Monthly water situation report: North East Area

1 Summary - October 2025

The rainfall totals for October were below average in all catchments. Monthly mean river flows decreased at all indicator sites compared to September and now fall within the below normal and normal ranges. Soil moisture deficits are slowly improving following the prolonged dry weather over the summer. Reservoir stocks have had a mixed response this month with most increasing whilst others continue to decline.

1.1 Rainfall

Monthly rainfall totals were below the long term average (LTA) for all catchments and ranged from 71% of the LTA in the Wear catchment to 90% of the LTA in the Northumbria North Sea Tribs Catchment. Analysis of the daily rainfall totals shows that for all catchments rainfall was recorded in the first week of October, and the last two weeks of October with a dry spell in between. The rainfall totals this month are in the normal range for all catchments. Longer term rainfall deficits remain, with the cumulative 12-month rainfall totals being classed as exceptionally low across all catchments.

1.2 Soil moisture deficit and recharge

Soil moisture deficits (SMDs) have decreased in the Tyne, Northumbria North Sea Tribs, and Tweed catchments. Deficits of 41-70mm remain in the Seaham area whilst the Wear and Tees catchments have deficits of 11-41mm. The Wear, Tyne and Seaham area catchments are now 6 to 25% wetter than average for the time of year. Soils across the area are slowly saturating following the prolonged dry weather over the spring and summer.

1.3 River flows

Monthly mean river flows have decreased this month from those in September at all indicator sites and fall within the below normal and normal ranges. Monthly mean flows ranged from just 18% of the LTA at Hartford Bridge on the River Blyth to 78% of the LTA at Middleton in Teesdale on the River Tees. Analysis of daily mean flows shows that flows were elevated at the start of the month in the normal, above normal and notably high ranges. On 3 October flows were in the exceptionally high range at Middleton in Teesdale on the River Tees and Rutherford Bridge on the River Greta. Following this, flows generally remained in the below normal, notably low and exceptionally low ranges until 20 October when flows elevated again before returning to below normal levels at Hartford Bridge, Haydon Bridge, Heaton Mill.

1.4 Groundwater levels

Groundwater levels have remained in the same range at all indicator sites with the exception of Town Law on the Till Fell Sandstone, which has increased from the below normal to normal range. Town Law is located within the more confined area of the aquifers which typically records a delayed response of 3 to 6 months to the observed weather. Royalty Observation, Red Lion and Aycliffe are classed as normal for the time of year. West Hall Farm remains within the notably high range. This seems to be the result of a reduction in nearby abstraction volumes rather than a climatic response.

1.5 Reservoir stocks

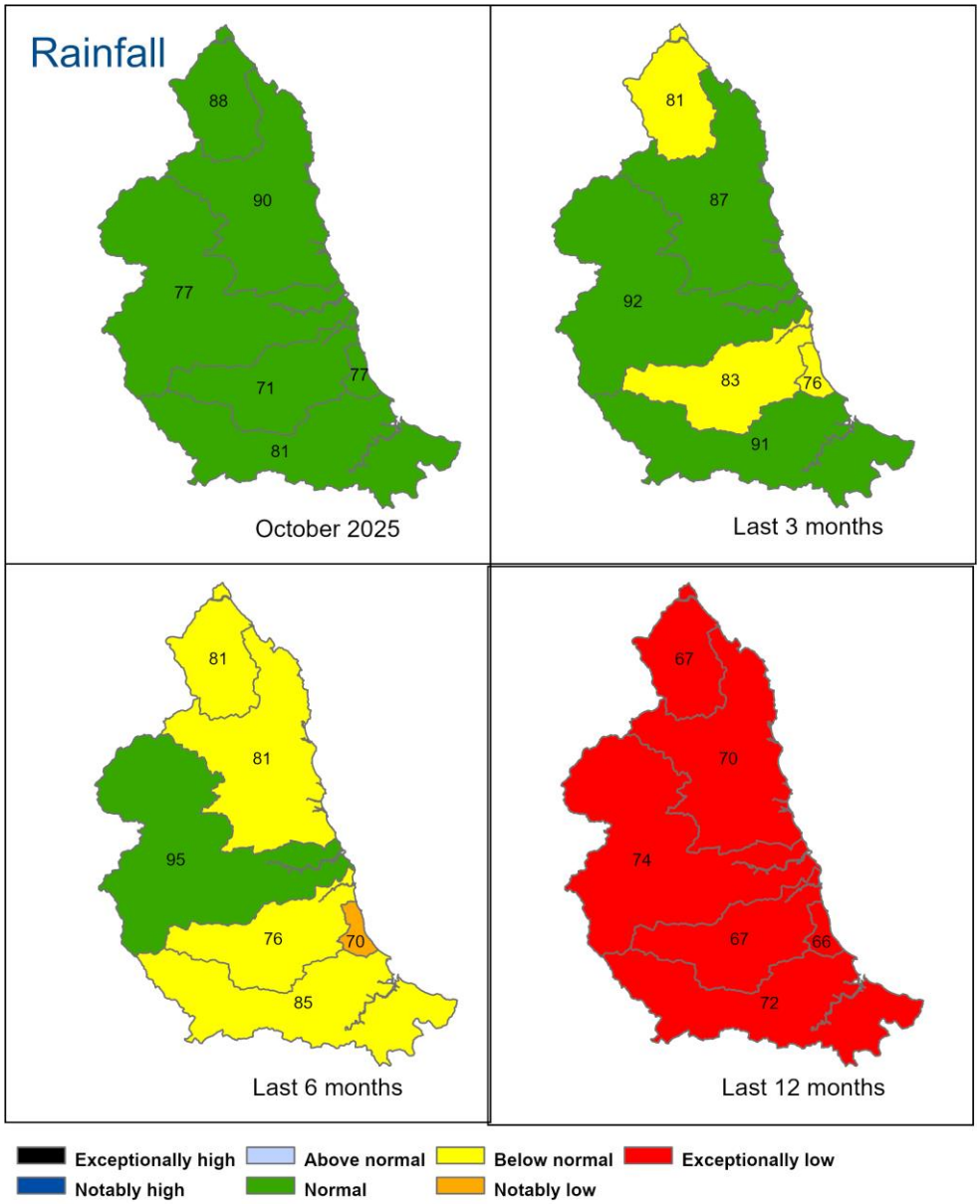
Reservoir stocks have decreased this month at Kielder and Derwent, although they have increased elsewhere. The highest increase was in the Durham group which increased by over 12% from 67.8% to 80.2% full. Reservoirs remain below overage for the time of year, except for the Durham and Lune and Balder groups which are above the average for October.

