Monthly water situation report: Yorkshire Area

1 Summary - October 2026

Rainfall in October was normal in all catchments. River flows in most catchments were below the long term average (LTA) for the time of year but were particularly low in the east of Yorkshire. Soils became wet in the western Pennines but remained mostly dry elsewhere. Groundwater levels were normal or below in all aquifers. Reservoir stocks increased but remained below the LTA for the time of year. There was a reduction in the number of abstraction licences with a Hands Off Flow (HoF) in force.

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 Rye to 116% of the LTA in the Calder based on the Met Office Had-UK Grid data set.

The Pennine catchments began the month largely settled, except for moderate showers on days 6 and 8. On days 23 and 24 however, Storm Austen and Storm Boelo brought much larger daily totals. Tow Hill in the Ure catchment recorded over 64mm in one day on day 24. The Swale catchment was less affected by these storm rainfall events than the other Pennine catchments.

The Don and Rother catchments had mostly settled conditions but also had rain mid-month on days 15 and 18, and more heavily within Storm Boelo on and around day 24.

The Esk, Rye, Derwent, Hull and Ouse catchments had scattered showers throughout much of October, with a dry end to the month from day 27. The rain gauge at Scarborough also highlighted the effect of the storms with almost half of the October LTA rainfall being recorded in one day on day 23.

The six-month cumulative rainfall totals since May were below normal in all catchments except those draining the North York Moors which were notably low. This reflected both the dry summer period and the improved position following October rainfall. The April to October seven-month cumulative rainfall total in the Rye was the sixth lowest in the record starting 1871.

In contrast, the twelve-month cumulative rainfall totals were normal or above normal, a legacy of the wet November to February seen in winter 2025 to 2026.

1.2 Soil moisture deficit and recharge

Soil moisture deficits began the month normal in the south-western Pennine soils, dry in the north and south of Yorkshire and very dry in central and eastern areas. In response to the rainfall, soils became wetter across the whole of Yorkshire over October. The western Pennine soils were saturated towards the end of the month. Soils were still mostly dry elsewhere and classed as normal in the North York Moors and upper Don.

1.3 River flows

Monthly mean river flows were normal in most Pennine catchments and ranged from 54% to 105% of the LTA for the time of year. The exception was the flow within the Nidd catchment which was below normal and around 43% of the LTA. Most monthly means were at least 10% below the LTA apart from the Ure and upper Wharfe which were close to the LTA or a little above. In the east of Yorkshire, monthly mean flows were notably or exceptionally low and ranged between 22% and 41% of the LTA for October.

Monthly mean flows for October at our key monitoring stations ranked third lowest in the Rye and Derwent and fourth lowest in the Esk and West Beck in each of their respective records. The shortest of these records is 34 years.

Daily mean river flows were mostly below normal in the Pennine catchments at the beginning of October. There was a small response to rainfall on days 7 and 9 and a more pronounced response in days 24, 25 and 26 following the storms, but otherwise flows remained normal or just below. The River Swale had exceptionally low flows in the first and third weeks of the month but was below normal at month end.

The Esk, Rye and Derwent catchments in the east of Yorkshire maintained notably or exceptionally low daily mean river flows for much of the month. The rainfall from Storm Boelo increased flows to below normal or normal, however this effect was temporary and flows soon returned to notably and exceptionally low.

Although flows receded after the peaks produced by the storms, a small increase in baseflow was observed in most of Yorkshire’s catchments by the end of the month. The exception was the Chalk-fed West Beck which showed an overall slight decline.

1.4 Groundwater levels

Magnesian Limestone

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

Millstone Grit

The groundwater level within the Millstone Grit at Hill Top Farm decreased and became exceptionally low for the time of year.

Sherwood Sandstone

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

Corallian Limestone

The groundwater level within the Corallian Limestone at Sproxton remained stable but became below normal for the time of year.

Chalk

The groundwater level within the Chalk decreased at Wetwang and was notably low for the time of year. The groundwater level decreased at Dalton Estate Well and was below normal for the time of year.

1.5 Reservoir stocks

Reservoir stocks increased by around 9% over the course of October. By the beginning of November, stocks were at 51.8%, which is 22.1% less than the LTA for the time of year.

1.6 Environmental impact

In late October, there were 35 abstraction licences with a HoF condition in force, and another 63 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 and licences' months of operation.

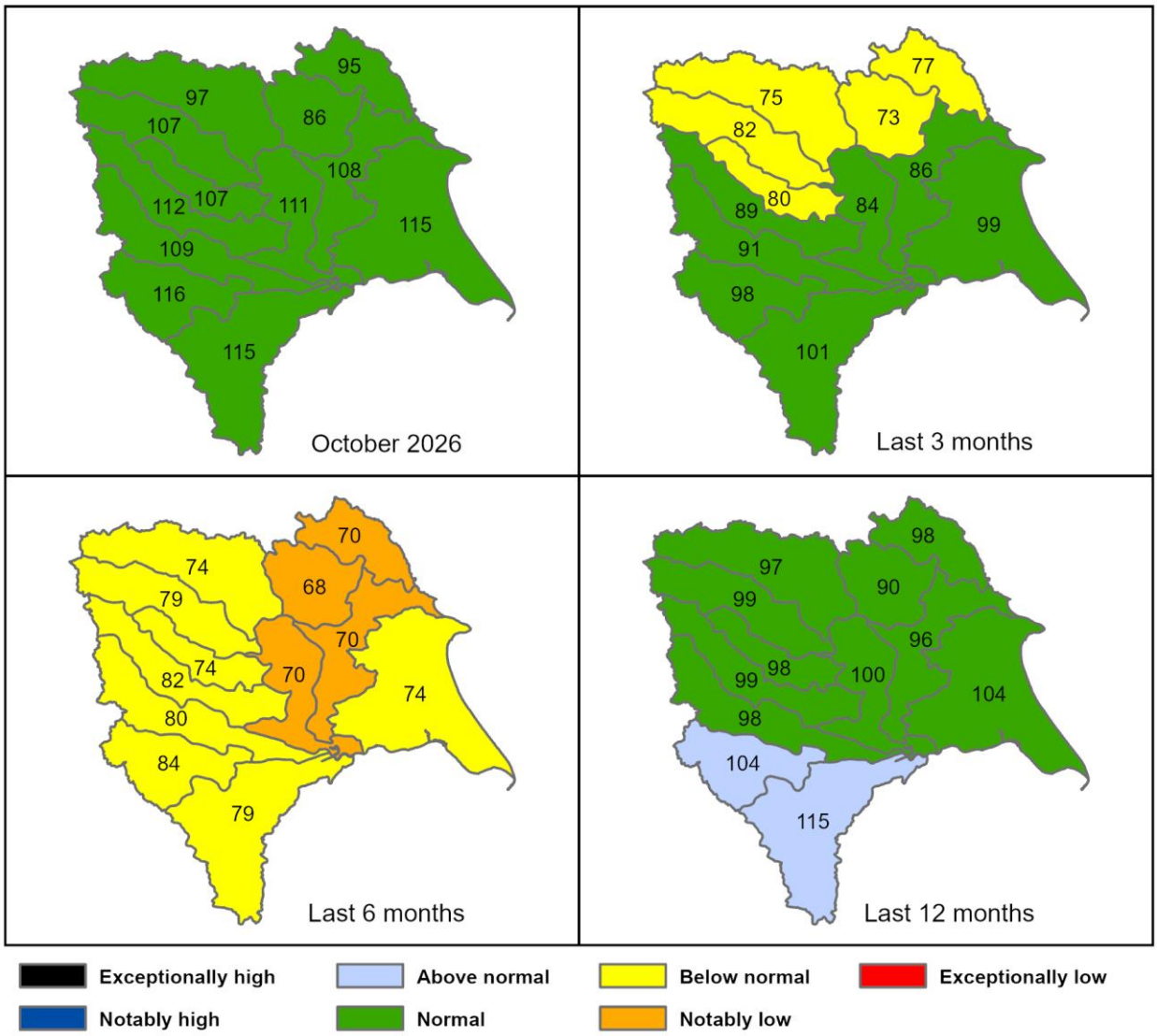
Author: Yorkshire Hydrology Team, hydrology.northeast@environment-agency.gov.uk

