Monthly water situation report: North-west England

1 Summary – May 2026

Rainfall for north-west England in May was within the normal range, having received 95% of the long-term average (LTA). Soil Moisture deficits (SMD) varied across the region, with higher than expected values in the south and lower than average values in the Esk (Cumbria) and Kent hydrological areas. Monthly mean river flows for May were generally as expected for this time of year, with the exception of four sites across the region which were classified as below normal. Total reservoir stocks for North-west England have decreased and are slightly below average for this time of year.

1.1 Rainfall

Rainfall across the north-west in May was classed as normal, having received 95% of the long-term average (LTA). Greater Manchester, Merseyside and Cheshire (GMMC) received 106% of the LTA, and Cumbria and Lancashire (CLA) received 100% of LTA, both of which are classed as normal. The lowest rainfall totals relative to the LTA were recorded in the Esk (Dumfries) hydrological area, while the highest values were recorded in the Douglas Hydrological area.

Over the 3-month cumulative period ending in May, a clear north-south divide in rainfall can be observed with drier conditions in south Lancashire and GMMC areas. The Kent and Esk (Cumbria) hydrological areas experienced the highest rainfall totals, both of which falling into the notably high classification.

The 6-month cumulative period ending in May was wetter than the long term average in all hydrological areas with the exception of the Ribble hydrological area. All other areas recorded rainfall totals classed as above normal except for the Kent and Esk (Cumbria) hydrological areas which observed notably high and exceptionally high rainfall respectively.

Over the 12-month cumulative period ending in May, a north-south spatial pattern remained apparent, with rainfall in the northern hydrological areas classed as exceptionally high, except for the Esk (Dumfries) hydrological area, which recorded notably high rainfall totals. In contrast, the southern areas recorded rainfall totals classed as above normal. For Cumbria, the 12-month period ending in May was the second wettest on record. Over the same period, rainfall totals were the highest on record for Esk (Cumbria), second highest for Kent and third highest for Derwent (North West).

1.2 Soil moisture deficit and recharge

At the end of May, soil moisture deficit (SMD) ranged from 10mm or less to 100mm across north-west England. In the three southernmost hydrological areas- Cheshire Rivers Group, Mersey and Irwell and Douglas, SMD was between 26 and 50mm above the LTA. SMD in the Ribble hydrological area was between 6 and 25mm above the LTA. SMD was between 6 and 25mm below the LTA in the Kent and Esk (Cumbria) hydrological areas, and the lowest in absolute terms in the latter (<=10mm).

1.3 River flows

In May, the majority of sites recorded normal monthly mean river flows for this time of year. Of the 25 sites, 21 were classed as normal and 4 as below normal. Corresponding to spatial patterns, lower flows were recorded in the north (expressed as a percentage of the LTA). Of the 4 sites that recorded notably low flows, 2 were in Cumbria: in the Derwent at Seaton Mill (43% of LTA) and the Lower Eden at Sheepmount. The other 2 sites were the Tame at Portwood and the Bollin at Bollington Mill in Greater Manchester and Cheshire, respectively. The highest flows relative to the LTA were recorded at the Upper Mersey at Brinksway (108%).

1.4 Groundwater levels

Groundwater levels across north-west England at the end of May were classed between below normal and exceptionally high. Groundwater levels increased at:

- Lea Lane, from normal to above normal

All other groundwater indicator sites remained at the same classification:

- Brown Bank Lay-By, classed as above normal
- Bruntwood Hall, classed as above normal
- Furness Abbey, classed as exceptionally high
- Great Musgrave, classed as normal
- Primrose Hill, classed as normal
- Priors Heyes, classed as exceptionally high
- Skirwith, classed as normal
- Richmond Park, classed as exceptionally high
- Victoria Road, classed as below normal

1.5 Reservoir stocks

Total reservoir storage for north-west England saw a decrease from 91.9% at the end of April to 83.3% at the end of May. This is slightly lower than the average of 83.9% for this time of year, and higher than this time last year when stocks were at 60.5%.

At the end of May, reservoir storage (in terms of percentage) was highest at Lake Vyrnwy at 96.1% full, and lowest at Rivington, at 69.3% full.

The combined storage at Haweswater and Thirlmere reservoirs decreased from 95.9% at the end of April to 80.5% at the end of May. This is higher than the average of 73.3% for this time of year, and higher than this time last year when stocks were 47.1%.

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
- Ridgegate System (Stockport Reservoir Supply District) – Ridgegate
- Cumbria Compensation & recreation only reservoirs – Borrans

1.6 Water abstraction restrictions and environmental impacts

In CLA, 5 water abstraction licences were issued with stop notices in May (two of which were sent resumes in May, the rest were sent resumes in June). In GMMC, 1 water abstraction licence was issued with a reduce notice in May. There were no reported environmental incidents related to dry weather across north-west England.

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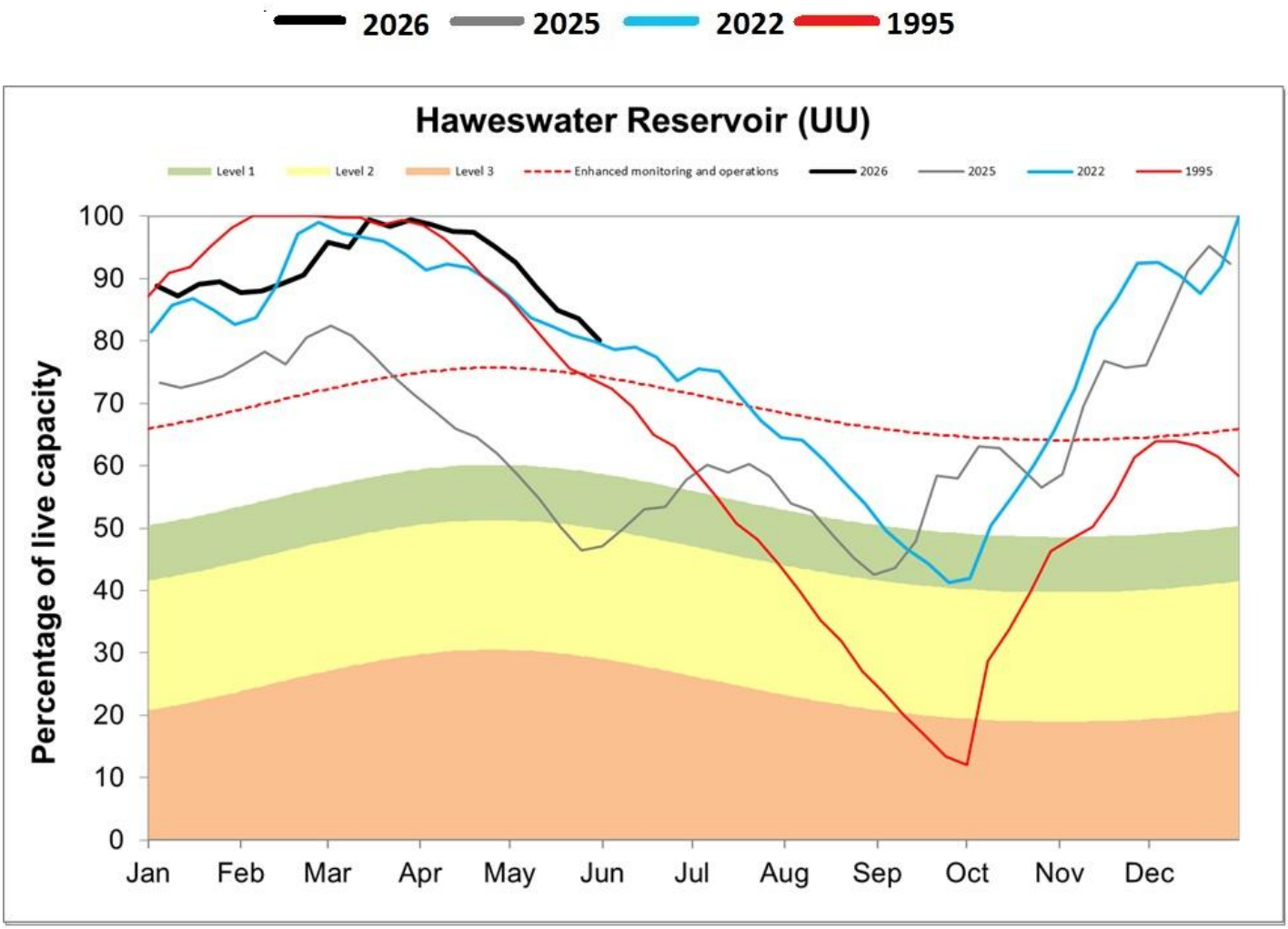
Figure 1.5: Storage in Haweswater Reservoir, including the drought levels for the reservoir and storage for the current year (2026) and representative years: 1995, 2022 and 2025 (*Source: United Utilities* (UU)).