Reservoir or reservoir group	Percentage of current stocks	Percentage of previous month stocks
Kielder	79.4	84.8
North Tynedale group	58.1	53.2
Derwent	39.7	44.4
Durham group	80.2	67.8
Lune and Balder group	90.2	79.5
Cow Green	65.5	61.7

2 Rainfall

2.1 Rainfall map

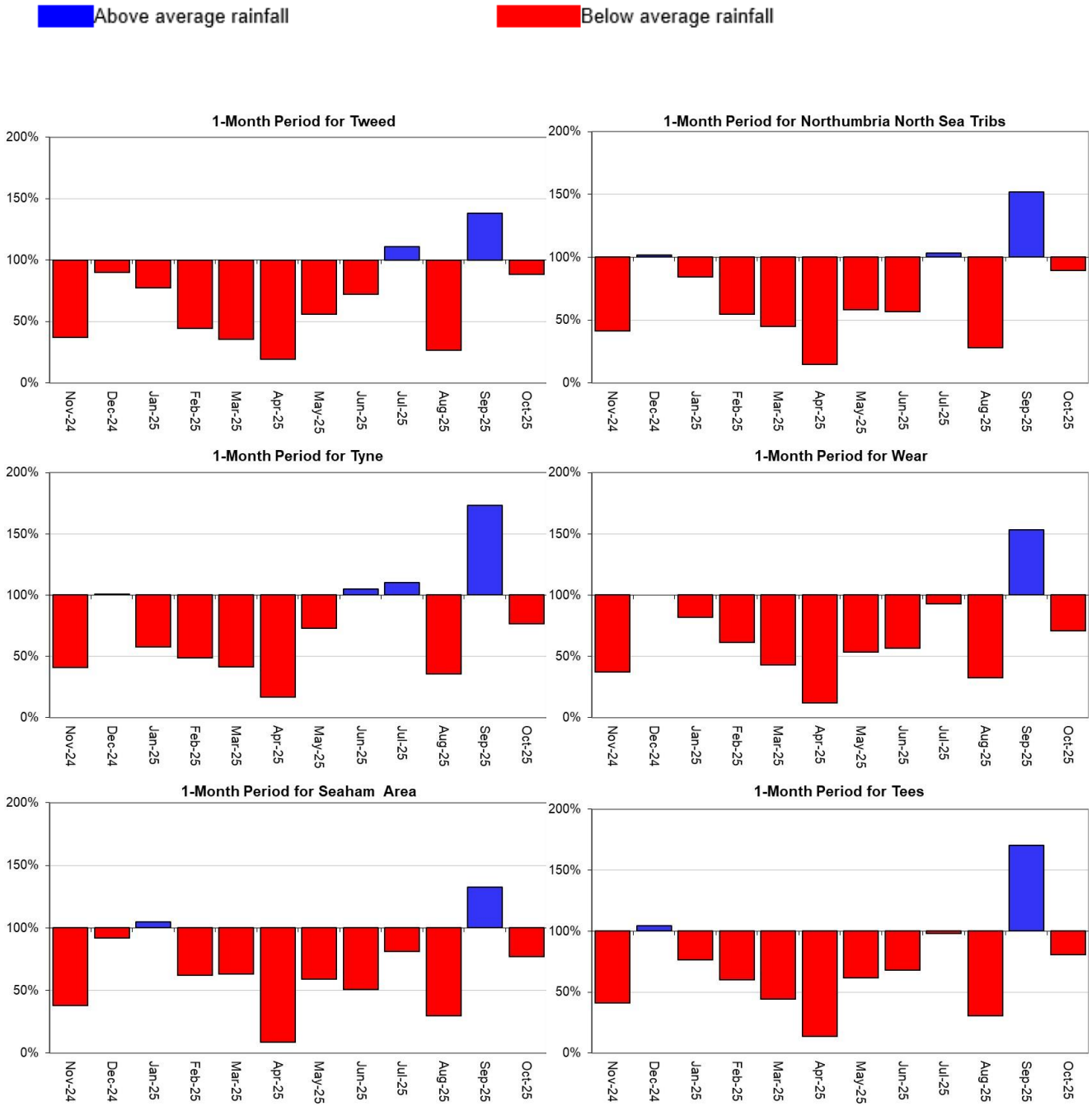
2.1: Total rainfall for hydrological areas for the current month (up to 31 October 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. The number on the maps refer to the percentage of the 1991 to 2020 LTA. October totals were classed as normal for all catchments. Table available in the appendices with detailed information.