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2 Rainfall

2.1 Rainfall map

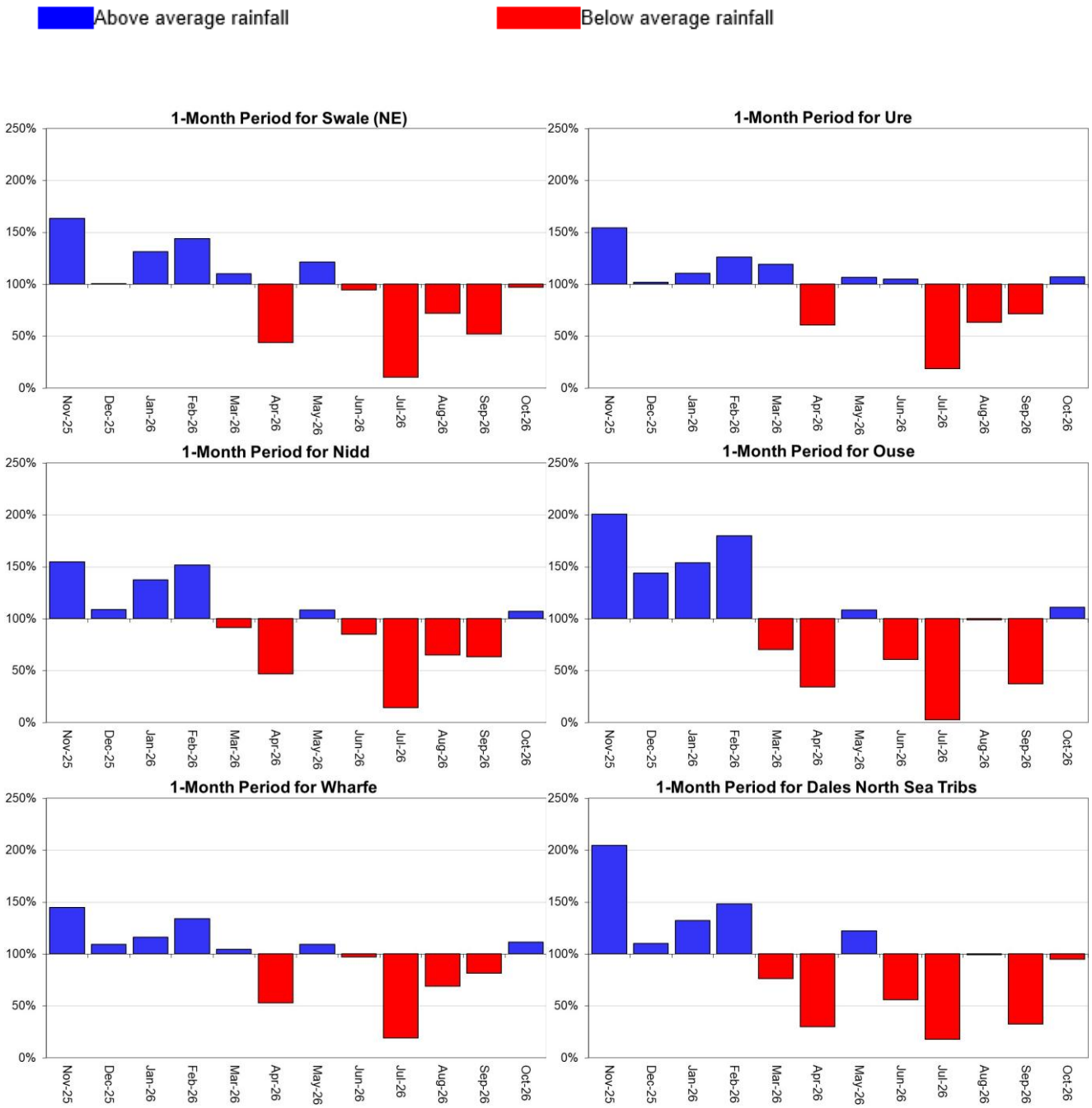
Figure 2.1: Total rainfall for hydrological areas across Yorkshire, expressed as a percentage of the 1991 to 2020 long term average rainfall, for the current month (up to 31 October 2026), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic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

