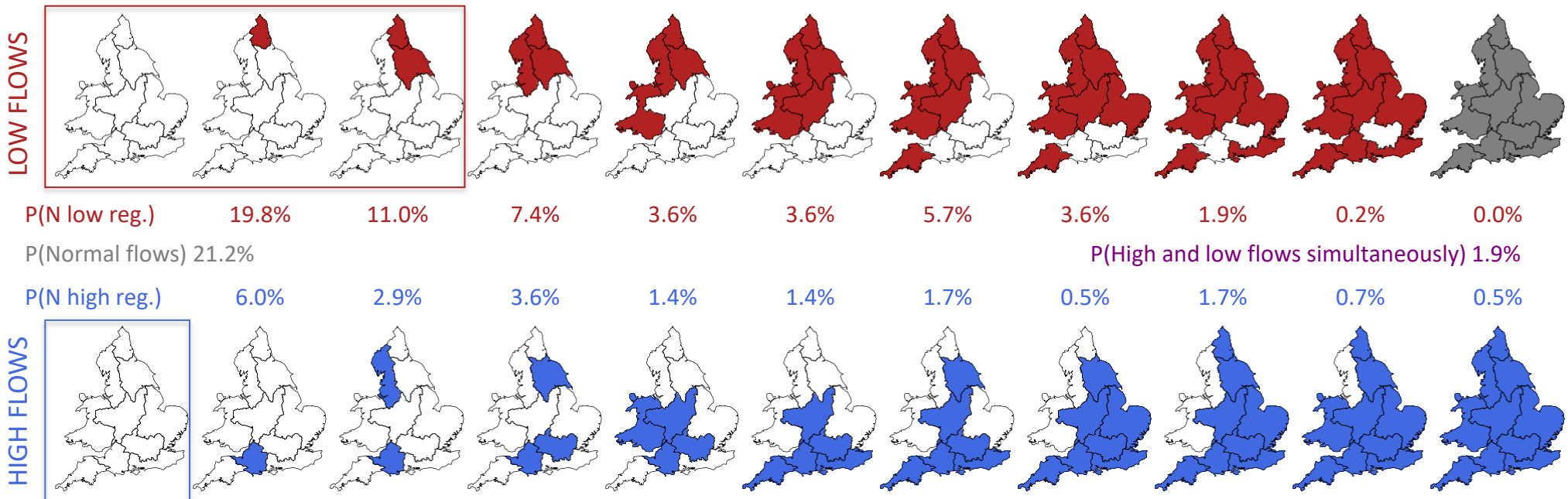
How likely are we to experience extremely low or high flows?



Probability of low and high flows in multiple regions simultaneously

1.9%

Which regions are most likely to experience extremely low or high flows?



