

Monthly water situation report: North-west England

1 Summary – July 2026

Rainfall for north-west England in July was classed as exceptionally low, having received 26% of the long-term average (LTA). Soil Moisture deficit (SMD) was higher than expected for the time of year across north-west England. July monthly mean river flows for north-west England for July were classed between normal and exceptionally low. Groundwater levels decreased slightly since last month at all sites and were classed between notably low and exceptionally high. Total reservoir storage for north-west England has declined compared to July and was marginally lower than average for the time of the year.

1.1 Rainfall

Rainfall for north-west England during July was classed as exceptionally low, receiving 26% of the LTA. Cumbria and Lancashire (CLA) received 35% of the LTA and Greater Manchester, Merseyside and Cheshire (GMMC) received 19% of the LTA, both classed as exceptionally low. This was the second driest July on record for north-west England since records began in 1871.

All hydrological areas in north-west England recorded rainfall classed as exceptionally low, except for the Derwent and Esk (Cumbria) hydrological areas which recorded rainfall classed as notably low. The lowest rainfall totals relative to the LTA were recorded in the Cheshire Rivers Group hydrological area (12% of the LTA) and in the Mersey and Irwell hydrological area (24% of the LTA). The Cheshire Rivers Group hydrological area observed its driest July, and the Mersey and Irwell hydrological area observed its second driest since records began in 1871. The highest rainfall values relative to the LTA were recorded in the Derwent (NW) hydrological area (42% of the LTA).

Over the 3-month cumulative period ending in July, rainfall patterns were more spatially variable with higher totals generally observed across CLA. Of the 10 hydrological areas, 1 was classed as notably low, 3 were classed as below normal and 6 were classed as normal.

Over the 6-month cumulative period ending in July, rainfall patterns were again spatially variable with the highest totals observed in the Esk (Cumbria) hydrological area and lowest totals in the Cheshire Rivers Group hydrological area. Of the 10 hydrological areas, 1 was classed as below normal, 5 were classed as normal, 3 were classed as above normal and 1 was classed as notably high.

Over the 12-month cumulative period ending in July, more rainfall was recorded than during the last 3 months and 6 months relative to the LTA. Of the 10 hydrological areas, 3 were

classed as normal, 1 was classed as above normal, 3 were classed as notably high and 3 were classed as exceptionally high.

1.2 Soil moisture deficit and recharge

Soil moisture deficits (SMD) increased between the end of June and end of July across all hydrological areas in north-west England and were higher than the LTA. The highest deficits were seen in the Ribble, Douglas, Mersey and Irwell, and Cheshire Rivers Group hydrological areas with levels between 101mm and 130mm. With the exception of the Esk (Dumfries), soil moisture deficits in all other hydrological areas had increased to levels between 71mm and 100mm.

1.3 River flows

River flows in July reflected the spatial patterns in rainfall with lower monthly mean flows observed at sites in Greater Manchester Merseyside and Cheshire, classed between exceptionally low and below normal for July. The monthly mean river flows at sites in Cumbria and Lancashire were classed as between notably low and normal for July. The highest river flows relative to the LTA were on the Mersey at Brinksway with 67% of the LTA and classed as below normal whereas the lowest flows were on the Wyre at St Michaels with 27% of the LTA and classed as below normal. For the 24 indicator sites this month, 6 were classed as exceptionally low, 6 were classed as notably low, 11 were classed as below normal and 1 was classed as normal.

1.4 Groundwater levels

Groundwater levels across north-west England at the end of July were classed between below normal and exceptionally high, with absolute levels decreasing between June and July at all sites. Between June and July, a reduction in classifications was seen at Great Musgrave, Priors Heyes, Skirwith and Richmond Park, whilst the classifications remained then same at all other sites.

- Great Musgrave, changed from below normal to notably low
- Priors Heyes, changed from exceptionally high to notably high
- Skirwith, changed from normal to below normal
- Richmond Park, changed from exceptionally high to notably high

All other groundwater indicator sites remained at the same classification as June:

- Brown Bank Lay-By, classed as above normal
- Bruntwood Hall, classed as normal
- Furness Abbey, classed as exceptionally high
- Lea Lane, classed as above normal
- Primrose Hill, classed as normal
- Victoria Road, classed as notably low

1.5 Reservoir stocks

Total reservoir storage for north-west England saw a decrease from 81.0% net storage at the end of June to 66.7% net storage at the end of July. This is 4.8% lower than the average of 71.5% for this time of year, and 5.4% higher than this time last year when stocks were at 61.3%.

At the end of July, net reservoir storage (in terms of percentage) was highest at Lake Vyrnwy at 82.1% full, and lowest at Pennines East, at 55.0% full.

The combined net storage at Haweswater and Thirlmere reservoirs decreased from 79.3% at the end of June to 62.5% at the end of July. This is marginally higher than the average of 62.3% for this time of year, and higher than this time last year when stocks were 58.2%.

Reservoirs kept low for maintenance works include parts of the:

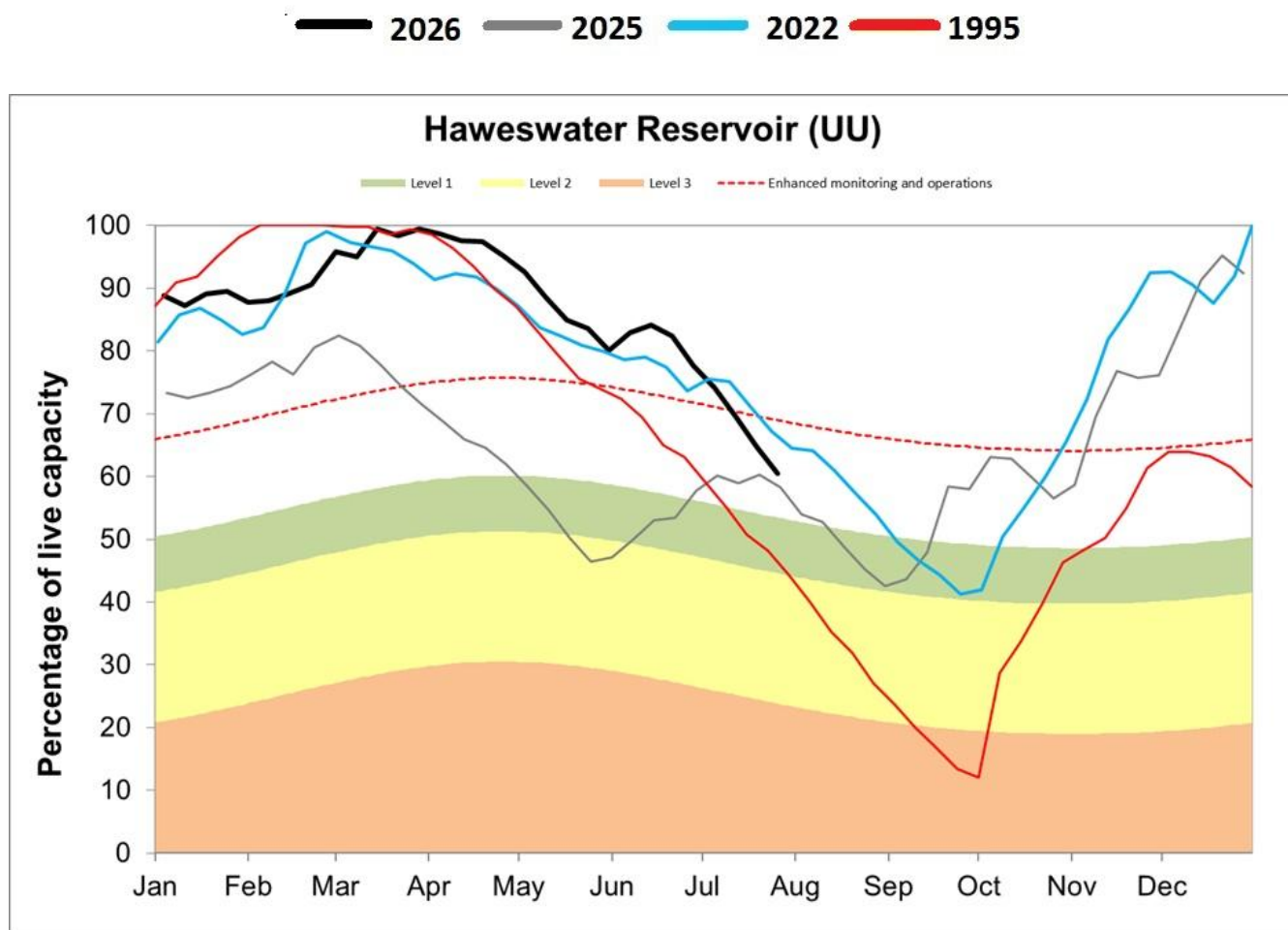
- Longridge System (Ribble Reservoir Supply District) – Alston No.1, Alston No.2, Spade Mill No.1, and Spade Mill No.2
- Rivington System (Rivington Reservoir Supply District) – Anglezarke, High Bullough, and Yarrow
- Longdendale System (Longdendale Reservoir Supply District) – Audenshaw No.1, Torside, and Woodhead
- Barnacre Group (Ribble Reservoir Supply District) – Barnacre North, and Barnacre South
- Cowpe System (Pennines West Reservoir Supply District) – Cragg
- Cowm System (Longdendale Reservoir Supply District) – Cowm
- Ogden (Barley) System (Ribble Reservoir Supply District) – Ogden (Barley) Lower, and Ogden (Barley) Upper
- Ridgeway System (Stockport Reservoir Supply District) – Ridgeway
- Cumbria Compensation & recreation only reservoirs – Borran

1.6 Water abstraction restrictions and environmental impacts

In GMMC, 1 warning was sent out on 24/07/2026, followed by a resume notice on 27/07/2026. A further warning notice, issued on 07/07/2026 which remains live. In addition, 1 reduce notice issued on 16/06/2026 and 2 warning notices that were sent out on 26/06/2026 remained live during July. In CLA, 11 water abstraction licences were issued with stop notices, 2 with warning alerts and 5 with resume alerts in July.

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Figure 1.5: Storage in Haweswater Reservoir, including the drought levels for the reservoir and storage for the current year (2026) and representative years: 1995, 2022 and 2025
 (Source: United Utilities (UU)).