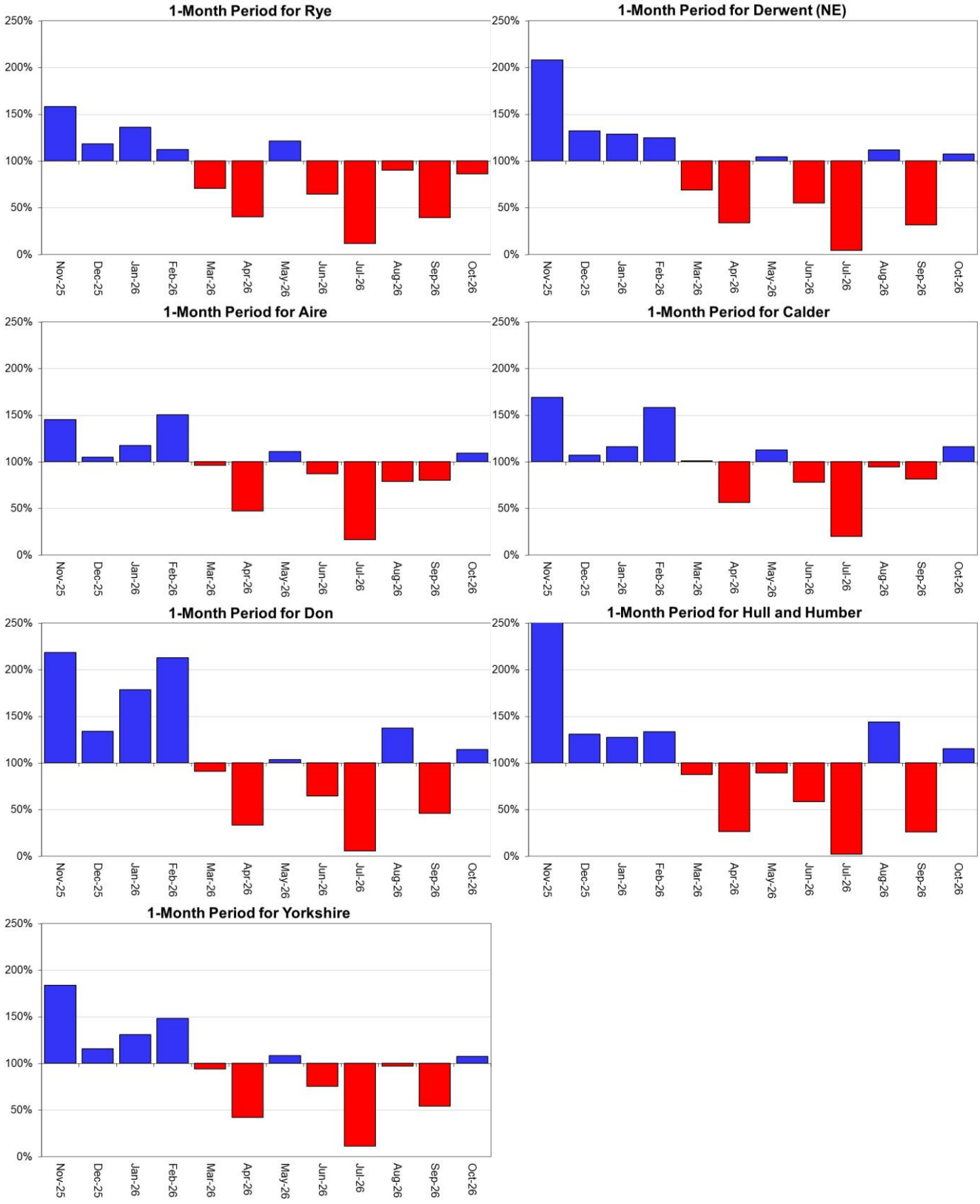


Rainfall data for January 2025 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026). Rainfall data prior to January 2025, extracted from Met Office HadUK 1km gridded 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 as a percentage of the 1991 to 2020 long term average for each catchment.





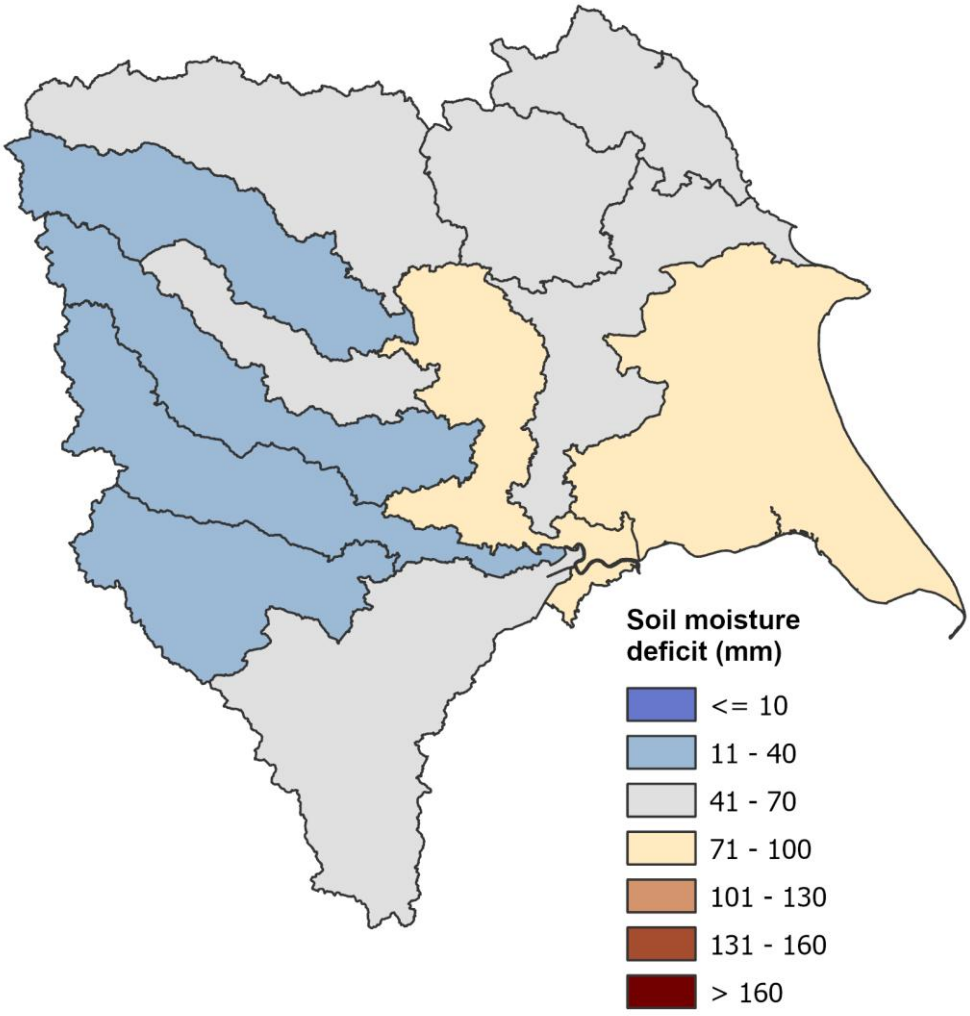
Rainfall data for January 2025 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment

Agency. Crown Copyright, 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 week ending 31 October 2026. Shows the actual soil moisture deficits (mm) within each hydrological area. Calculated from MORECS data for real land use.

