

Monthly water situation report: Yorkshire Area

1 Summary - October 2025

Average amounts of rain fell this month, and rivers responded but mostly remained within the normal range. Soils were wet in the western Pennines and dry around the Hull and Humber region but normal elsewhere. Groundwater levels increased in most aquifers but continued to decline in the Chalk. Reservoir stocks increased but remained below the long term average (LTA) for October.

1.1 Rainfall

Rainfall in Yorkshire was normal and close to average for the time of year across all catchments this month. Monthly totals ranged from 86% of the LTA in the Swale to 119% of the LTA in the Calder based on the Met Office Had-UK Grid data set.

Most areas experienced a wet spell in the first few days of the month associated with Storm Amy. Many of the Pennine catchments received around a third of the month's LTA rainfall in one day on day 3. This was followed by a largely dry, settled period between days 4 and 19. Beyond this, there were scattered showers until the month's end.

Six-month cumulative rainfall totals since May show a west-east split. The Pennine catchment totals lie in the normal range but the Esk, Ouse, Rye, Derwent and Hull recorded below normal rainfall. In the past year, October was only the fifth month to receive normal rainfall (or higher) in all catchments. Thus, the twelve month cumulative rainfall totals were below normal or notably low in all catchments, also reflecting the very dry conditions from February through to May.

1.2 Soil moisture deficit and recharge

Soils in the Pennines, particularly in the Ure catchment, remained wet throughout the course of this month and were completely saturated by the third week. In the rest of the area soil moisture deficit decreased during the second half of the month. The lower Hull and Humber and lower Ouse regions had dry soils; the Derwent and upper Hull catchment soils fluctuated between being dry and normal by month end. Elsewhere soil moisture deficits were in the normal range for the time of year.

1.3 River flows

Monthly mean flows were normal in most Yorkshire rivers ranging from 58% to 113% of the LTA. The exceptions were the Rother which was below normal at 40% of the LTA and the chalk-fed West Beck which was notably low at 41% of the LTA. It is noted that monthly means

were lower than the LTA across Yorkshire, except the upper Nidd where the monthly mean was particularly influenced by high flows after Storm Amy early in the month.

Rivers responded to the rainfall that fell in the first few days of the month and from day 19 onwards. During the settled period mid-month, many declined into the below normal or notably low flow range.

Rivers in the Pennines all reached exceptionally high flows by day 4. Flows then lessened gradually and became notably low in the Swale, Ure, Wharfe, Ouse and Don. On day 19, they recovered and rose again to above normal flows. After they receded again, further rainfall episodes caused them to fluctuate around the normal range for the remainder of October.

The Esk and Rye also had flows within the normal range for most of the month. They peaked three times; around day 4 when they became notably high, on day 20 and around day 25.

Beginning the month below normal, the Derwent briefly peaked on days 4 and 5 to become above normal and then declined again until it became notably low. On day 20, flows returned to normal where they remained until the month's end.

Flow in the chalk-fed West Beck was notably low for most of the month. The autumn decline in flows continued until day 19. Since then, underlying flows have remained steady, supported by catchment rainfall.

1.4 Groundwater levels

Magnesian Limestone

The groundwater level within the Magnesian Limestone decreased at Brick House Farm and was above normal for the time of year.

Millstone Grit

The groundwater level within the Millstone Grit increased at Hill Top Farm and was exceptionally low for the time of year. This observation borehole is used for water abstraction by means of a pump which may affect the groundwater level recorded here.

Sherwood Sandstone

The groundwater level within the Sherwood Sandstone increased at Great Ouseburn and was above normal for the time of year. The groundwater level increased at Riccall Approach Farm and was normal for the time of year.

Corallian Limestone

The groundwater level within the Corallian Limestone increased at Sproxton and was normal for the time of year.

Chalk

The groundwater level decreased at Wetwang and was notably low for the time of year. The groundwater level also decreased at Dalton Estate Well and was notably low for the time of year.

1.5 Reservoir stocks

Reservoir stocks increased again this month. In the first week, they increased by 7.3% and thereafter more steadily. At the end of October, stocks were at 62.9%, still 11.1% less than the LTA for the time of year.

1.6 Environmental impact

In late October, there were 18 abstraction licences with a Hands Off Flow condition in force, and another 58 abstraction licence holders had been given advance warning that flows were low. The number of HOFs in place continues to change in response to the low flow conditions particularly in central and East Yorkshire.

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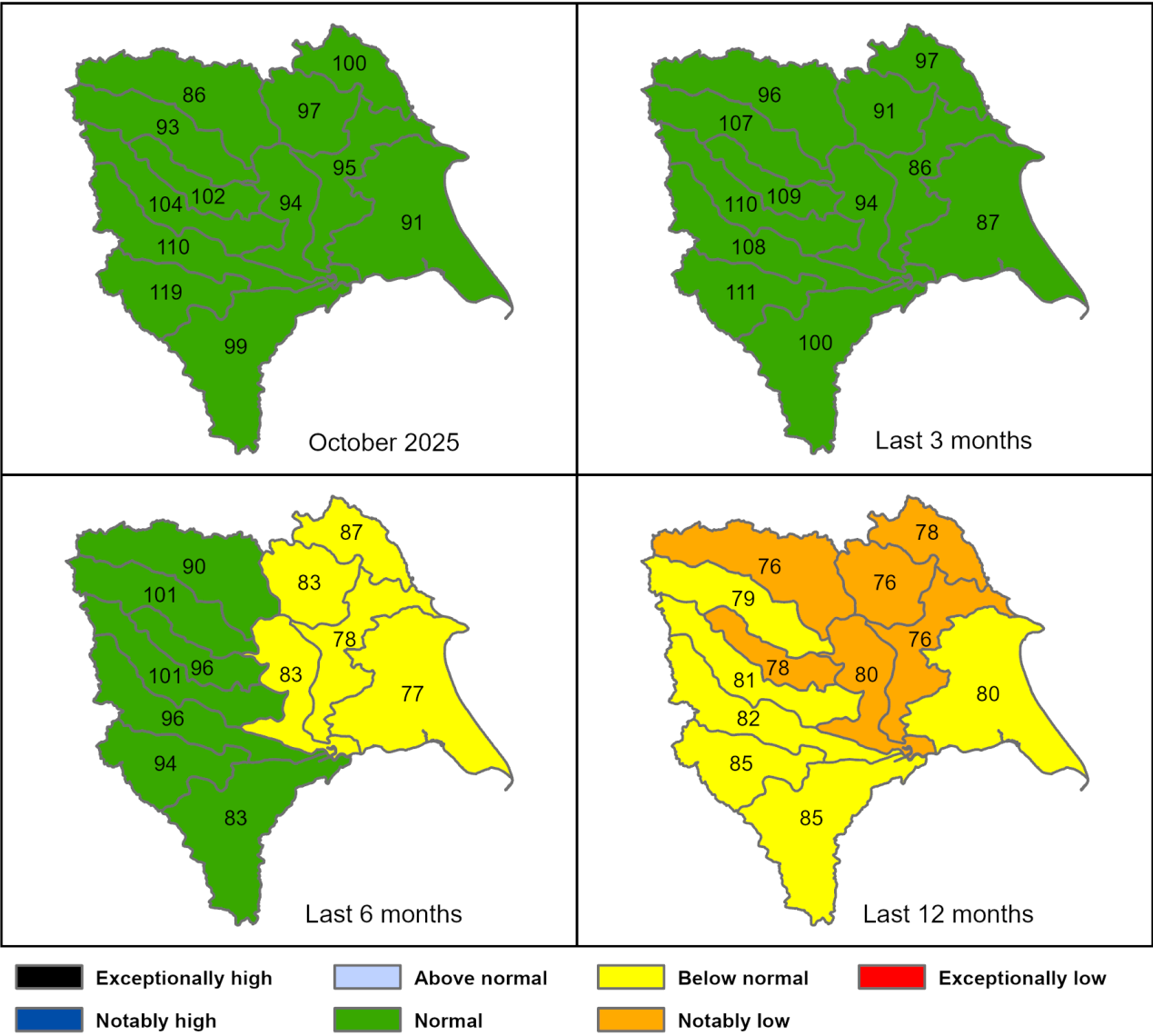
Contact Details: 020 847 48174