Rainfall data for Oct 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2025). Rainfall data prior to Oct 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2025).

2.2 Rainfall charts

2.2: Monthly rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average for each hydrometric catchment in the North East area.



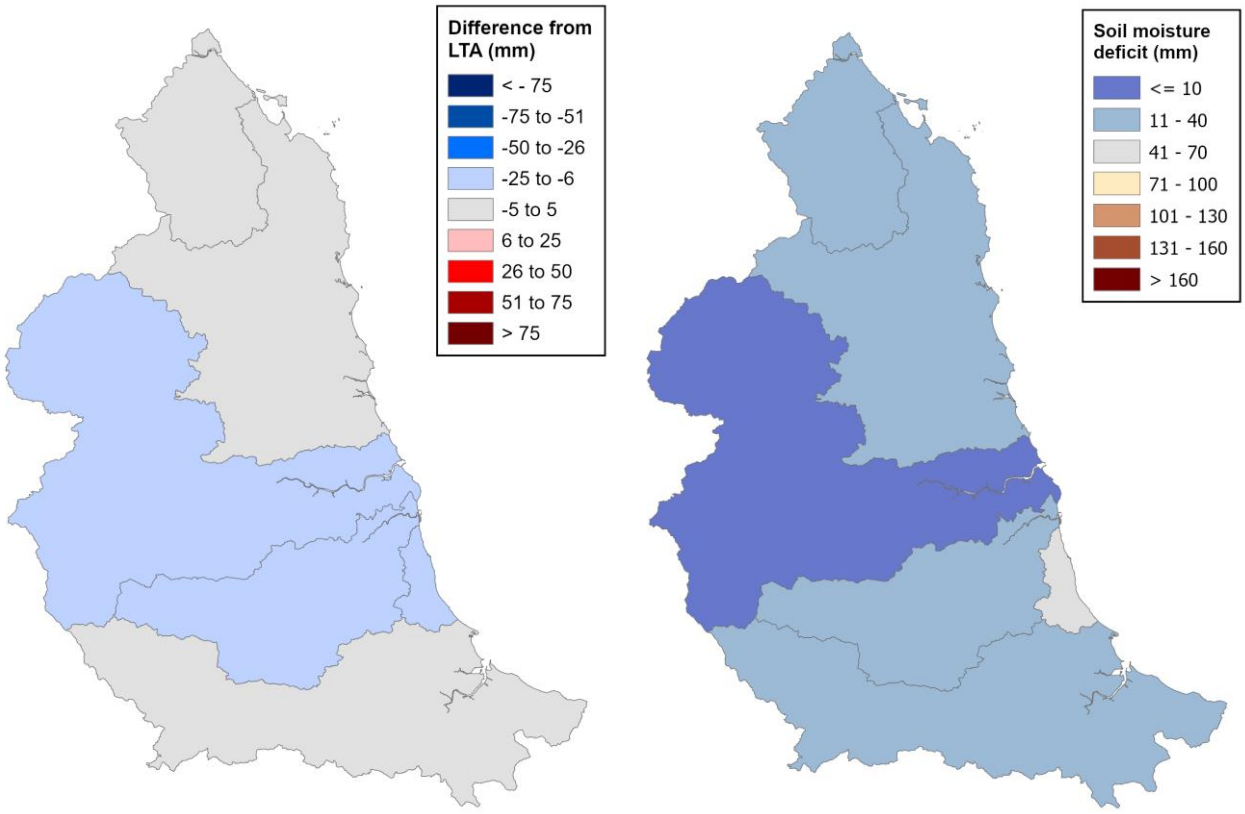
Rainfall data for Oct 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 2025). Rainfall data prior to Oct 2023, extracted from Met Office

HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2025).

