Hydrological Summary

for the United Kingdom

November 2025

General

November was the wettest month of 2025 so far, with 131% of average for the UK as a whole and exceptional rainfall across large parts of the country. It rounds off a transformative autumn, with many areas quickly shifting from drought concerns to flood risk (although precautionary drought restrictions remained at month-end even in some of the wetter areas). With steep increases in soil moisture levels, river flows climbed sharply in responsive catchments – flood alerts were widespread and there was locally severe flooding in south Wales. Correspondingly, reservoir levels recovered in many upland impoundments: stocks for England & Wales climbed from 68% in October to 81% of capacity (only 3% below the typical November stocks) and some reservoirs saw even greater increases (e.g. in the Pennines where Derwent Valley and Washburn went from substantially below average to 13% and 8% above, respectively). However, in southern and eastern England, despite some notable increases, stocks typically remained below average (e.g. 28% below average at Wimbleball and 30% at Ardingly), reflecting a drier autumn that extends long-term rainfall deficiencies. Notably low groundwater levels were also apparent across the southern and eastern Chalk, although recharge has commenced in some areas, and it will take time for the November rainfall to have an impact. Entering winter, the picture is mixed, with simultaneous flood warnings and drought restrictions in place, reflecting both spatial variations in autumn rainfall and the role of aquifer/catchment properties in dictating the rate of recovery. The Thames Water temporary use ban was lifted on 27th November and further cessation of drought status was planned in other areas for early December. And yet, concerns remain, and winter rainfall will be of pivotal importance in dictating the water resources outlook for 2026, particularly in the south-east. The latest Hydrological Outlook indicates normal to below normal flows and groundwater levels are likely in parts of southeast England and in northern Scotland through the winter.

Rainfall

Early November was mild but very unsettled, as several frontal systems bought heavy rainfall, particularly in the west, where surface water flooding triggered transport disruption and localised property flooding in the first week in Wales and Cumbria. From the 9th to the 14th, a complex low-pressure system to the southwest of the UK, Storm 'Claudia', brought a series of slow-moving fronts across southern Britain, with embedded convection at times. Significant rainfall totals were widespread (with a large swathe of Wales and central England receiving the typical November rainfall in this six-day period), with the greatest totals in the Welsh borders and upland south Wales – e.g. a 2-day total of 120mm on the 13th/14th at Tafolog in the Black Mountains. Thereafter, a northerly airflow triggered a wintry spell (with some disruptive snowfall e.g. on the North York Moors) before a return to westerly airflows brought further heavy rainfall in the closing days. While northern Scotland and southern England saw near- or below-average rainfall totals for November (with 81% of average for Southern region), elsewhere was significantly wetter with over 170% of average across a large swathe of central England and parts of the west. The Anglian and Yorkshire regions registered their fourth and fifth highest November totals respectively (since 1890). November concludes a very wet autumn (September-November) for large parts of England, Wales (which saw its wettest autumn since 2000, and ninth wettest since 1890) and Northern Ireland (its third wettest autumn since 1890). In contrast, southeast England and northern and eastern Scotland received near-average or moderately below average rainfall.

River Flows

In many rivers in Wales and northern and western England, flows climbed through the first week, and flood alerts were widespread, particularly in the west – rescues and property flooding were reported following floodplain inundations in Carmarthenshire. Notable peak flows included the Tywi on the 4th (fifth highest in a record from 1958) and the Teifi on the 5th (third highest in a record from 1959). The passage of Storm 'Claudia' triggered rapid increases in flow and by the 14th, flood warnings were widespread, with a particular focus on Wales and the Welsh borders, with four severe flood warnings in south Wales – a major incident was declared in Monmouth due to property flooding from the river Monnow. Thereafter, conditions were more quiescent and fluvial flood alerts were localised until the closing days. Average flows for November were above normal across Northern Ireland, southern Scotland and northern England, exceptionally so in a few cases. In Wales, notably or exceptionally high November flows were widespread, with over 180% of average in some western catchments (the Teifi, Tywi and Erch). The Tawe registered its highest November average flow on record in a series from 1957. Correspondingly, for Wales as a whole, the November outflows were the fourth highest in a record from 1961. In contrast, November flows across northern Scotland and southeast England were in the normal range (albeit below average) and remained below normal in some eastern catchments (the Wensum and the Stringside, the latter with 27% of average). Broadly similar geographical contrasts can be seen in the average flows for autumn, but with more catchments with below normal flow accumulations in eastern Scotland and lowland England.

Soil Moisture and Groundwater

COSMOS-UK observations indicated further recovery in soil moisture, with most sites showing normal or above normal levels, and below normal levels confined to a few sites, mainly in eastern England. Soil moisture deficits reduced sharply to near-average late-November levels. Changes in groundwater levels were spatially variable in the Chalk, with many areas showing recharge (Ashton Farm, Aylesby, Chilgrove House, Dalton Holme, Houndean and West Woodyates Manor). In contrast, Killyglen and Rockley experienced further decline, with the remainder of Chalk sites exhibiting similar levels to the previous month. The Jurassic limestone continued to receive significant recharge, with Ampney Crucis moving from below normal to notably high. In the Magnesian Limestone, Aycliffe remained at normal levels while Brick House Farm moved from normal to above normal. In the Carboniferous limestone, at Alstonfield levels decreased from normal to below normal levels, while Pant y Lladron remained in the normal range. Conversely, Greenfield Garage moved from normal to exceptionally high levels. Levels within the Permo-Triassic Sandstone remained normal for Llanfair D.C. and Bussels No.7a, while Weir Farm remained above normal level. For the Upper Greensand at Lime Kiln Way and the Fell Sandstone at Royalty Observatory, levels continued to be within the normal range. In the Devonian Sandstone, Easter Lathirsk continued to be notably low, meanwhile at Feddan Junction, groundwater levels moved from below normal to the normal range.

National Hydrological Monitoring Programme | UKCEH | BGS British Geological Survey

Rainfall . . . Rainfall . . .

Rainfall accumulations and return period estimates

Percentages are from the 1991-2020 average.

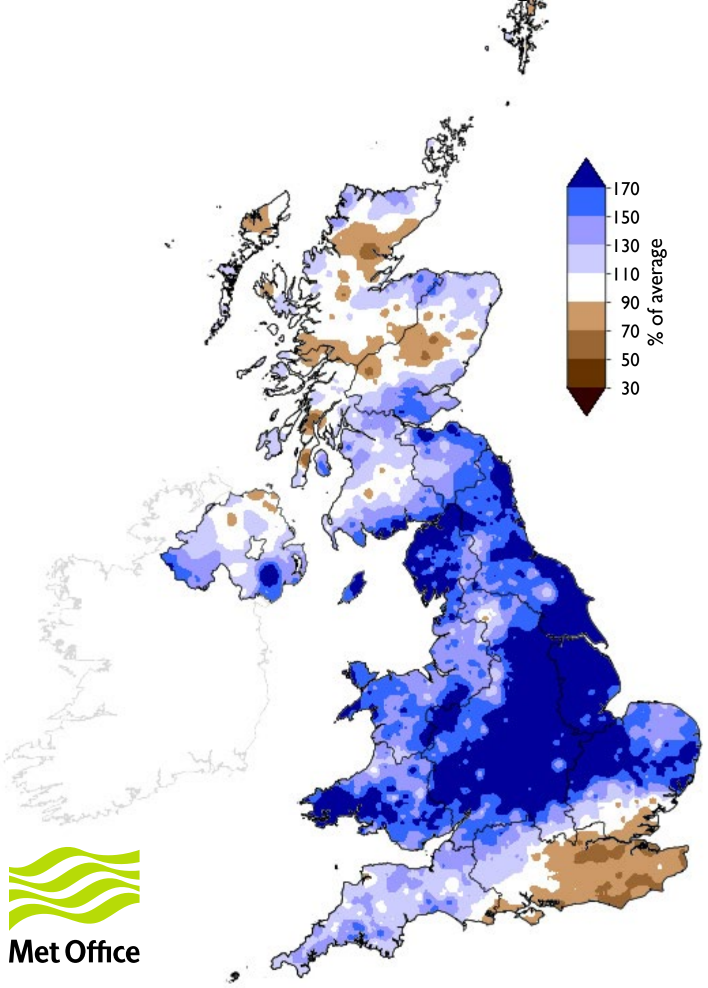
Region	Rainfall	Nov 2025	Sep25 – Nov25	RP	Jun25 – Nov25	RP	Mar25 – Nov25	RP	Dec24 – Nov25	RP
United	mm	**162**	403		616		744		1058	
Kingdom	%	**131**	120	8-12	104	2-5	91	2-5	91	2-5
England	mm	**138**	321		463		539		766	
	%	**149**	128	10-15	101	2-5	86	2-5	88	2-5
Scotland	mm	**179**	482		797		1001		1440	
	%	**109**	105	2-5	103	2-5	93	2-5	92	2-5
Wales	mm	**259**	594		834		980		1413	
	%	**159**	137	15-25	113	5-10	97	2-5	97	2-5
Northern	mm	**149**	449		700		868		1103	
Ireland	%	**122**	139	40-60	118	8-12	105	2-5	95	2-5
England &	mm	**154**	358		513		599		854	
Wales	%	**151**	130	10-15	104	2-5	88	2-5	90	2-5
North West	mm	**214**	542		841		966		1299	
	%	**160**	145	30-50	126	10-15	107	2-5	101	2-5
Northumbria	mm	**157**	348		507		580		771	
	%	**164**	136	15-25	105	2-5	87	2-5	85	2-5
Severn-Trent	mm	**144**	308		417		485		699	
	%	**184**	138	10-20	98	2-5	82	5-10	87	2-5
Yorkshire	mm	**157**	361		493		565		788	
	%	**176**	148	20-30	107	2-5	89	2-5	91	2-5
Anglian	mm	**107**	213		312		363		512	
	%	**172**	119	5-10	89	2-5	76	8-12	81	5-10
Thames	mm	**94**	227		334		383		581	
	%	**119**	106	2-5	88	2-5	72	10-20	80	5-10
Southern	mm	**80**	274		413		467		708	
	%	**82**	108	2-5	98	2-5	81	5-10	86	2-5
Wessex	mm	**131**	306		417		484		741	
	%	**124**	113	2-5	90	2-5	75	10-15	82	5-10
South West	mm	**185**	452		651		816		1186	
	%	**126**	122	5-10	104	2-5	95	2-5	94	2-5
Welsh	mm	**252**	570		798		938		1354	
	%	**161**	137	15-25	112	5-10	96	2-5	96	2-5
Highland	mm	**190**	540		914		1164		1756	
	%	**99**	101	2-5	105	2-5	94	2-5	95	2-5
North East	mm	**119**	298		476		592		870	
	%	**105**	94	2-5	84	2-5	76	10-20	82	5-10
Tay	mm	**150**	397		661		827		1185	
	%	**101**	99	2-5	96	2-5	86	2-5	85	2-5
Forth	mm	**171**	377		612		770		1049	
	%	**138**	108	2-5	97	2-5	89	2-5	84	2-5
Tweed	mm	**155**	334		562		667		899	
	%	**139**	109	2-5	100	2-5	86	2-5	83	2-5
Solway	mm	**226**	563		909		1093		1478	
	%	**133**	122	8-12	114	5-10	100	2-5	94	2-5
Clyde	mm	**221**	619		1009		1273		1750	
	%	**110**	112	5-10	108	5-10	99	2-5	92	2-5