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2 Rainfall

2.1 Rainfall map

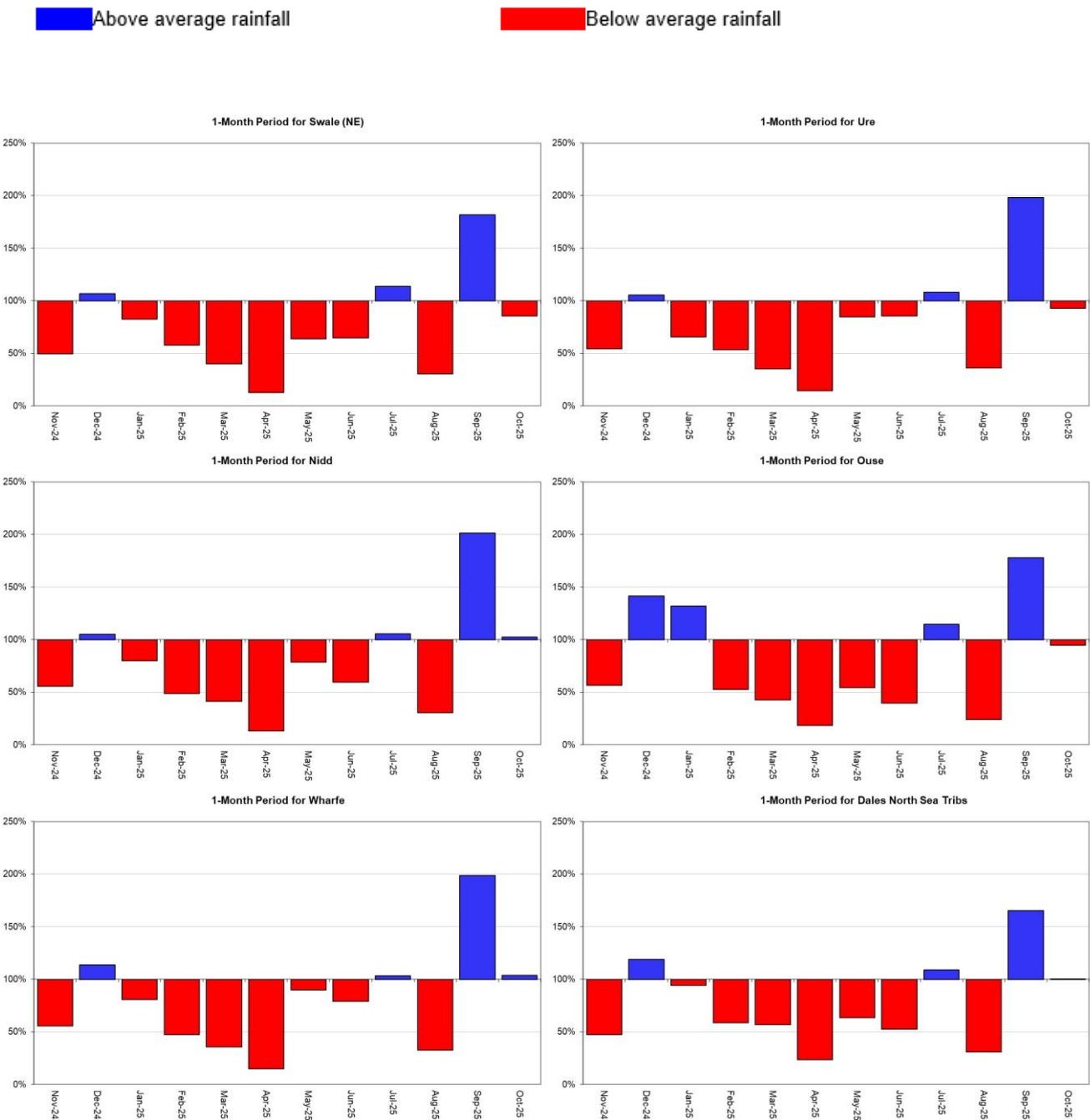
2.1: Total rainfall for hydrological areas across Yorkshire, expressed as a percentage of the 1990 to 2020 long term average rainfall, for the current month (up to 31 October 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