3 Soil moisture deficit

3.1 Soil moisture deficit map

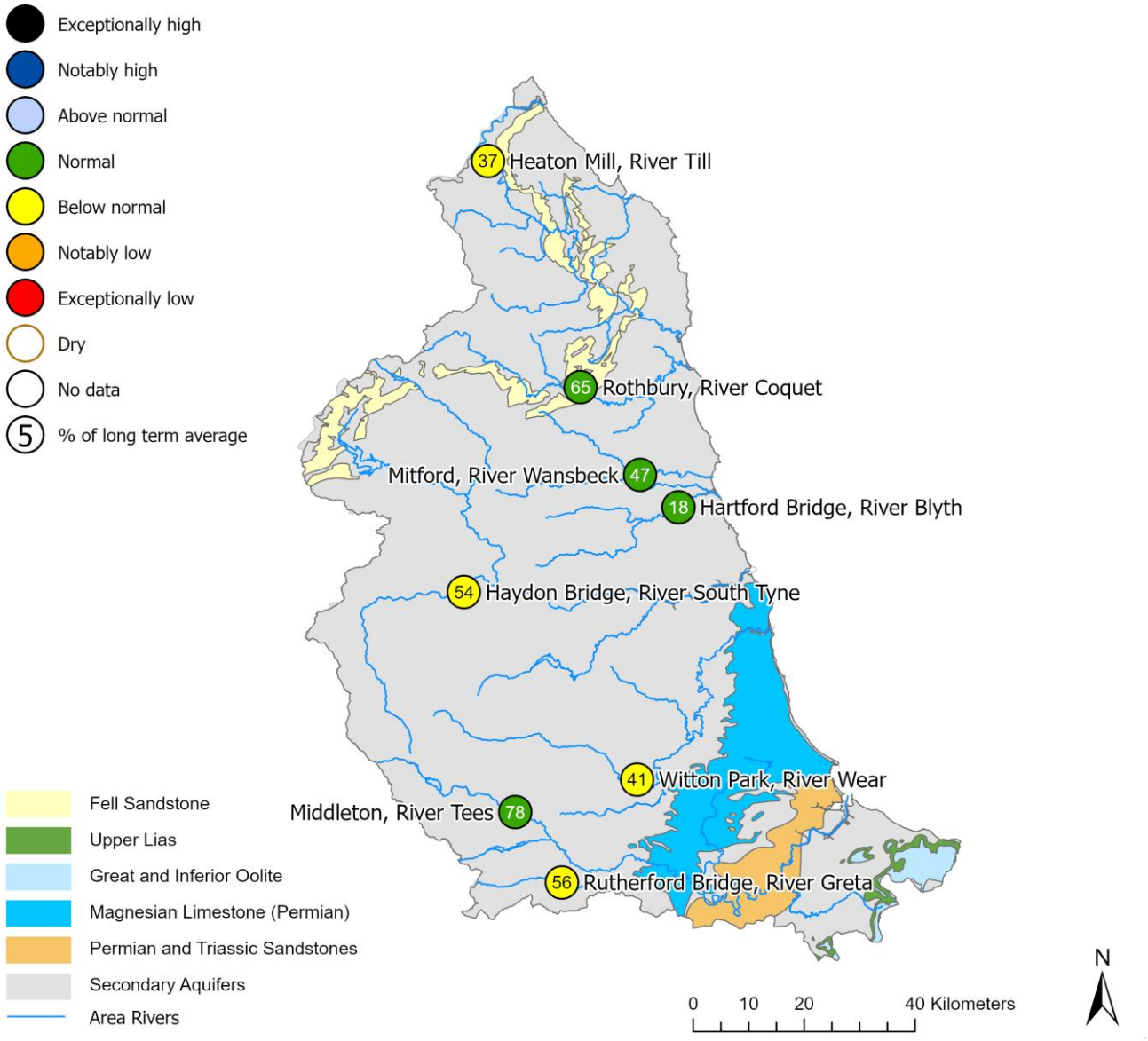
3.1: Soil moisture deficits for week ending 31 October 2025. Map on the left shows the difference (mm) of the actual soil moisture deficit from the 1991 to 2020 long term average soil moisture deficits. MORECS data for real land use.