P(High and low flows simultaneously) 1.9%

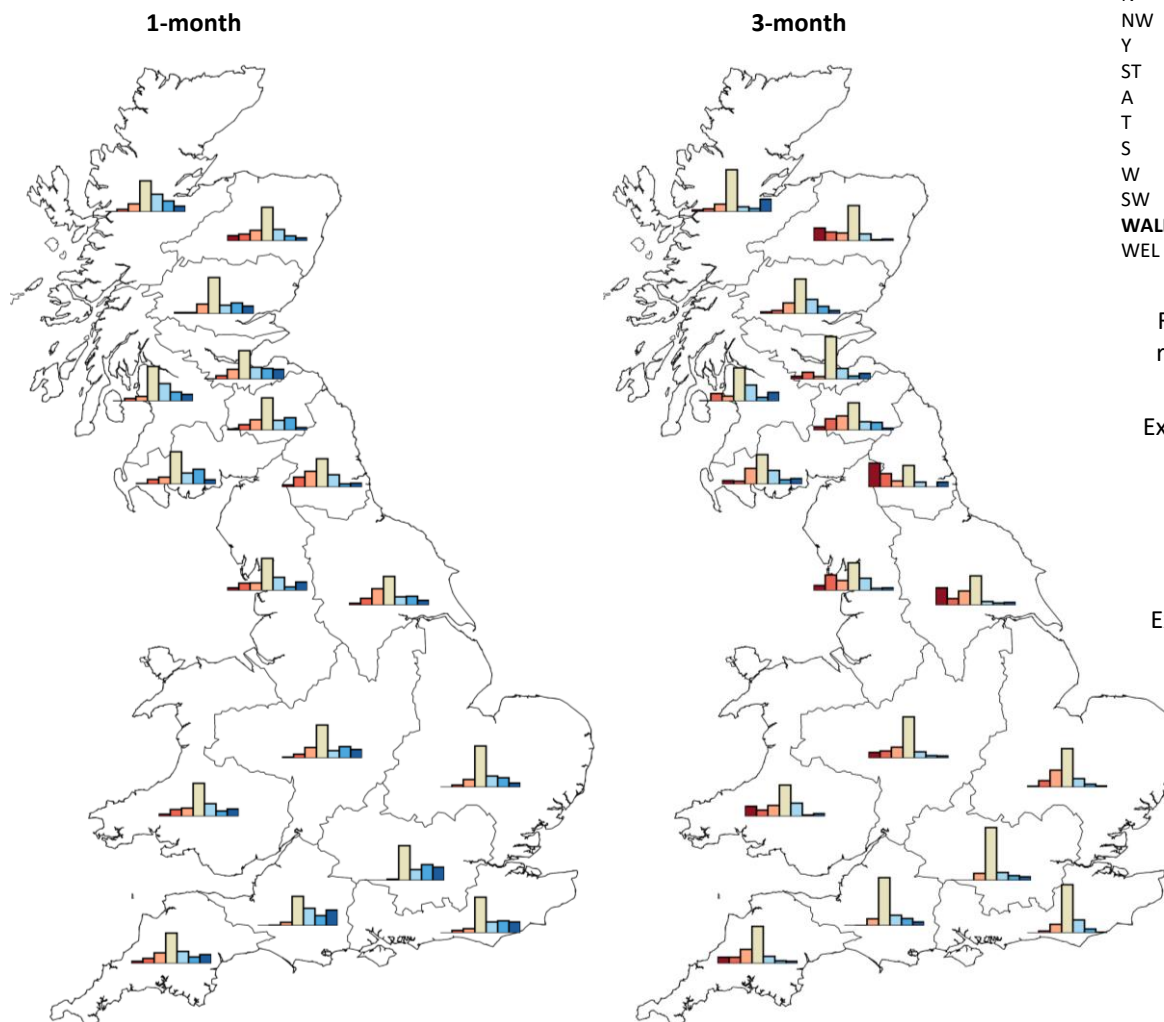
Histograms of GB regional mean river flow distributions

Period: March 2025 - May 2025

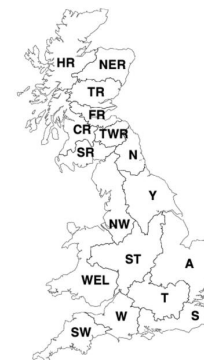
Issue date: 05.03.2025

- This page shows the **ensemble flow distribution for each region** over the next 1- and 3-month periods.
- The 1km flow forecasts are averaged within each region, then categorised according to the historical flows.
- The histogram in each region indicates the proportion of ensemble members in each flow category.

SUMMARY: Over the next month, river flows across most of Great Britain are likely to be in the *normal range*, while river flows in central southern England and northeast Scotland are likely to be in the *normal range* to *notably high flow*. Over the next three months, river flows across most of Great Britain are likely to be in the *normal range*, while river flows in the northeast of England are likely to be in the *normal range* to *exceptionally low flow*.