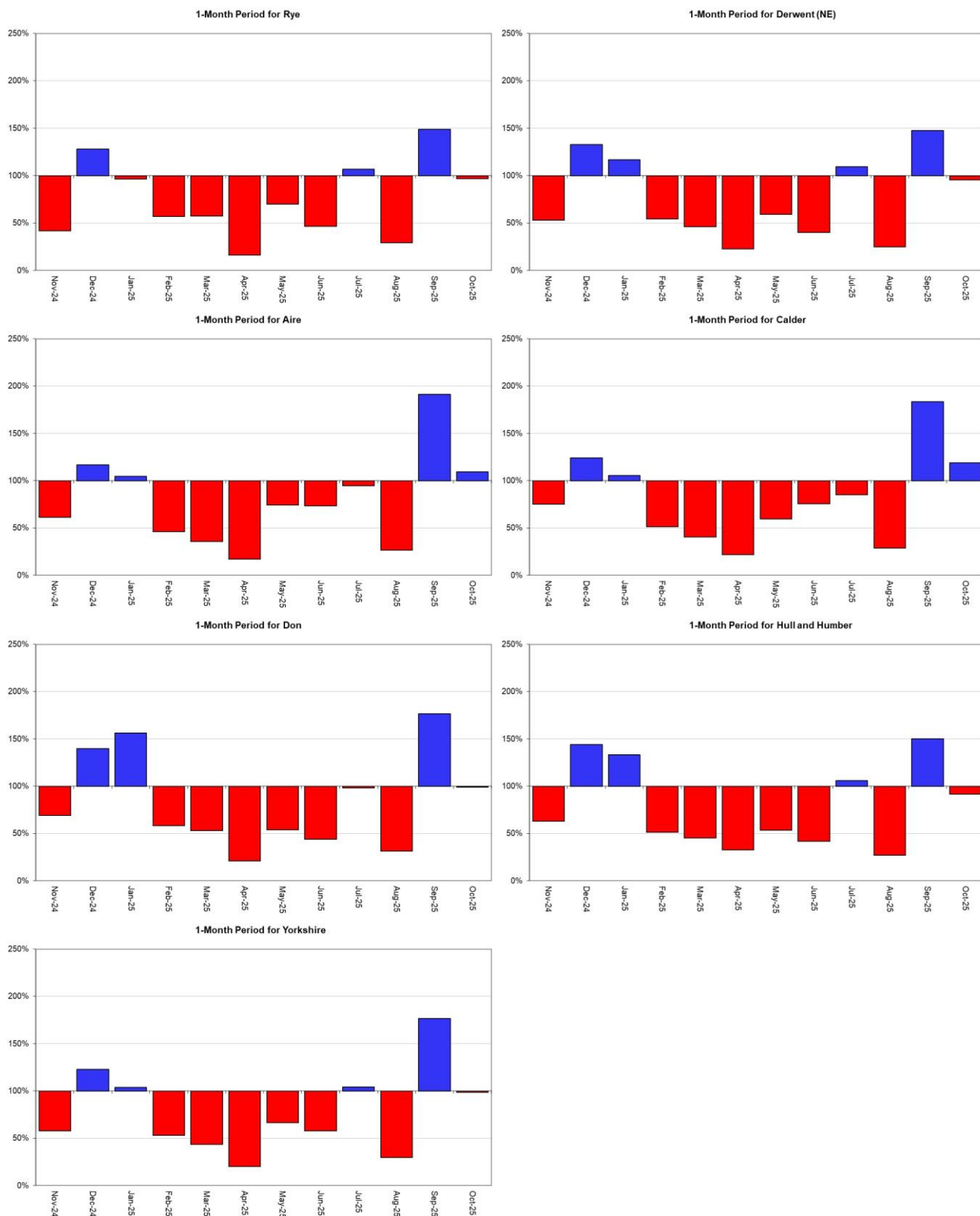


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

2.2 Rainfall charts

2.2: Monthly rainfall totals for the past 24 months as a percentage of the 1991 to 2020 long term average for each catchment.



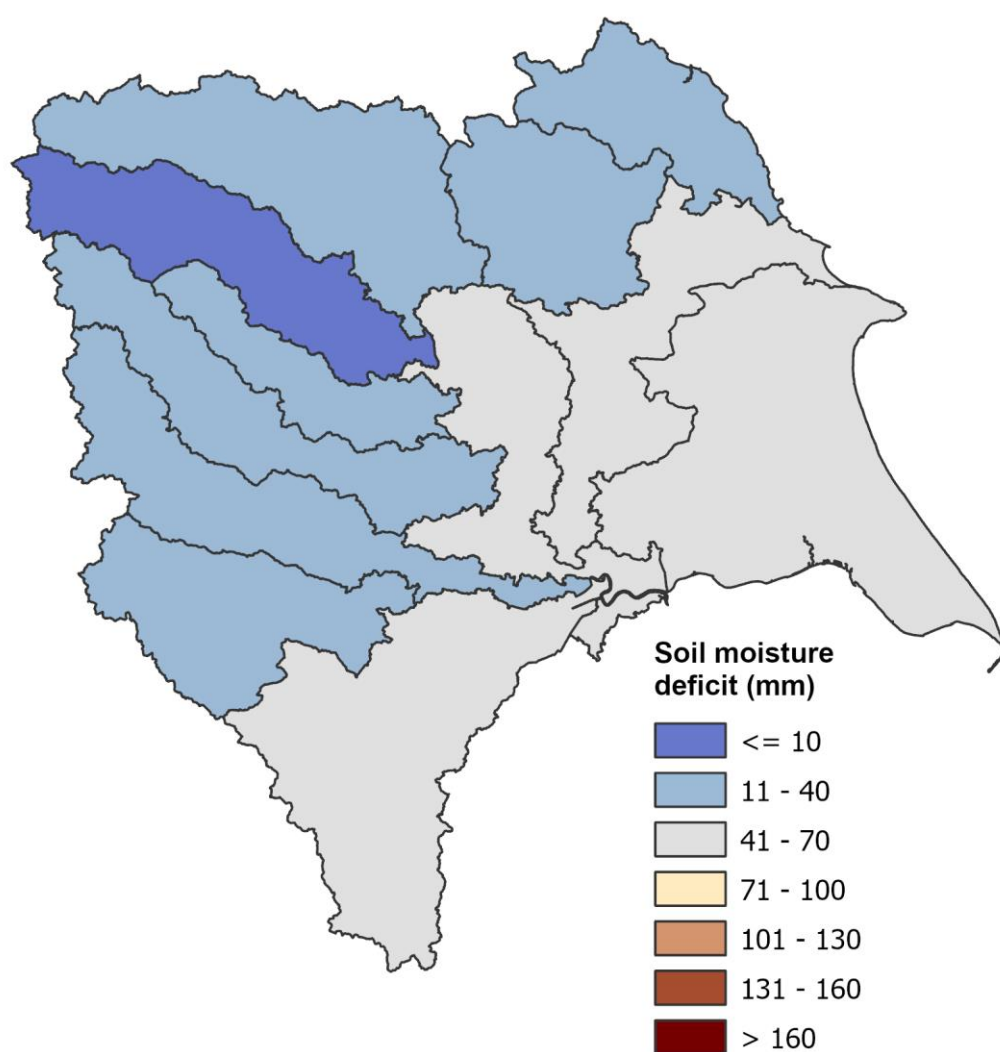


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

3 Soil moisture deficit

3.1 Soil moisture deficit map

3.1: Soil moisture deficits for weeks ending 31 October 2025. Shows the actual soil moisture deficits (mm) within each hydrological area. Calculated from MORECS data for real land use.