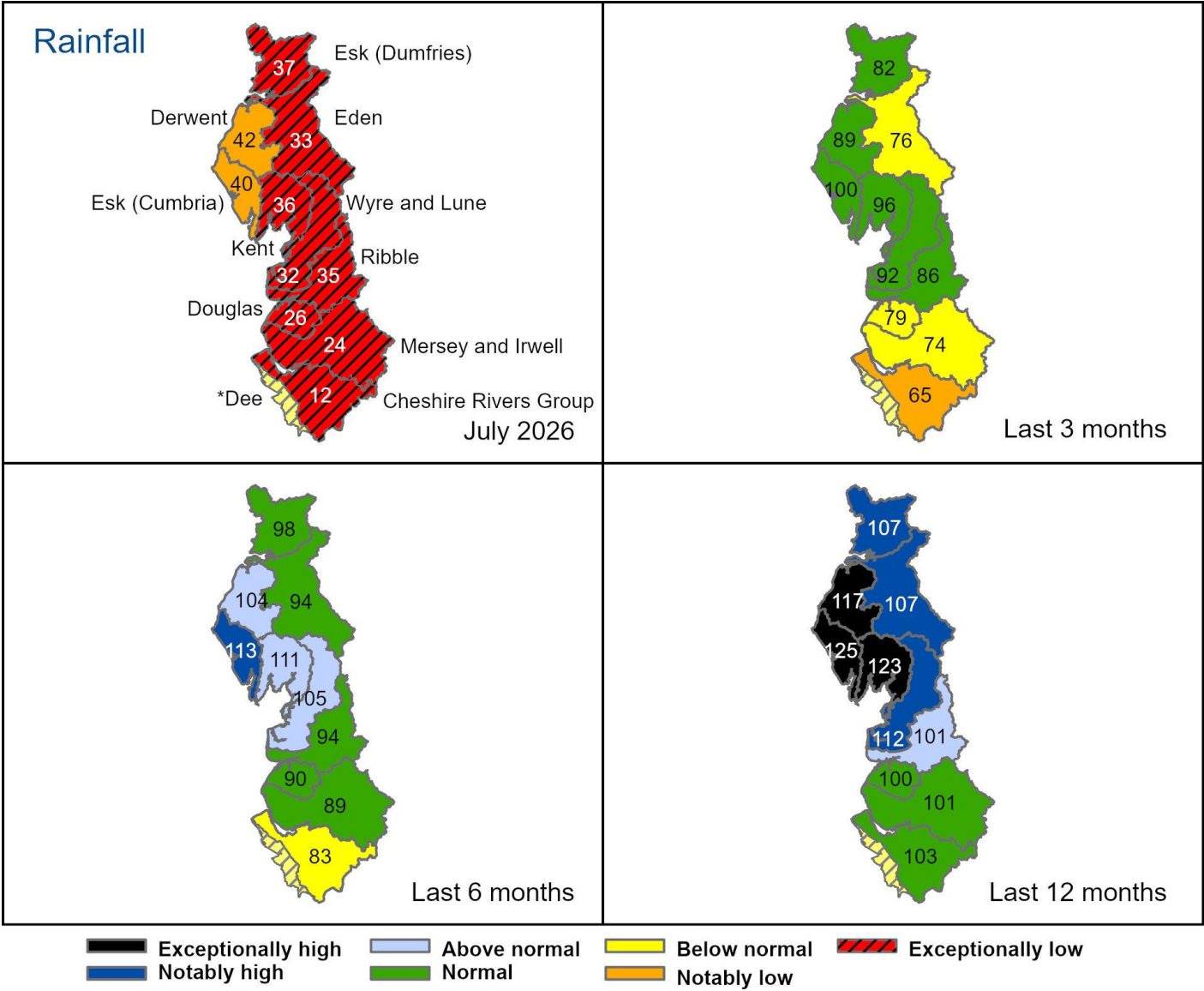


Author: Greater Manchester, Merseyside and Cheshire Hydrology Team,
Hydrology.GMMYCH@environment-agency.gov.uk

2 Rainfall

2.1 Rainfall map

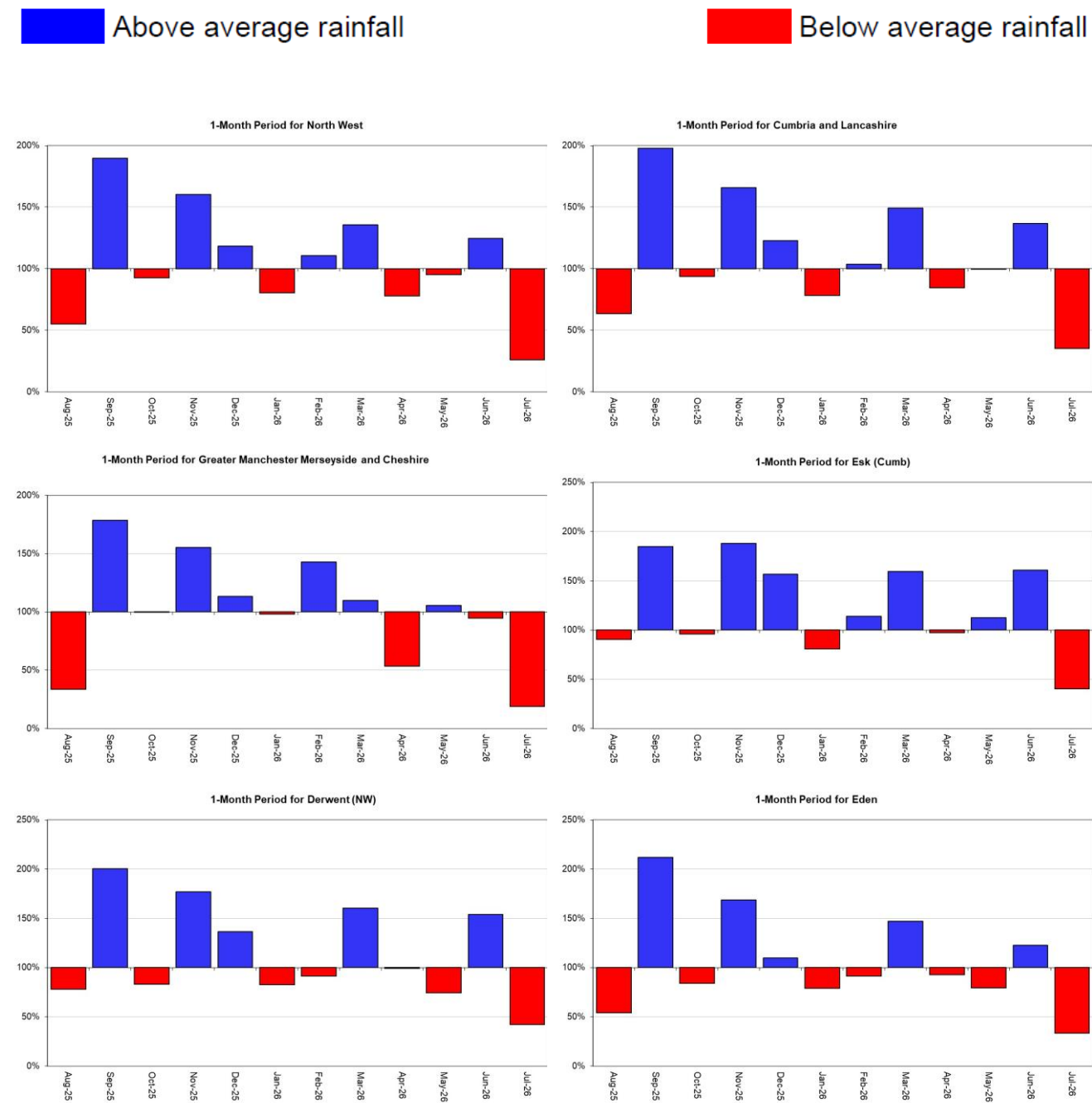
Figure 2.1: Total rainfall (as a percentage of the 1991 to 2020 long term average) for hydrological areas for the current month (up to 31 July 2026), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



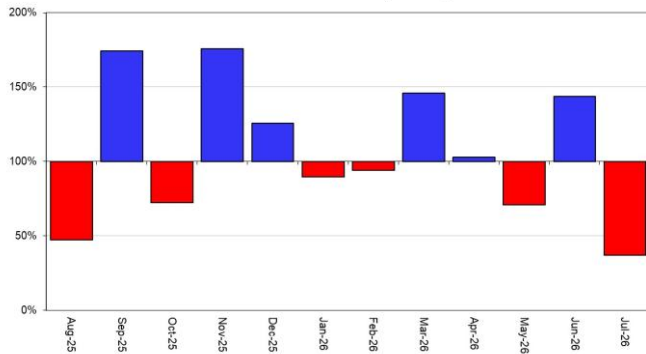
Rainfall data since January 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026). Rainfall data prior to January 2025, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2026).

2.2 Rainfall charts

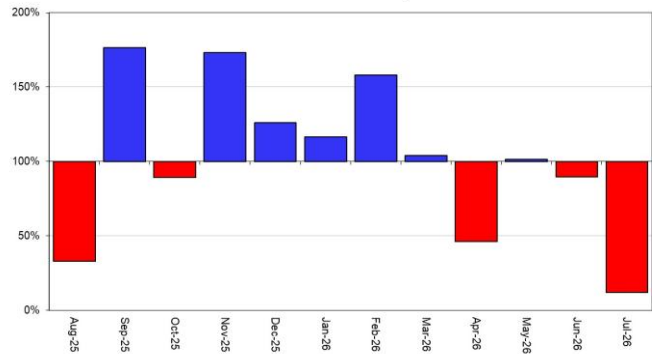
Figure 2.2: Monthly rainfall totals for the past 12 months expressed as a percentage of the 1991 to 2020 long term average for North-west England and its hydrological areas.



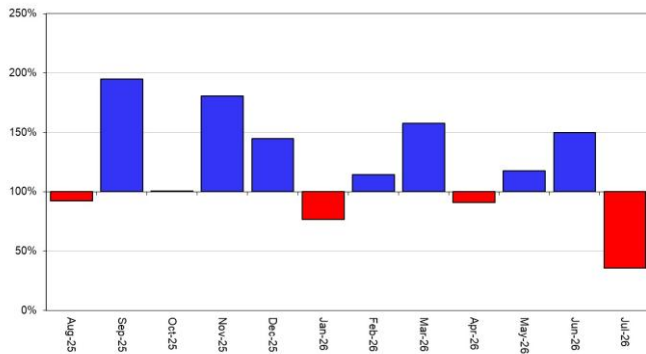
1-Month Period for Esk (Dumfries)



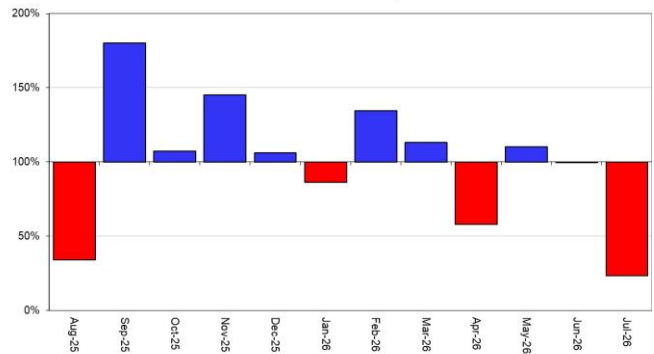
1-Month Period for Cheshire Rivers Group