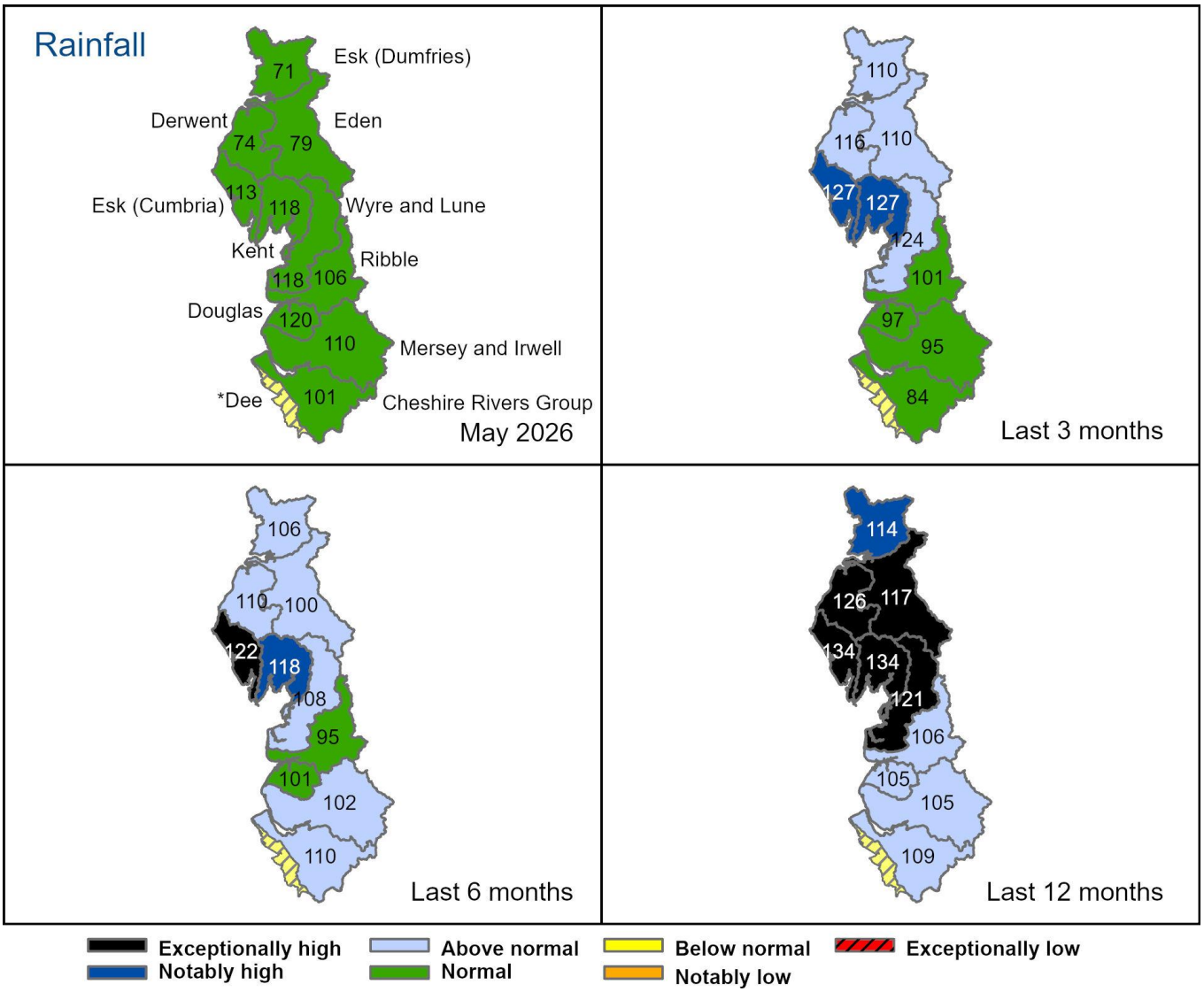


Author: Greater Manchester, Merseyside and Cheshire Hydrology Team, hydrology.GMMYCH@environment-agency.gov.uk

2 Rainfall

2.1 Rainfall map

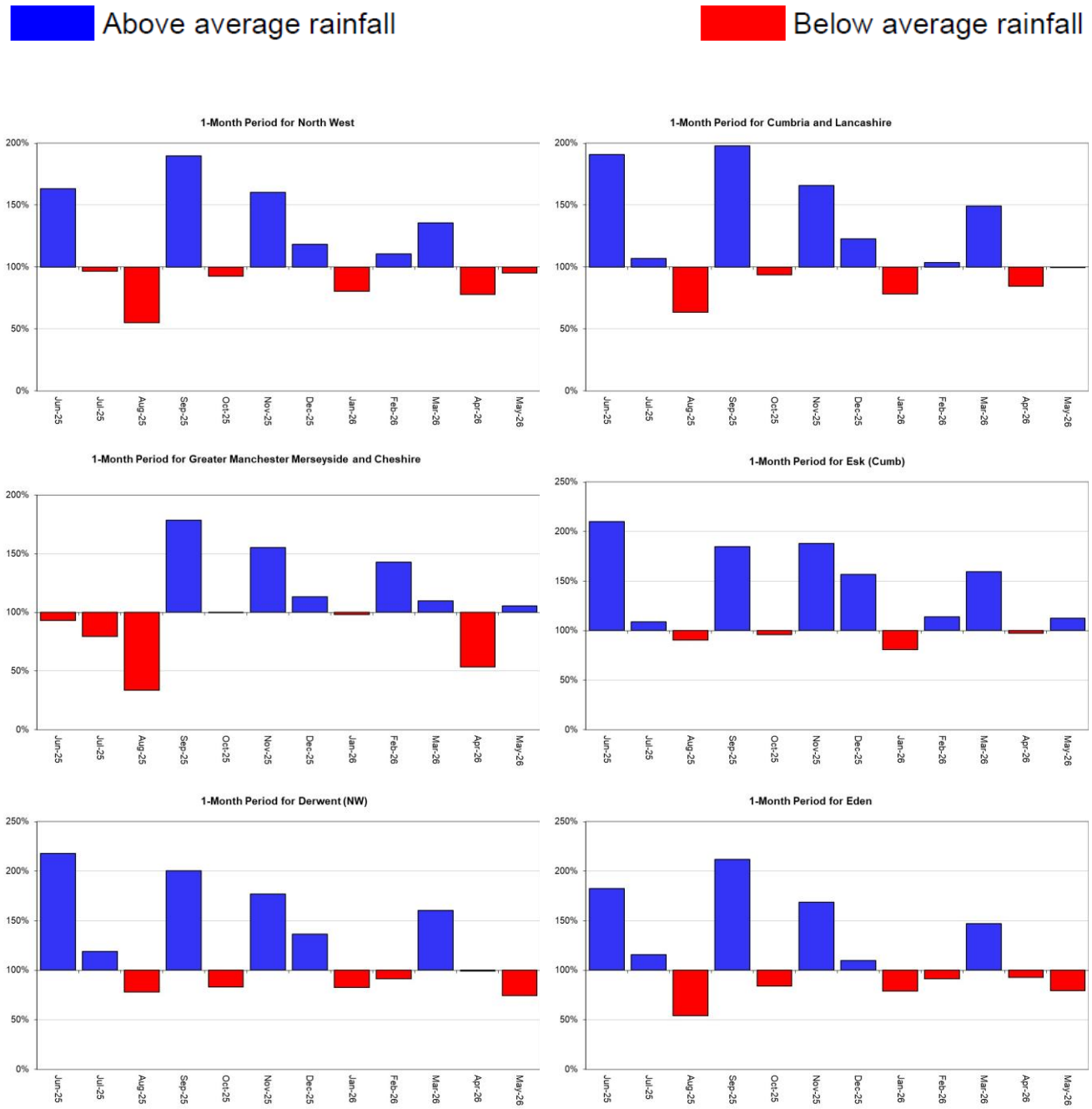
Figure 2.1: Total rainfall (as a percentage of the 1991 to 2020 long term average) for hydrological areas for the current month (up to 31 May 2026), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices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

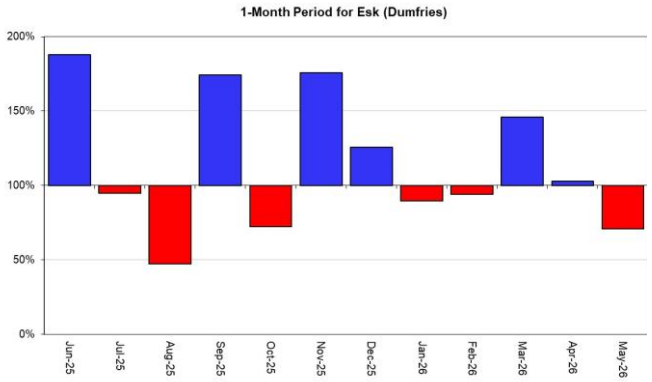


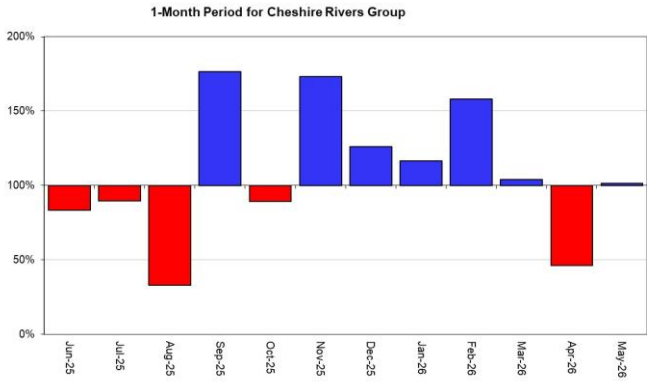
Rainfall data since January 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026). Rainfall data prior to January 2025, extracted from Met Office HadUK 1km gridded rainfall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

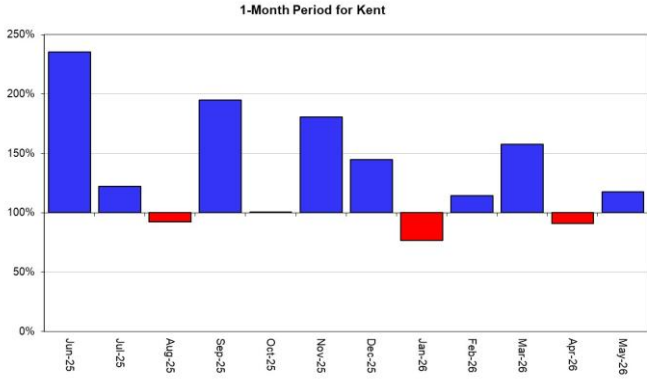
2.2 Rainfall charts

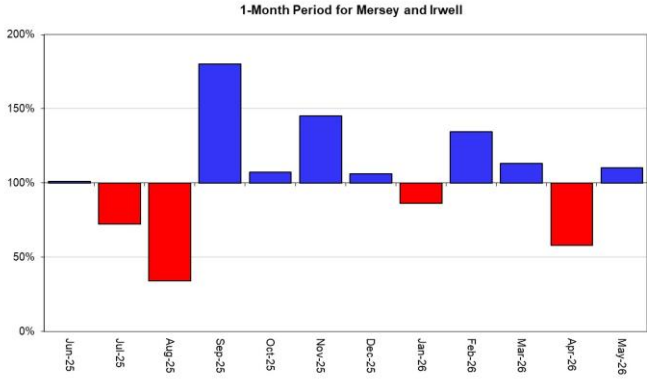
Figure 2.2: Monthly rainfall totals for the past 12 months expressed as a percentage of the 1991 to 2020 long term average for North-west England and its hydrological areas.