% = percentage of 1991-2020 average *RP = Return period*

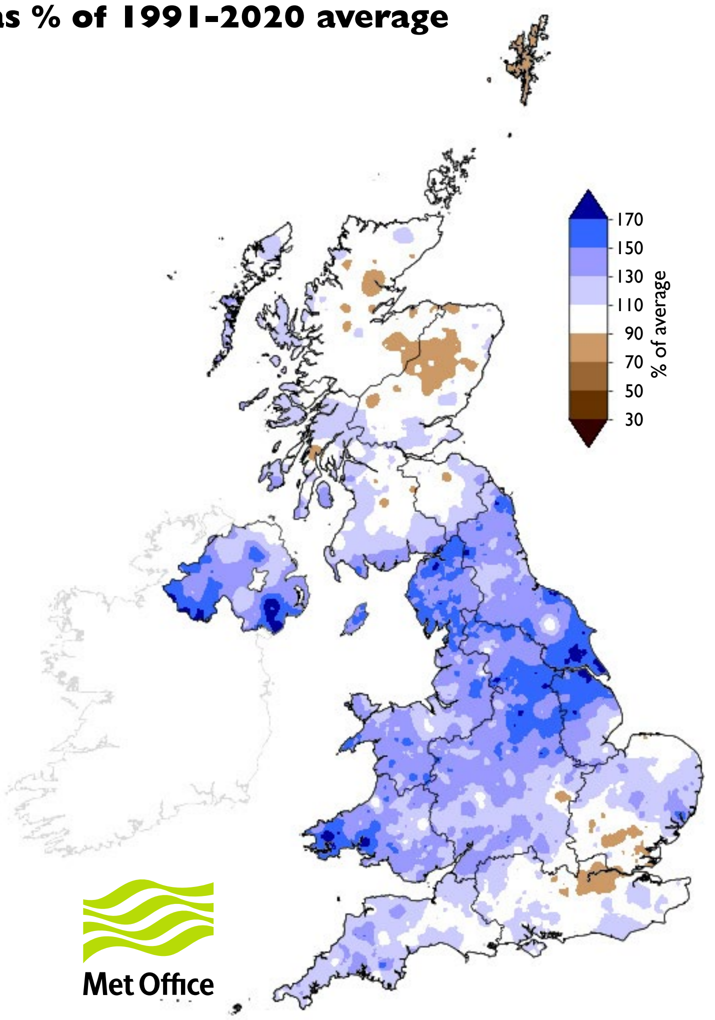
Important note: Figures in the above table may be quoted provided their source is acknowledged. Where appropriate, specific mention must be made of the uncertainties associated with the return period estimates. The RP estimates are based on data provided by the Met Office and reflect climatic variability since 1890; they also assume a stable climate. The quoted RPs relate to the specific timespans only; for the same timespans, but beginning in any month the RPs would be substantially shorter. The timespans featured do not purport to represent the critical periods for any particular water resource management zone. For hydrological or water resources assessments of drought severity, river flows and/or groundwater levels normally provide a better guide than return periods based on regional rainfall totals. Note that precipitation totals in winter months may be underestimated due to snowfall undercatch. All monthly rainfall totals since January 2025 are provisional. Source: Data from HadUK-Grid dataset at 1km resolution v1.3.1.0.

Rainfall . . . Rainfall . . .

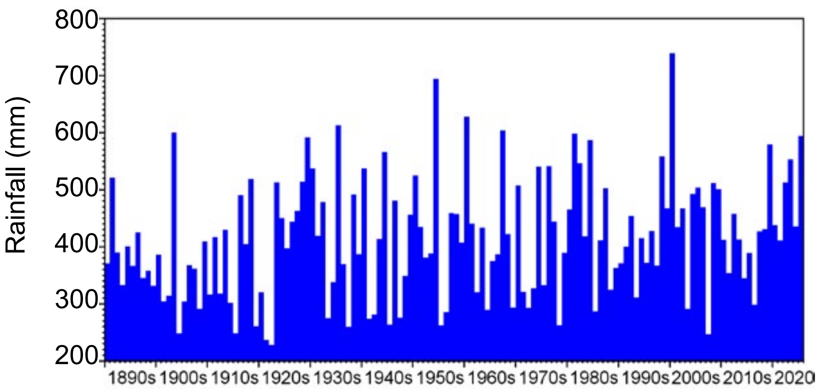
November 2025 rainfall as % of 1991-2020 average



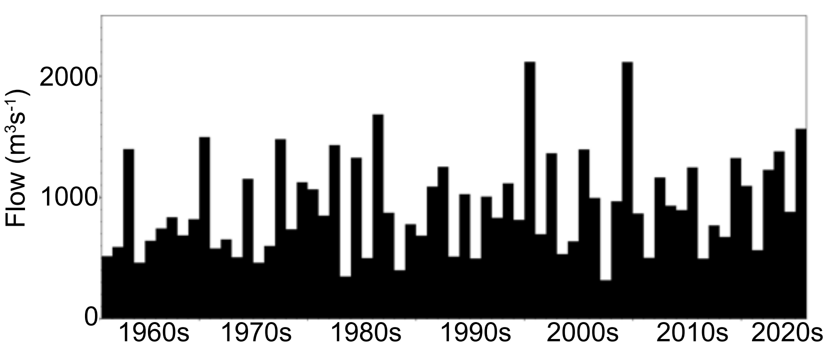
September 2025 - November 2025 rainfall as % of 1991-2020 average