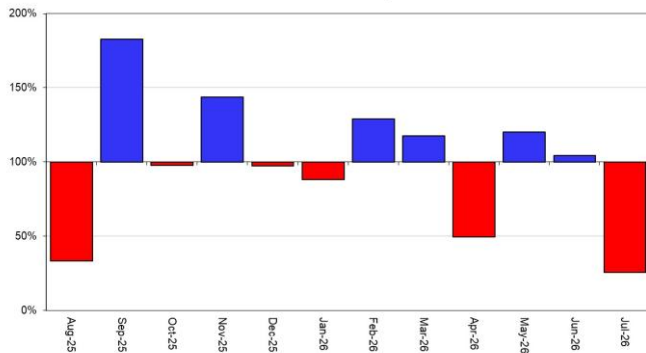
1-Month Period for Kent



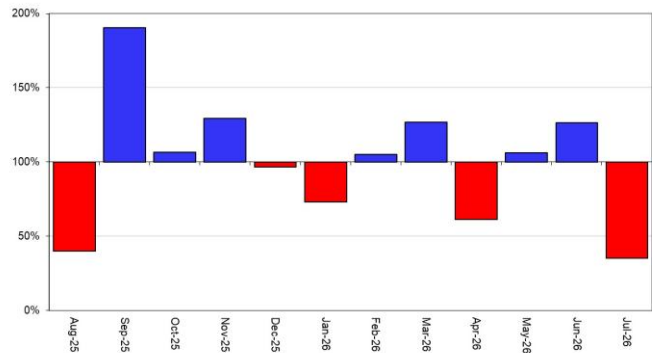
1-Month Period for Mersey and Irwell

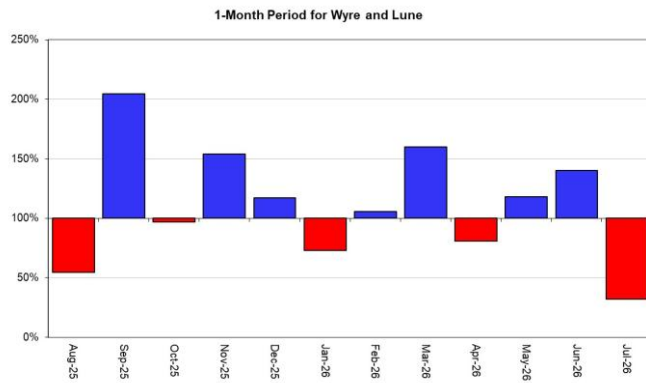


1-Month Period for Douglas



1-Month Period for Ribble



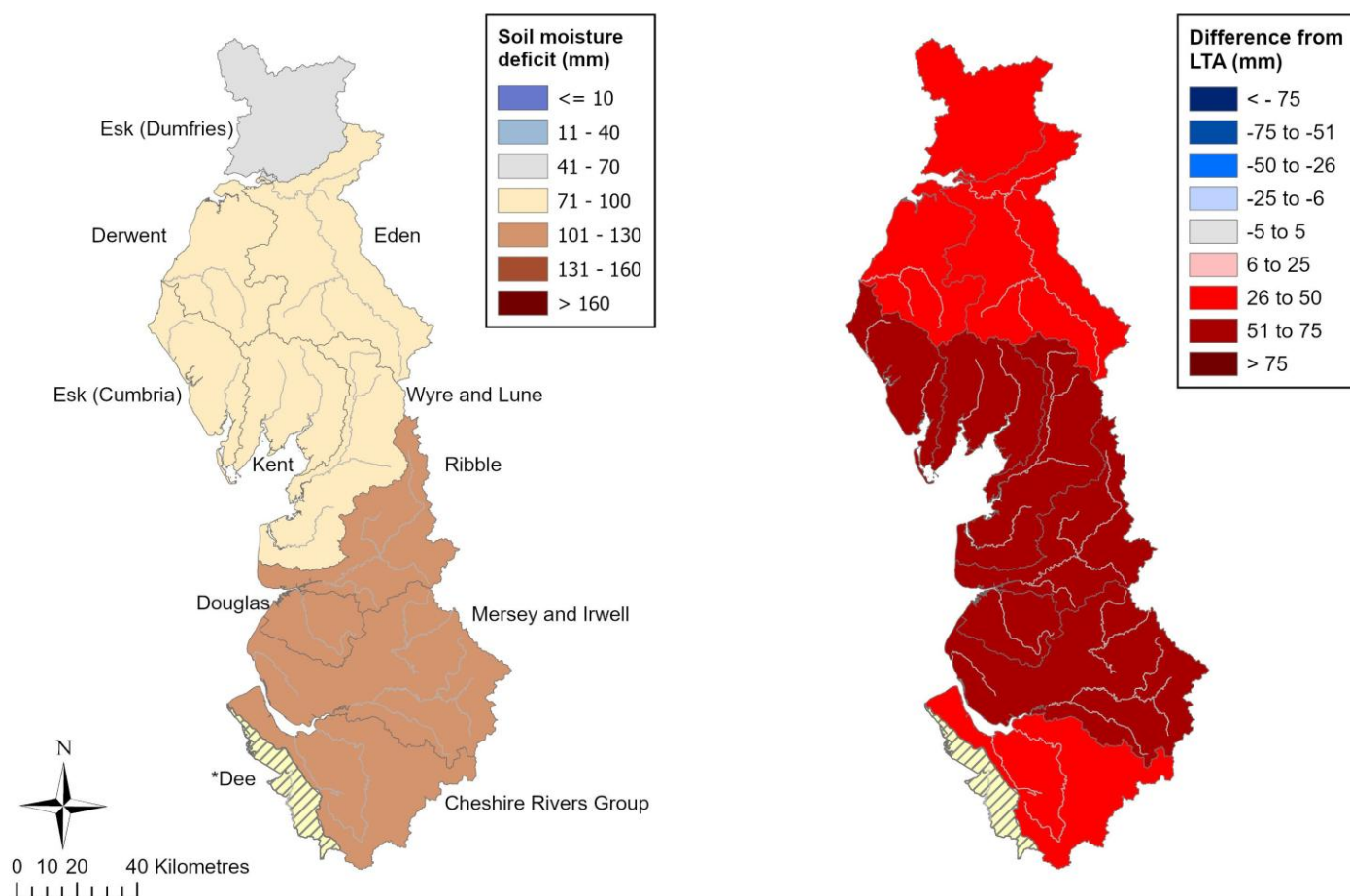


Rainfall data since January 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026). Rainfall data prior to January 2025, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2026).

3 Soil moisture deficit

3.1 Soil moisture deficit map

Figure 3.1: Soil moisture deficits for the week ending 29 July 2026. The map on the left shows actual soil moisture deficits (mm) and on the right shows the difference (mm) of the actual from the 1991 - 2020 long term average soil moisture deficits. MORECS data for real land use.

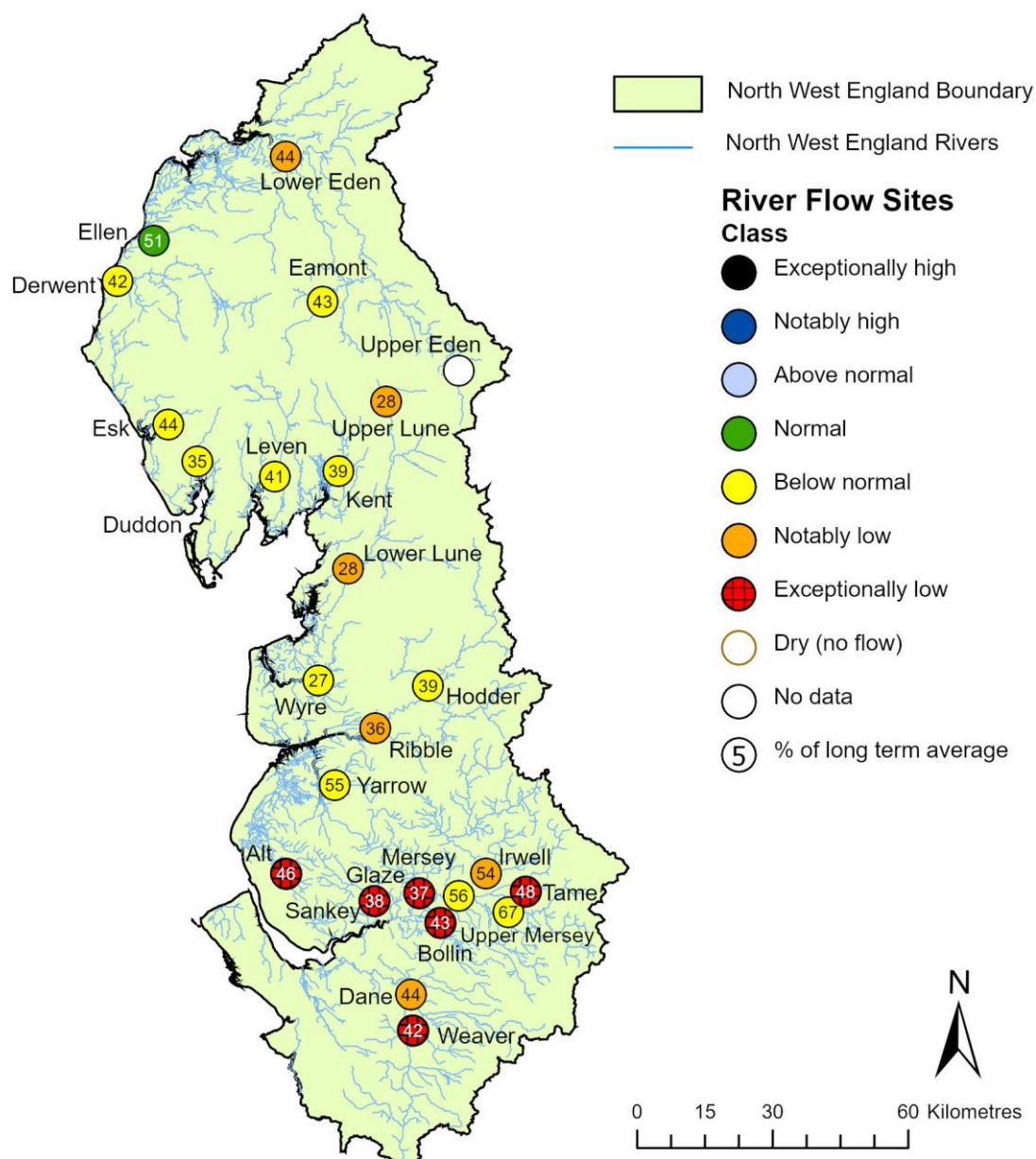


(Source: Met Office. Crown copyright, 2026). All rights reserved. Environment Agency, AC0000807064, 2026.