4 River flows

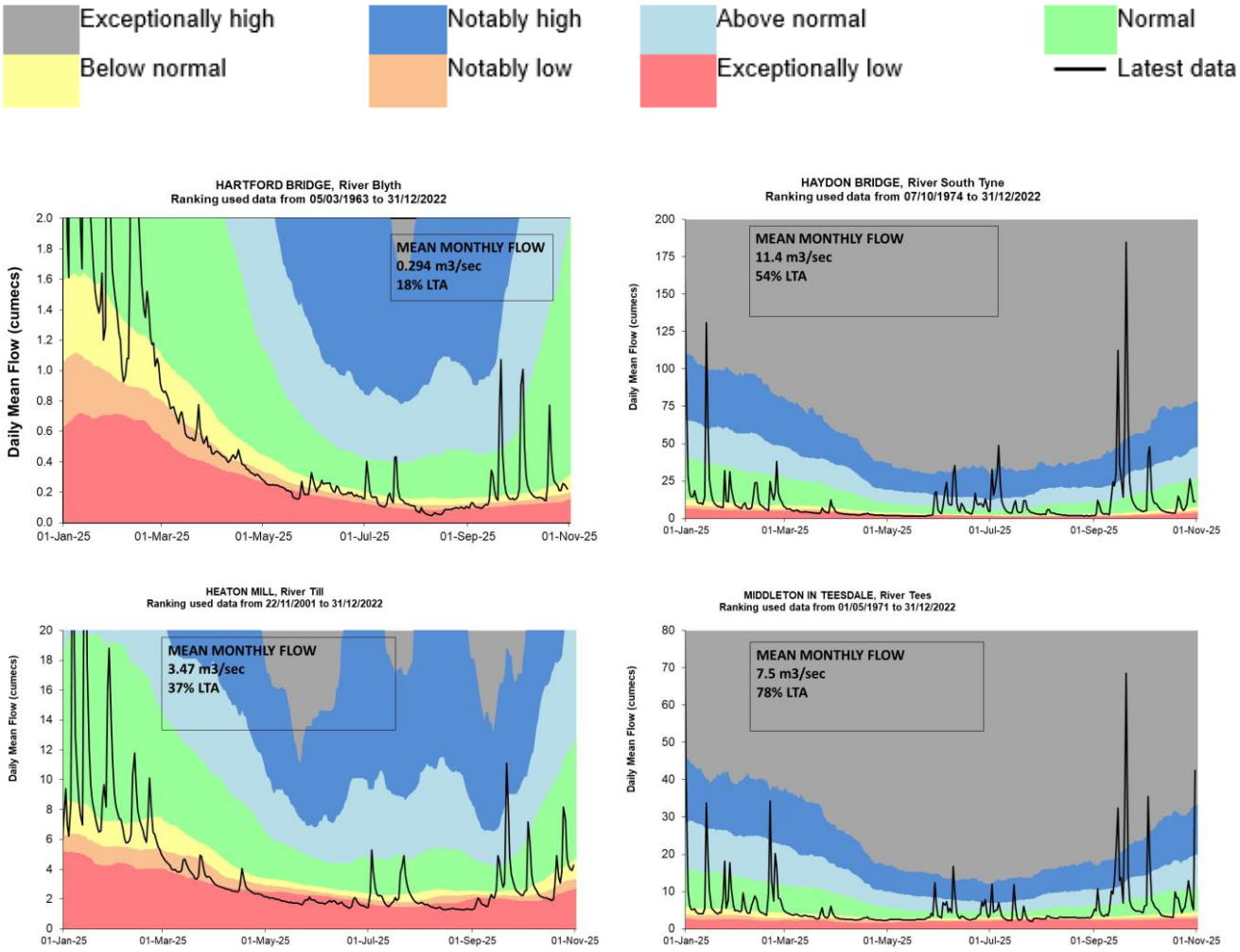
4.1 River flows map

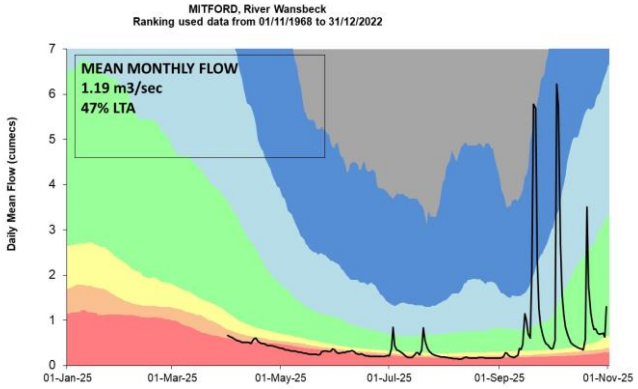
4.1: Monthly mean river flow for indicator sites for October 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic October monthly means. Monthly mean flows are classed as normal at Rothbury, Mitford, Hartford Bridge, and Middleton, and as below normal for the rest of the area. Flows at Middleton can be supported by reservoir releases. Table available in the appendices with detailed information.

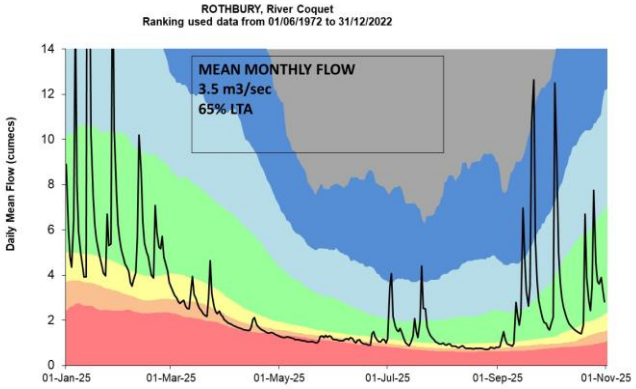


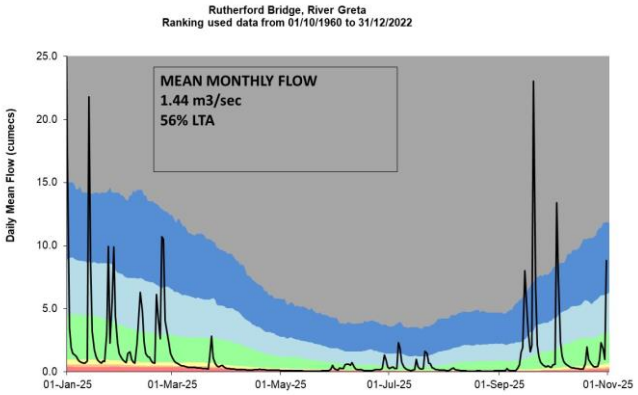
4.2 River flow charts

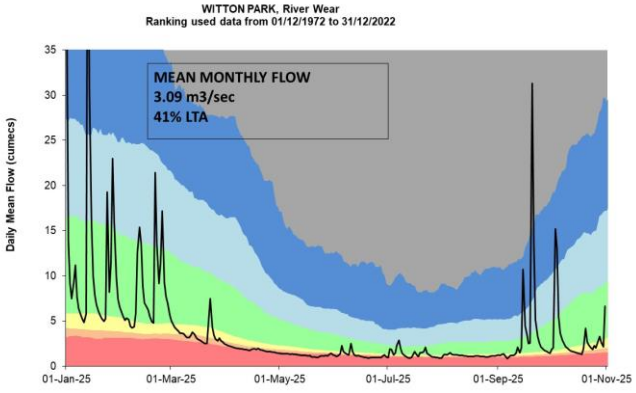
4.2: Daily mean river flow for index sites over the past 10 months, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.