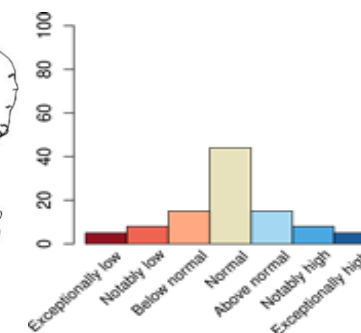


- SCOTLAND**
- HR Highlands Region
 - NER North East Region
 - TR Tay Region
 - FR Forth Region
 - CR Clyde Region
 - TWR Tweed Region
 - SR Solway Region
- ENGLAND**
- N Northumbria
 - NW North West
 - Y Yorkshire
 - ST Severn Trent
 - A Anglian
 - T Thames
 - S Southern
 - W Wessex
 - SW South West
- WALES**
- WEL Welsh



Flow estimate for each river pixel ranked in terms of historic % flow estimates (1963-2016)

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



Tables of GB regional mean river flow distributions

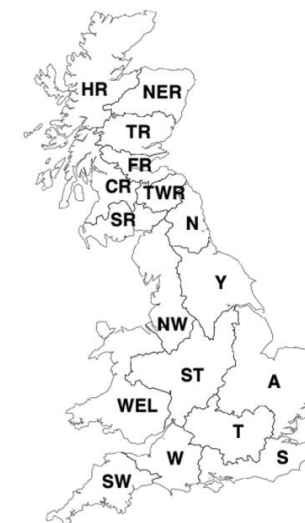
Period: March 2025 - May 2025

Issue date: 05.03.2025

- This page shows **the ensemble flow distribution for each region** over the next 1- and 3-month periods.
- The 1km flow forecasts are averaged within each region, then categorised according to the historical flows.
- The table indicates the percentage of ensemble members in each flow category.

SUMMARY: Over the next month, river flows across most of Great Britain are likely to be in the *normal range*, while river flows in central southern England and northeast Scotland are likely to be in the *normal range to notably high flow*.

Over the next three months, river flows across most of Great Britain are likely to be in the *normal range*, while river flows in the northeast of England are likely to be in the *normal range to exceptionally low flow*.



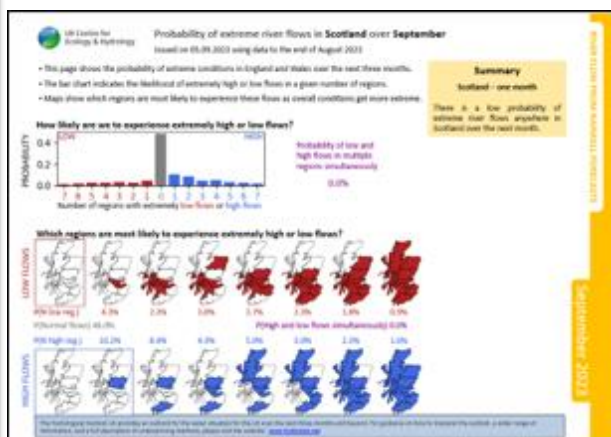
1-month ahead	A	NW	N	ST	SW	S	T	WEL	W	Y	CR	FR	HR	NER	SR	TR	TWR
Exceptionally high flow	6	11	5	11	12	14	17	10	20	6	9	13	8	4	6	10	4
Notably high	12	5	4	15	9	16	21	7	13	12	12	14	14	7	20	14	17
Above normal	15	18	16	10	16	14	14	17	23	11	23	16	23	15	15	11	13
Normal range	54	42	37	43	40	47	46	43	38	38	46	38	41	44	43	48	43
Below normal	10	10	21	14	14	6	2	11	4	22	6	13	11	14	10	13	14
Notably low	3	10	13	5	7	3	0	9	1	9	4	5	3	9	6	2	8
Exceptionally low flow	0	4	3	1	3	0	0	3	0	3	0	0	0	7	1	2	2

3-month ahead	A	NW	N	ST	SW	S	T	WEL	W	Y	CR	FR	HR	NER	SR	TR	TWR
Exceptionally high flow	2	4	7	3	3	1	5	4	5	4	12	8	17	3	8	4	3
Notably high	4	3	0	3	4	5	6	2	9	3	5	4	4	2	6	10	10
Above normal	11	16	7	8	9	17	10	17	14	5	21	14	7	9	18	19	11
Normal range	51	36	28	54	49	63	69	41	63	38	44	56	55	46	39	46	36
Below normal	22	13	8	14	19	11	9	14	9	19	7	4	10	11	21	14	19
Notably low	9	20	18	9	8	2	0	8	0	9	10	9	4	12	4	4	15
Exceptionally low flow	1	7	32	7	8	0	0	13	0	23	1	4	3	17	5	3	5

Forecasts of river flows using Met Office rainfall forecasts

- The data on these (yellow-bordered) pages are based on approximately 400 rainfall scenarios provided by the Met Office, which are used as inputs to a water balance hydrological model.
- River flow forecasts for every 1km grid cell are ranked according to the historical flow estimates and aggregated within each region.
- A full description of this method and these summary products is given in the technical documentation available via the Hydrological Outlook website.