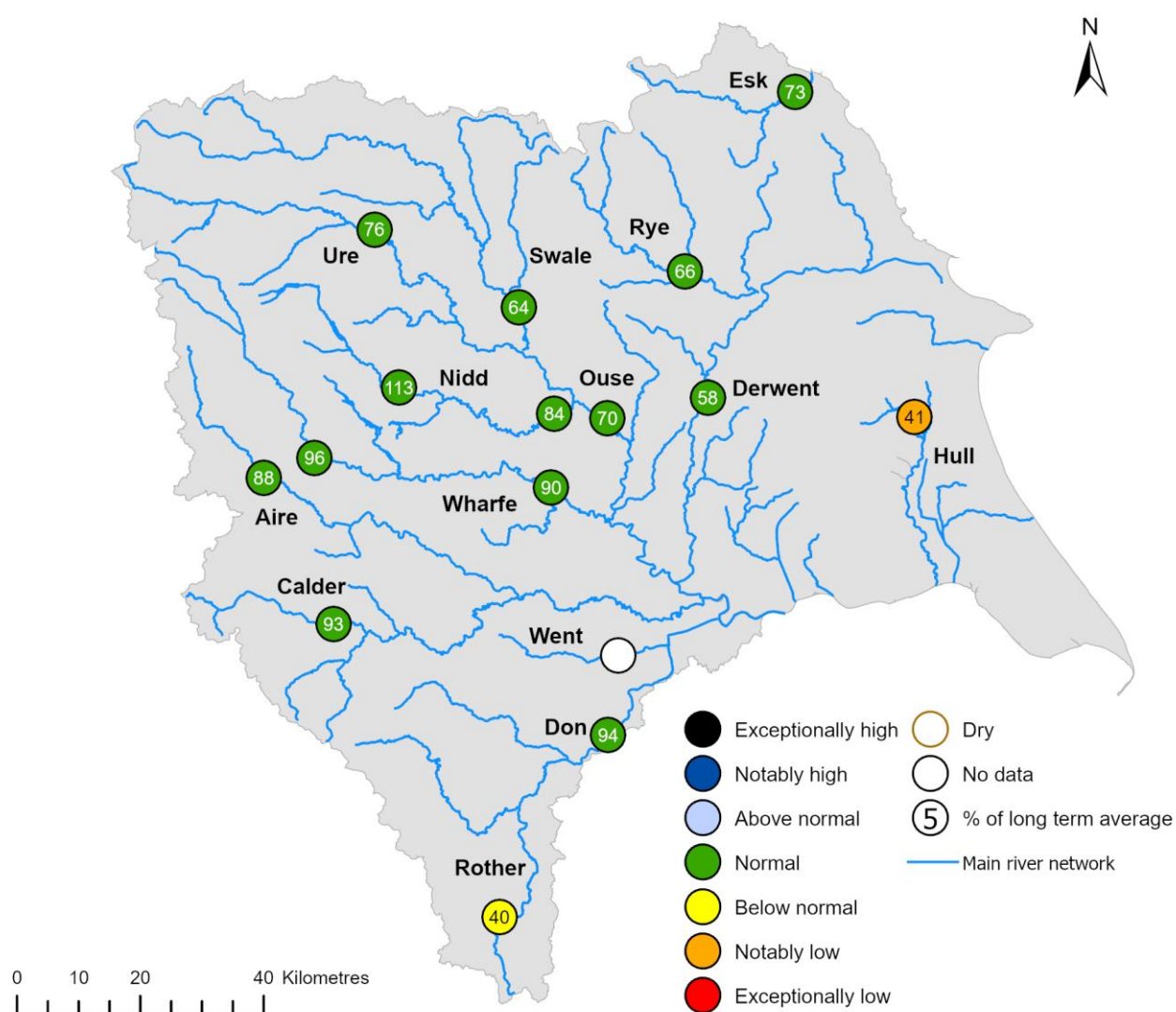


(Source: Met Office. Crown copyright, 2025). All rights reserved. Environment Agency, 100024198, 2025.

4 River flows

4.1 River flows map

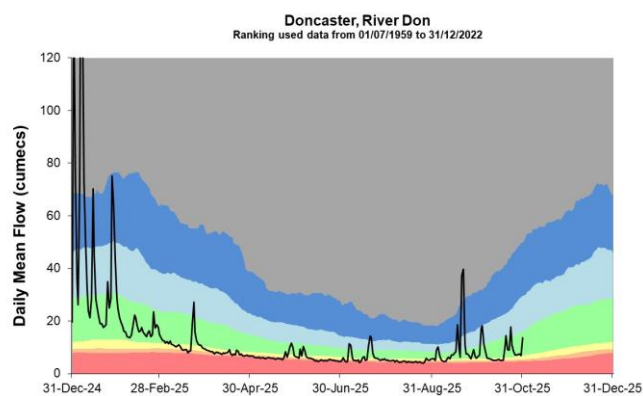
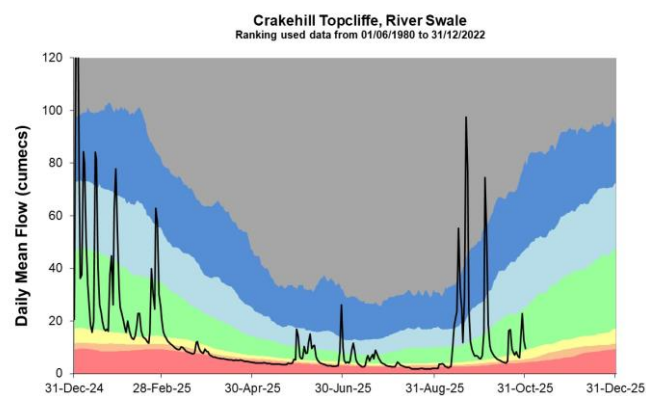
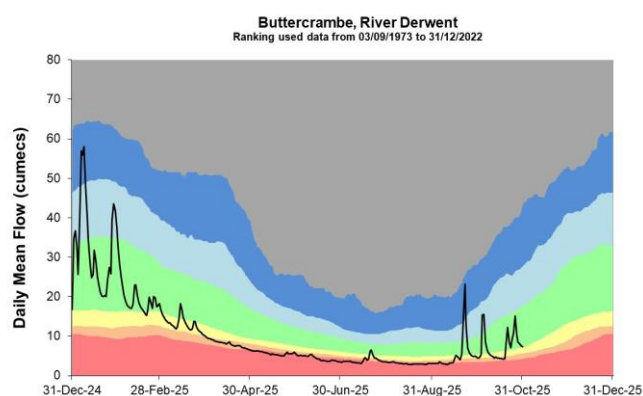
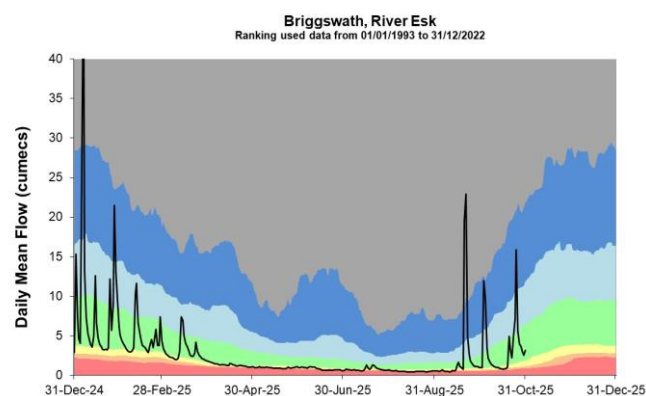
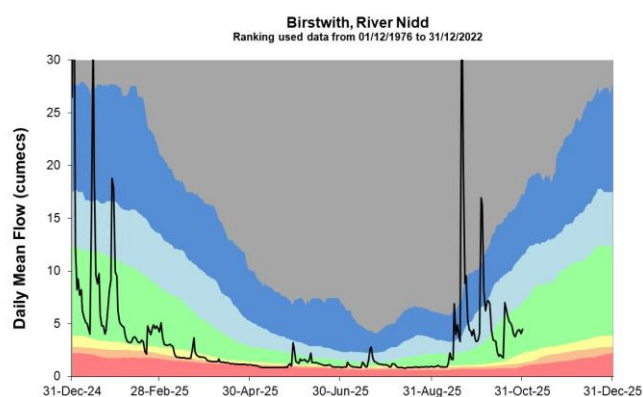
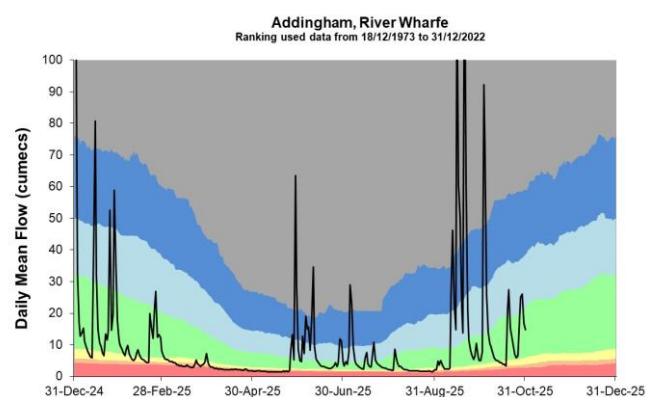
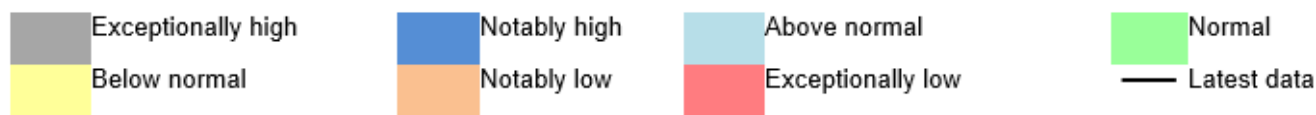
4.1: Monthly mean river flow for indicator sites for October 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic October monthly means. Table available in the appendices with detailed information.