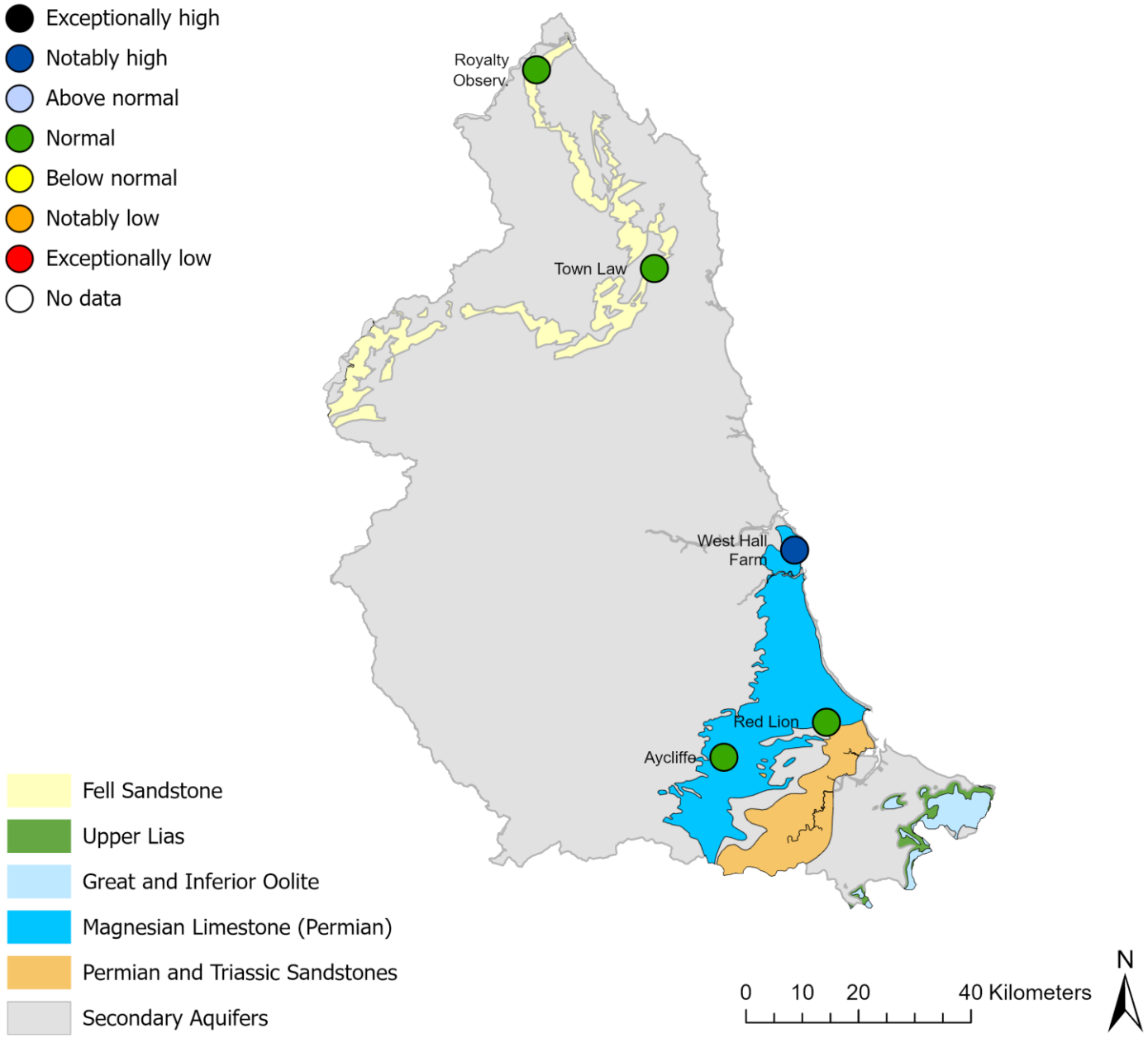


Source: Environment Agency.