Probability of extreme river flows



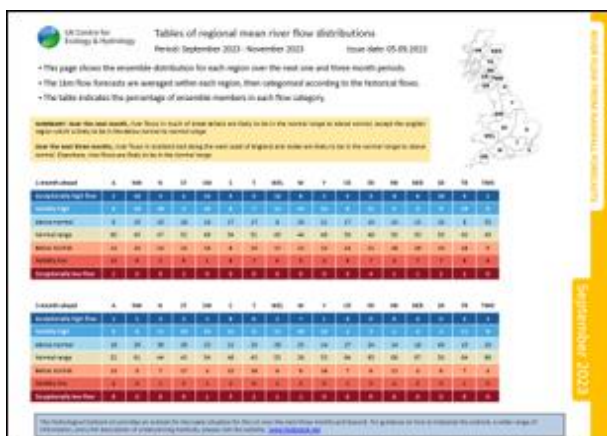
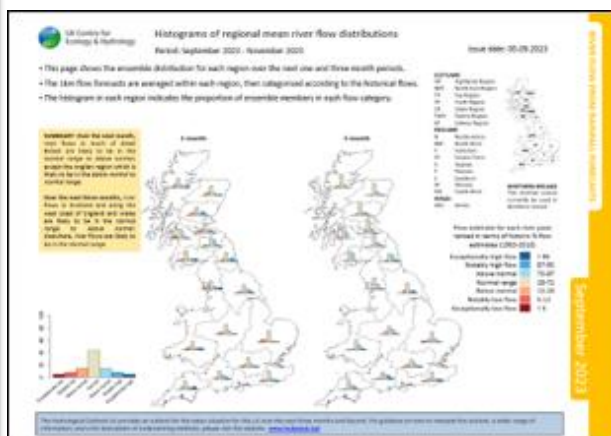
Extreme river flows are defined as those which rank in the lowest or highest 13% of historical flow estimates (1963 - 2016). This definition encompasses the 'Notably' and 'Exceptionally' high/low flow bands used elsewhere in the Outlook.

The bar chart shows the probability of a given number of regions experiencing extremely high/low flows, where scenarios showing both extremely high and extremely low flows in different regions simultaneously excluded. These probabilities are also shown beneath the maps.

Shaded regions on each map are those most likely to experience extreme flows from the set of scenarios with at least a given number of regions experiencing such flows. If shown, grey maps indicate scenarios not observed in the ensemble.

The box drawn around some maps spans the central 50% probability interval, excluding scenarios where extremely high/low flows are observed simultaneously. If these excluded cases constitute a significant probability, details are given in the yellow summary box.

Regional mean river flow distributions



The maps illustrate the ensemble distribution of regional mean river flows. The historical distribution is shown at bottom-left, and allows deviations from the normal distribution to be determined by comparing the forecast distribution to the historical distribution. A summary is given in the yellow box.

The table gives access to the data shown in the histograms. The numbers in the tables are the percentage of ensemble forecasts falling in each of the flow categories. As before results are averaged by region then ranked in terms of 54 years of historical regional flow estimates (1963 – 2016).