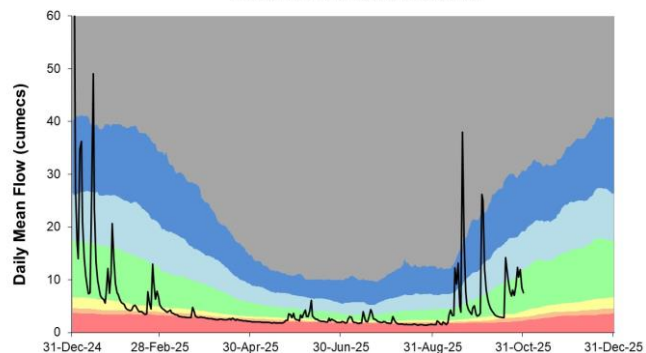
(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

4.2 River flow charts

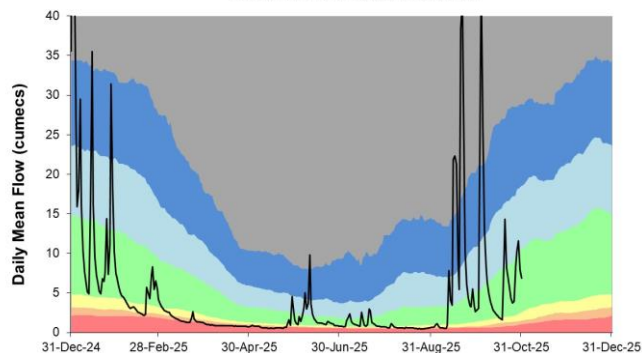
4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



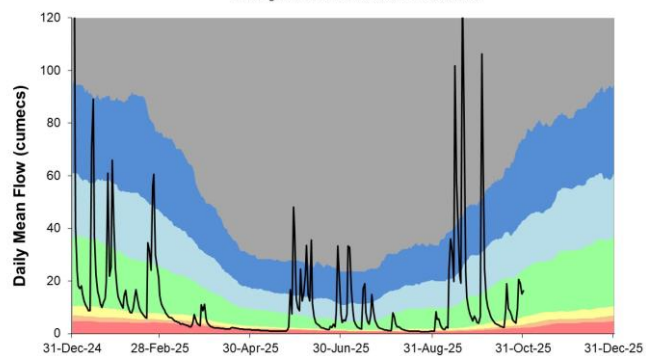
Elland, River Calder
Ranking used data from 01/07/1971 to 31/12/2022



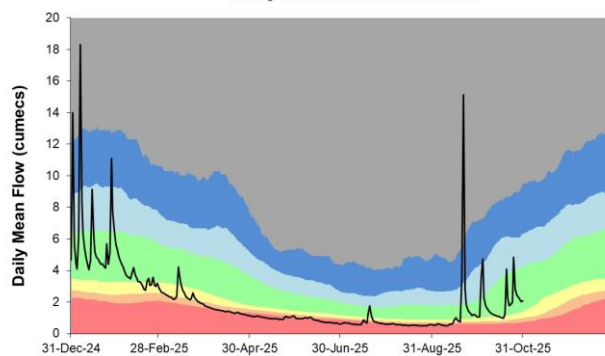
Kildwick, River Aire
Ranking used data from 01/08/1971 to 31/12/2022



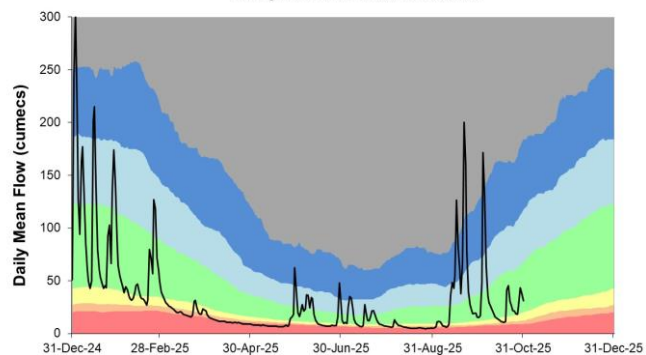
Kilgram Bridge, River Ure
Ranking used data from 01/08/1971 to 31/12/2022