4 River flows

4.1 River flows map

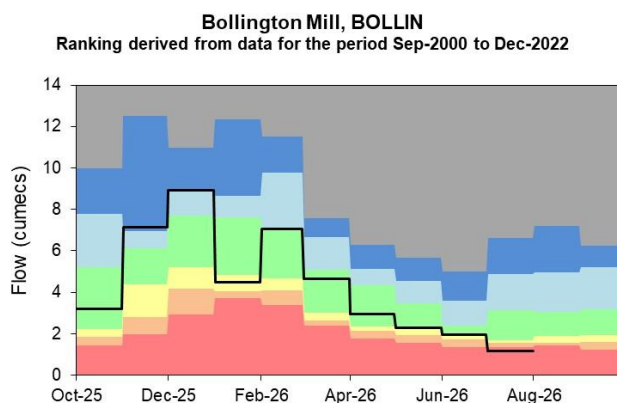
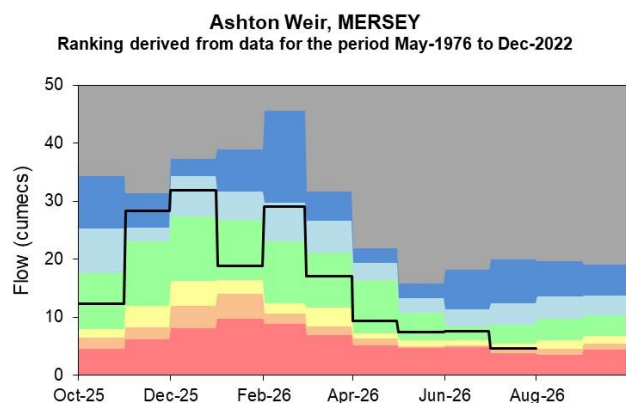
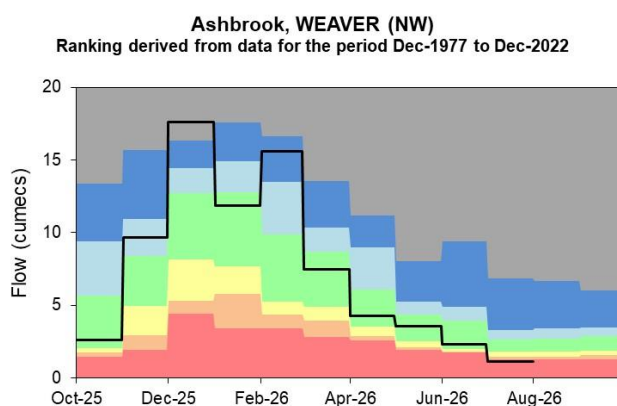
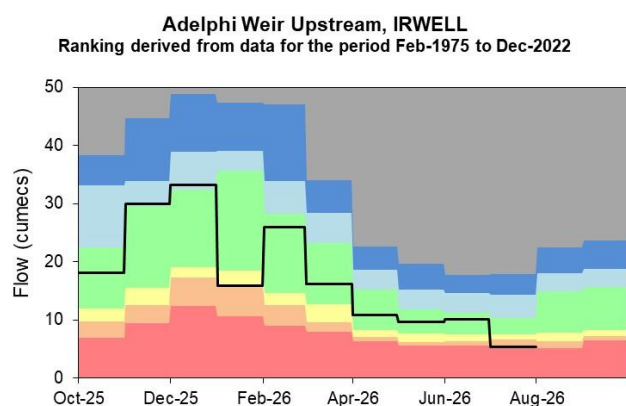
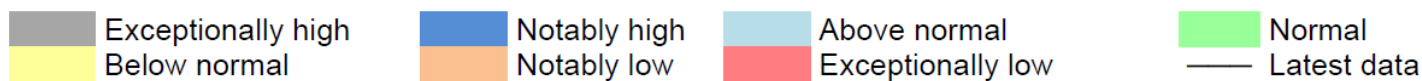
Figure 4.1: Monthly mean river flow for indicator sites for July 2026, expressed as a percentage of the respective long term average and classed relative to an analysis of historic July monthly means. Table available in the appendices with detailed information.



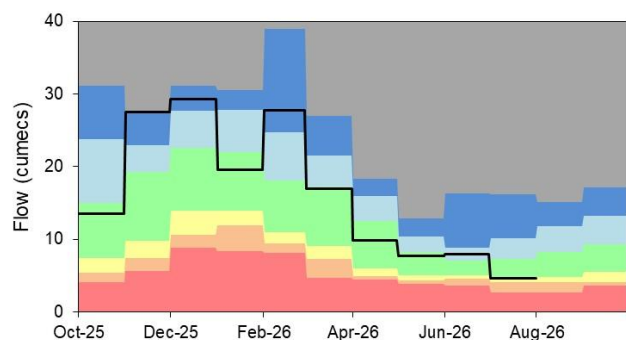
(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, AC0000807064, 2026.

4.2 River flow charts

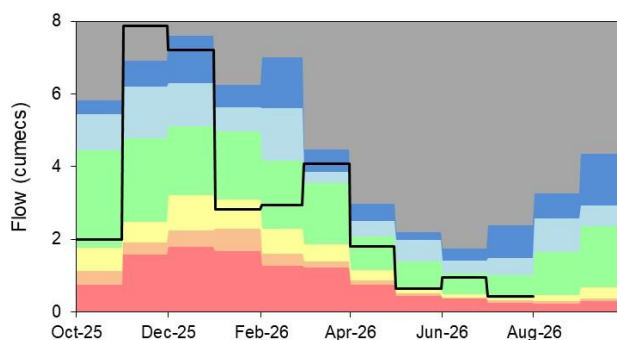
Figure 4.2: Monthly mean river flow for index sites over the past year, compared to an analysis of historic monthly mean flows.



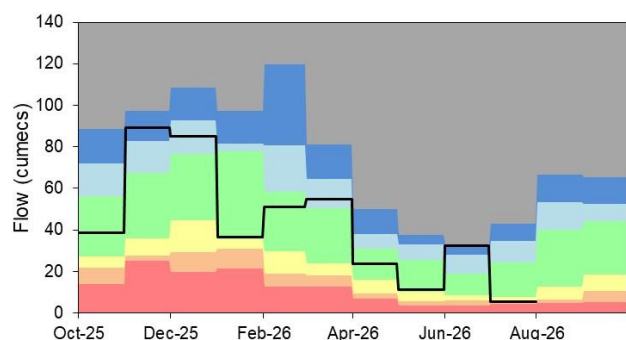
Brinksway, MERSEY
 Ranking derived from data for the period Jan-1974 to Dec-2022



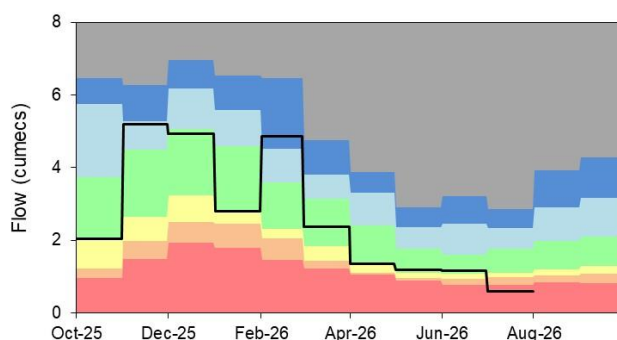
Bullgill, ELLEN
 Ranking derived from data for the period Jan-1976 to Dec-2022



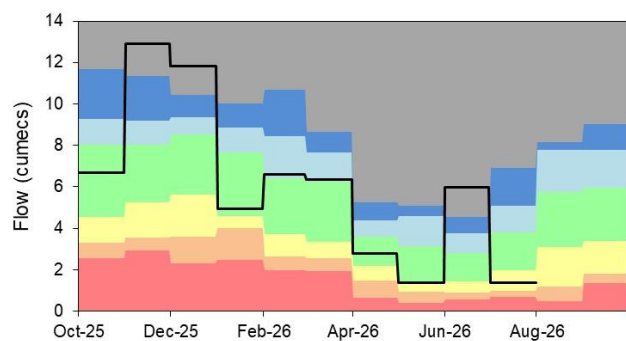
Caton, LUNE
 Ranking derived from data for the period Jan-1959 to Dec-2022



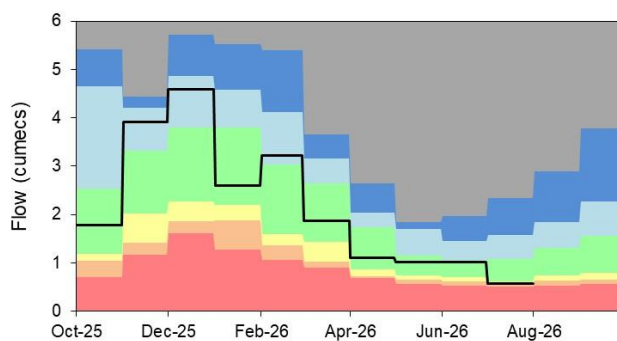
Causey Bridges, SANKEY
 Ranking derived from data for the period Jan-1977 to Dec-2022



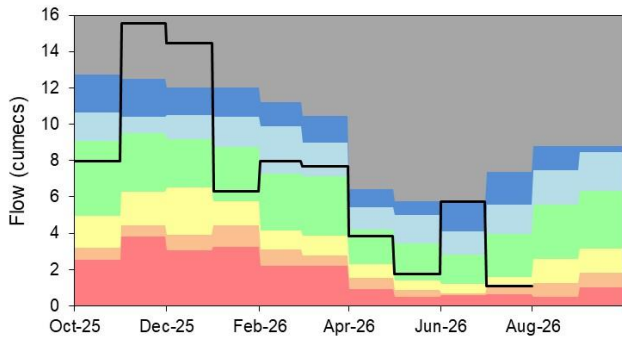
Crople How, ESK (NW)
 Ranking derived from data for the period Jan-1976 to Dec-2022



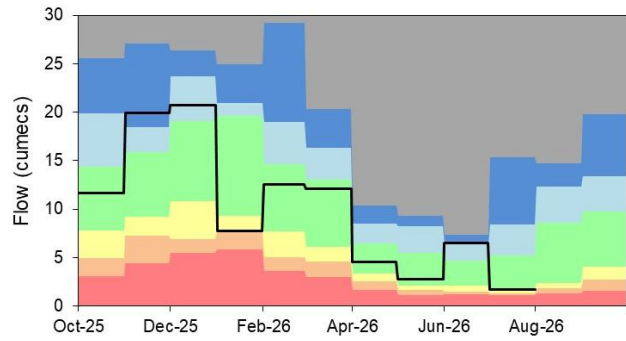
Croston, YARROW
 Ranking derived from data for the period Jan-1976 to Dec-2022



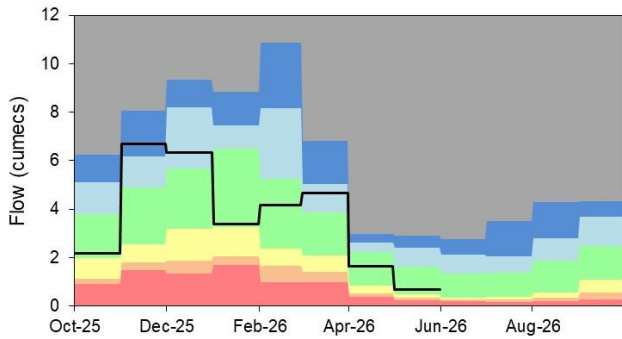
Duddon Hall, DUDDON
 Ranking derived from data for the period Mar-1968 to Dec-2022