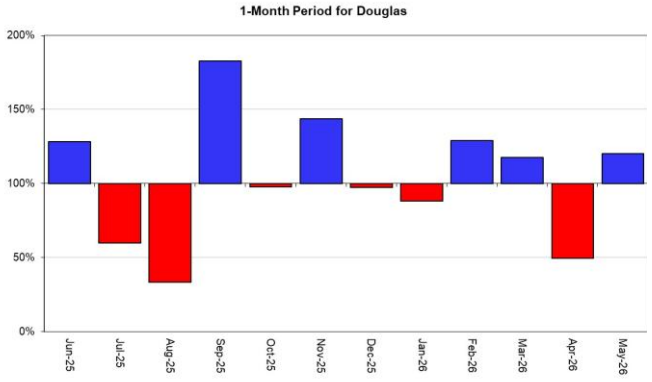


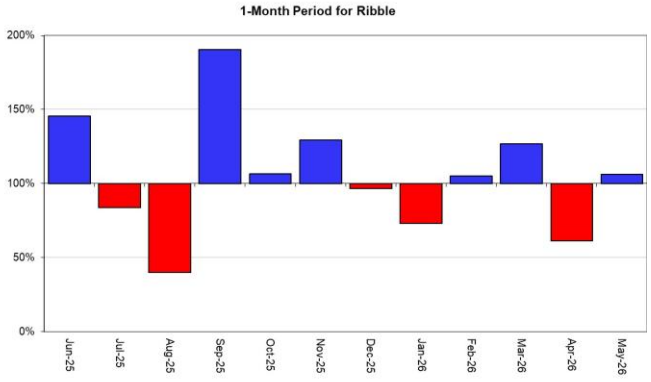

1-Month Period for Esk (Dumfries)
200%
150%
100%
50%
0%
Jun-25
Jul-25
Aug-25
Sep-25
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26

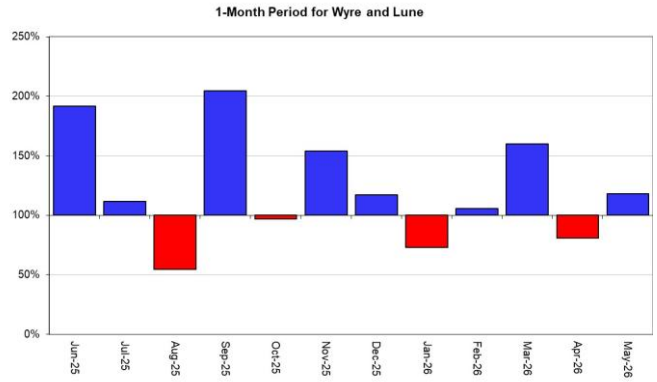

1-Month Period for Cheshire Rivers Group
200%
150%
100%
50%
0%
Jun-25
Jul-25
Aug-25
Sep-25
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26


1-Month Period for Kent
250%
200%
150%
100%
50%
0%
Jun-25
Jul-25
Aug-25
Sep-25
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26


1-Month Period for Mersey and Irwell
200%
150%
100%
50%
0%
Jun-25
Jul-25
Aug-25
Sep-25
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26


1-Month Period for Douglas
200%
150%
100%
50%
0%
Jun-25
Jul-25
Aug-25
Sep-25
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26


1-Month Period for Ribble
200%
150%
100%
50%
0%
Jun-25
Jul-25
Aug-25
Sep-25
Oct-25
Nov-25
Dec-25
Jan-26
Feb-26
Mar-26
Apr-26
May-26

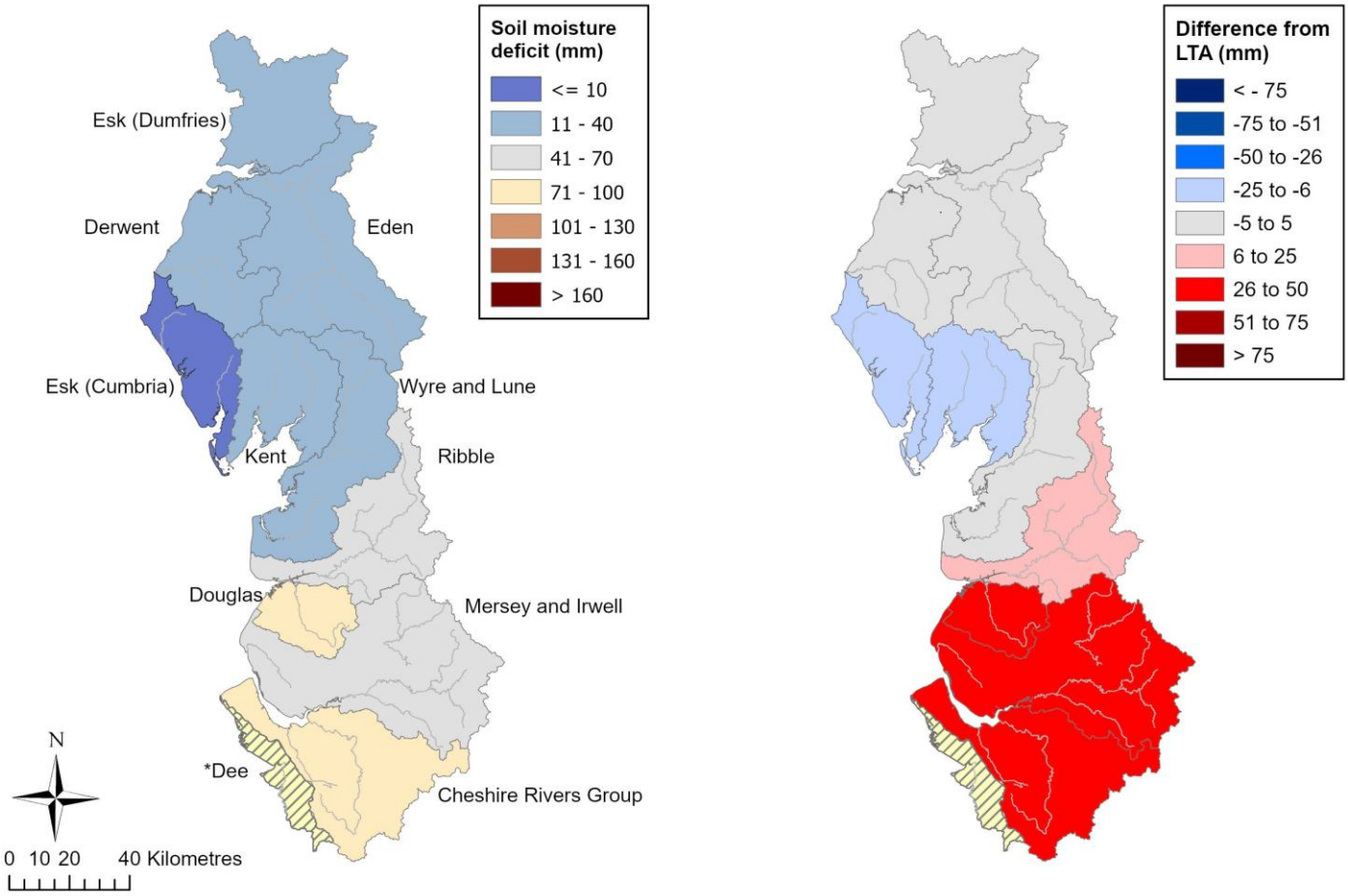


Rainfall data since January 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026). Rainfall data prior to January 2025, extracted from Met Office HadUK 1km gridded rainfall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

3 Soil moisture deficit

3.1 Soil moisture deficit map

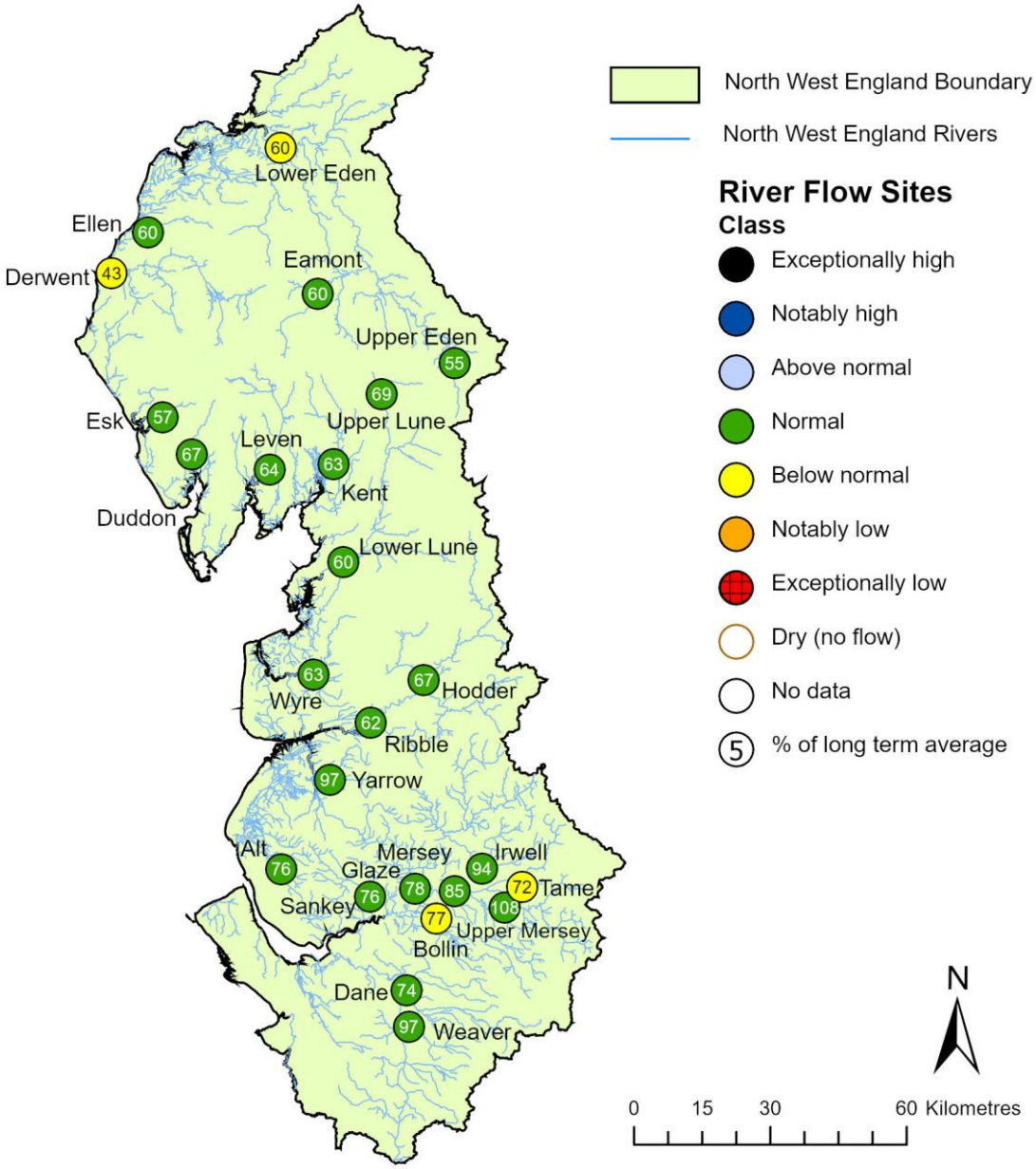
Figure 3.1: Soil moisture deficits for the week ending 2 June 2026. The map on the left shows actual soil moisture deficits (mm) and on the right shows the difference (mm) of the actual from the 1991 - 2020 long term average soil moisture deficits. MORECS data for real land use.