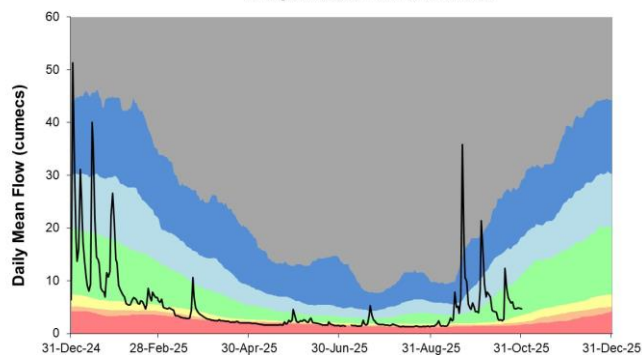
Ness, River Rye
Ranking used data from 01/09/1974 to 31/12/2022

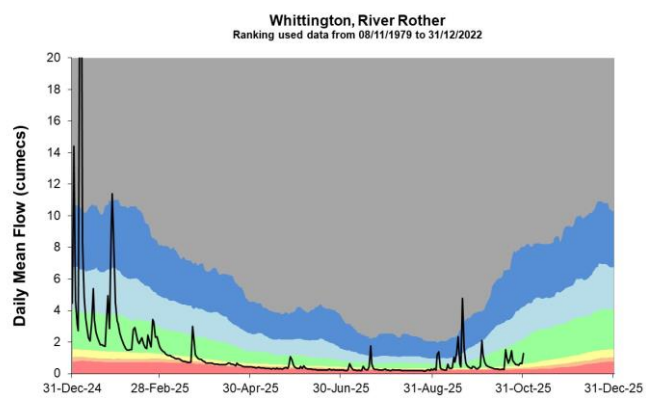
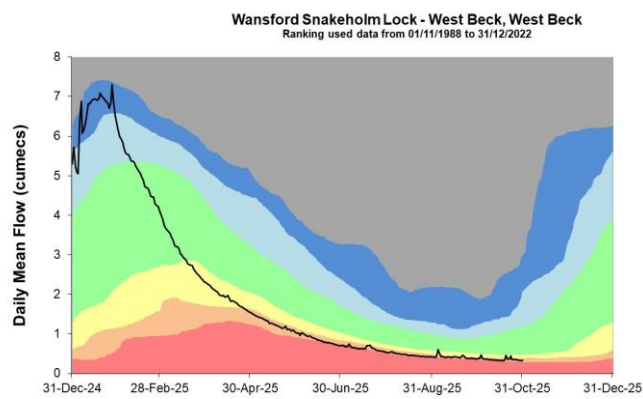
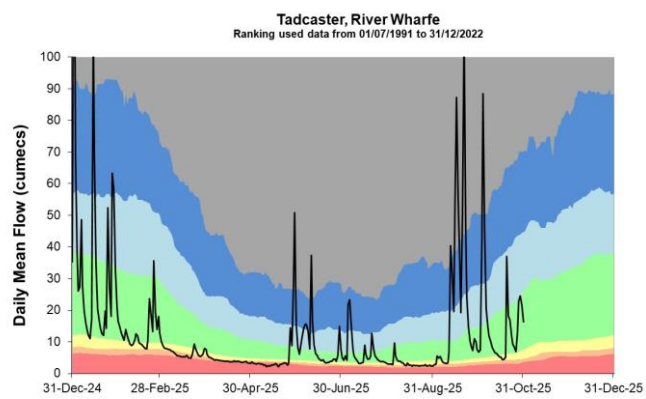


Skelton, River Ouse
Ranking used data from 18/09/1969 to 31/12/2022



Skip Bridge Kirk Hammerton, River Nidd
Ranking used data from 12/06/1979 to 31/12/2022



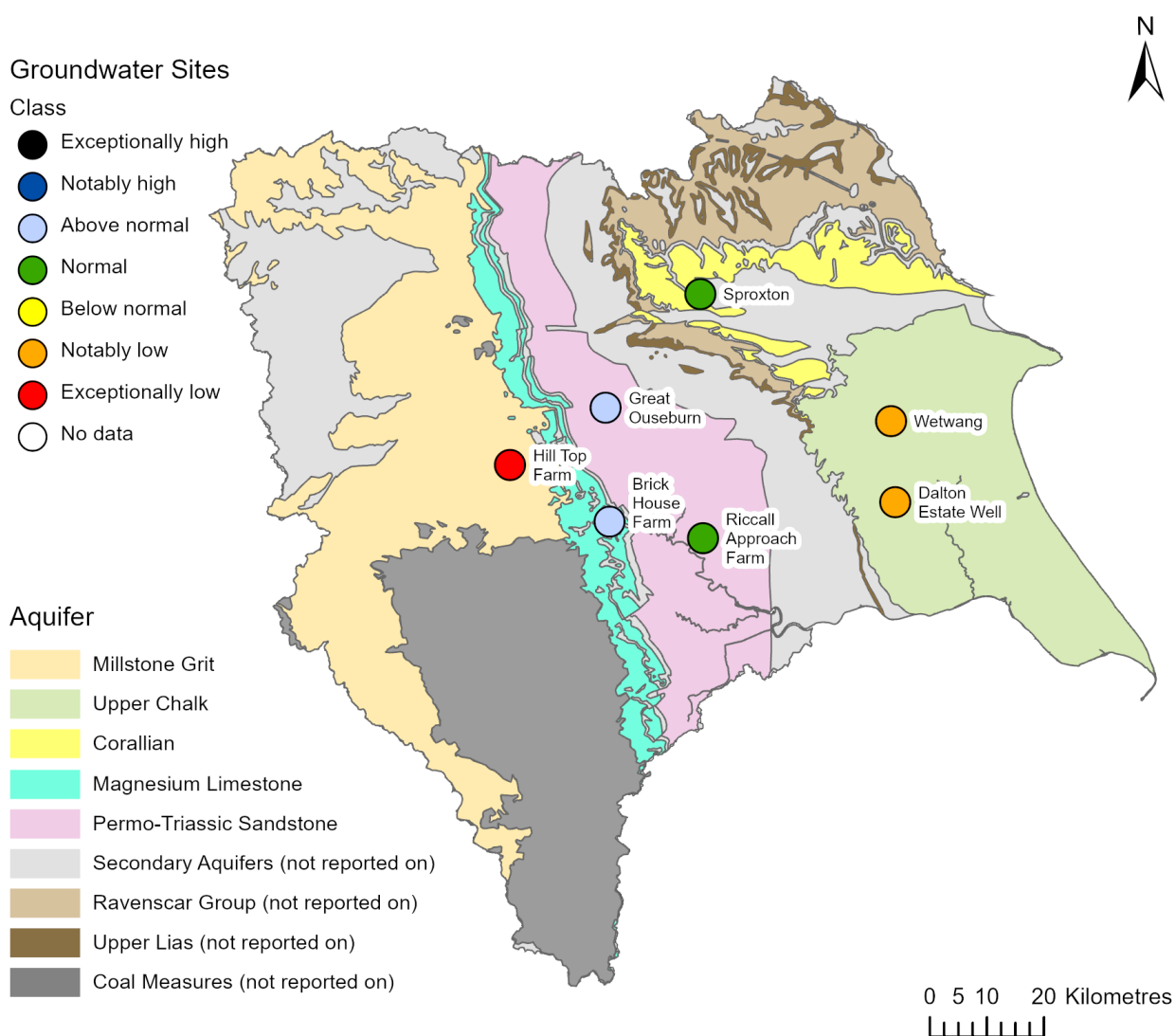


Source: Environment Agency.