Autumn (September-November) rainfall for Wales



November outflows for Wales



UK Hydrological Outlook

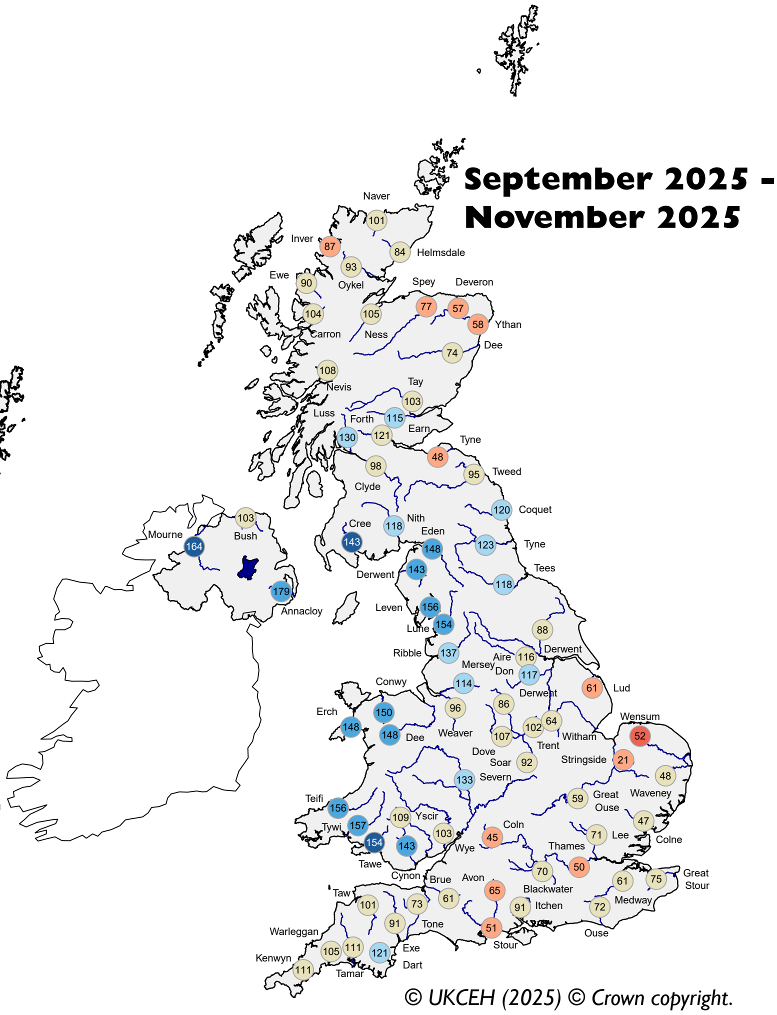
The Hydrological Outlook provides an insight into future hydrological conditions across the UK. Specifically it describes likely trajectories for river flows and groundwater levels on a monthly basis, with particular focus on the next three months.

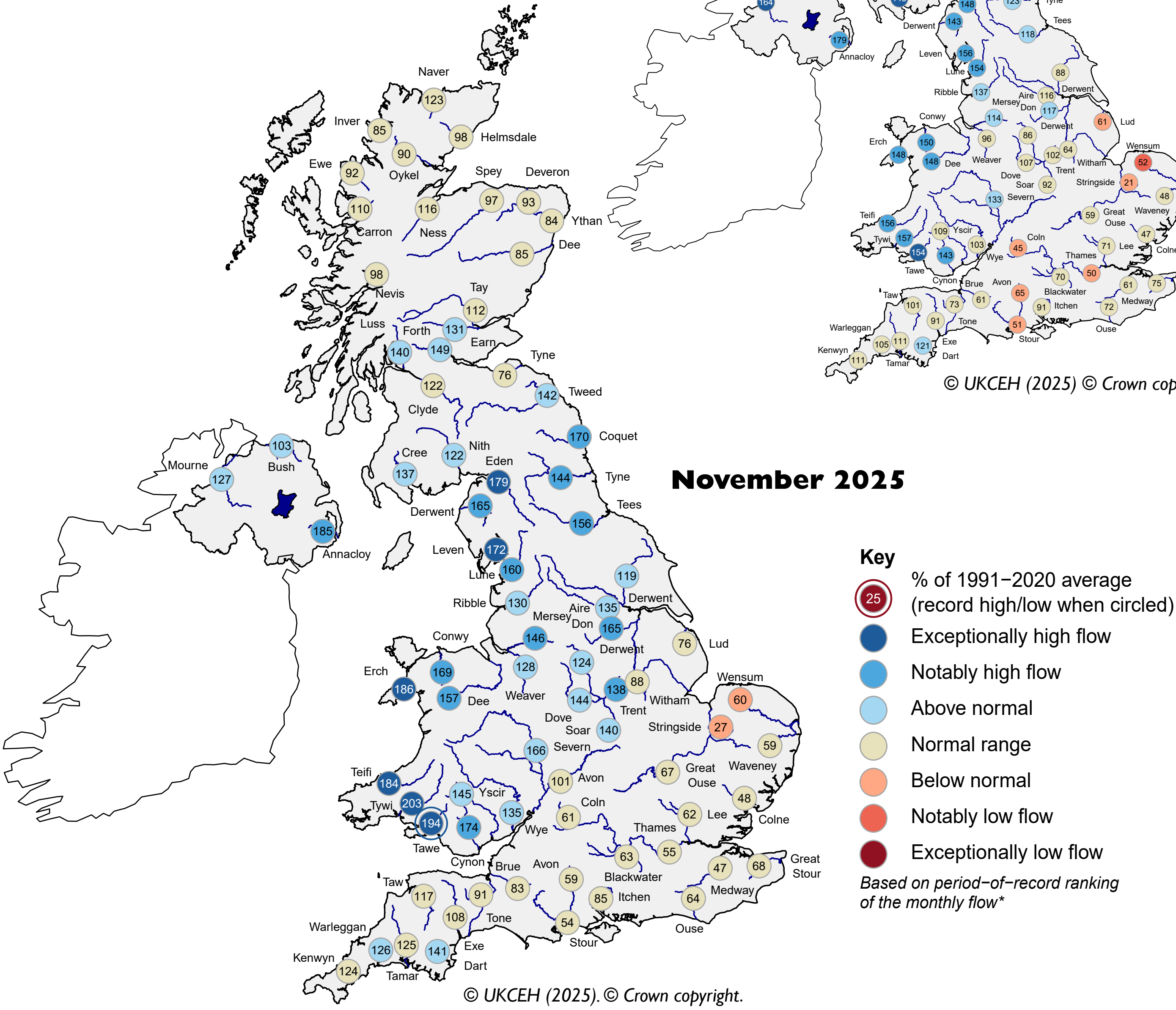
The complete version of the Hydrological Outlook UK can be found at: www.hydoutuk.net/latest-outlook/

Period: **from December 2025**
Issued: **05.12.2025**
using data to the end of November 2025

The outlook for December is for normal to above normal flows and groundwater levels across the majority of the UK, with the potential for exceptional highs in some catchments and aquifers. These levels are likely to return to normal over the winter season. River flows and groundwater levels across the chalk aquifers of the south-east, and in northern Scotland, are likely to be normal to below normal for the next three months

River flow . . . River flow . . .