4 River flows

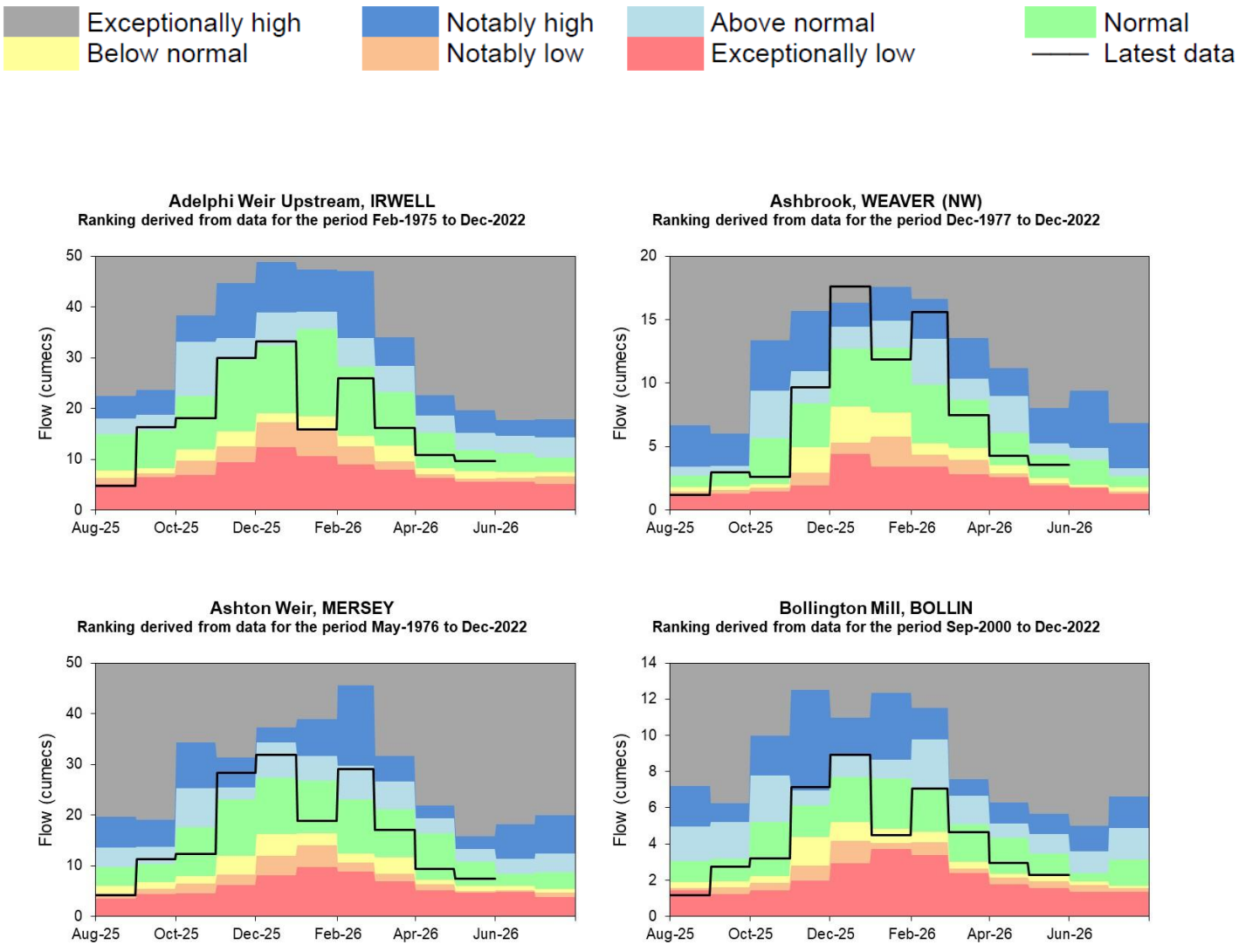
4.1 River flows map

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

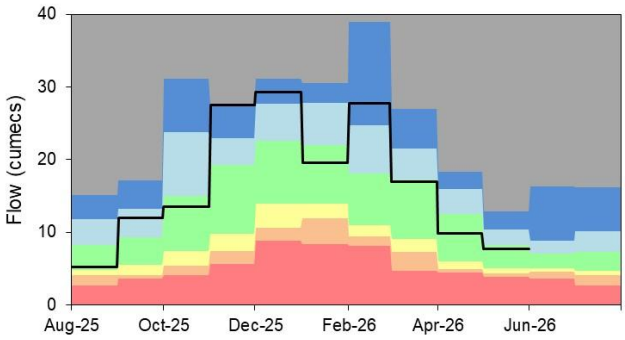


4.2 River flow charts

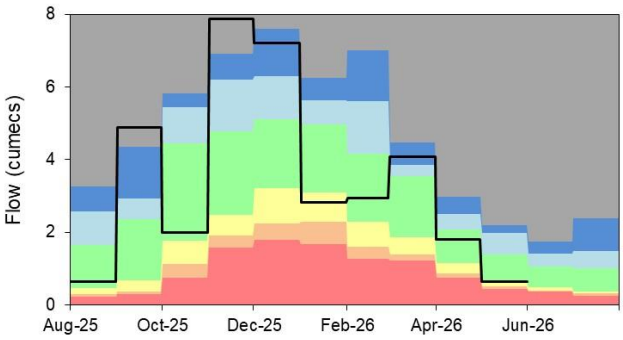
Figure 4.2: Monthly mean river flow for index sites over the past year, compared to an analysis of historic monthly mean flows.



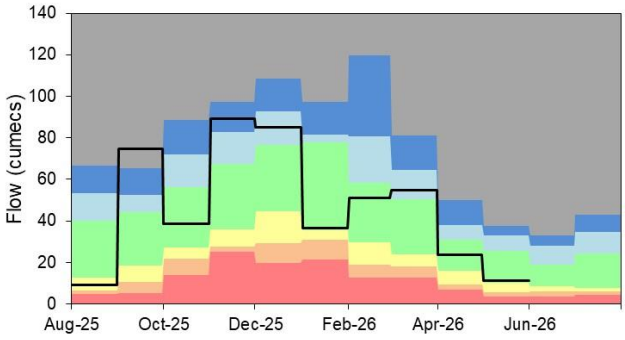
Brinksway, MERSEY
Ranking derived from data for the period Jan-1974 to Dec-2022



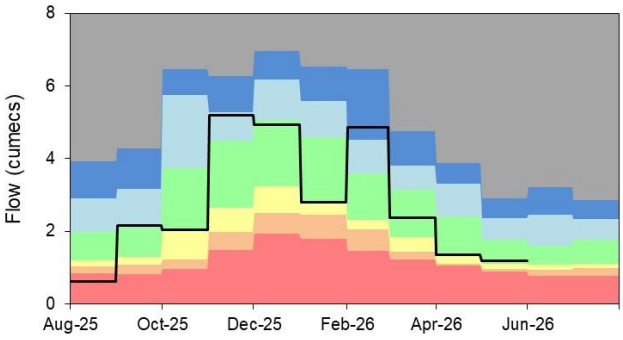
Bullgill, ELLEN
Ranking derived from data for the period Jan-1976 to Dec-2022



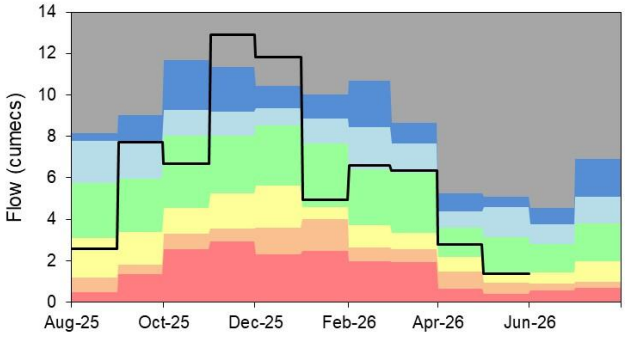
Caton, LUNE
Ranking derived from data for the period Jan-1959 to Dec-2022



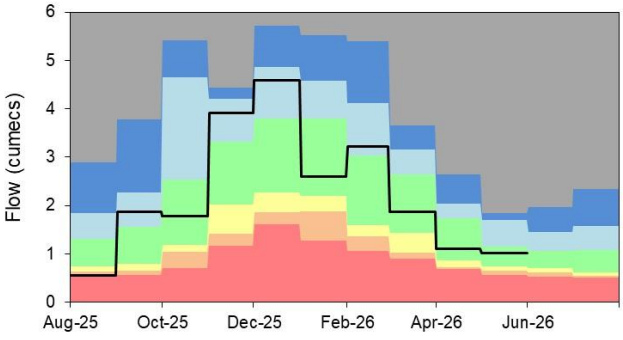
Causey Bridges, SANKEY
Ranking derived from data for the period Jan-1977 to Dec-2022



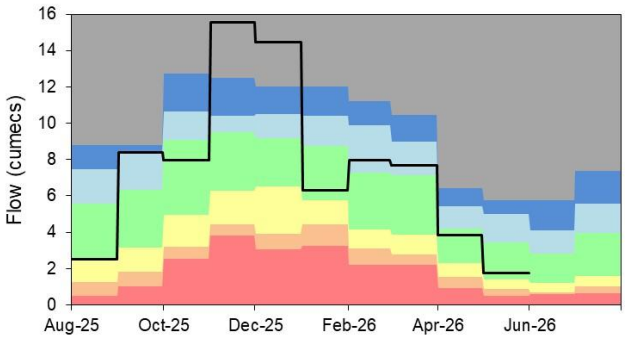
Cropple How, ESK (NW)
Ranking derived from data for the period Jan-1976 to Dec-2022