5 Groundwater levels

5.1 Groundwater levels map

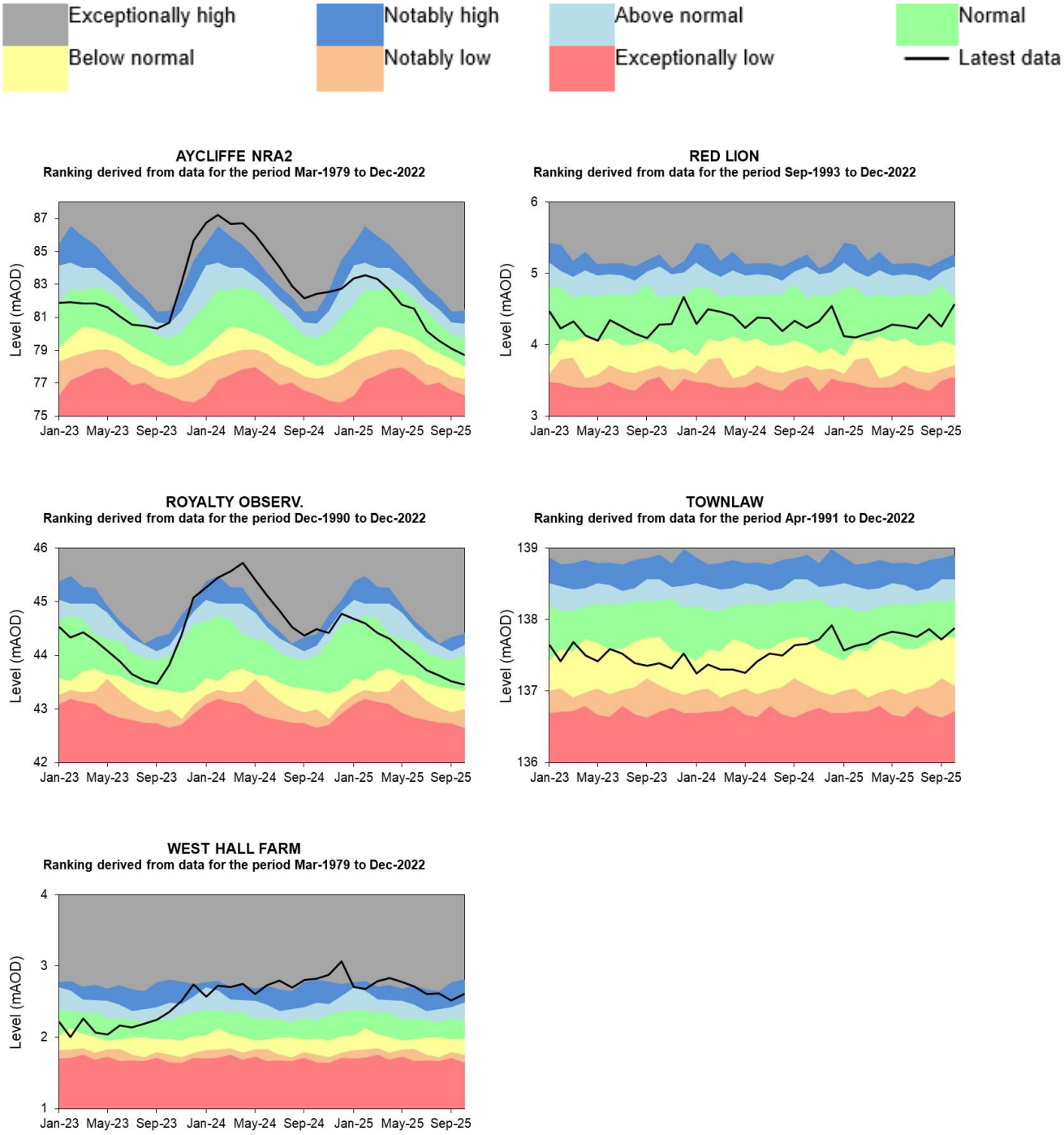
5.1: Groundwater levels for indicator sites at the end of October 2025, classed relative to an analysis of respective historic October levels. Groundwater levels are classed as notably high at West Hall Farm on Magnesian Limestone. All other sites are classed as normal for the time of year. Table available in the appendices with detailed information.



(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, AC0000807064, 2025.

5.2 Groundwater level charts

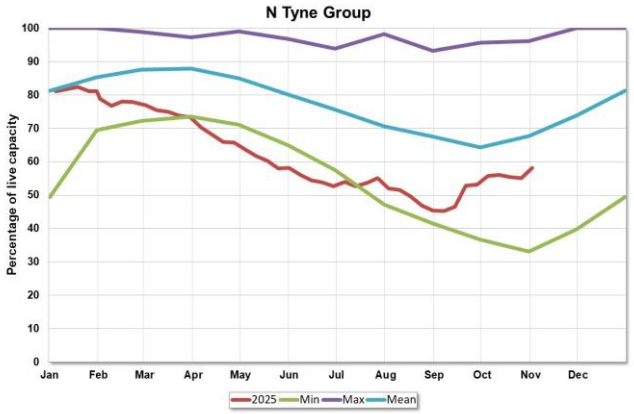
5.2: End of month groundwater levels at index groundwater level sites for major aquifers. 36 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

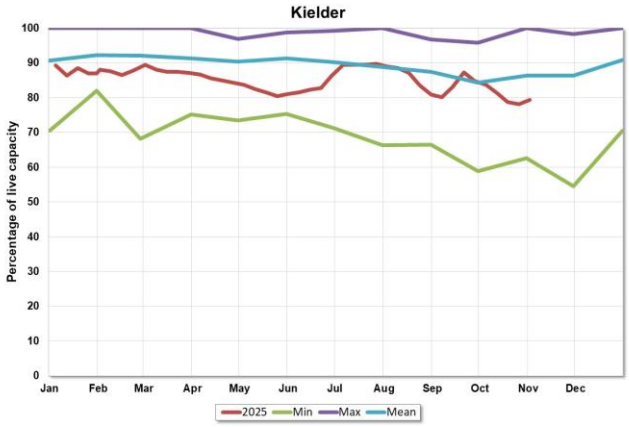


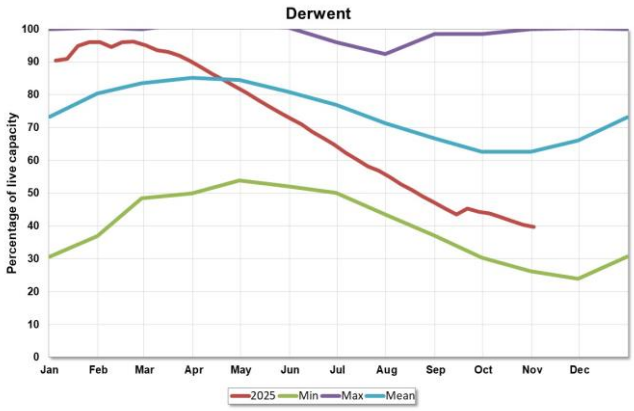
Source: Environment Agency, 2025.