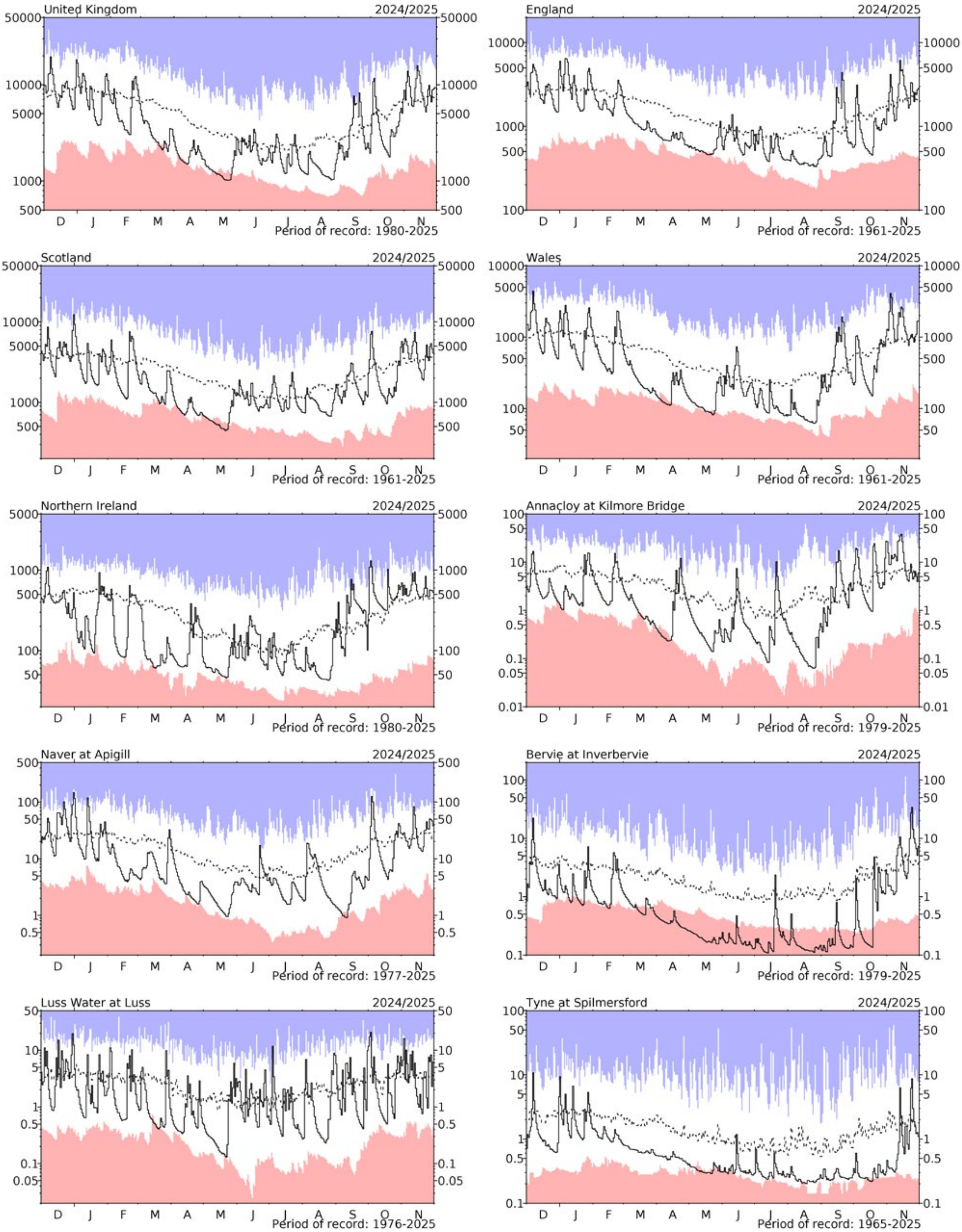




River flows

*Comparisons based on percentage flows alone can be misleading. A given percentage flow can represent extreme drought conditions in permeable catchments where flow patterns are relatively stable but be well within the normal range in impermeable catchments where the natural variation in flows is much greater. The categories of the spots are based on the full period-of-record data whereas the percentages are based on the 1991-2020 averaging period for consistency between rainfall and river flows. Percentages may be omitted where flows are under review.

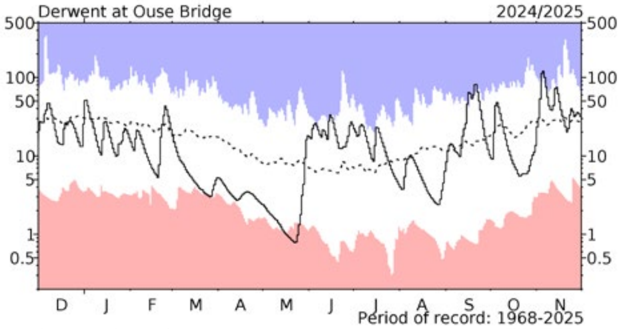
River flow . . . River flow . . .

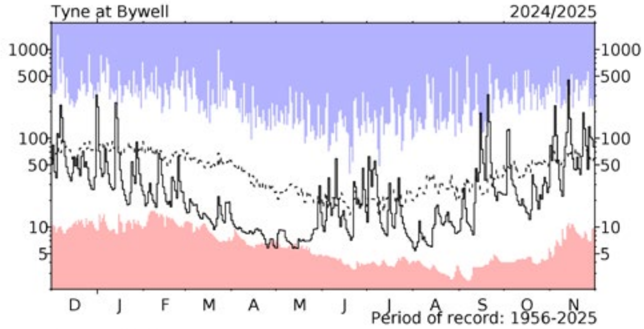


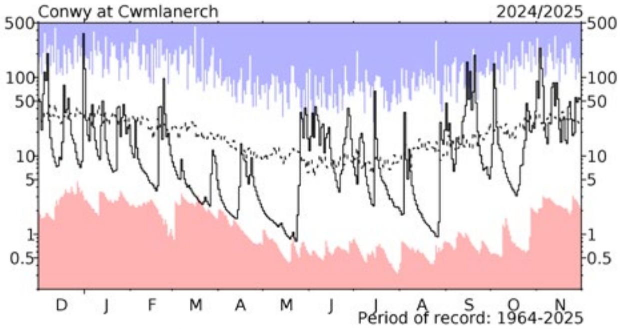
River flow hydrographs

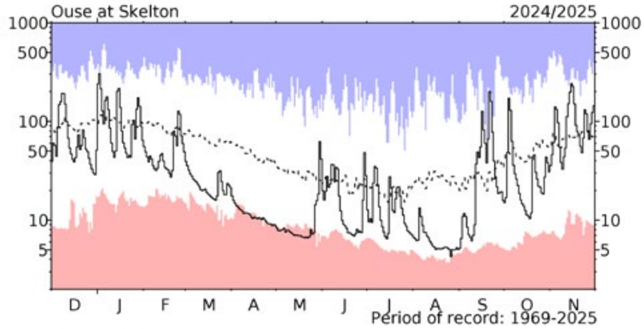
*The river flow hydrographs show the daily mean flows (measured in m^3s^{-1}) together with the maximum and minimum daily flows prior to December 2024 (shown by the shaded areas). Daily flows falling outside the maximum/minimum range are indicated where the bold trace enters the shaded areas. The dashed line represents the period-of-record average daily flow.

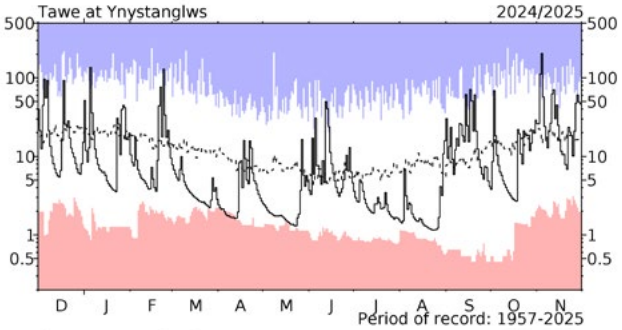
River flow . . . River flow . . .