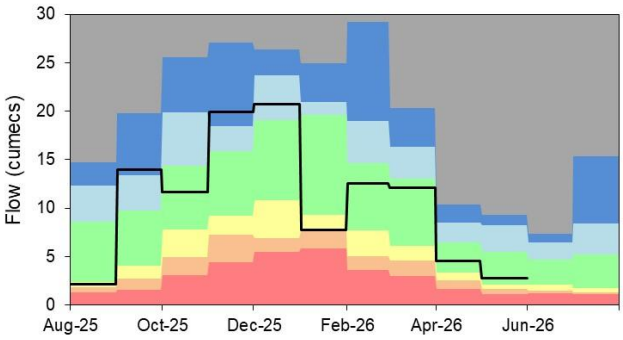
Croston, YARROW
Ranking derived from data for the period Jan-1976 to Dec-2022



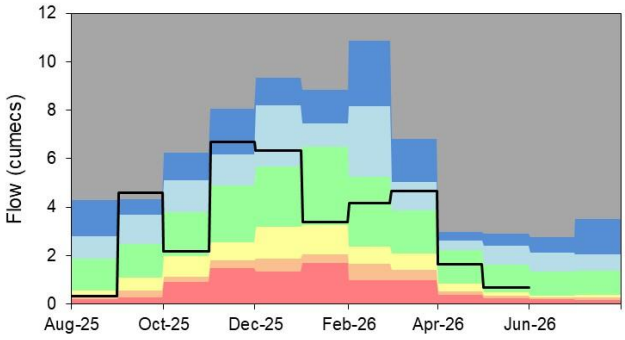
Duddon Hall, DUDDON
Ranking derived from data for the period Mar-1968 to Dec-2022



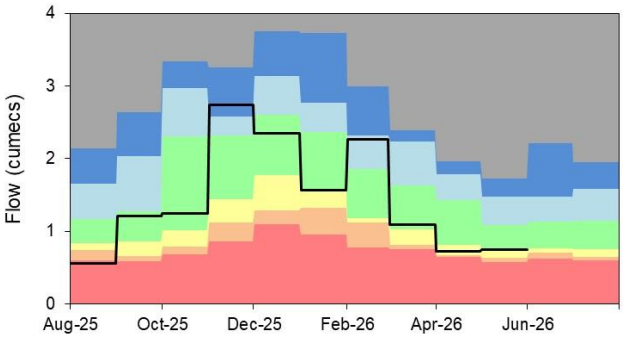
Hodder Place, HODDER
Ranking derived from data for the period Jan-1976 to Dec-2022



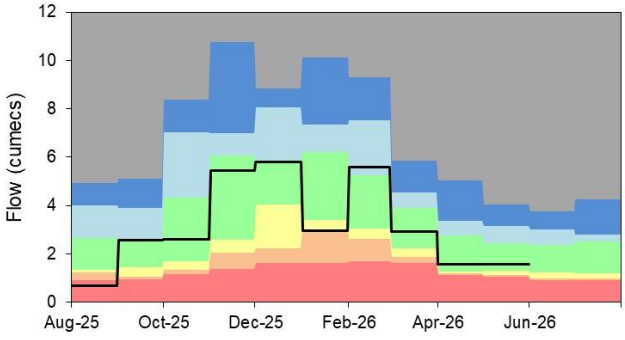
Kirkby Stephen, EDEN (NW)
Ranking derived from data for the period Oct-1971 to Dec-2022



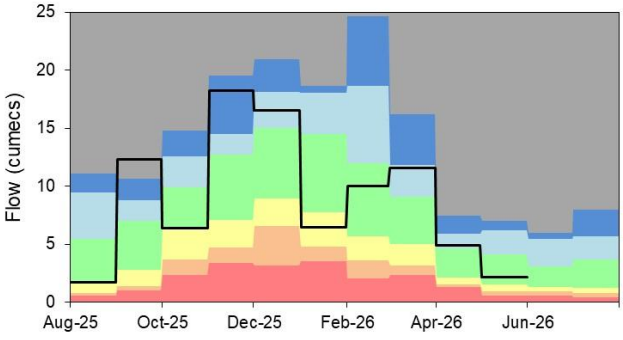
Kirkby, ALT
Ranking derived from data for the period Oct-1977 to Dec-2022



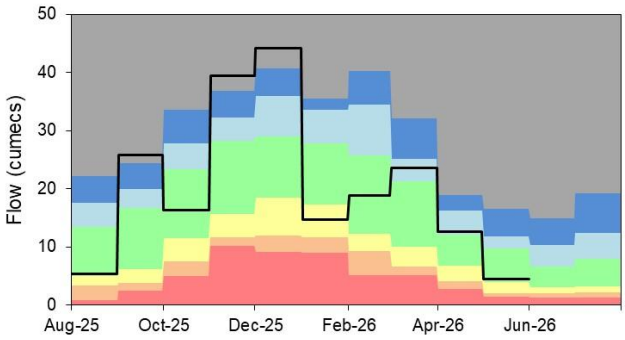
Little Woolden Hall Ultrasonic, GLAZE
Ranking derived from data for the period Jul-1995 to Dec-2022



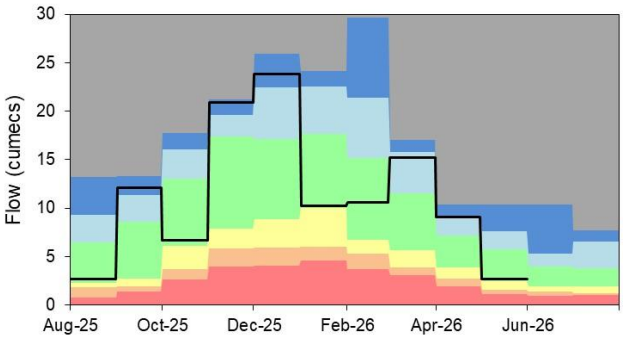
Lunes Bridge, LUNE
Ranking derived from data for the period Dec-1979 to Dec-2022



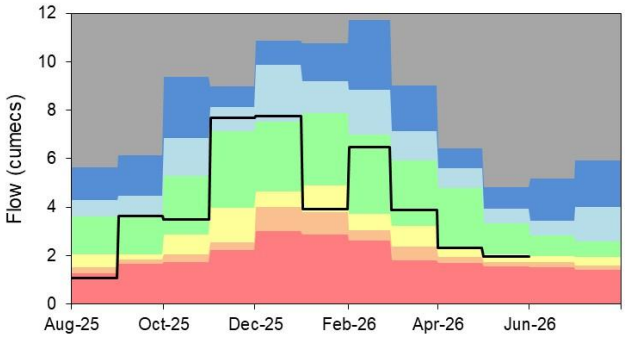
Newby Bridge FMS, LEVEN (NW)
Ranking derived from data for the period Jan-1972 to Dec-2022



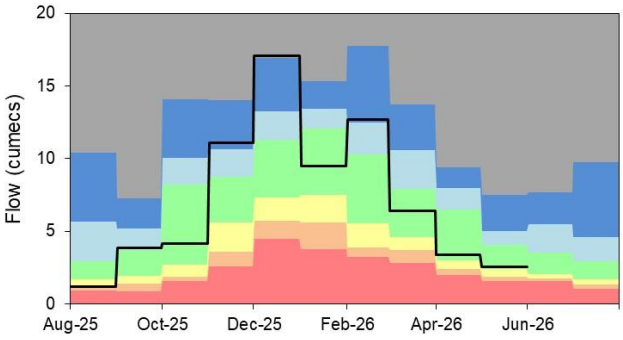
Pooley Bridge, EAMONT
Ranking derived from data for the period Jul-1970 to Dec-2022



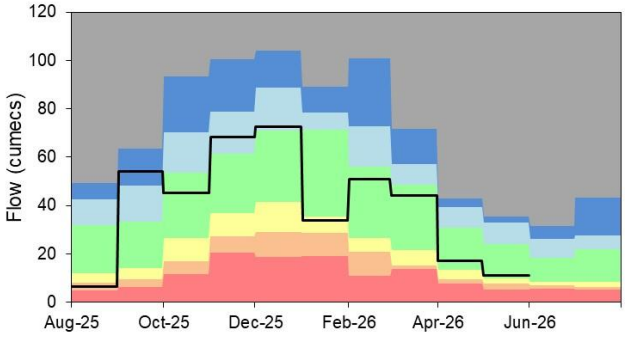
Portwood, TAME
Ranking derived from data for the period Jan-1976 to Dec-2022



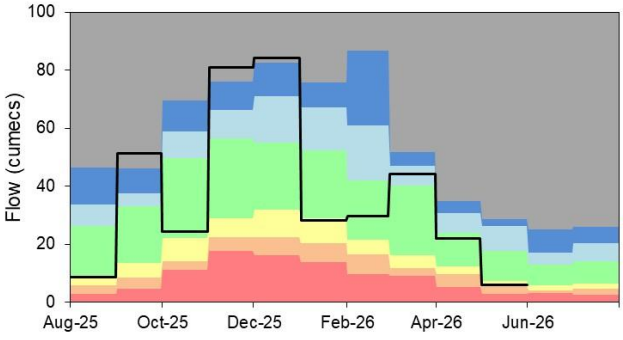
Rudheath, DANE
Ranking derived from data for the period Jan-1976 to Dec-2022



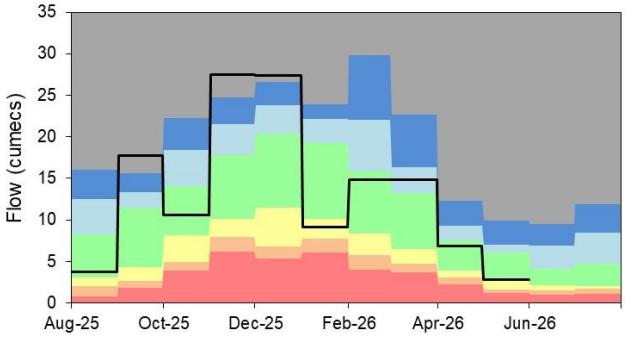
Samlesbury Pgs, RIBBLE (NW)
Ranking derived from data for the period May-1960 to Dec-2022