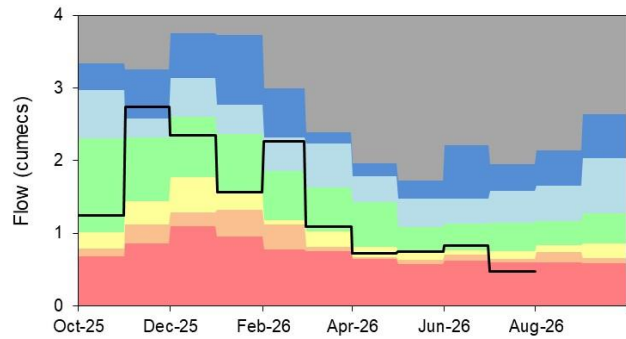
Hodder Place, HODDER
 Ranking derived from data for the period Jan-1976 to Dec-2022



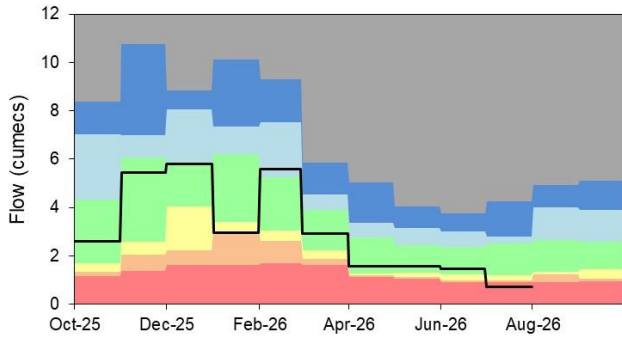
Kirkby Stephen, EDEN (NW)
 Ranking derived from data for the period Oct-1971 to Dec-2022



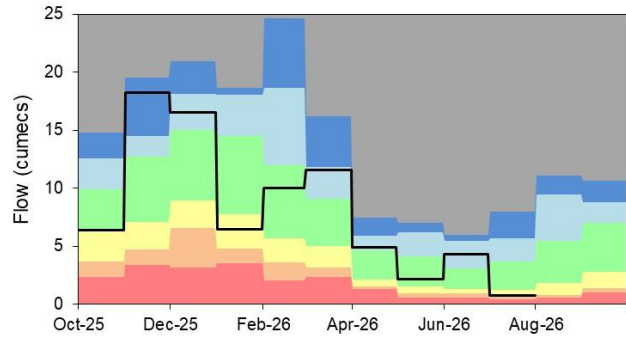
Kirkby, ALT
 Ranking derived from data for the period Oct-1977 to Dec-2022



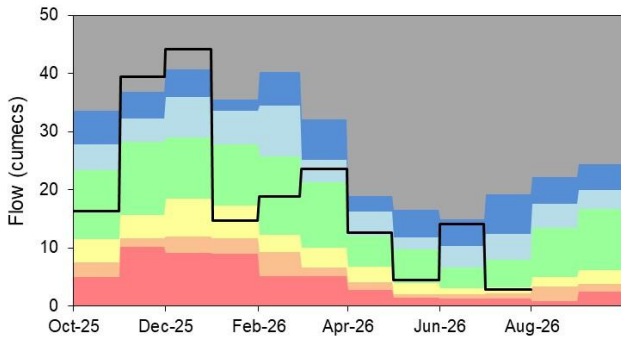
Little Woollen Hall Ultrasonic, GLAZE
 Ranking derived from data for the period Jul-1995 to Dec-2022



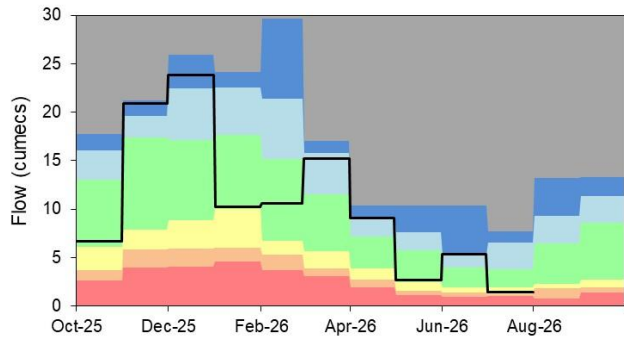
Lunes Bridge, LUNE
 Ranking derived from data for the period Dec-1979 to Dec-2022



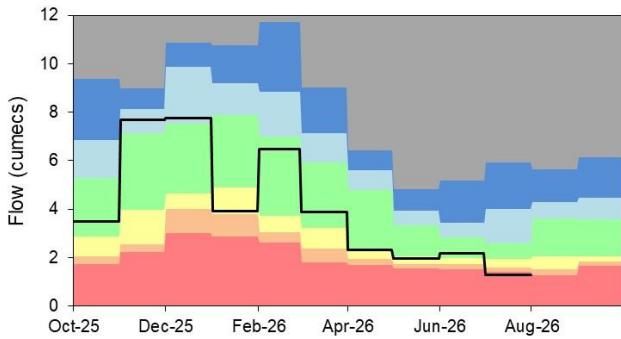
Newby Bridge FMS, LEVEN (NW)
 Ranking derived from data for the period Jan-1972 to Dec-2022



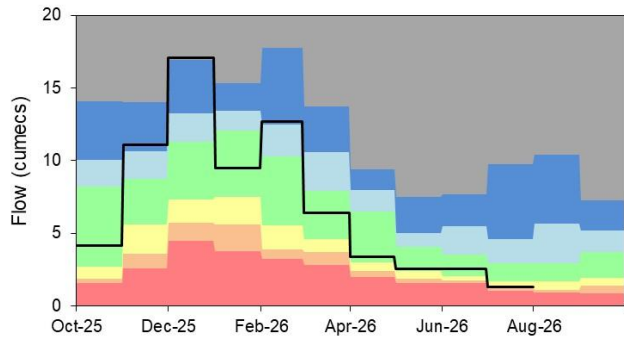
Pooley Bridge, EAMONT
 Ranking derived from data for the period Jul-1970 to Dec-2022



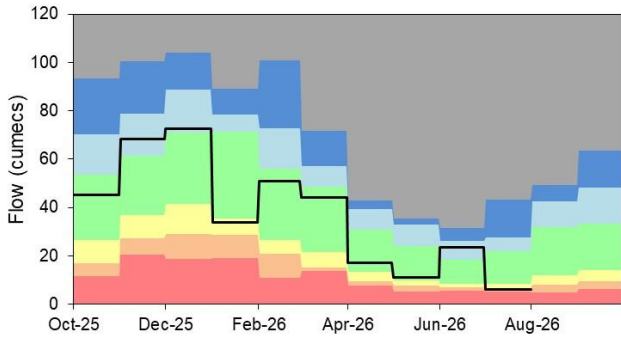
Portwood, TAME
 Ranking derived from data for the period Jan-1976 to Dec-2022



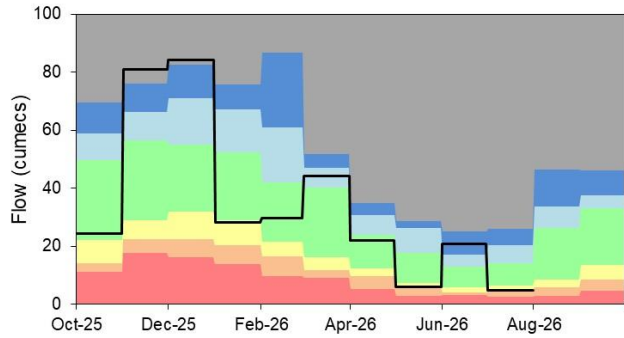
Rudheath, DANE
 Ranking derived from data for the period Jan-1976 to Dec-2022

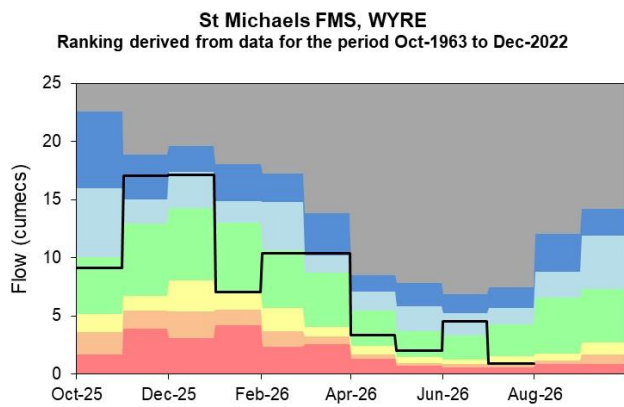
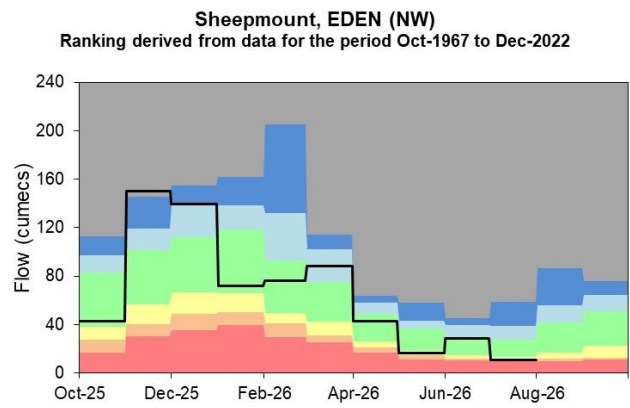
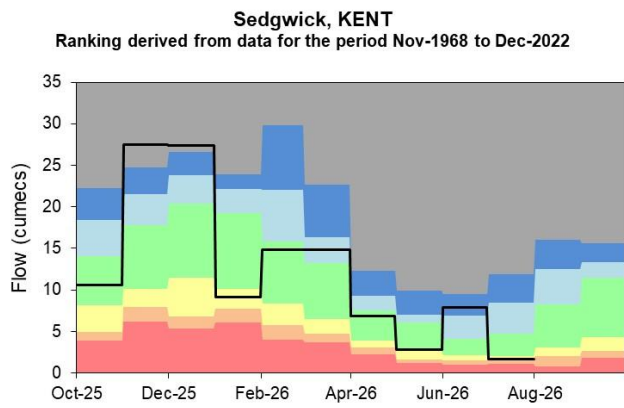


Samlesbury Pgs, RIBBLE (NW)
 Ranking derived from data for the period May-1960 to Dec-2022



Seaton Mill, DERWENT (NW)
 Ranking derived from data for the period Sep-1960 to Dec-2022