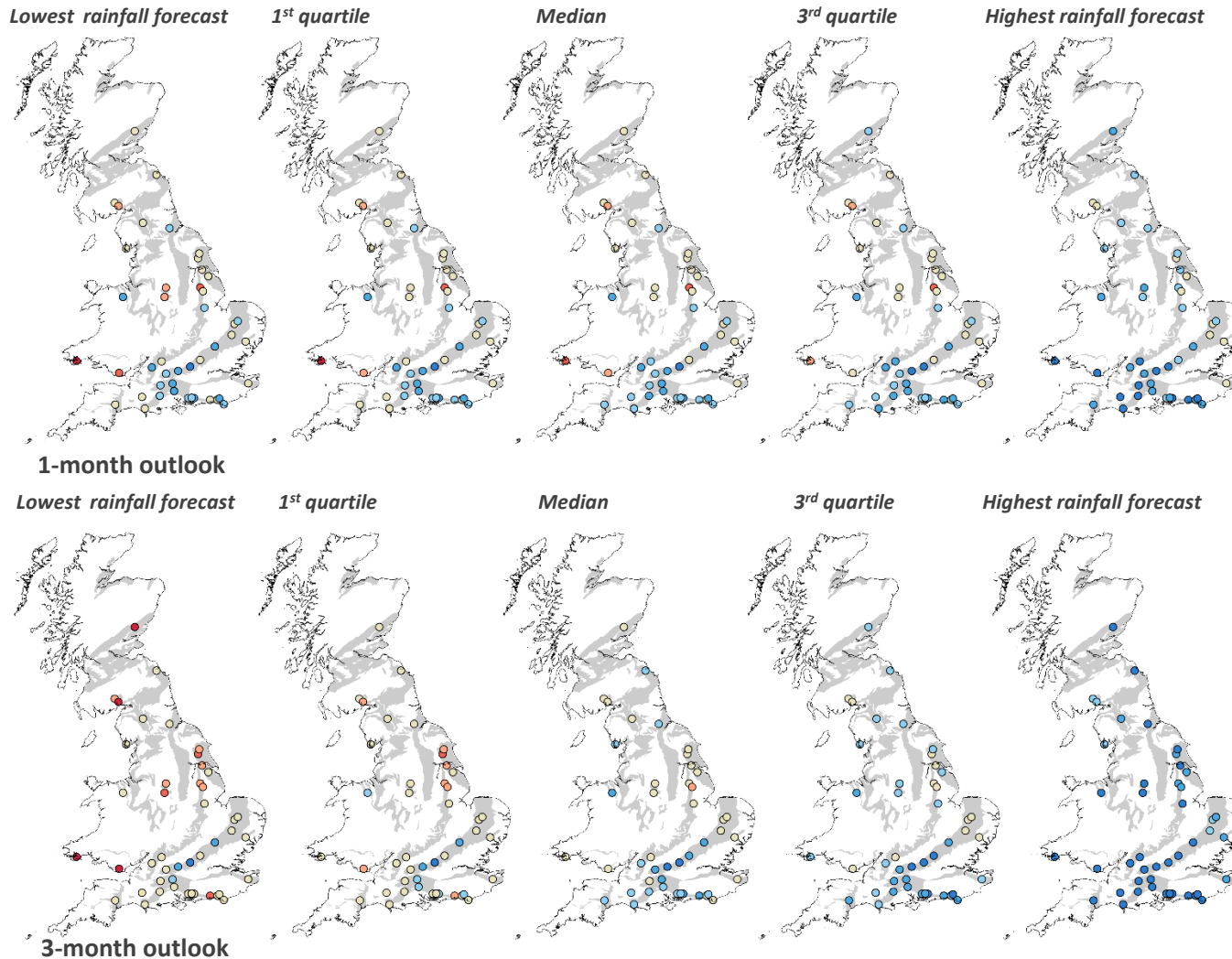
Period: March 2025 – May 2025

Issued on 07.03.2025 using data to the end of February

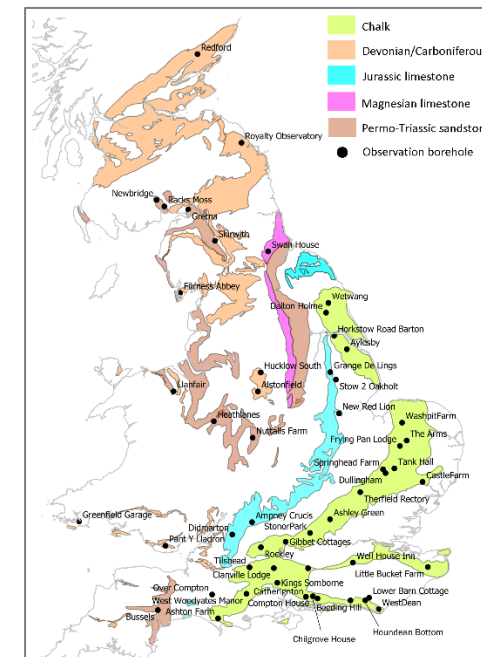
Under median rainfall conditions, groundwater levels across much of northern, central and eastern England, are expected to stay within normal conditions over the next month. In contrast, the Chalk aquifer in southern England is likely to maintain above normal levels. Meanwhile, in the Permo-Triassic Sandstones of Scotland and south Wales some below normal to exceptionally low levels are anticipated. The three-month median forecasts suggest that levels will stay within normal conditions, although levels in the Chalk aquifers of southern England are expected to remain above normal.