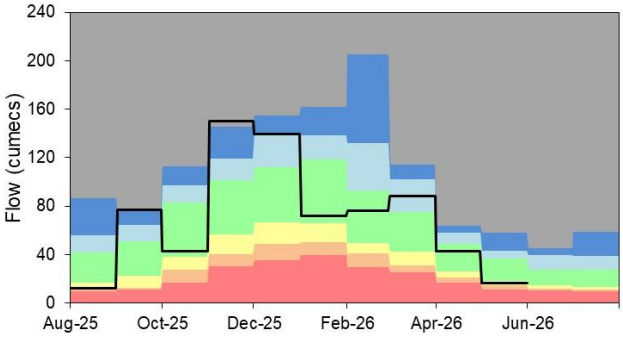
Seaton Mill, DERWENT (NW)
Ranking derived from data for the period Sep-1960 to Dec-2022



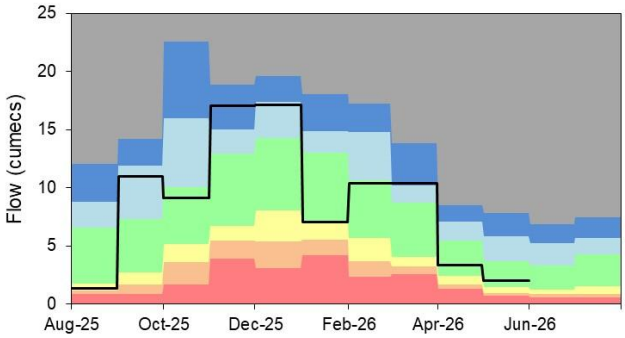
Sedgwick, KENT
Ranking derived from data for the period Nov-1968 to Dec-2022



Sheepmount, EDEN (NW)
Ranking derived from data for the period Oct-1967 to Dec-2022



St Michaels FMS, WYRE
Ranking derived from data for the period Oct-1963 to Dec-2022

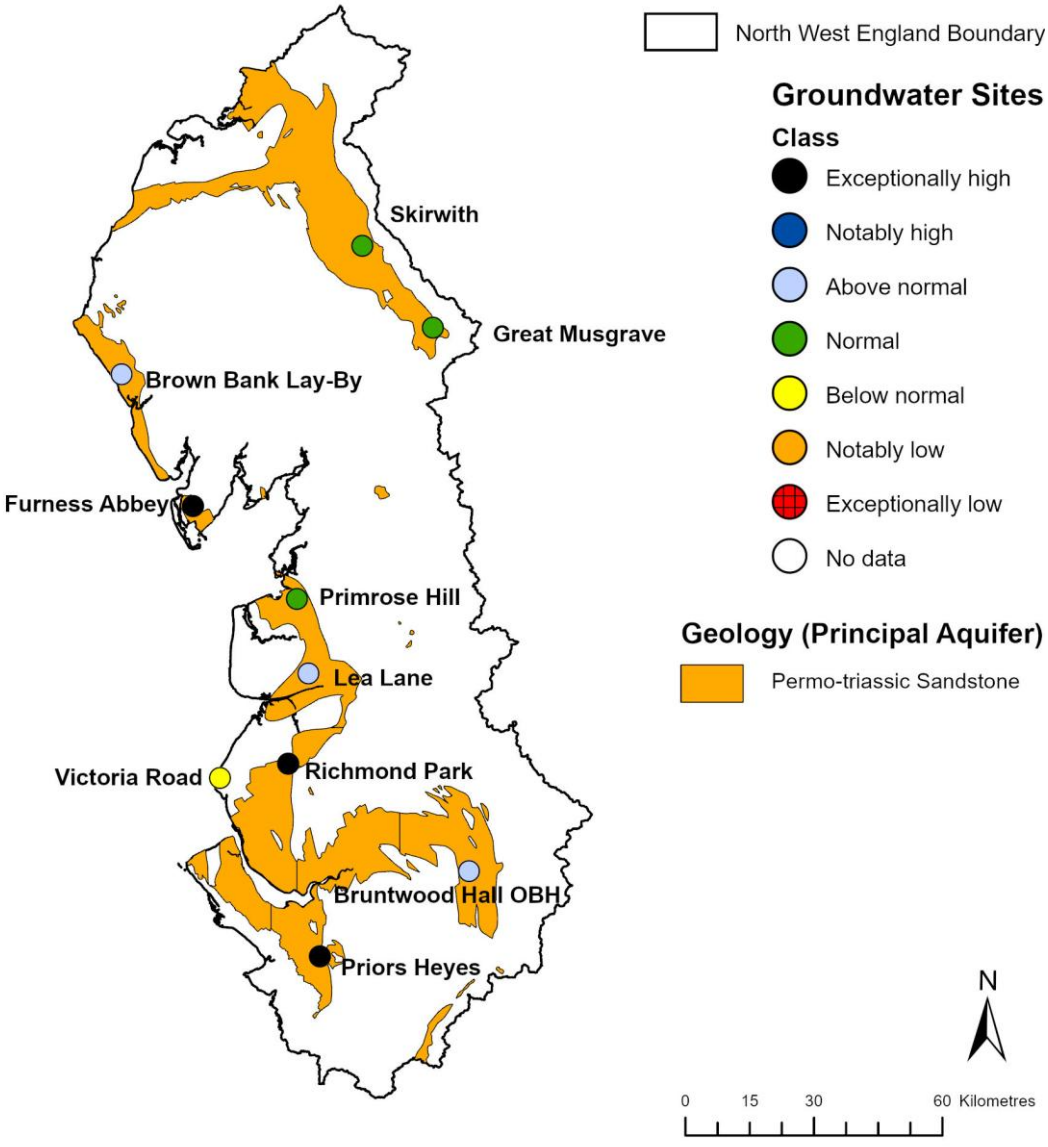


Source: Environment Agency.

5 Groundwater levels

5.1 Groundwater levels map

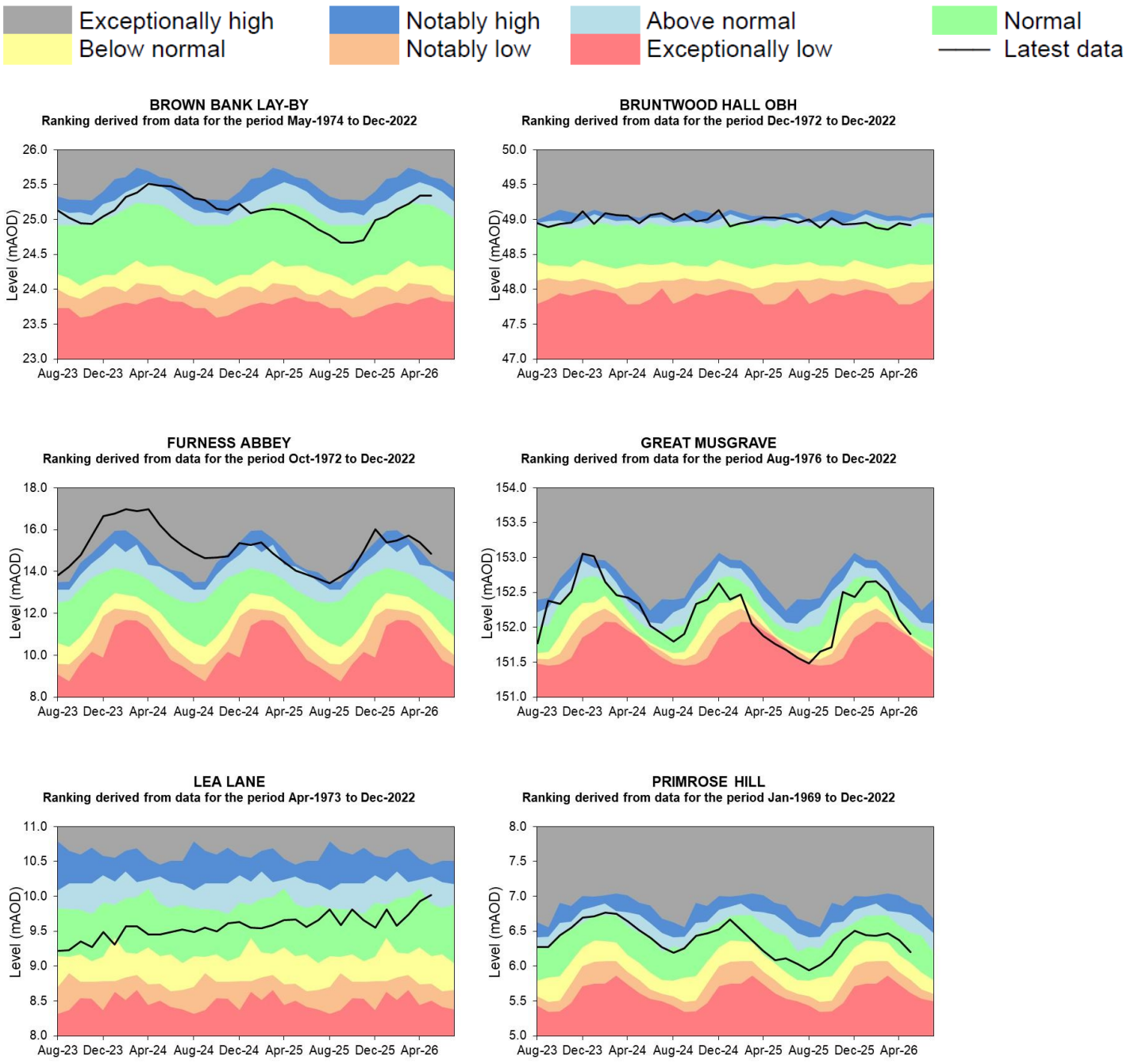
Figure 5.1: Groundwater levels for indicator sites at the end of May 2026, classed relative to an analysis of respective historic May levels. Table available in the appendices with detailed information. Please note Victoria Road Borehole sits within a superficial deposit as opposed to a bedrock aquifer.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