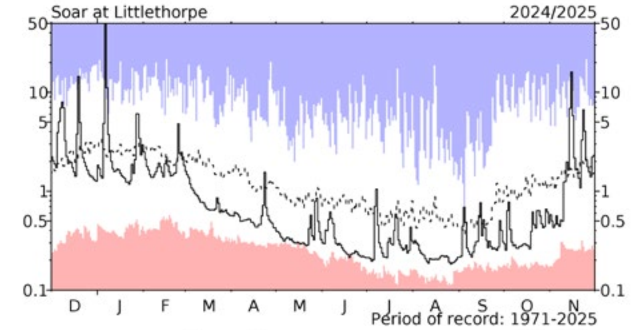


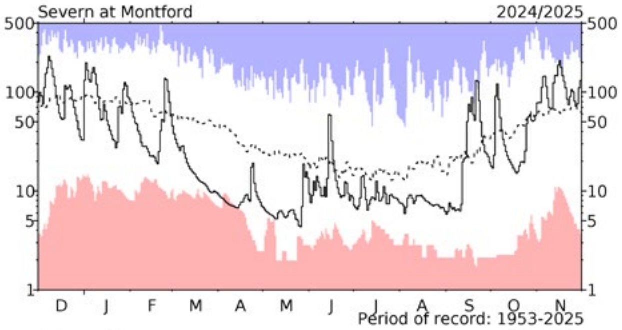


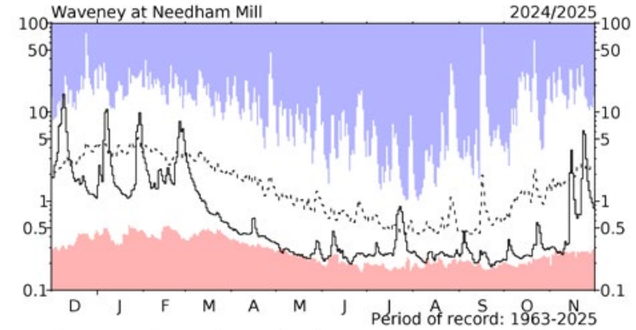


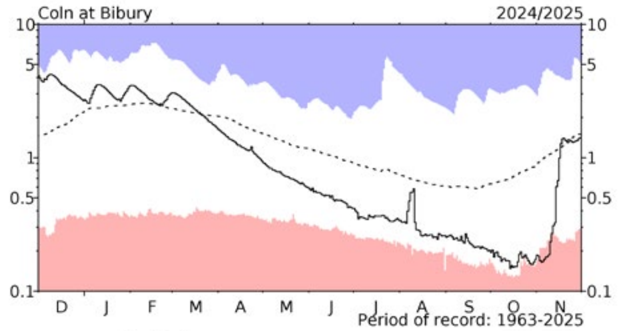


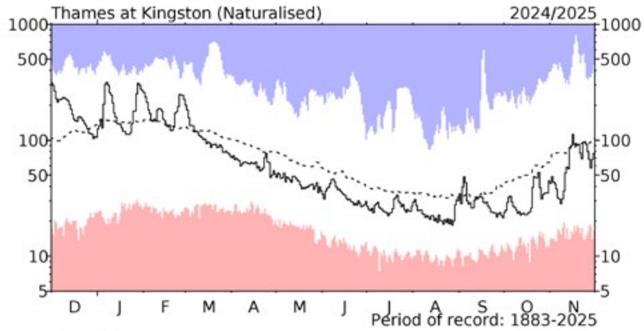


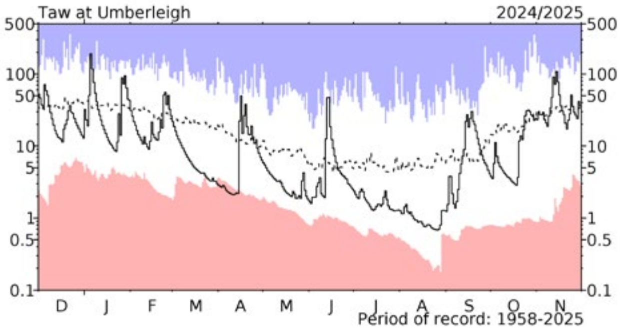


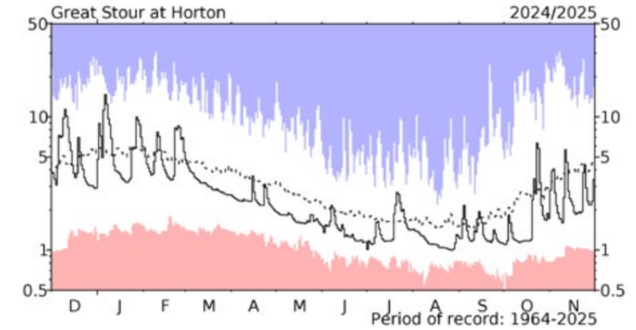




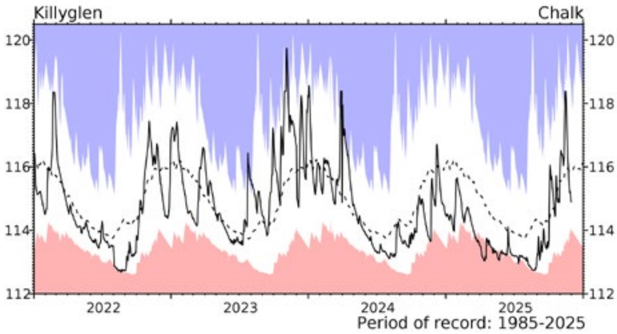


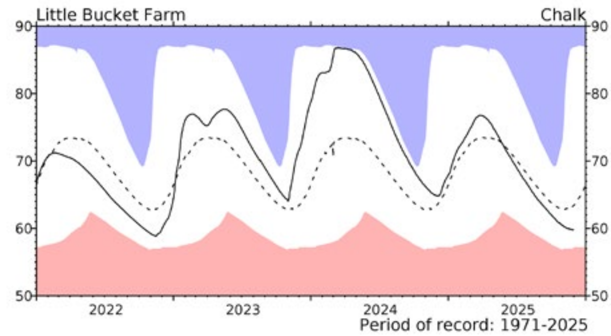


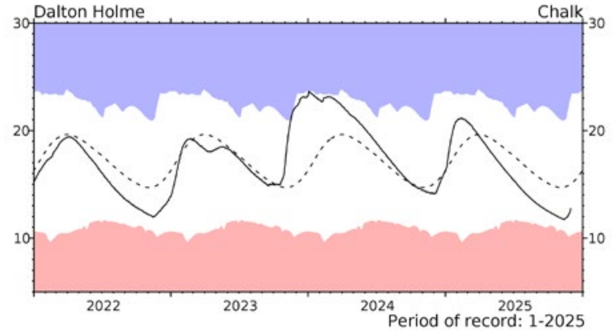


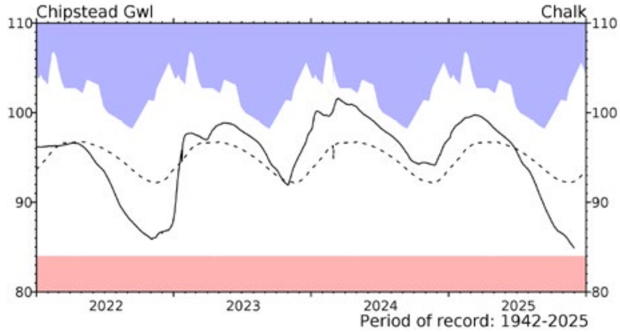


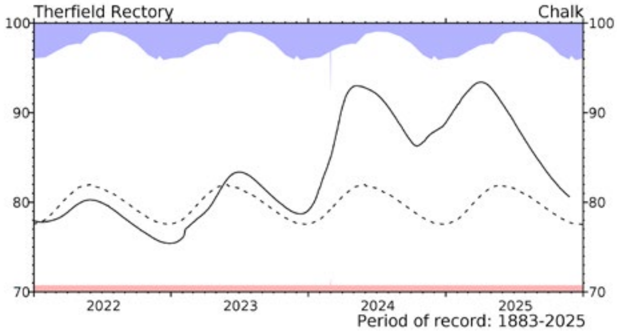
Groundwater . . . Groundwater

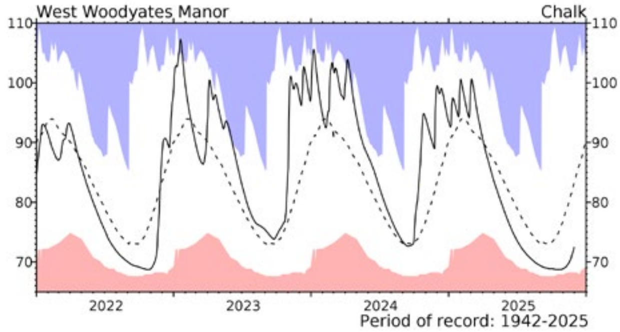


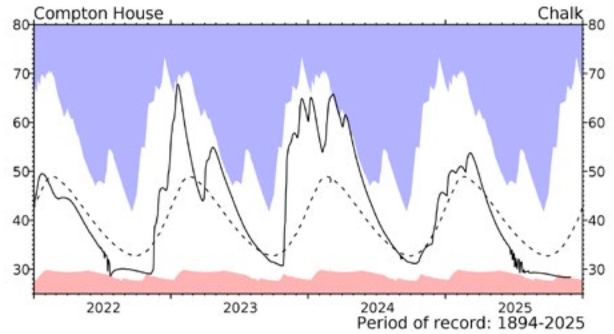


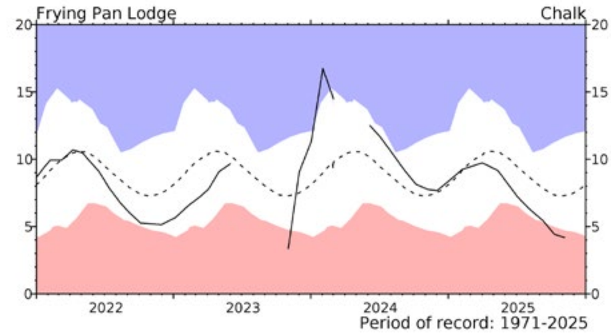


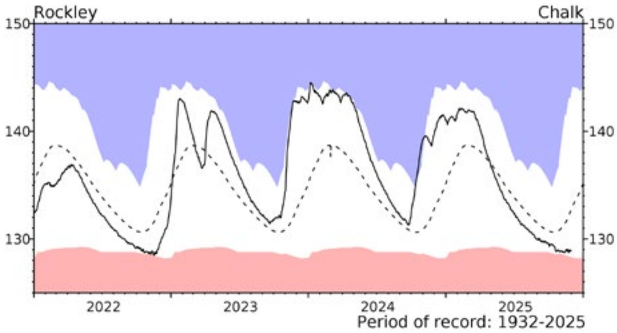


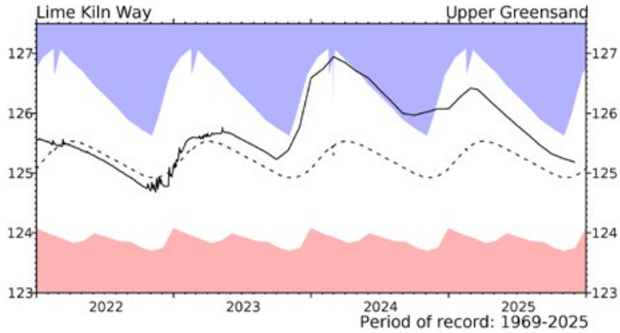






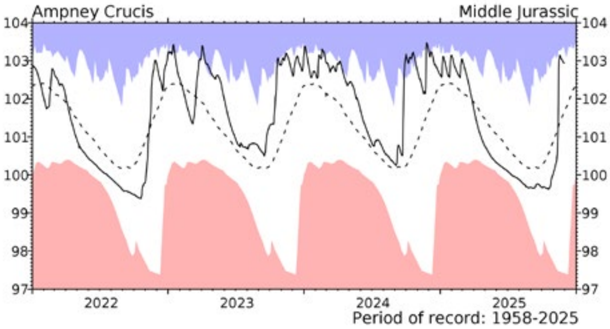


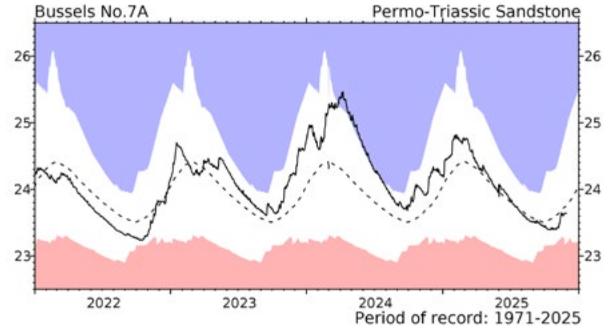


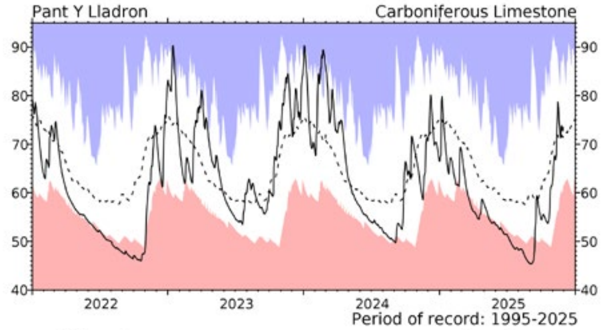


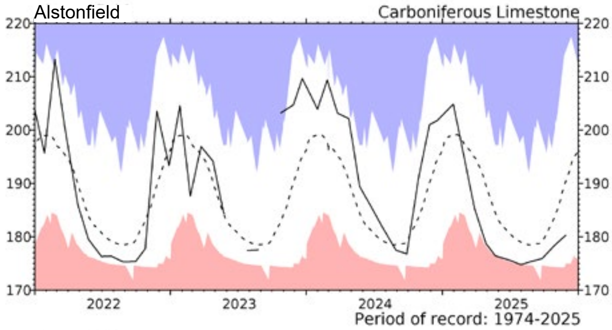
Groundwater levels (measured in metres above ordnance datum) normally rise and fall with the seasons, reaching a peak in the spring following replenishment through the winter (when evaporation losses are low and soil moist). They decline through the summer and early autumn. This seasonal variation is much reduced when the aquifer is confined below overlying impermeable strata. The monthly mean and the highest and lowest levels recorded for each month are calculated with data from the start of the record to the end of 2021. Note that most groundwater levels are not measured continuously and, for some index wells, the greater frequency of contemporary measurements may, in itself, contribute to an increased range of variation.