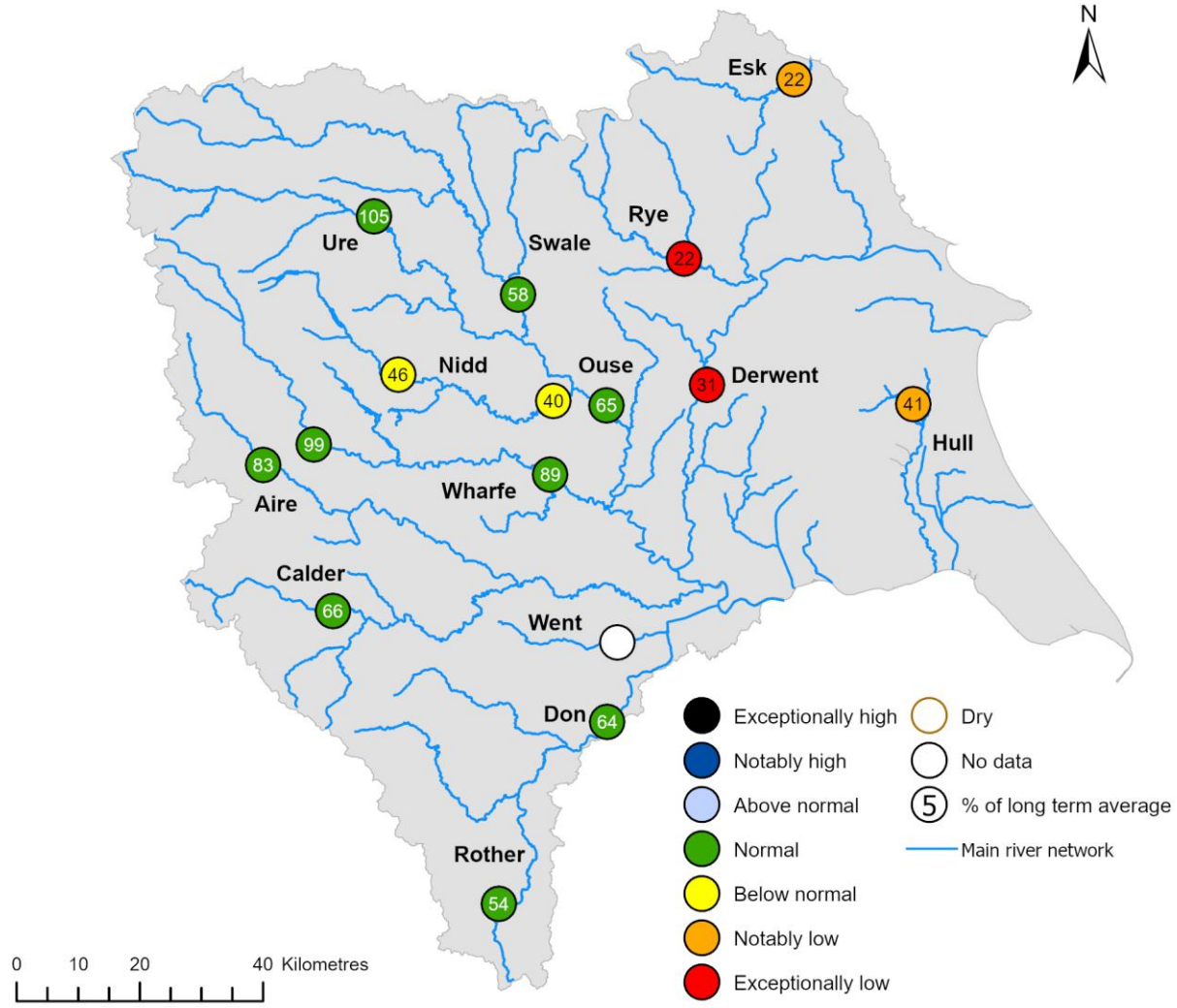


(Source: Met Office. Crown copyright, 2026). All rights reserved. Environment Agency, AC0000807064, 2026.

4 River flows

4.1 River flows map

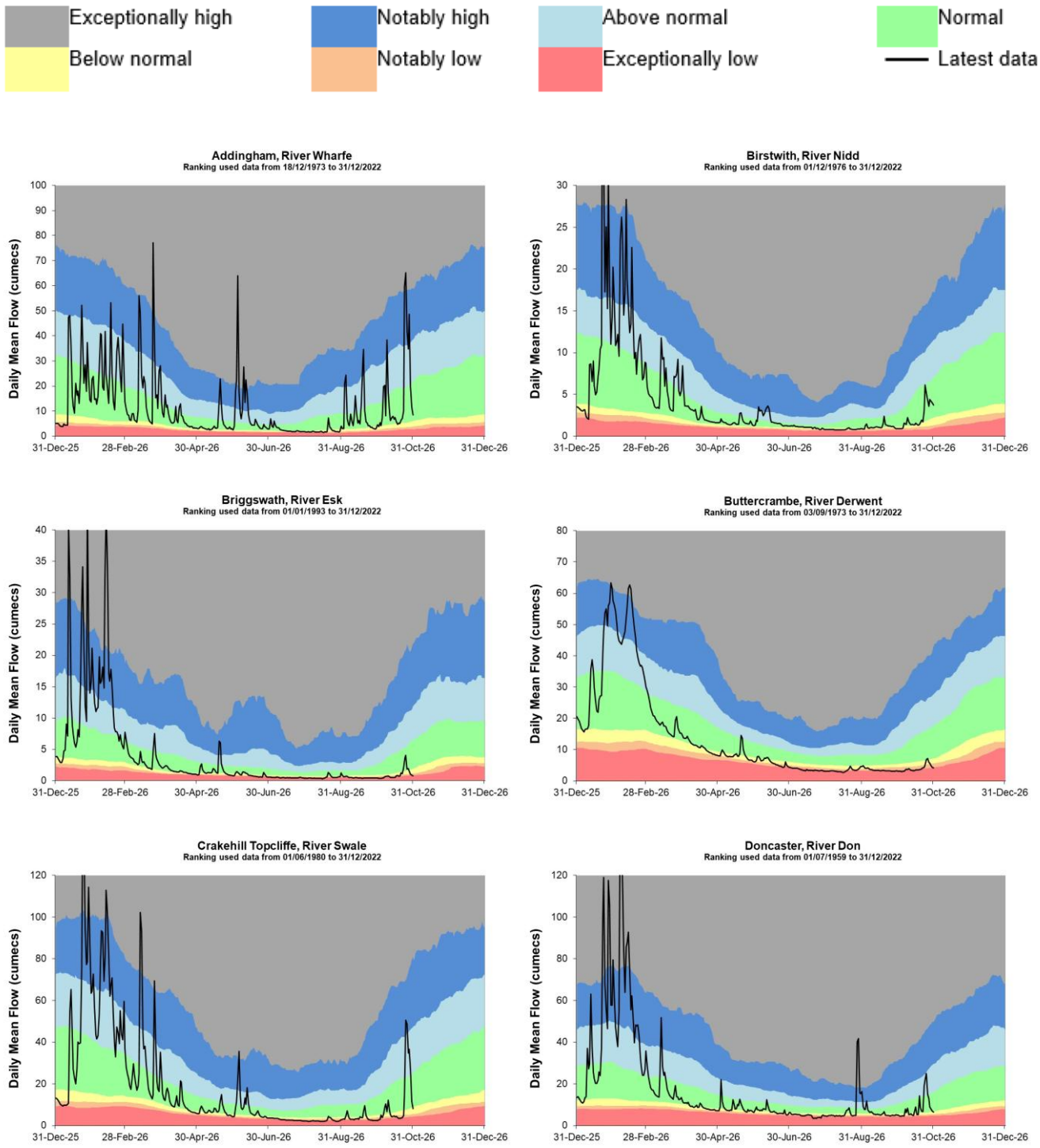
Figure 4.1: Monthly mean river flow for indicator sites for October 2026, expressed as a percentage of the respective long term average and classed relative to an analysis of historic October monthly means. Table available in the appendices with detailed information.