These forecasts are produced by running five members of the Met Office ensemble climate forecast through groundwater models of observation borehole hydrographs at 42 sites across the country. The sites are distributed across the principal aquifers.

Based on the distribution of observed historical groundwater levels in a given month, seven categories have been derived for each site: very low, low, below normal, normal, above normal, high, and very high. The forecast groundwater level is assigned to one of these seven categories depending on where it falls within the distribution of the historically observed values.



Key	Percentile range of historic observed values for relevant month
Exceptionally high levels	> 95
Notably high levels	87-95
Above normal	72-87
Normal	28-72
Below normal	12-28
Notably low levels	5-13
Exceptionally low levels	< 5



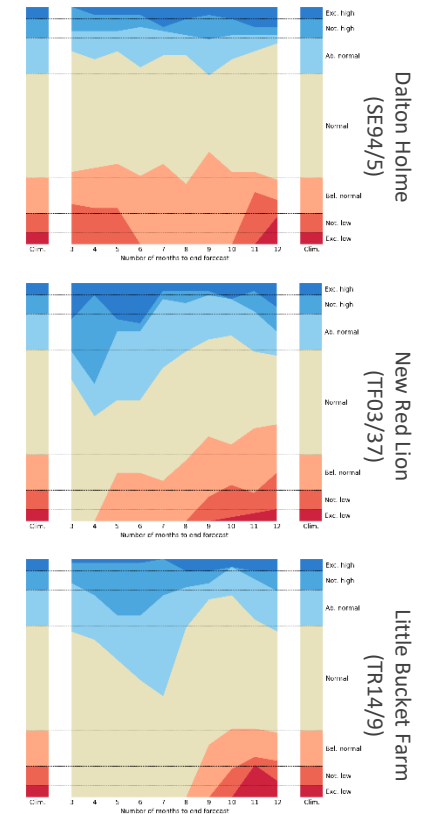
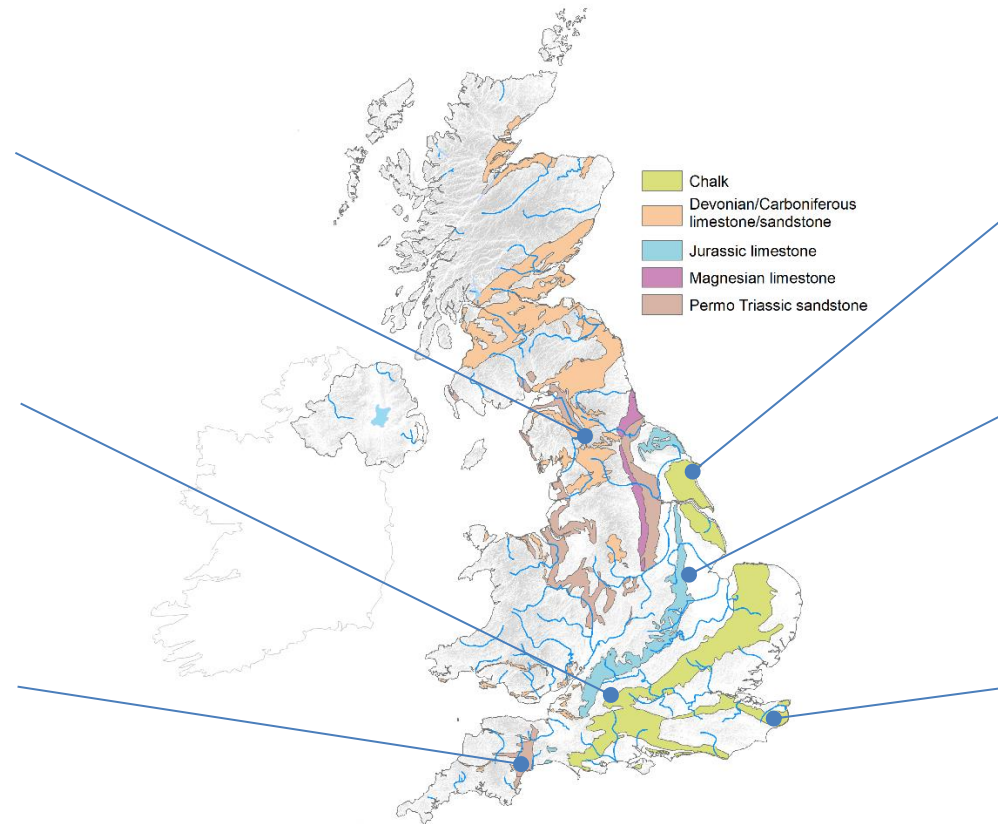
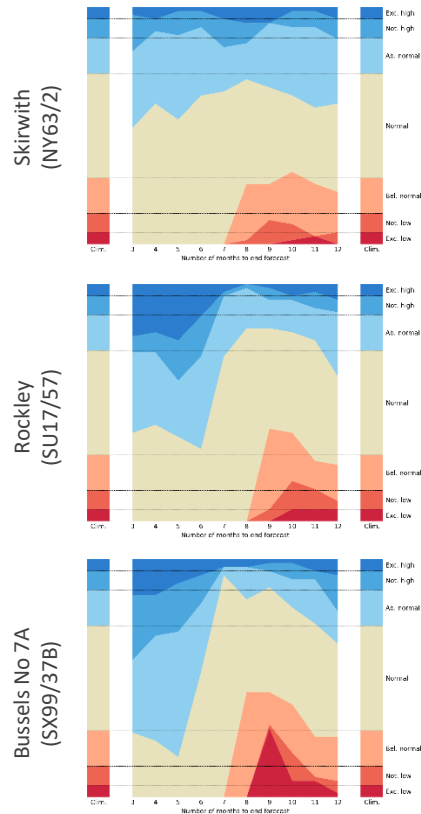
The Hydrological Outlook UK provides an outlook for the water situation for the UK over the next three months and beyond. For guidance on how to interpret the outlook, a wider range of information, and a full description of underpinning methods, please visit the website: www.hydroutuk.net