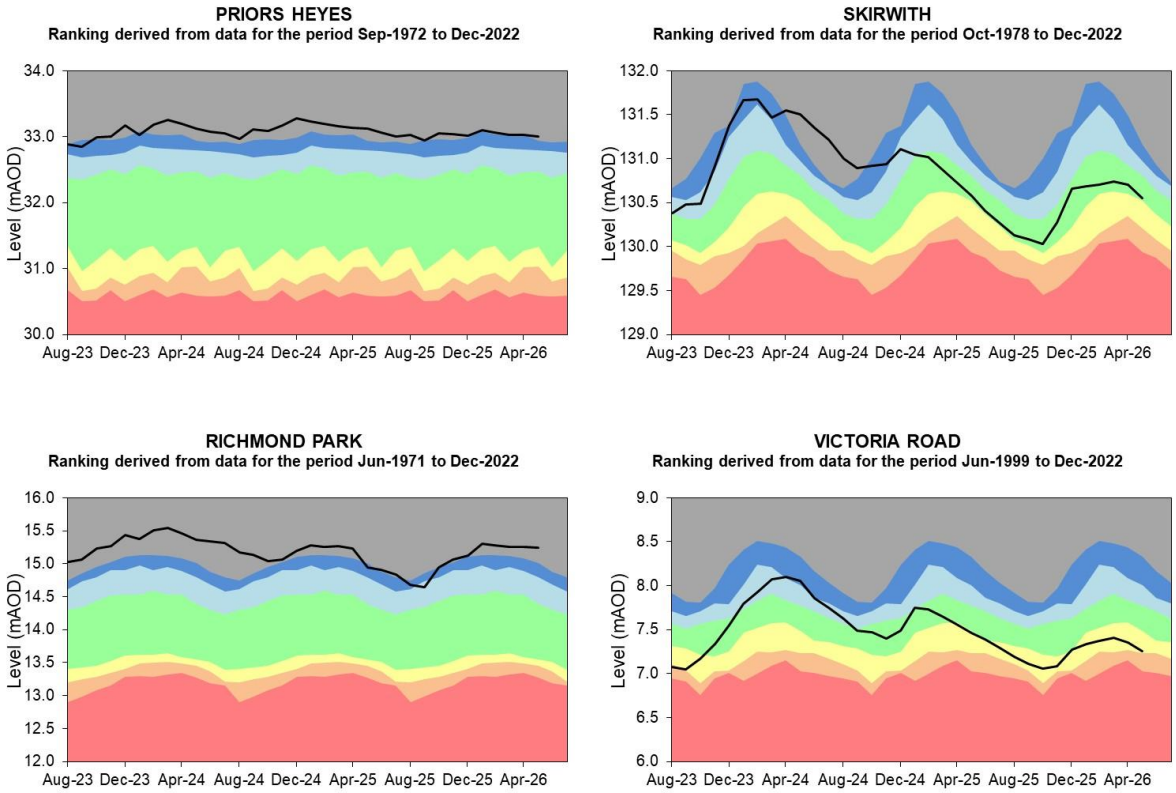


(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, AC0000807064, 2026.

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.

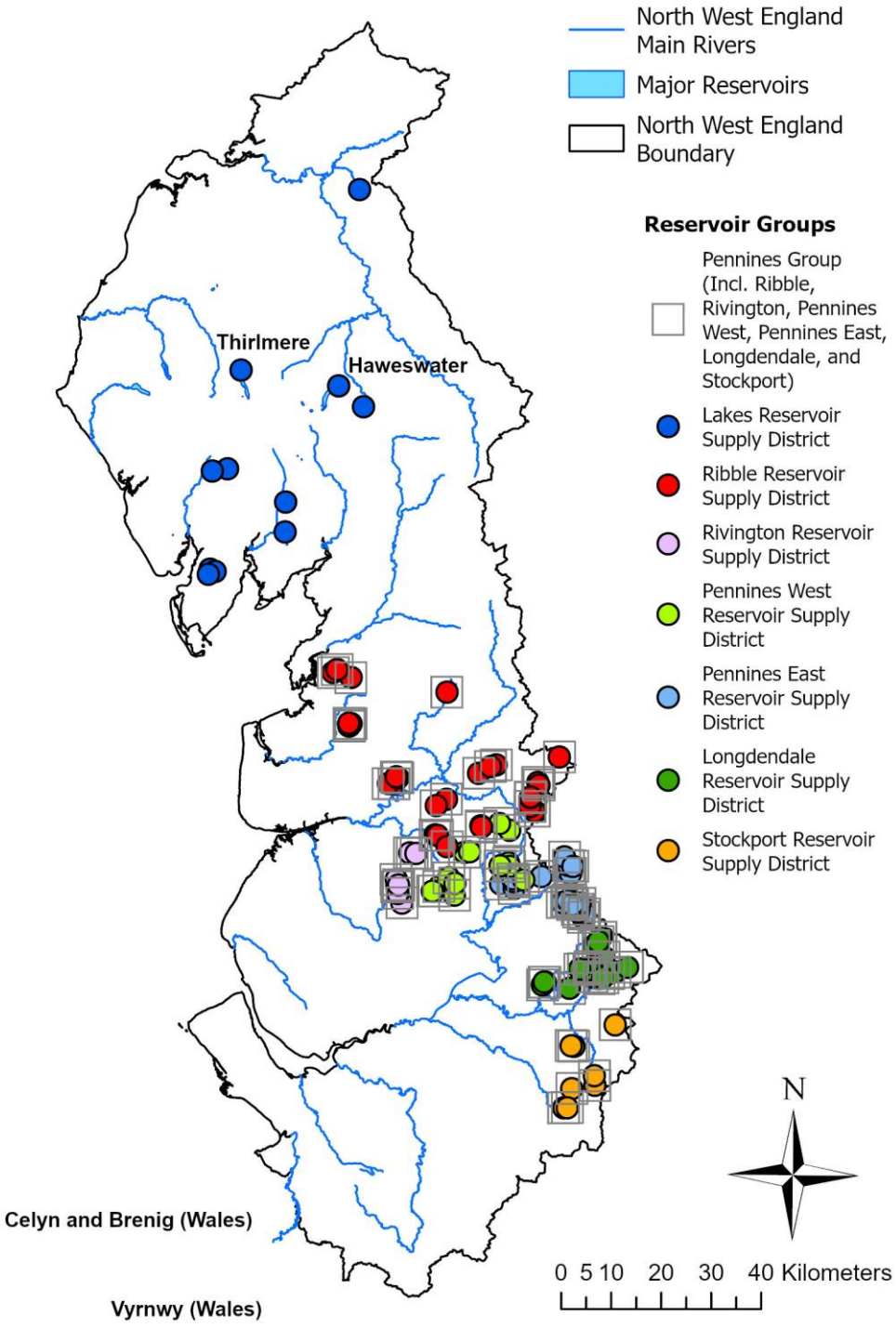
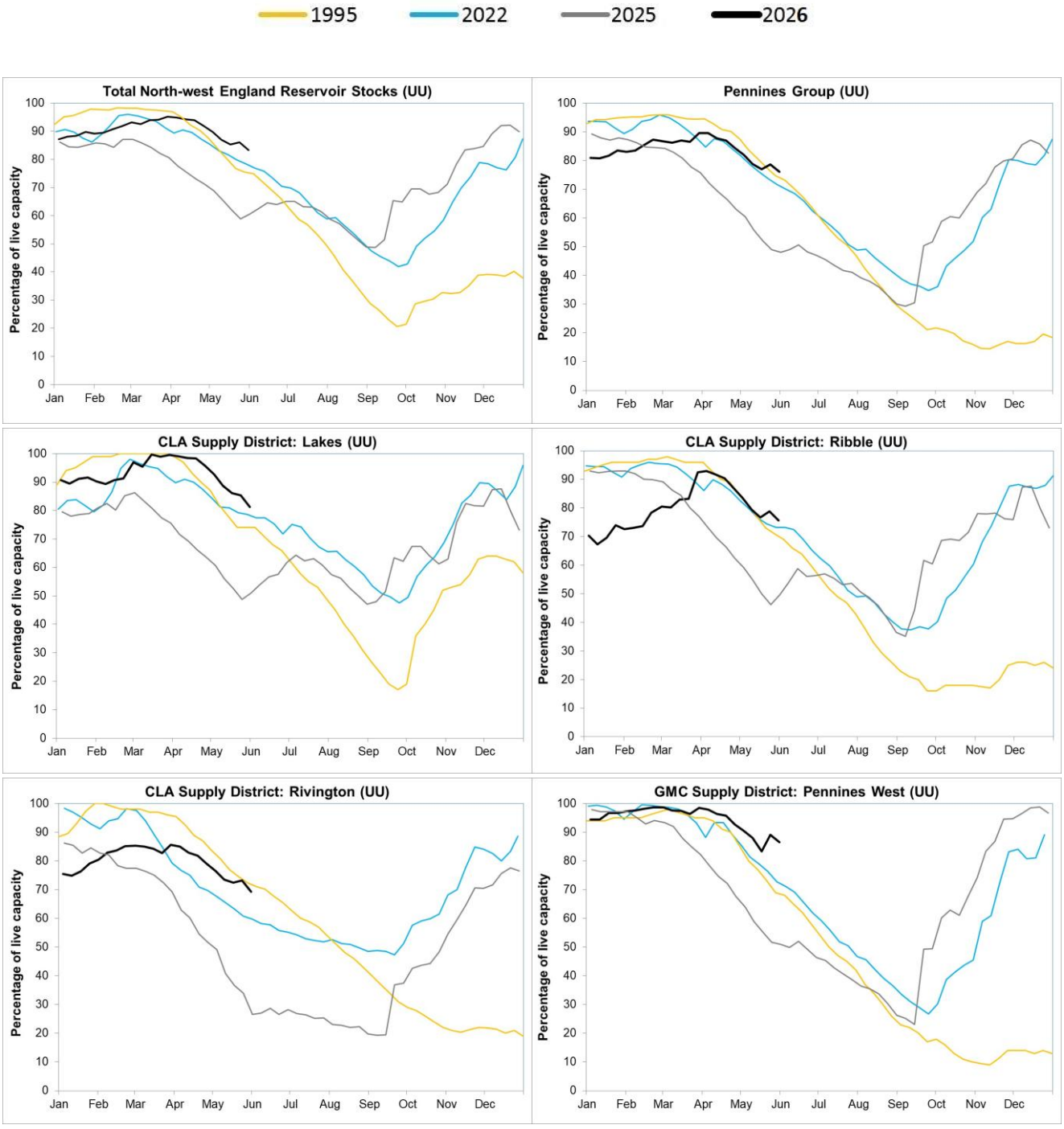
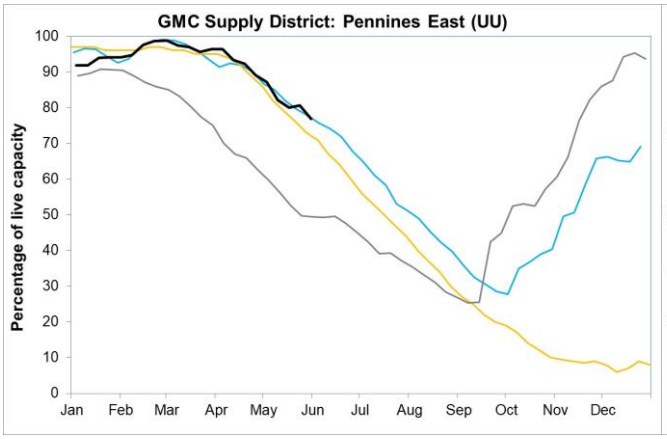
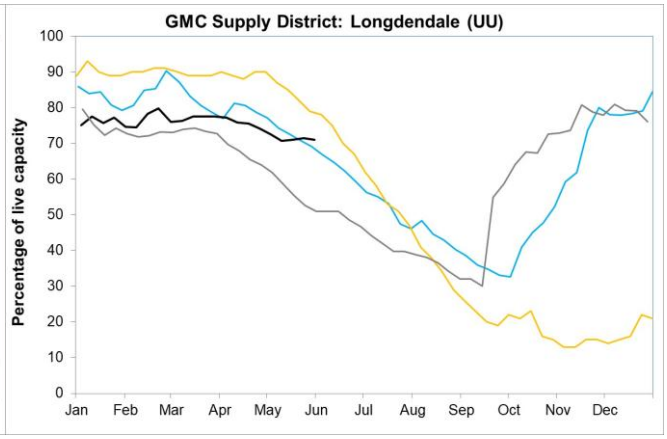
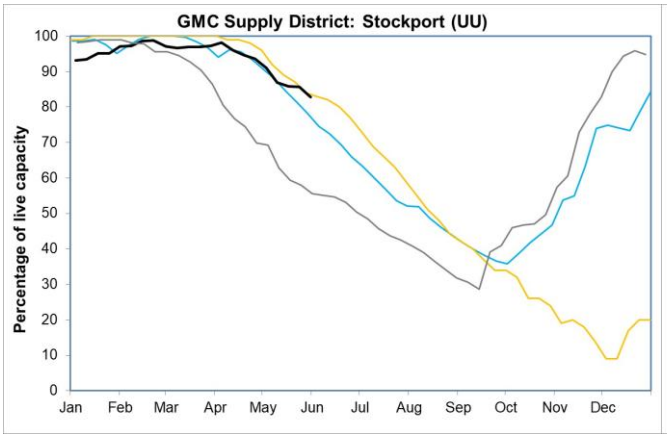