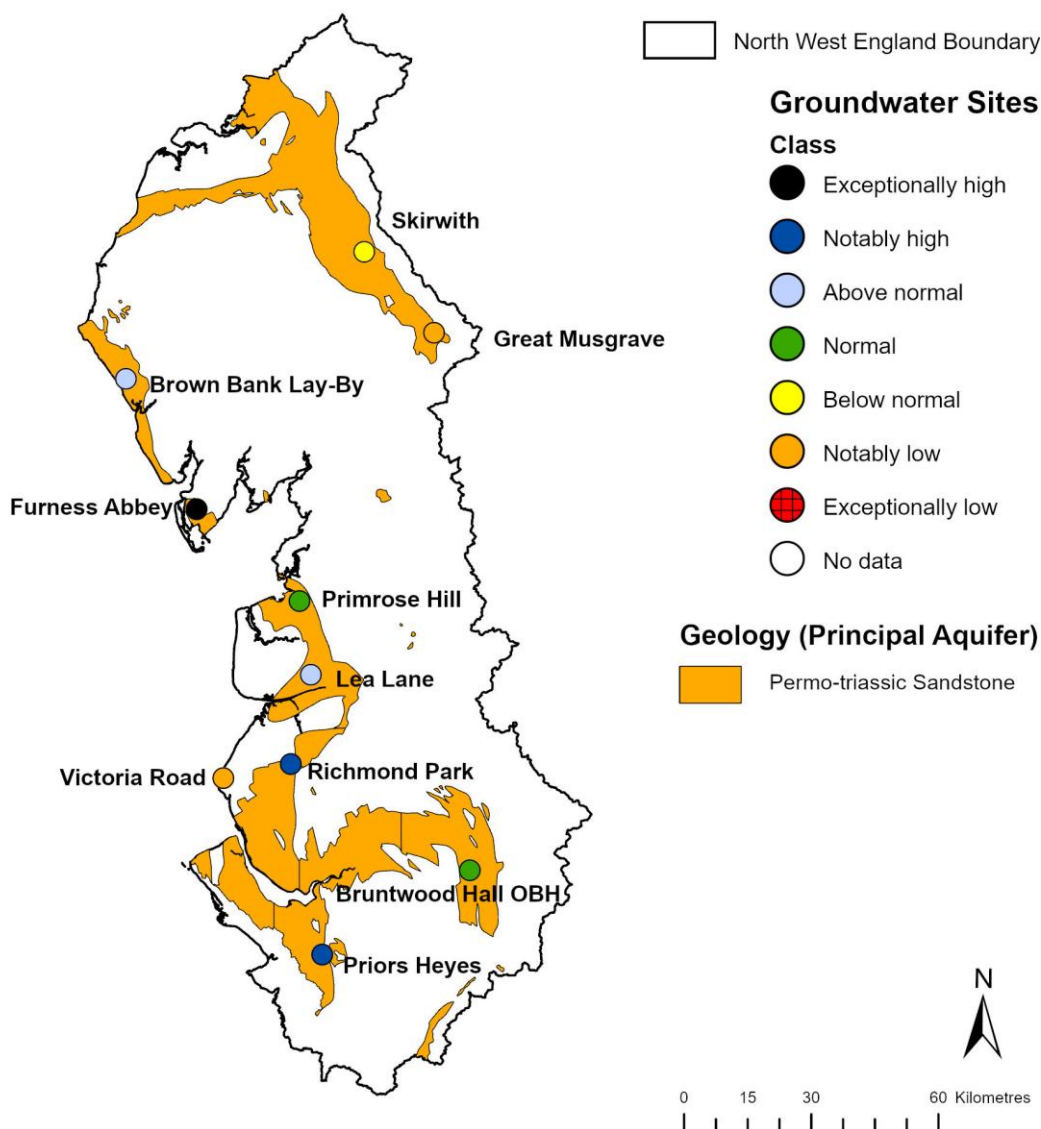


Source: Environment Agency.

5 Groundwater levels

5.1 Groundwater levels map

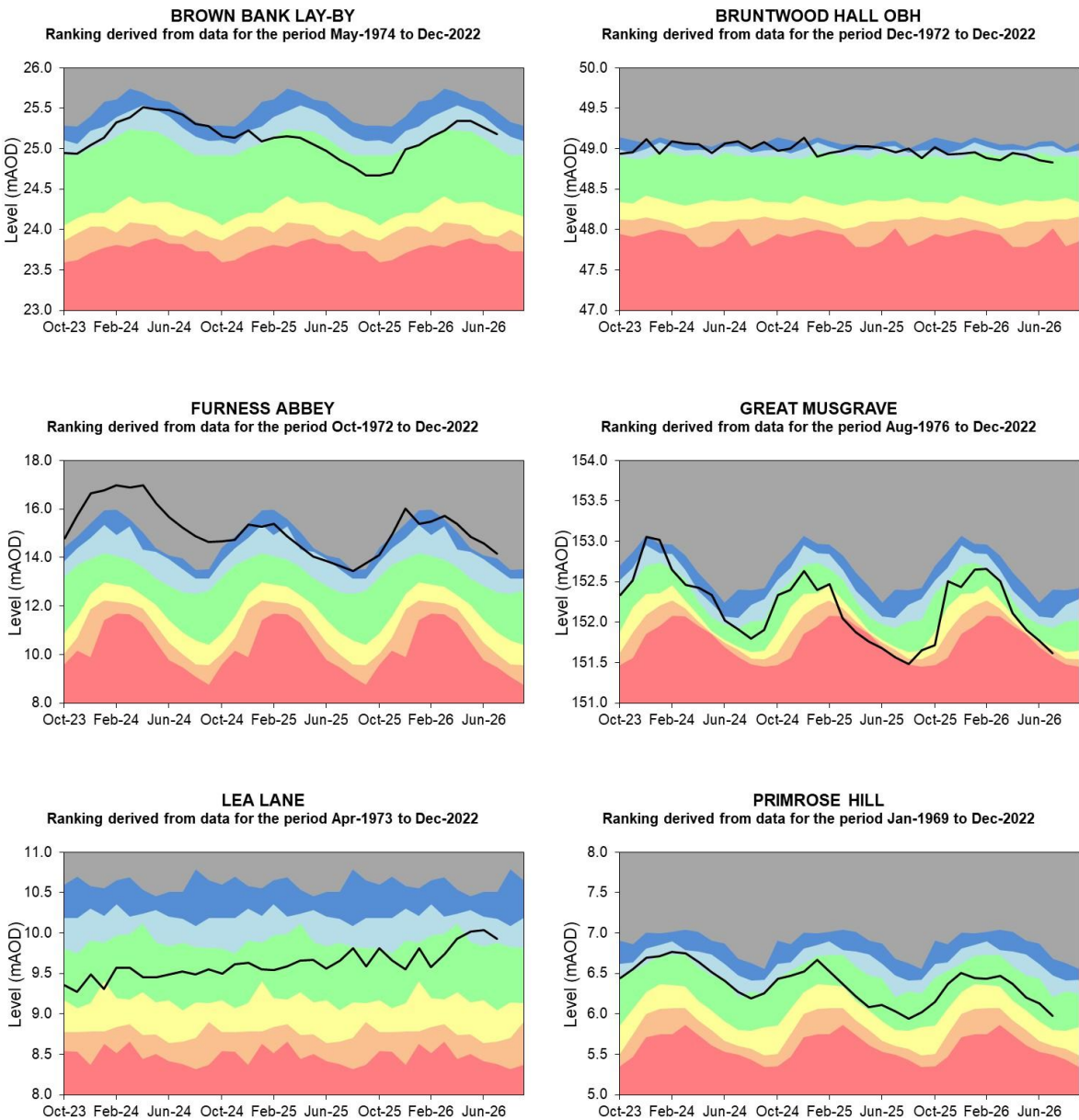
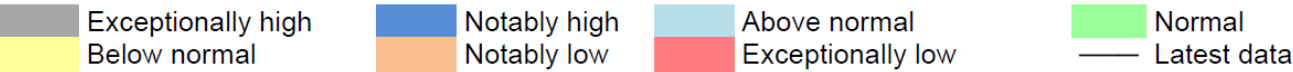
Figure 5.1: Groundwater levels for indicator sites at the end of July 2026, classed relative to an analysis of respective historic July levels. Table available in the appendices with detailed information. Please note Victoria Road Borehole sits within a superficial deposit as opposed to a bedrock aquifer. This is why the geology type is not marked on the map.

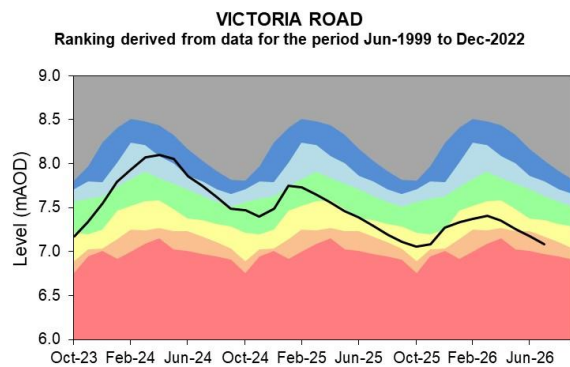
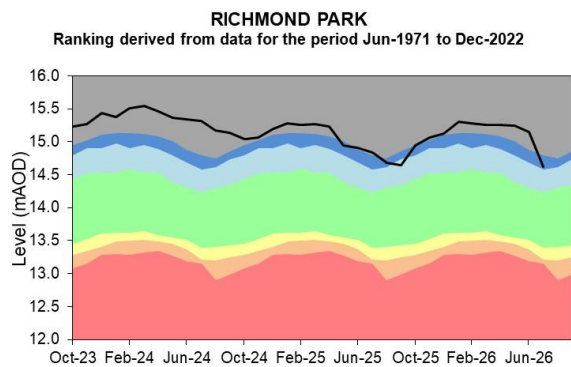
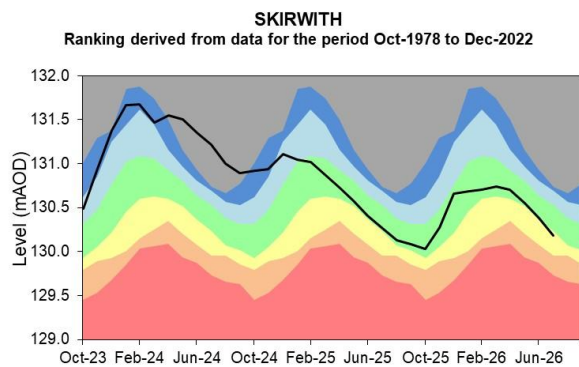
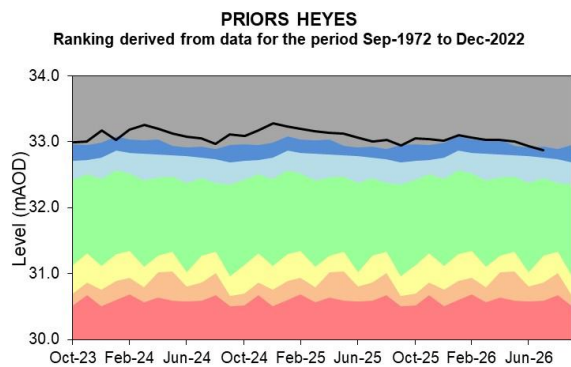


(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, AC0000807064, 2026.

5.2 Groundwater level charts

Figure 5.2: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.





Source: Environment Agency, 2026.

6 Reservoir stocks

Figure 6.1: The location of reservoirs that comprise the supply districts across North-west England and selected individual reservoirs.