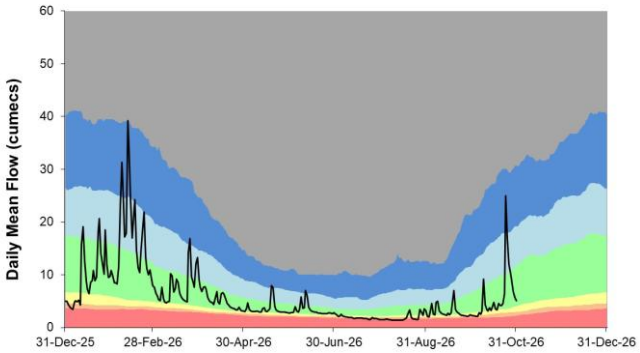
(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, AC0000807064, 2026.

4.2 River flow charts

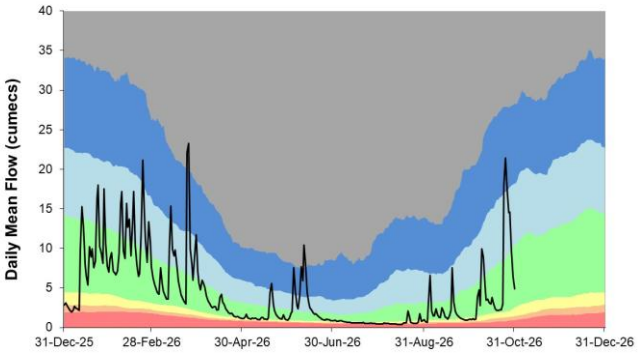
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



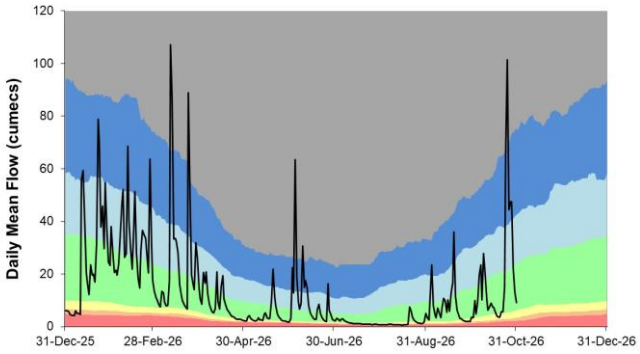
Elland, River Calder
Ranking used data from 01/07/1971 to 31/12/2022



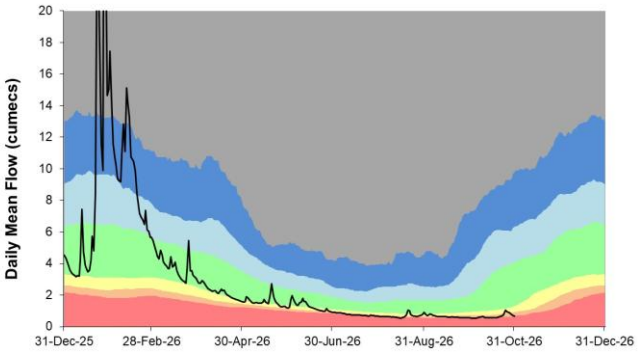
Kildwick, River Aire
Ranking used data from 01/01/1970 to 31/12/2022



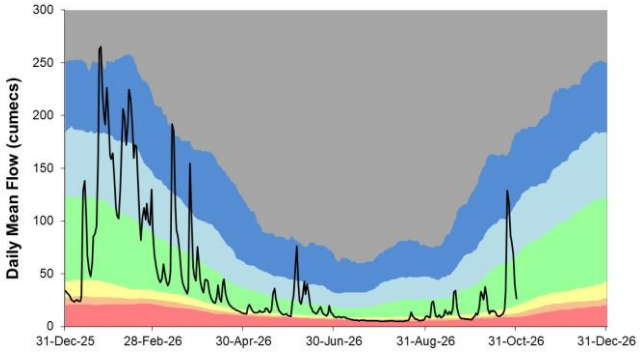
Kilgram Bridge, River Ure
Ranking used data from 01/01/1968 to 31/12/2022



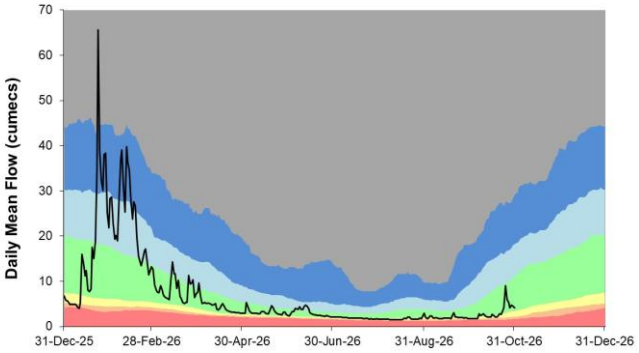
Ness, River Rye
Ranking used data from 07/08/1974 to 31/12/2022