5 Groundwater levels

5.1 Groundwater levels map

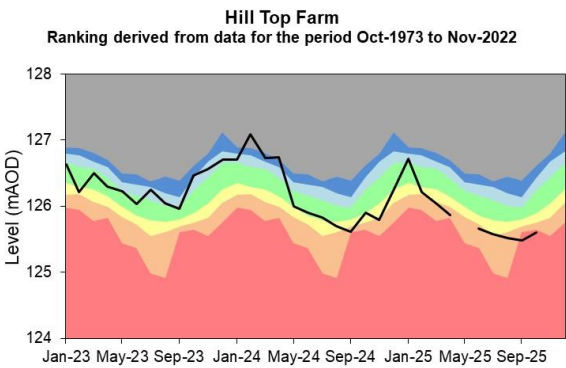
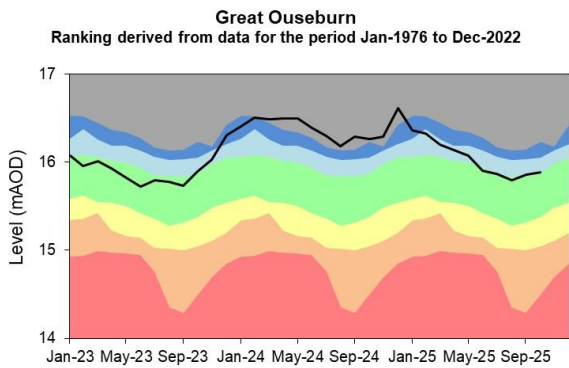
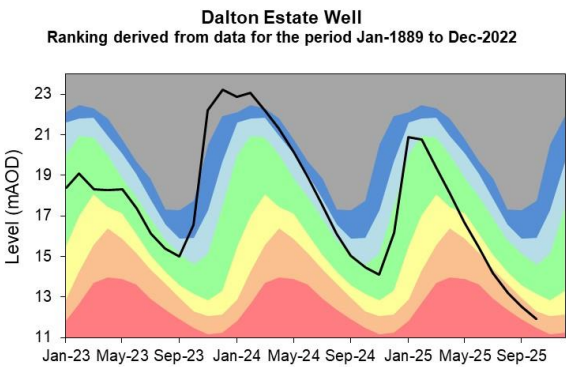
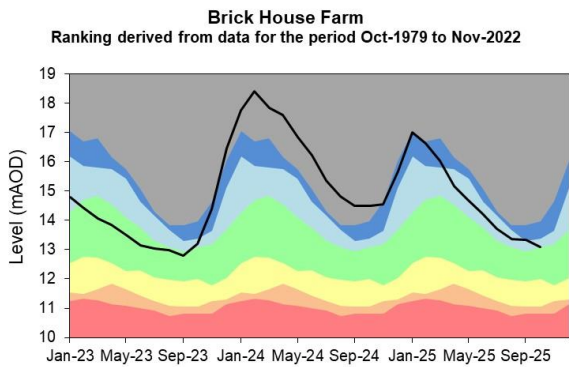
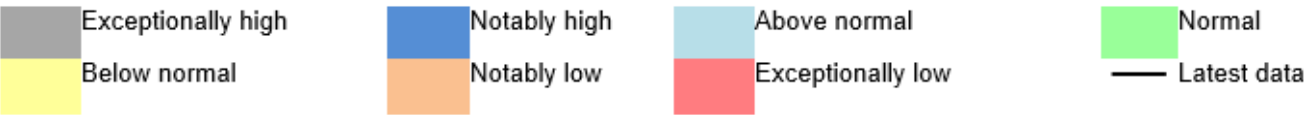
5.1: Groundwater levels for indicator sites at the end of October 2025, classed relative to an analysis of respective historic October levels. Table available in the appendices with detailed information.

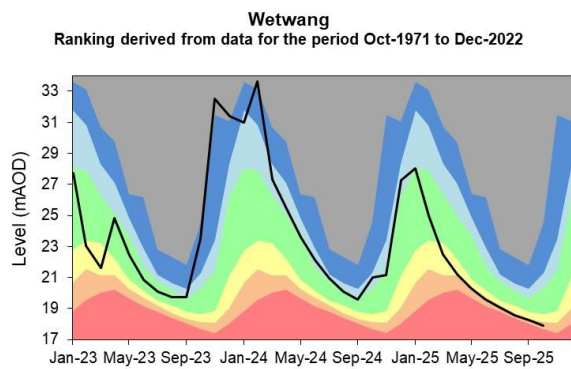
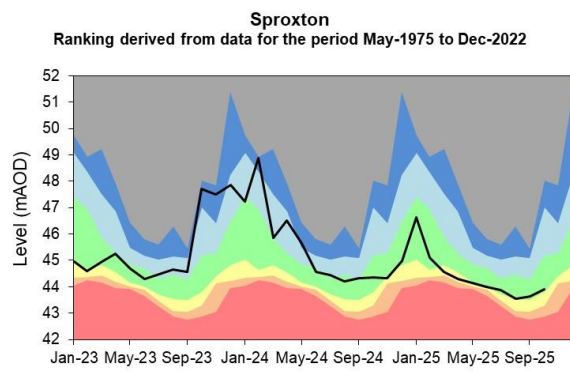
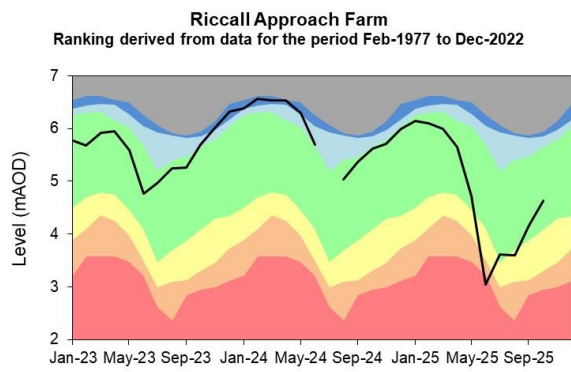