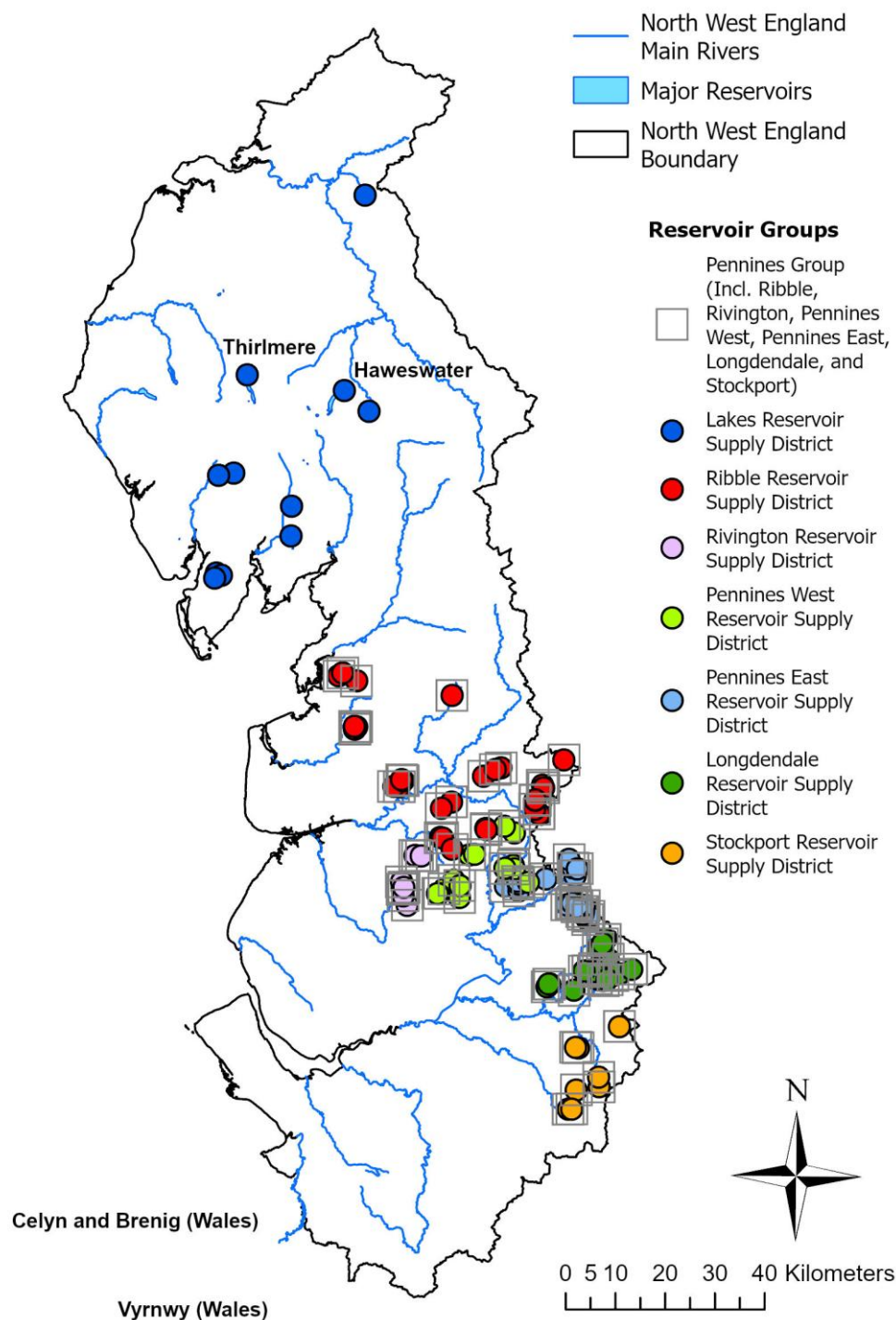
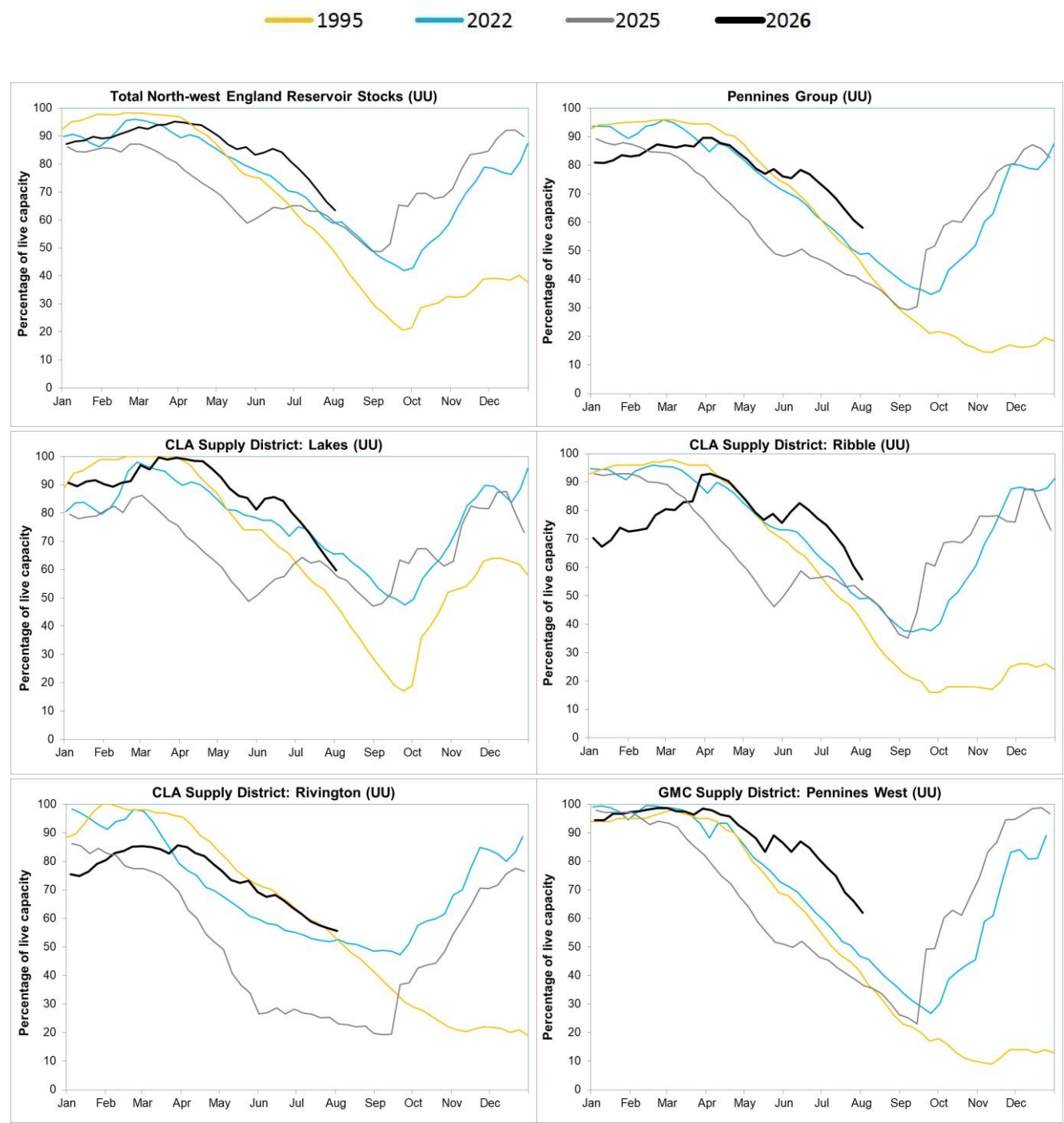
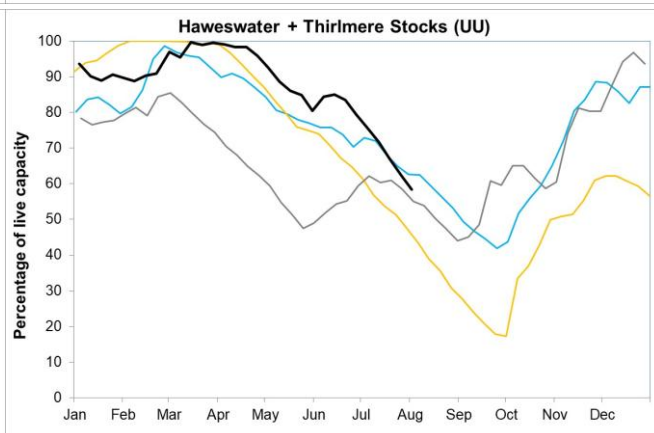
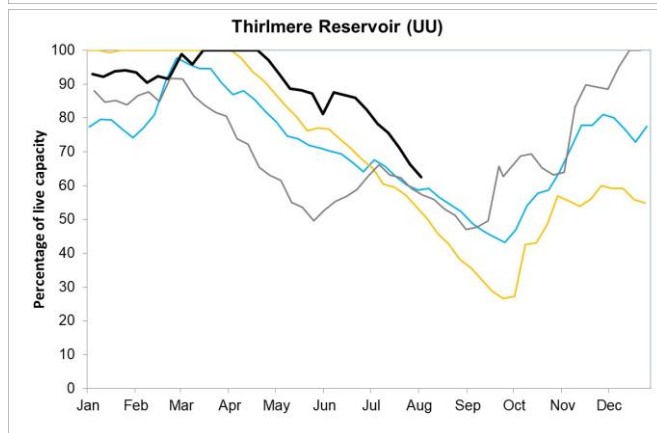
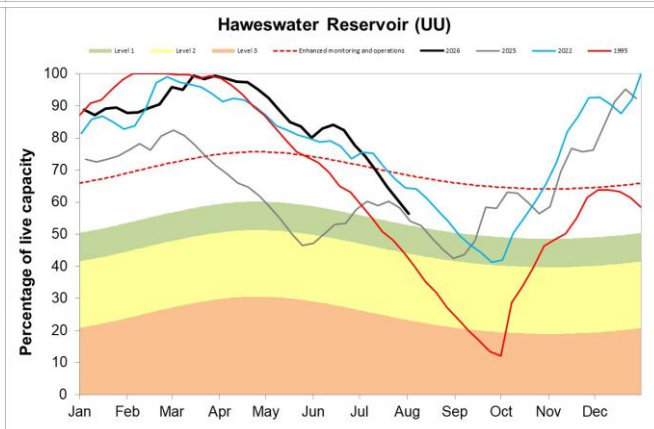
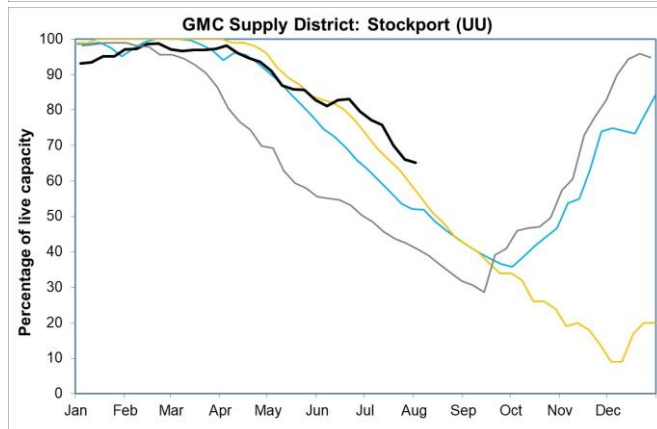
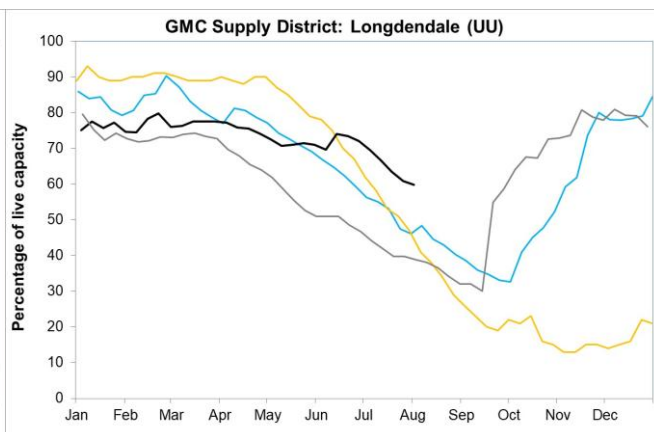
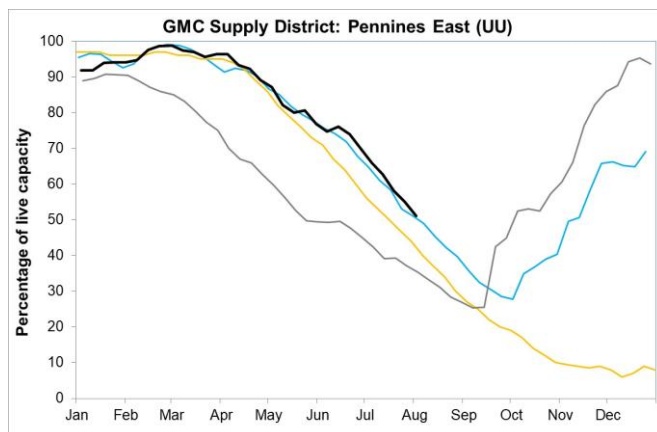
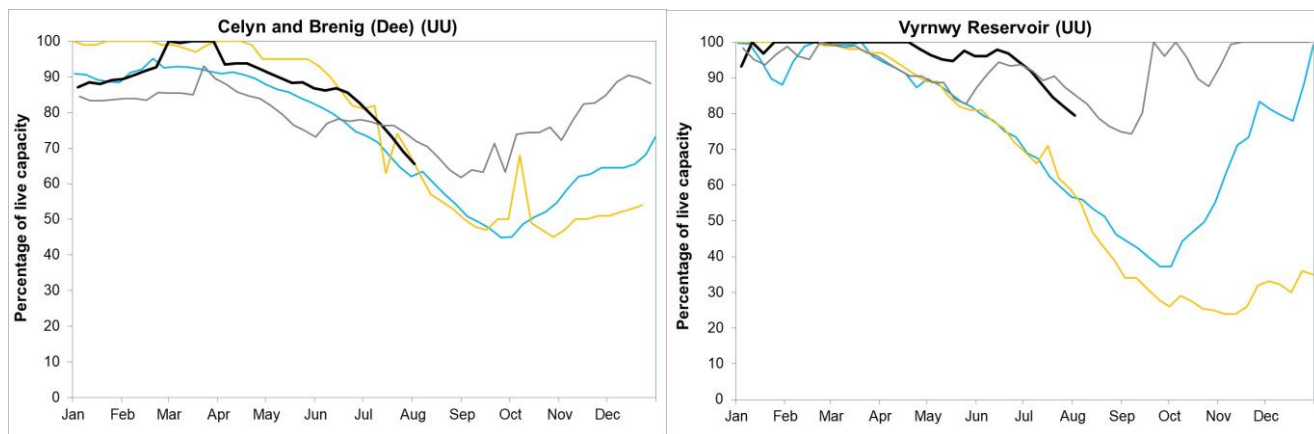