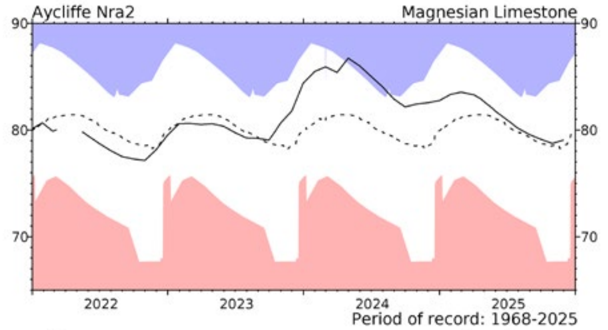
Groundwater . . . Groundwater

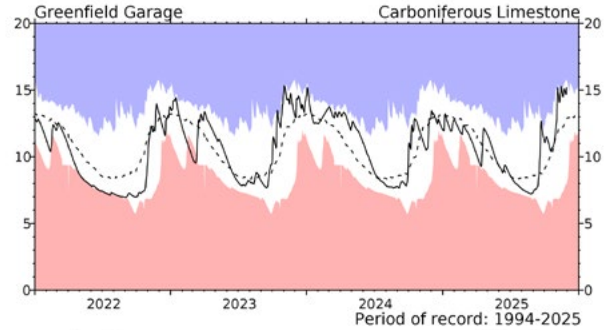


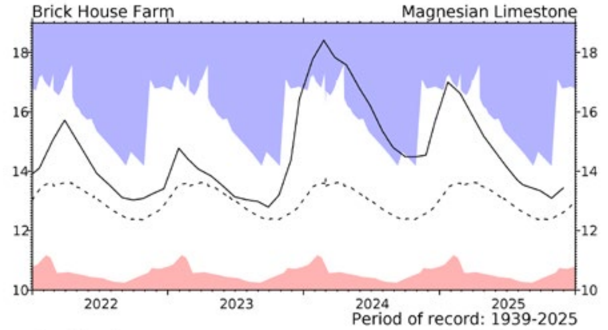


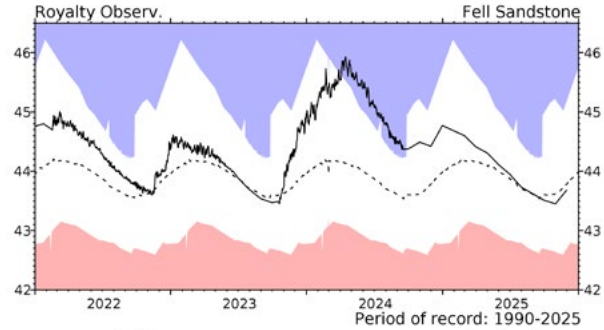


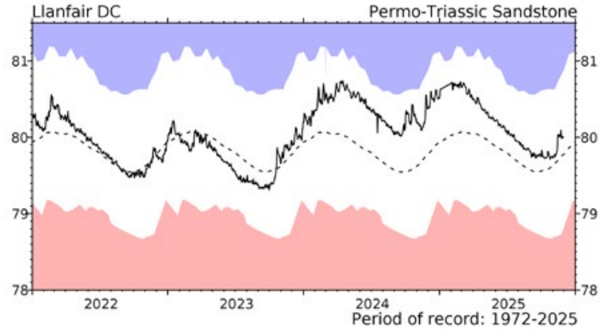


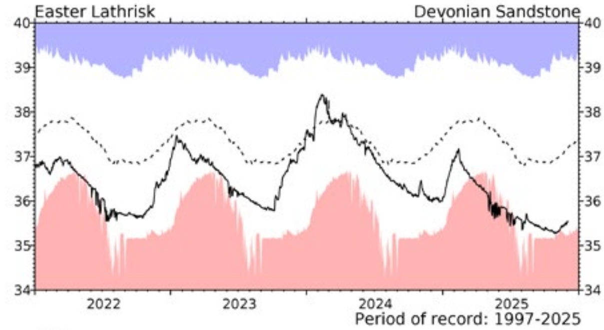


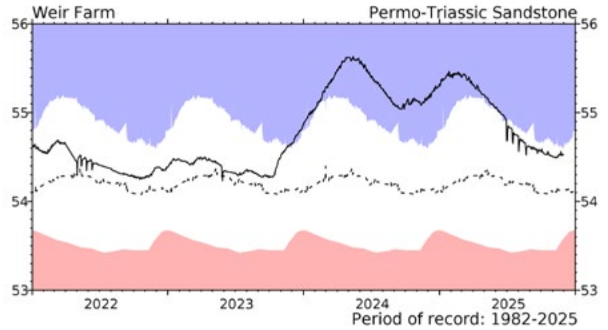


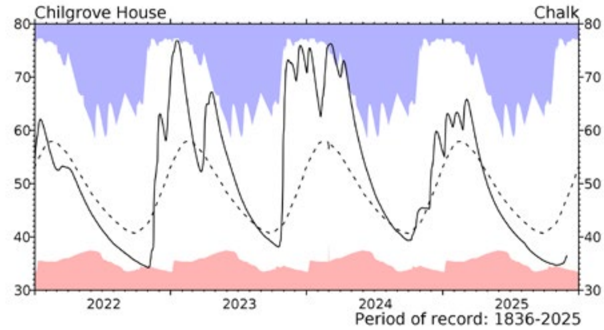












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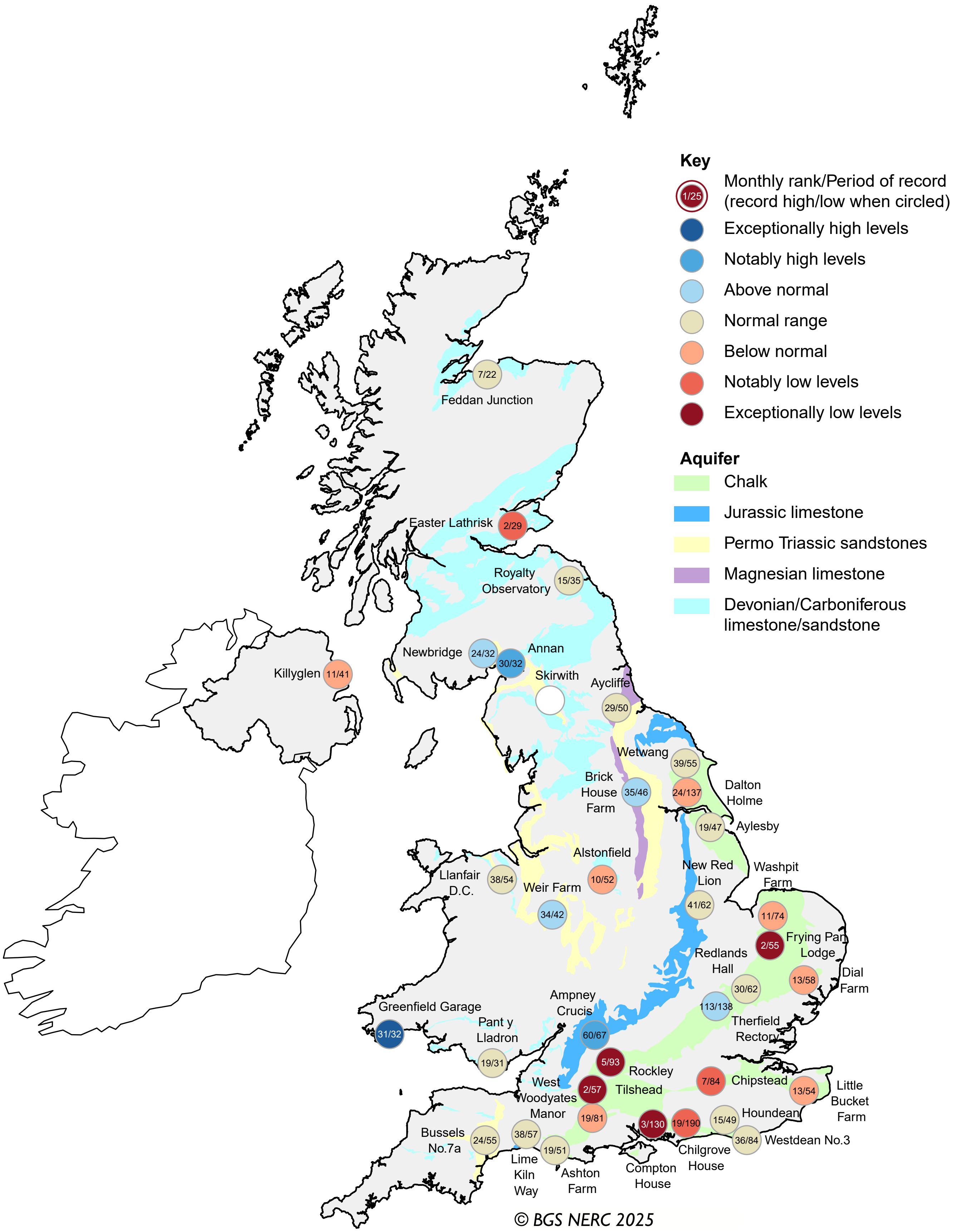
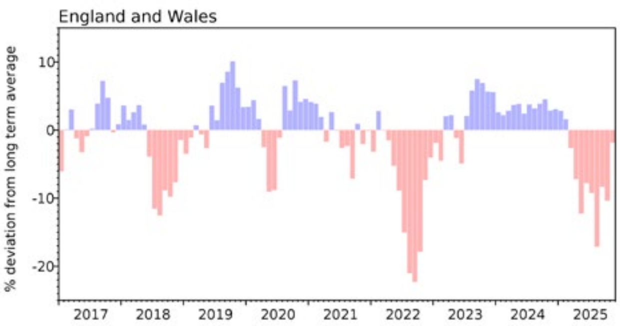


Groundwater levels - November 2025

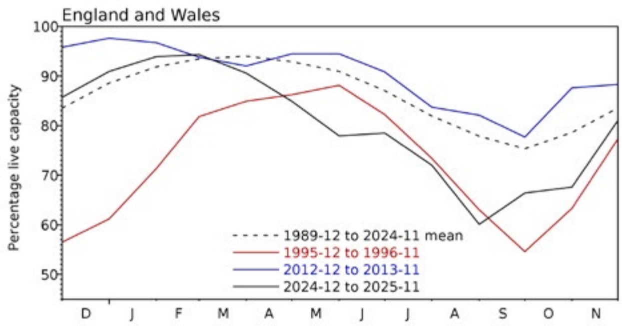
The calculation of ranking has been modified from that used in summaries published prior to October 2012. It is now based on a comparison between the most recent level and levels for the same date during previous years of record. Where appropriate, levels for earlier years may have been interpolated. The rankings are designed as a qualitative indicator, and ranks at extreme levels, and when levels are changing rapidly, need to be interpreted with caution.

Reservoirs . . . Reservoirs . . .

Guide to the variation in overall reservoir stocks for England and Wales



Comparison between overall reservoir stocks for England and Wales in recent years



Percentage live capacity of selected reservoirs at end of month

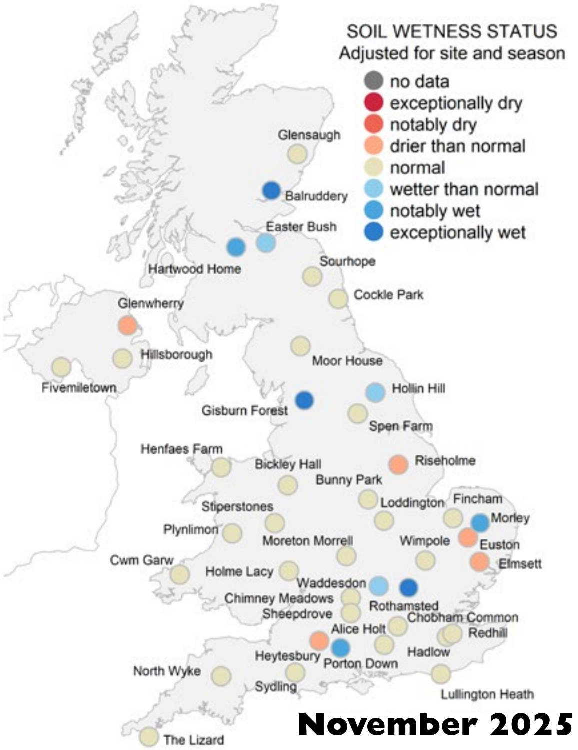
Area	Reservoir		Capacity (Ml)	2025 Sep	2025 Oct	2025 Nov	Nov Anom.	Min Nov	Year* of min	2024 Nov	Diff 25-24
North West	N Command Zone	•	124929	65	69	85	6	44	1993	79	6
	Vyrnwy		55146	96	88	100	16	33	1995	92	8
Northumbrian	Teesdale	•	87936	72	79	94	9	39	1995	99	-5
	Kielder		(199175)	85	79	91	5	55	2007	85	7
Severn-Trent	Clywedog		49936	75	81	82	0	43	1995	90	-8
	Derwent Valley	•	46692	50	55	91	13	9	1995	78	14
Yorkshire	Washburn	•	23373	36	50	86	8	16	1995	82	3