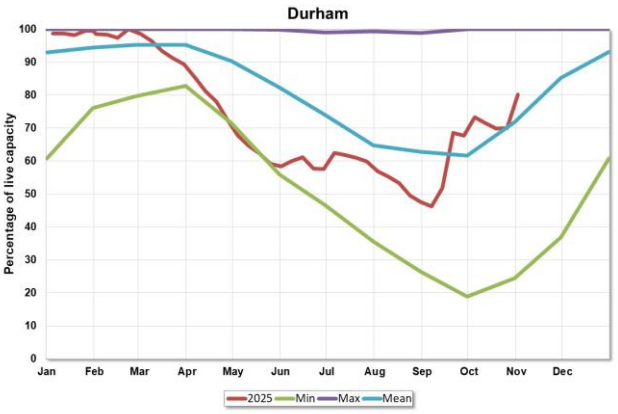
6 Reservoir stocks

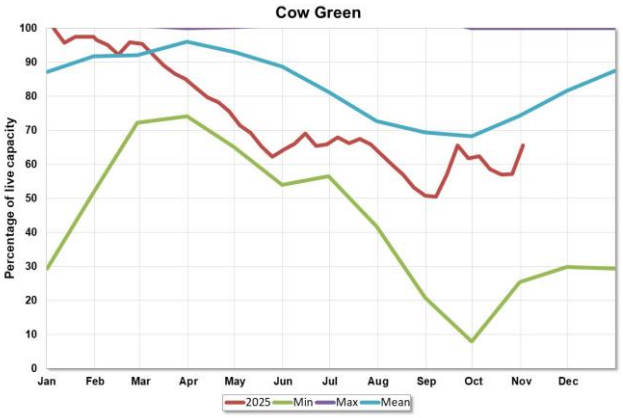
6.1: End of month reservoir stocks compared to long term maximum, minimum and average stocks. Note: Historic records of individual reservoirs and reservoir groups making up the values vary in length.

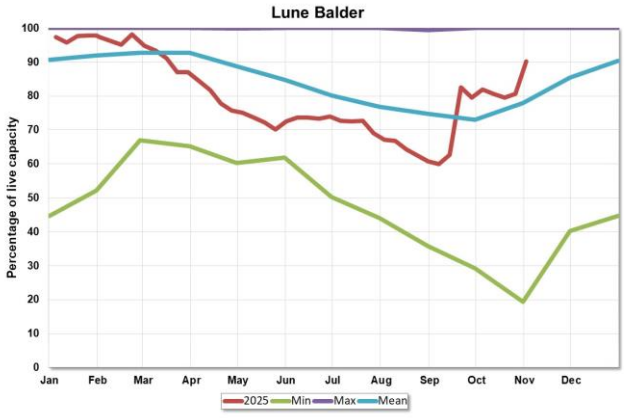












(Source: water company).

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	Oct 2025 rainfall % of long term average 1991 to 2020	Oct 2025 band	Aug 2025 to Oct 2025 cumulative band	May 2025 to Oct 2025 cumulative band	Nov 2024 to Oct 2025 cumulative band
Northumbria North Sea Tribs	90	Normal	Normal	Below normal	Exceptionally low
Seaham Area	77	Normal	Below normal	Notably low	Exceptionally low
Tees	81	Normal	Normal	Below normal	Exceptionally low
Tweed	88	Normal	Below normal	Below normal	Exceptionally low
Tyne	77	Normal	Normal	Normal	Exceptionally low
Wear	71	Normal	Below normal	Below normal	Exceptionally low

8.2 River flows table

Site name	River	Catchment	Oct 2025 band	Sep 2025 band
Hartford Bridge	Blyth	Blyth	Normal	Normal
Haydon Bridge	South Tyne	South Tyne	Below normal	Notably high
Heaton Mill	Till	Till	Below normal	Normal
Middleton In Teesdale	Tees	Tees	Normal	Notably high
Mitford	Wansbeck	Wansbeck	Normal	Normal
Rothbury	Coquet	Coquet	Normal	Normal
Rutherford Bridge	Greta	Greta	Below normal	Above normal
Witton Park	Wear	Wear	Below normal	Normal

8.3 Groundwater table

Site name	Aquifer	End of Oct 2025 band	End of Sep 2025 band
Aycliffe Nra2	Skerne Magnesian Limestone	Normal	Normal
Red Lion	Skerne Magnesian Limestone	Normal	Normal
Royalty Observ.	Till Fell Sandstone	Normal	Normal
Townlaw	Till Fell Sandstone	Normal	Below normal
West Hall Farm	Wear Magnesian Limestone	Notably high	Notably high