Figure 6.2: End of month reservoir stocks for supply districts across North-west England and selected individual reservoirs for current year (2026) and representative years: 1995, 2022 and 2025. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.







Source: (UU) United Utilities, (EA) The Environment Agency.

7 Glossary

7.1 Terminology

Aquifer

A geological formation able to store and transmit water.

Areal average rainfall

The estimated average depth of rainfall over a defined area. Expressed in depth of water (mm).

Artesian

The condition where the groundwater level is above ground surface but is prevented from rising to this level by an overlying continuous low permeability layer, such as clay.

Artesian borehole

Borehole where the level of groundwater is above the top of the borehole and groundwater flows out of the borehole when unsealed.

Cumecs

Cubic metres per second (m^3s^{-1}).

Effective rainfall

The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).

Flood alert and flood warning

Three levels of warnings may be issued by the Environment Agency. Flood alerts indicate flooding is possible. Flood warnings indicate flooding is expected. Severe flood warnings indicate severe flooding.

Groundwater

The water found in an aquifer.

Long term average (LTA)

The arithmetic mean calculated from the historic record, usually based on the period 1991 to 2020. However, the period used may vary by parameter being reported on (see figure captions for details).

mAOD

Metres above ordnance datum (mean sea level at Newlyn Cornwall).

MORECS

Met Office Rainfall and Evaporation Calculation System. Met Office service providing real time calculation of evapotranspiration, soil moisture deficit and effective rainfall on a 40 by 40 km grid.

Naturalised flow

River flow with the impacts of artificial influences removed. Artificial influences may include abstractions, discharges, transfers, augmentation and impoundments.

NCIC

National Climate Information Centre. NCIC area monthly rainfall totals are derived using the Met Office 5 km gridded dataset, which uses rain gauge observations.

Recharge

The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).

Reservoir gross capacity

The total capacity of a reservoir.

Reservoir live capacity

The capacity of the reservoir that is normally usable for storage to meet established reservoir operating requirements. This excludes any capacity not available for use (for example, storage held back for emergency services, operating agreements or physical restrictions). May also be referred to as 'net' or 'deployable' capacity.

Soil moisture deficit (SMD)

The difference between the amount of water actually in the soil and the amount of water the soil can hold. Expressed in depth of water (mm).

7.2 Categories

Exceptionally high

Value likely to fall within this band 5% of the time.

Notably high

Value likely to fall within this band 8% of the time.

Above normal

Value likely to fall within this band 15% of the time.

Normal

Value likely to fall within this band 44% of the time.

Below normal

Value likely to fall within this band 15% of the time.

Notably low

Value likely to fall within this band 8% of the time.

Exceptionally low

Value likely to fall within this band 5% of the time.

8 Appendices

8.1 Rainfall table

Hydrological area	Jul 2026 rainfall % of long term average 1991 to 2020	Jul 2026 band	May 2026 to July cumulative band	Feb 2026 to July cumulative band	Aug 2025 to July cumulative band
Cheshire Rivers Group	12	Exceptionally Low	Notably low	Below normal	Normal
Derwent (NW)	42	Notably Low	Normal	Above normal	Exceptionally high
Douglas	26	Exceptionally Low	Below normal	Normal	Normal
Eden	33	Exceptionally Low	Below normal	Normal	Notably high
Esk (Cumbria)	40	Notably Low	Normal	Notably high	Exceptionally high
Esk (Dumfries)	37	Exceptionally Low	Normal	Normal	Notably high
Kent	36	Exceptionally Low	Normal	Above normal	Exceptionally high
Mersey And Irwell	24	Exceptionally Low	Below normal	Normal	Normal
Ribble	35	Exceptionally Low	Normal	Normal	Above normal

Wyre And Lune	32	Exceptionally Low	Normal	Above normal	Notably high
North West	26	Exceptionally Low	Below normal	Normal	Notably high

8.2 River flows table

Site name	River	Catchment	Jul 2026 band	Jun 2026 band
Adelphi Weir Upstream	Irwell	Irwell (Croal to Irk)	Notably low	Normal
Ashbrook	Weaver (NW)	Weaver Upper	Exceptionally low	Normal
Ashton Weir	Mersey	Mersey Non Tidal	Below normal	Normal
Bollington Mill	Bollin	Bollin	Exceptionally low	Normal
Brinksway	Mersey	Mersey Non Tidal	Below normal	Above normal
Bullgill	Ellen	Ellen Lower	Normal	Normal
Caton	Lune	Lune Lower Tidal	Notably low	Notably high
Causey Bridges	Sankey	Mersey Non Tidal	Exceptionally low	Normal
Crople How	Esk (NW)	Esk (South West Lakes)	Below normal	Exceptionally high
Croston	Yarrow	Yarrow Lower	Below normal	Normal
Duddon Hall	Duddon	Duddon	Below normal	Notably high
Hodder Place	Hodder	Hodder Lower	Below normal	Notably high

Kirkby	Alt	Alt	Exceptionally low	Normal
Kirkby Stephen	Eden (NW)	Eden Cumbria Upper	Missing data	Missing data
Little Woolden Hall Ultrasonic	Glaze	Glaze	Exceptionally low	Normal
Lunes Bridge	Lune	Lune Upper	Notably low	Above normal
Newby Bridge Fms	Leven (NW)	Leven Cumbria	Below normal	Notably high
Pooley Bridge	Eamont	Eamont	Below normal	Notably high
Portwood	Tame	Tame	Exceptionally low	Normal
Rudheath	Dane	Dane	Notably low	Normal
Samlesbury Pgs	Ribble (NW)	Ribble Lower	Notably low	Above normal
Seaton Mill	Derwent (NW)	Derwent Cumbria Lower	Below normal	Notably high
Sedgwick	Kent	Levens Bridge	Below normal	Notably high
Sheepmount	Eden (NW)	Eden Cumbria Lower	Notably low	Above normal
St Michaels Fms	Wyre	Brock	Below normal	Above normal

8.3 Groundwater table

Site name	Aquifer	End of Jul 2026 band	End of Jun 2026 band
Brown Bank Lay-by	West Cumbria Permo-triassic Sandstone	Above normal	Above normal
Bruntwood Hall Obh	East Cheshire Permo-triassic Sandstone	Normal	Normal
Furness Abbey	Furness Permo-triassic Sandstone	Exceptionally high	Exceptionally high
Great Musgrave	Eden Valley And Carlisle Basin Permo-triassic Sandstone	Notably low	Below normal
Lea Lane	Fylde Permo-triassic Sandstone	Above normal	Above normal
Priors Heyes	West Cheshire Permo-triassic Sandstone	Notably high	Exceptionally high
Primrose Hill	Fylde Permo-triassic Sandstone	Normal	Normal
Richmond Park	Rufford Permo-triassic Sandstone	Notably high	Exceptionally high
Skirwith	Eden Valley And Carlisle Basin Permo-triassic Sandstone	Below normal	Normal
Victoria Road Entrance	West Lancashire Quarternary Sand And Gravel Superficial Deposits	Notably low	Notably low