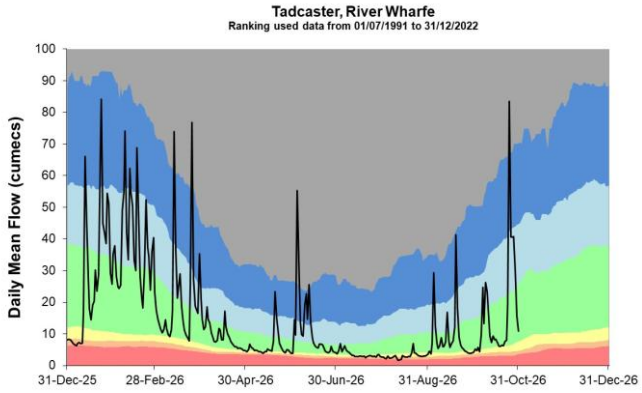


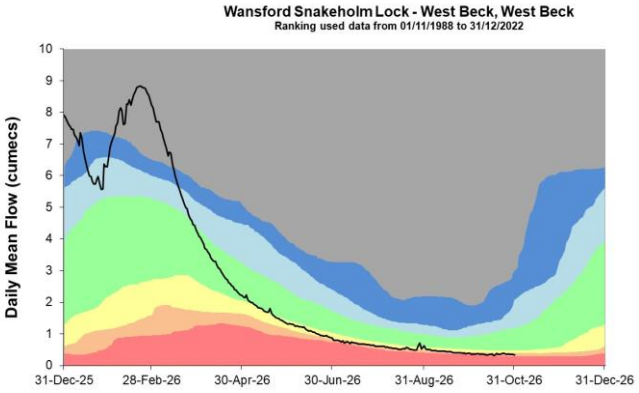
Skelton, River Ouse
Ranking used data from 18/09/1969 to 31/12/2022

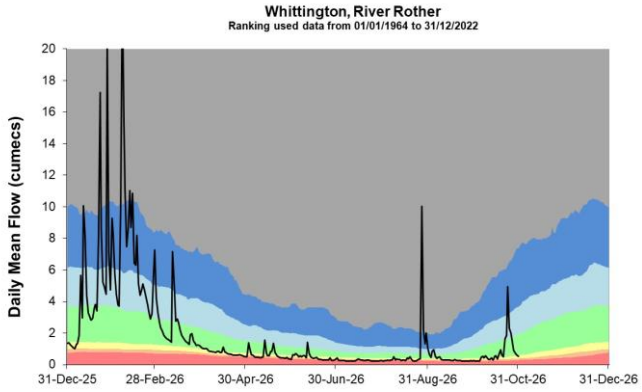


Skip Bridge Kirk Hammerton, River Nidd
Ranking used data from 12/06/1979 to 31/12/2022







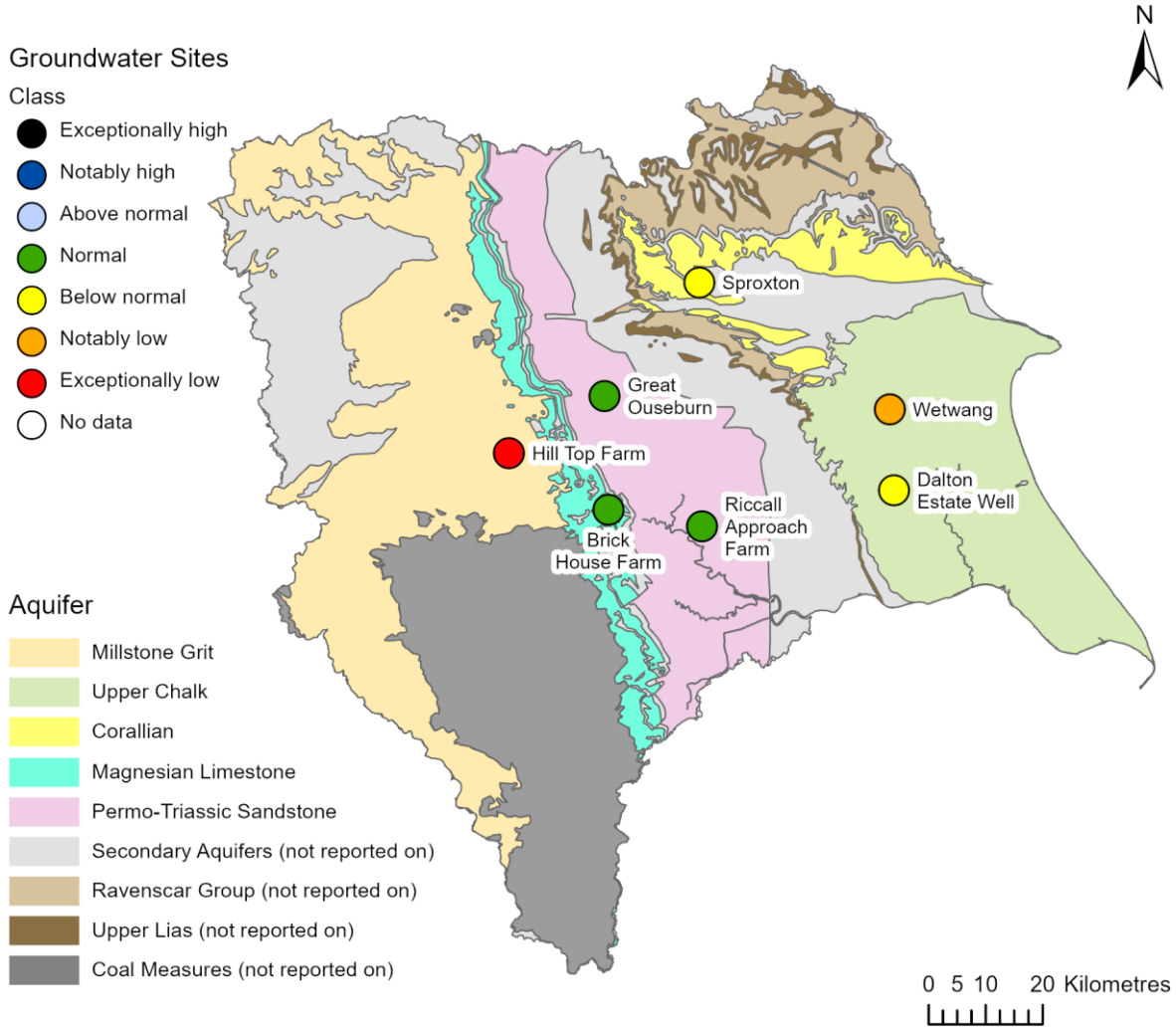


(Source: Environment Agency).