Outlook based on modelled groundwater from historical climate

Period: March 2025 – February 2026

Issued on 07.03.2025 using data to the end of February

At Rockley in the Chalk and at Bussels No 7A and Skirwith in the Permo-Triassic Sandstones, groundwater levels are projected to transition from above normal to more normal conditions over the next seven months, with a potential for below-normal conditions over the following four months. At Little Bucket Farm and Dalton Holme in the Chalk, groundwater levels are likely to remain normal over the next 12 months, though both sites may experience occasional periods of above or below normal conditions during this time. The Jurassic Limestones at New Red Lion are expected to remain normal to above normal for the next four months, before transitioning to below normal conditions thereafter.



This outlook is based on monthly ensembles of historical sequences of observed climate (rainfall and potential evapotranspiration) that form input to hydrological models. The outputs are probabilistic simulations of the average groundwater level over the forecast horizon (3 to 12 months ahead), at each location.

that fall within each the seven categories: exceptionally low, notably low, below normal, normal, above normal, notably high and exceptionally high. The monthly variations can be compared to the long-term average distribution of levels, which are shown as columns on the left and right of each graph.

the atmosphere and ocean. It is hence possible that some of the historical sequences used might be inconsistent with current large-scale atmospheric conditions and would therefore be unlikely to occur in the next few months.

The graphs show variation over time of the number of simulated groundwater levels in each monthly ensemble,

This outlook is based entirely on historical sequences and therefore does not contain any knowledge of the state of