(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

5.2 Groundwater level charts

5.2: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



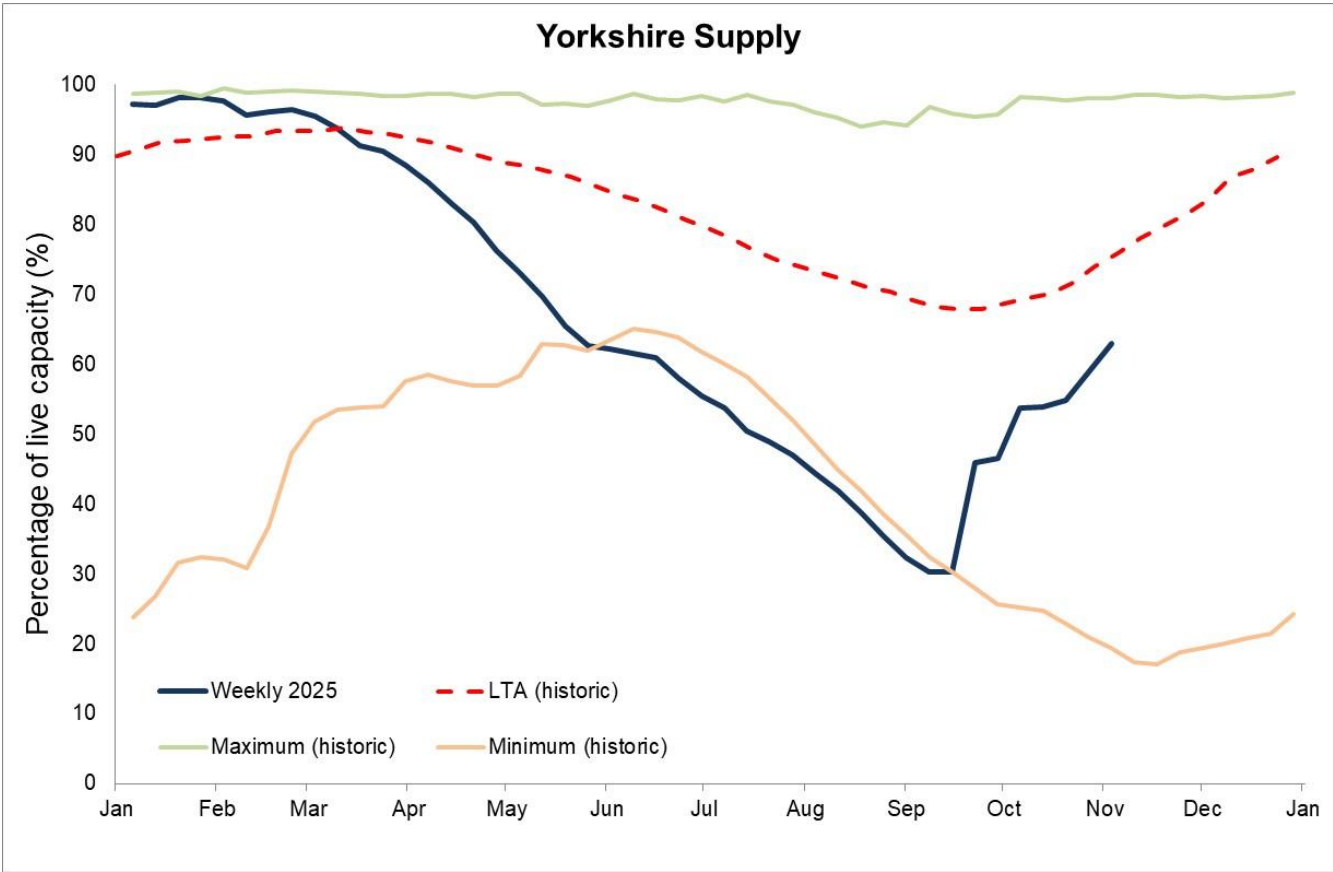


Source: Environment Agency, 2025.

N.B. Hill Top Farm observation borehole is used for abstraction, therefore, the groundwater level record will be directly affected by pumping.

6 Reservoir stocks

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



(Source: Yorkshire Water).

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 October cumulative band	May 2025 to October cumulative band	Nov 2024 to October cumulative band
Aire	110	Normal	Normal	Normal	Below normal
Calder	119	Normal	Normal	Normal	Below normal
Dales North Sea Tributaries	100	Normal	Normal	Below normal	Notably low
Derwent (NE)	95	Normal	Normal	Below normal	Notably low
Don	99	Normal	Normal	Normal	Below normal
Hull And Humber	91	Normal	Normal	Below normal	Below normal
Nidd	102	Normal	Normal	Normal	Notably low
Ouse	94	Normal	Normal	Below normal	Notably low
Rye	97	Normal	Normal	Below normal	Notably low
Swale (NE)	86	Normal	Normal	Normal	Notably low
Ure	93	Normal	Normal	Normal	Below normal
Wharfe	104	Normal	Normal	Normal	Below normal

8.2 River flows table

Site name	River	Catchment	Oct 2025 band	Sep 2025 band
Addingham	Wharfe	Wharfe Middle	Normal	Exceptionally high
Birstwith	Nidd	Nidd Middle	Normal	Notably high
Briggswath	Esk	Esk Yorks	Normal	Normal
Buttercrambe	Derwent	Derwent Yorks Middle	Normal	Below normal
Crakehill Topcliffe	Swale	Swale Lower	Normal	Notably high
Doncaster	Don	Don Lower	Normal	Above normal
Elland	Calder	Calder Yorks Upper	Normal	Normal
Skip Bridge Kirk Hammerton	Nidd	Nidd Lower	Normal	Above normal
Kildwick	Aire	Aire Upper	Normal	Notably high
Kilgram Bridge	Ure	Ure Middle	Normal	Notably high
Ness	Rye	Rye	Normal	Normal
Skelton	Ouse	Ouse Yorks	Normal	Notably high
Tadcaster	Wharfe	Wharfe Lower	Normal	Notably high

Site name	River	Catchment	Oct 2025 band	Sep 2025 band
Wansford Snakeholm Lock	West Beck	Hull Upper	Notably low	Notably low
Whittington	Rother	Rother Yorks	Below normal	Normal

8.3 Groundwater table

Site name	Aquifer	End of Oct 2025 band	End of Sep 2025 band
Brick House Farm	Wharfe Magnesian Limestone	Above normal	Notably high
Dalton Estate Well	Hull And East Riding Chalk	Notably low	Notably low
Great Ouseburn	Sherwood Sandstone	Above normal	Above normal
Hill Top Farm	Millstone Grit and Carboniferous Limestone	Exceptionally low	Exceptionally low
Riccall Approach Farm	Sherwood Sandstone	Normal	Normal
Sproxton	Sherwood Sandstone	Normal	Normal
Wetwang	Hull and East Riding Chalk	Notably low	Notably low