5 Groundwater levels

5.1 Groundwater levels map

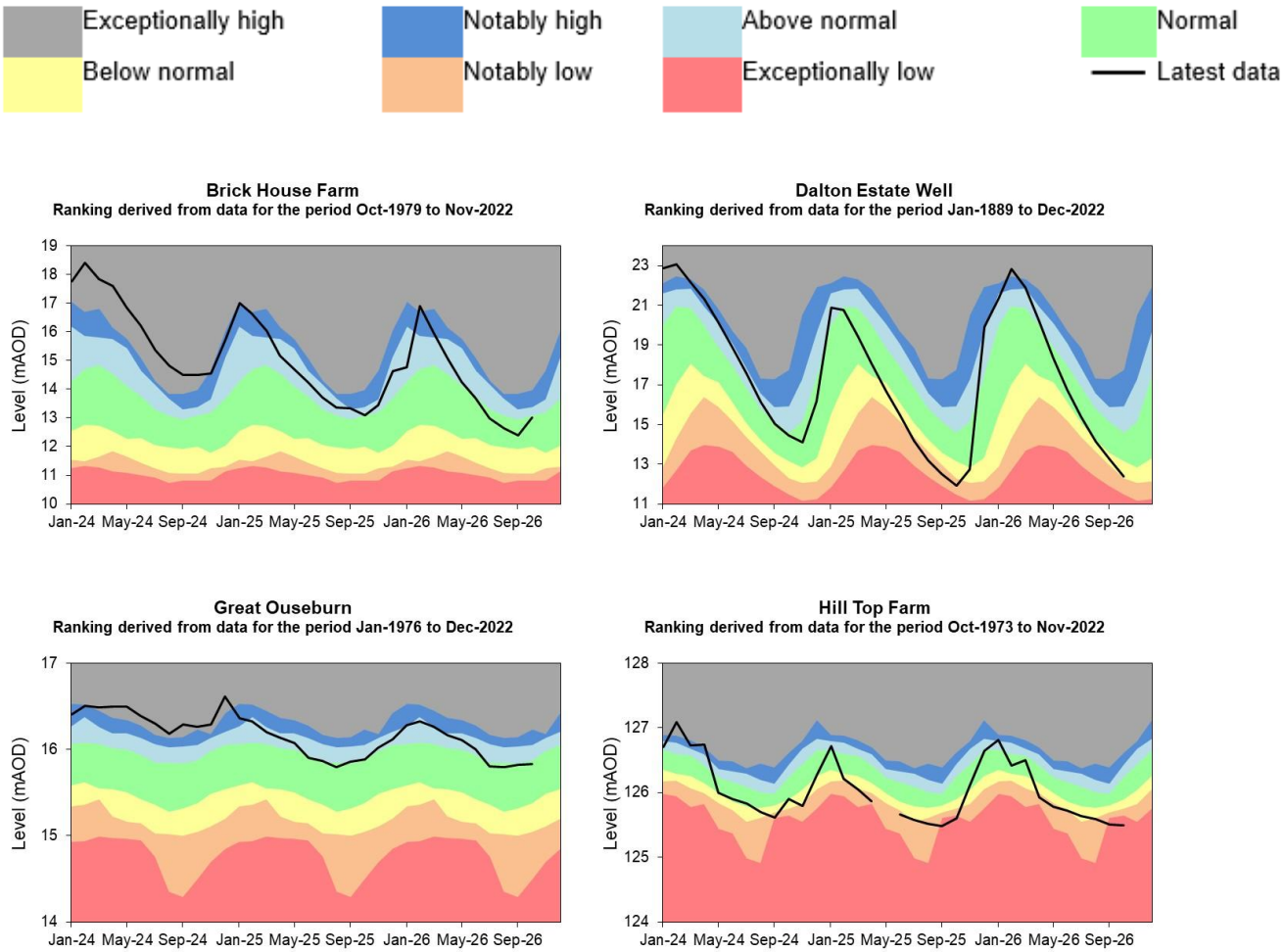
Figure 5.1: Groundwater levels for indicator sites at the end of October 2026, classed relative to an analysis of respective historic end of October levels. Table available in the appendices with detailed information. N.B. Hill Top Farm observation borehole is used for abstraction, therefore, the groundwater level record will be directly affected by pumping.

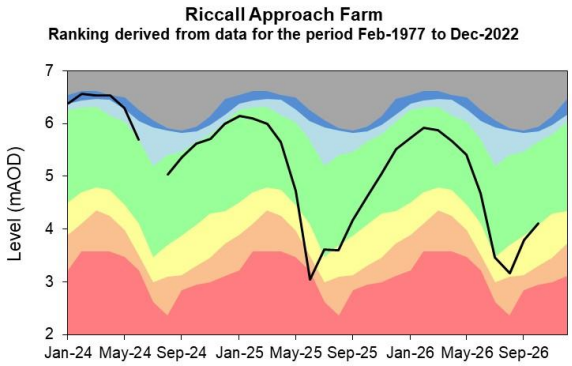


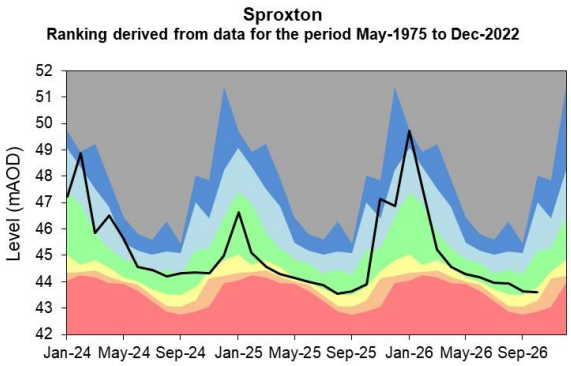
(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, AC0000807064, 2026.