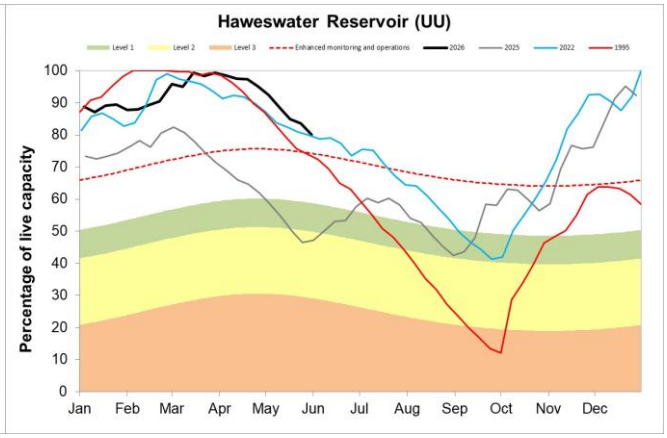
Figure 6.2: End of month reservoir stocks for supply districts across North-west England and selected individual reservoirs for current year (2025) and representative years: 1995, 2003 and 2022. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.

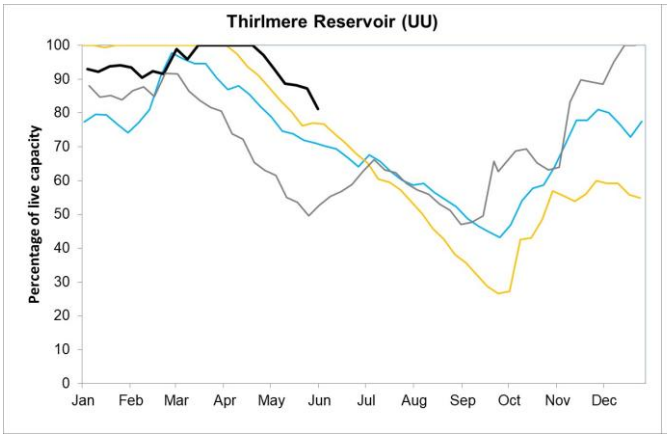


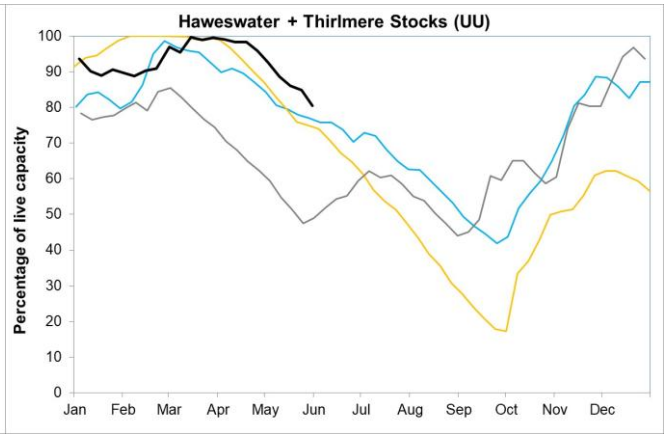

GMC Supply District: Pennines East (UU)
Percentage of live capacity
100
90
80
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

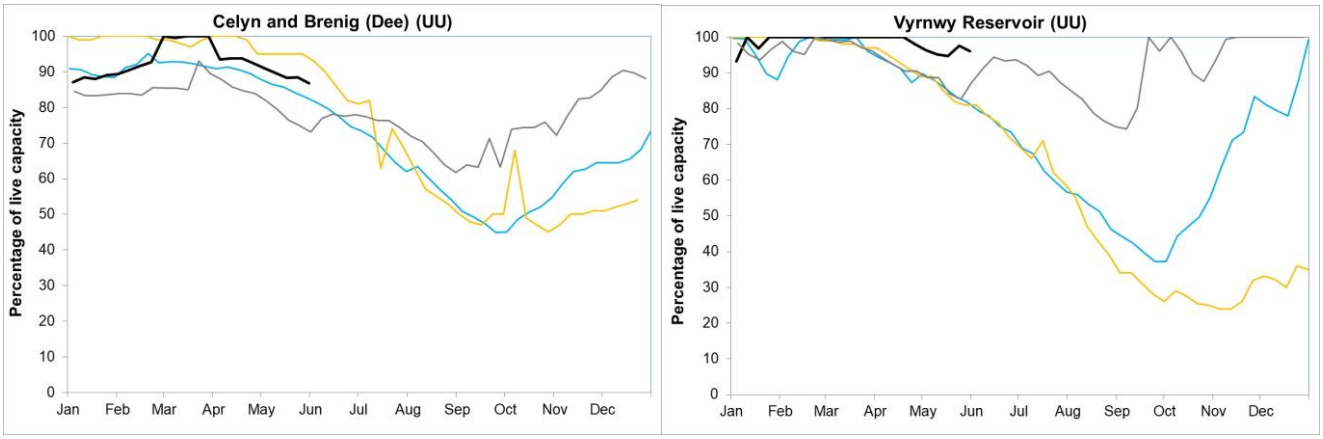

GMC Supply District: Longdendale (UU)
Percentage of live capacity
100
90
80
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec


GMC Supply District: Stockport (UU)
Percentage of live capacity
100
90
80
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec


Haweswater Reservoir (UU)
Level 1
Level 2
Level 3
Enhanced monitoring and operations
2026
2025
2022
1995
Percentage of live capacity
100
90
80
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec


Thirlmere Reservoir (UU)
Percentage of live capacity
100
90
80
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec


Haweswater + Thirlmere Stocks (UU)
Percentage of live capacity
100
90
80
70
60
50
40
30
20
10
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



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	May 2026 rainfall % of long term average 1991 to 2020	May 2026 band	Mar 2026 to May cumulative band	Dec 2025 to May cumulative band	Jun 2025 to May cumulative band
Cheshire Rivers Group	101	Normal	Normal	Above normal	Above normal
Derwent (NW)	74	Normal	Above normal	Above normal	Exceptionally high
Douglas	120	Normal	Normal	Normal	Above normal
Eden	79	Normal	Above normal	Above normal	Exceptionally high
Esk (Cumbria)	113	Normal	Notably high	Exceptionally high	Exceptionally high
Esk (Dumfries)	71	Normal	Above normal	Above normal	Notably high
Kent	118	Normal	Notably high	Notably high	Exceptionally high
Mersey And Irwell	110	Normal	Normal	Above normal	Above normal
Ribble	106	Normal	Normal	Normal	Above normal

Wyre And Lune	118	Normal	Above normal	Above normal	Exceptionally high
North West	95	Normal	Normal	Above normal	Exceptionally high

8.2 River flows table

Site name	River	Catchment	May 2026 band	Apr 2026 band
Adelphi Weir Upstream	Irwell	Irwell (Croal to Irk)	Normal	Normal
Ashbrook	Weaver (NW)	Weaver Upper	Normal	Normal
Ashton Weir	Mersey	Mersey Non Tidal	Normal	Normal
Bollington Mill	Bollin	Bollin	Below normal	Normal
Brinksway	Mersey	Mersey Non Tidal	Normal	Normal
Bullgill	Ellen	Ellen Lower	Normal	Normal
Caton	Lune	Lune Lower Tidal	Normal	Normal
Causey Bridges	Sankey	Mersey Non Tidal	Normal	Normal
Cropple How	Esk (NW)	Esk (South West Lakes)	Normal	Normal
Croston	Yarrow	Yarrow Lower	Normal	Normal
Duddon Hall	Duddon	Duddon	Normal	Normal
Hodder Place	Hodder	Hodder Lower	Normal	Normal
Kirkby	Alt	Alt	Normal	Below normal

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

8.3 Groundwater table

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