	Bradford Supply	•	40942	50	63	82	-1	20	1995	84	-2
Anglian	Grafham		(55490)	70	65	69	-13	47	1997	88	-18
	Rutland		(116580)	69	64	68	-13	57	1995	90	-22
Thames	London	•	202828	68	66	73	-8	52	1990	84	-11
	Farmoor	•	13822	87	87	93	3	52	1990	90	2
Southern	Bewl		31000	48	42	43	-21	33	2017	63	-19
	Ardingly		4685	28	29	44	-30	14	2011	100	-56
Wessex	Clatworthy		5662	31	34	73	-7	16	2003	100	-27
	Bristol	•	(38666)	37	34	57	-14	27	1990	89	-32
South West	Colliford		28540	44	43	52	-19	25	2022	76	-24
	Roadford		34500	60	61	71	-2	19	1995	93	-21
	Wimbleball		21320	32	26	45	-28	34	1995	78	-33
	Stithians		4967	49	43	57	-10	29	2001	67	-10
Welsh	Celyn & Brenig	•	131155	69	74	85	-2	50	1995	80	5
	Brianne		62140	82	100	100	4	72	1995	100	0
	Big Five	•	69762	56	57	77	-6	49	1990	81	-4
	Elan Valley	•	99106	48	57	91	-2	47	1995	90	1
Scotland(E)	Edinburgh/Mid-Lothian	•	97223	75	75	84	-3	45	2003	90	-6
	East Lothian	•	9317	51	50	89	-2	38	2003	100	-11
Scotland(W)	Loch Katrine	•	110326	68	94	97	5	65	2007	91	6
	Daer		22494	93	91	95	-1	73	2003	91	4
	Loch Thom		10721	93	99	100	7	72	2003	90	10
Northern	Total+	•	56800	86	92	96	9	59	2003	90	6
Ireland	Silent Valley	•	20634	91	100	100	16	43	2001	99	2

( ) figures in parentheses relate to gross storage • denotes reservoir groups *last occurrence

+ excludes Lough Neagh

Details of the individual reservoirs in each of the groupings listed above are available on request. The percentages given in the Average and Minimum storage columns relate to the 1988-2012 period except for West of Scotland and Northern Ireland where data commence in the mid-1990s. In some gravity-fed reservoirs (e.g. Clywedog) stocks are kept below capacity during the winter to provide scope for flood attenuation purposes. Monthly figures may be artificially low due to routine maintenance or turbidity effects in feeder rivers.