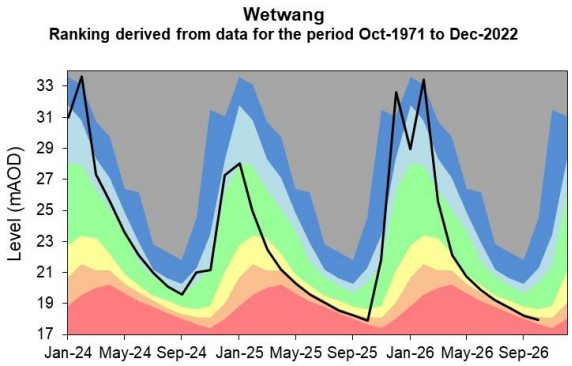
5.2 Groundwater level charts

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







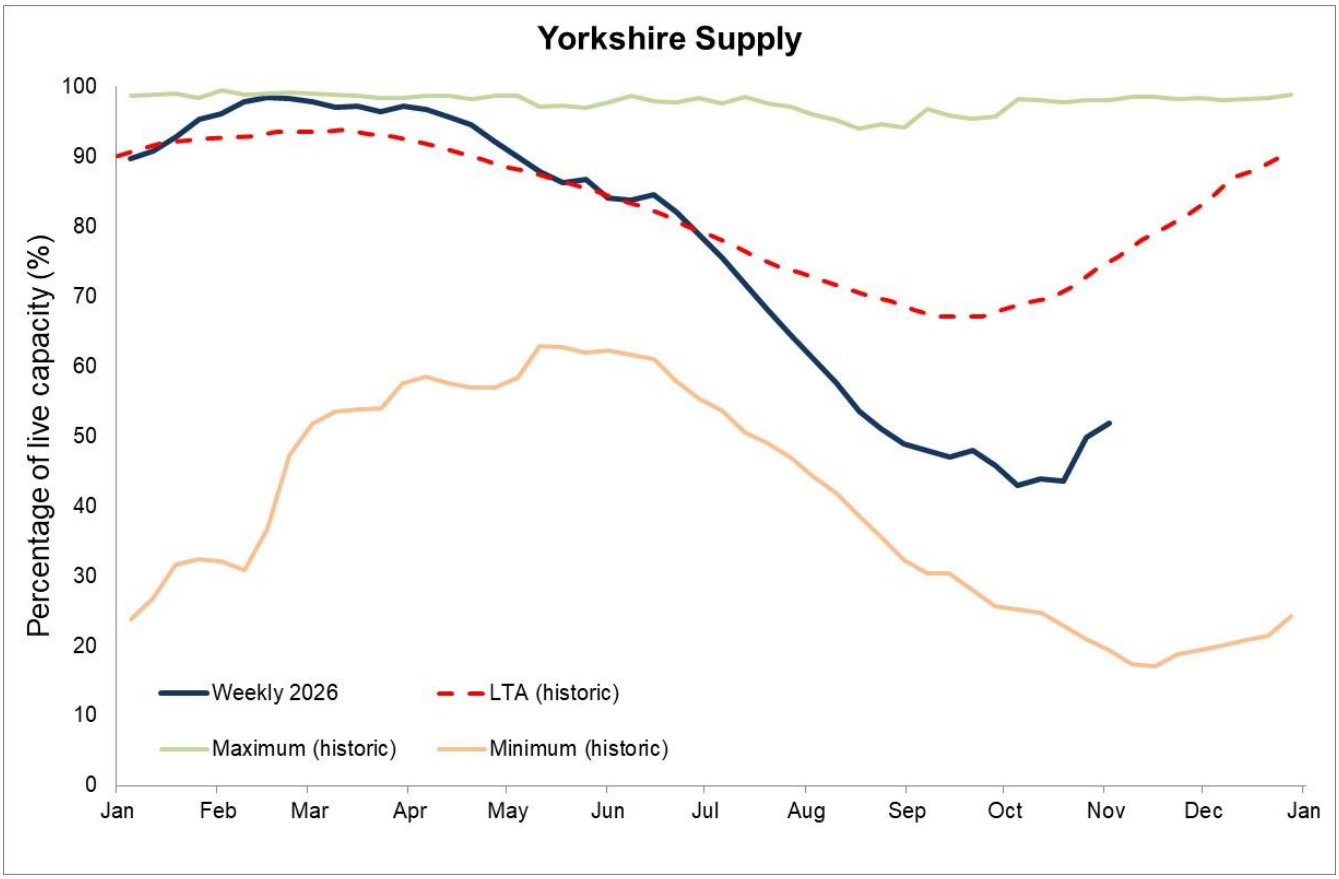


(Source: Environment Agency, 2026).

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

Figure 6.1: End of month Yorkshire Water 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 1 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 2026 rainfall % of long term average 1991 to 2020	Oct 2026 band	Aug 2026 to October cumulative band	May 2026 to October cumulative band	Nov 2025 to October cumulative band
Aire	110	Normal	Normal	Below normal	Normal
Calder	116	Normal	Normal	Below normal	Above normal
Dales North Sea Tributaries	95	Normal	Below normal	Notably low	Normal
Derwent (NE)	108	Normal	Normal	Notably low	Normal
Don	115	Normal	Normal	Below normal	Above normal
Hull and Humber	115	Normal	Normal	Below normal	Normal
Nidd	107	Normal	Below normal	Below normal	Normal
Ouse	111	Normal	Normal	Notably low	Normal
Rye	86	Normal	Below normal	Notably low	Normal
Swale (NE)	97	Normal	Below normal	Below normal	Normal
Ure	107	Normal	Below normal	Below normal	Normal
Wharfe	112	Normal	Normal	Below normal	Normal

8.2 River flows table

Site name	River	Catchment	Oct 2026 band	Sep 2026 band
Addingham	Wharfe	Wharfe Middle	Normal	Normal
Birstwith	Nidd	Nidd Middle	Below normal	Below normal
Briggswath	Esk	Esk Yorks	Notably low	Exceptionally low
Buttercrambe	Derwent	Derwent Yorks Middle	Exceptionally low	Notably low
Crakehill Topcliffe	Swale	Swale Lower	Normal	Notably low
Doncaster	Don	Don Lower	Normal	Below normal
Elland	Calder	Calder Yorks Upper	Normal	Below normal
Skip Bridge Kirk Hammerton	Nidd	Nidd Lower	Below normal	Below normal
Kildwick	Aire	Aire Upper	Normal	Normal
Kilgram Bridge	Ure	Ure Middle	Normal	Normal
Ness	Rye	Rye	Exceptionally low	Notably low
Skelton	Ouse	Ouse Yorks	Normal	Below normal
Tadcaster	Wharfe	Wharfe Lower	Normal	Normal
Wansford Snakeholm Lock	West Beck	Hull Upper	Notably low	Notably low
Whittington	Rother	Rother Yorks	Normal	Notably low

8.3 Groundwater table

Site name	Aquifer	End of Oct 2026 band	End of Sep 2026 band
Brick House Farm	Wharfe Magnesian Limestone	Normal	Normal
Dalton Estate Well	Hull and East Riding Chalk	Below normal	Below normal
Great Ouseburn	Sherwood Sandstone	Normal	Normal
Hill Top Farm	Millstone Grit and Carboniferous Limestone	Exceptionally low	
Riccall Approach Farm	Sherwood Sandstone	Normal	Below normal
Sproxton	Sherwood Sandstone	Below normal	Normal
Wetwang	Hull and East Riding Chalk	Notably low	Notably low