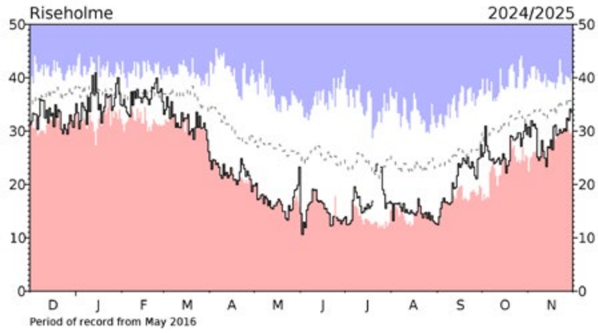
Soil Moisture . . . Soil Moisture

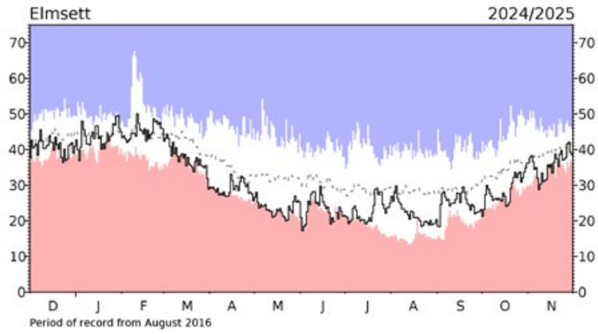


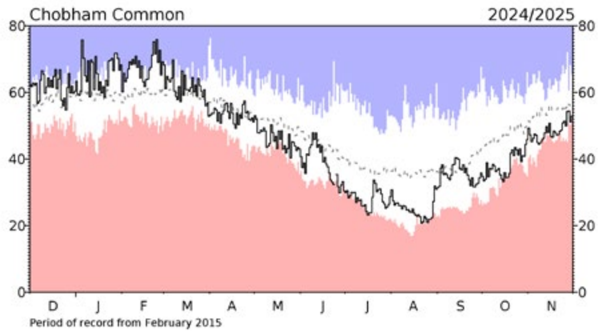
Daily mean soil moisture status at COSMOS-UK sites on the last day of the month 30 November 2025. Soil wetness categories are adjusted for site specific characteristics, i.e. taking account of the possible range of soil wetness at each site, determined through period-of-record data and hindcast modelling. Where no data are available on the last day of the month, these are shown by grey dots.

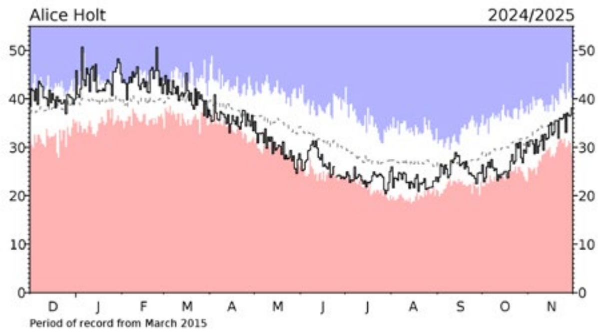
COSMOS-UK sites show that the sustained wet weather has continued the recovery in soil moisture across the network. The North-South divide, seen earlier in the autumn, has begun to diminish, with previously drier sites in the south (e.g. Alice Holt, Riseholme, and Chobham Common) continuing a recovery in their soil moisture levels. Overall, 38 sites (88% of the network) measured conditions that are normal, or wetter than normal, for the time of year. A small number of sites (e.g. Elmsett, Glenwherry, Heytesbury) remained drier than expected despite the widespread rainfall. The solar storm at the start of November was detected in the recorded neutron counts across the network, particularly in northern sites – we are investigating the potential effects of this on the COSMOS volumetric water content calculations.

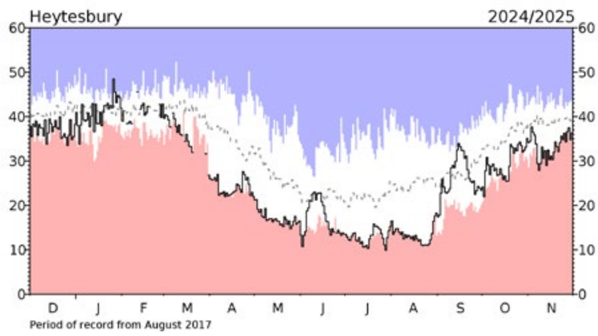
Overall, November's above-average rainfall helped replenish soil moisture across the UK, although the significant drought over the summer can still be felt through the remaining drier than normal sites.











Soil moisture data

These data are from UKCEH's COSMOS-UK network. The time series graphs show volumetric water content as a percentage in black together with the maximum and minimum daily values for the period-of-record of the sites. The dashed line represents the period-of-record mean VWC. For more information visit cosmos.ceh.ac.uk.

NHMP

The National Hydrological Monitoring Programme (NHMP) was started in 1988 and is undertaken jointly by the UK Centre for Ecology & Hydrology (UKCEH) and the British Geological Survey (BGS). The NHMP aims to provide an authoritative voice on hydrological conditions throughout the UK, to place them in a historical context and, over time, identify and interpret any emerging hydrological trends. Hydrological analysis and interpretation within the Programme is based on the data holdings of the National River Flow Archive (NRFA; maintained by UKCEH) and National Groundwater Level Archive (NGLA; maintained by BGS), including rainfall, river flows, borehole levels, and reservoir stocks.

The Hydrological Summary is supported by the Natural Environment Research Council award number NE/Y006208/1 as part of the NC-UK programme delivering National Capability.

Data Sources

The NHMP depends on the active cooperation of many data suppliers. This cooperation is gratefully acknowledged. A location map of all sites used in the Hydrological Summary can be found on the NHMP website. River flow and groundwater level data are provided by the Environment Agency (EA), Natural Resources Wales - Cyfoeth Naturiol Cymru (NRW), the Scottish Environment Protection Agency (SEPA) and, for Northern Ireland, the Department for Infrastructure - Rivers and the Northern Ireland Environment Agency. In all cases the data are subject to revision following validation (high flow and low flow data in particular may be subject to significant revision).

Details of reservoir stocks are provided by the Water Service Companies, the EA, Scottish Water and Northern Ireland Water.

The Hydrological Summary and other NHMP outputs may also refer to and/or map soil moisture data for the UK. These data are provided by the Meteorological Office Rainfall and Evaporation Calculation System (MORECS). MORECS provides estimates of monthly soil moisture deficit in the form of averages over 40 x 40 km grid squares over Great Britain and Northern Ireland. The monthly time series of data extends back to 1961.

Rainfall data are provided by the Met Office. To allow better spatial differentiation the rainfall data for Britain are presented for the regional divisions of the precursor organisations of the EA, NRW and SEPA. The areal rainfall figures have been produced by the Met Office National Climate Information Centre (NCIC), and are based on the HadUK-Grid 1km resolution gridded data from rain gauges. The majority of the full rain gauge network across the UK is operated by the EA, NRW, SEPA and Northern Ireland Water; supplementary rain gauges are operated by the Met Office. The Met Office NCIC monthly rainfall series extend back to 1836 and form the official source of UK areal rainfall statistics which have been adopted by the NHMP. The gridding technique used is described in Hollis, 2019 available at https://doi.org/10.1002/gdj3.78

Long-term averages are based on the period 1991-2020 and are derived from the monthly areal series.

The regional figures for the current month in the hydrological summaries are based on a limited rain gauge network so these (and the associated return periods) should be regarded as a guide only.

The monthly rainfall figures are provided by the Met Office NCIC and are Crown Copyright and may not be passed on to, or published by, any unauthorised person or organisation. These are provisional totals calculated from a sub set of Met Office registered gauges and will be subject to change once data from the complete network of Met Office registered gauges has been quality assured and gridded within the annual process of updating the HadUK-Grid dataset.

For further details on rainfall or MORECS data, please contact the Met Office:

Tel: 0370 900 0100
Email: enquiries@metoffice.gov.uk

Enquiries

Enquiries should be directed to the NHMP:

Tel: 01491 692599
Email: nhmp@ceh.ac.uk

A full catalogue of past Hydrological Summaries can be accessed and downloaded at:

http://nrfa.ceh.ac.uk/monthly-hydrological-summary-uk

Some of the features displayed on the maps contained in this report are based on the following data with permission of the controller of HMSO.