Monthly water situation report: Yorkshire Area

1 Summary - December 2025

This month, the rainfall in Yorkshire was above average and mostly fell in the first 18 days. The soils remained fully saturated throughout the month. River flows in the Pennine-fed catchments ranged between normal to notably high, whereas those in the east were greater and ranged from notably to exceptionally high. Groundwater levels rose in most aquifers and reservoir stocks remained close to capacity.

1.1 Rainfall

All catchments recorded above average rainfall for December, which ranged between 100% to 144% of the long-term average (LTA). Catchments across the Pennine ridge received rainfall within normal range and those to the south and east recorded above normal status. In the Derwent, Don and Hull catchments it was the second wettest November to December period and it was the third wettest November to December period in the Ouse in a 154-year record. Most of the rain fell within the first 18 days, with very little rain recorded from day 22 onwards. Days 14 to 18 were particularly wet in the Ouse, Rye, Derwent and Esk catchments.

1.2 Soil moisture deficit and recharge

Soils remained fully saturated for all weeks in December with very little variation between weeks.

1.3 River flows

Monthly mean flows in the Pennine catchments were above the LTA, between 115% and 162% of the LTA value, and classed between normal to notably high. Further east, catchments recorded greater monthly mean flows relative to their LTAs, ranging from 168% in the Esk, 189% in the Derwent to192% in the Rye. In the upper Hull catchment, monthly mean flows in the West Beck at Wansford Snakeholm Lock were 270% of the LTA. The monthly mean flows were classified as notably high in the Esk and exceptionally high in the Rye, Derwent and upper Hull.

Rivers in the Pennine-fed catchments and the Esk in the north-east started the month in an elevated state, most reported daily mean flows in the notably to exceptionally high range. They then continued for the next 11 days to fluctuate between exceptionally high to above normal and only the Ure, Wharfe and Calder recorded a short period when flows were normal. From day 13 to 15 flows receded temporarily to within normal range. By day 15 to 19 flows increased to either above normal or notably high in response to rainfall. Flows in these catchments then receded and by day 20 to 24 were classified as normal. Flows continued to decline to below normal starting on day 25 in the Ure, Wharfe and Aire followed by the remaining Dales catchments and the Calder later in the month. The Ure, Wharfe and Aire reached notably low for the time of year by the month end, whereas flows in the Don and Esk remained in normal range.

Flows in the east of Yorkshire area reflected ongoing effects of high November rainfall, further heavy rainfall in early December and from day 14 to 18, together with greater baseflow support from groundwater sources in these catchments. In the Rye and Derwent daily mean flows were notably or exceptionally high for much of the first three weeks of December, gradually receding from day 22 onwards and returning to normal for the time of year by the final week.

In the West Beck in the upper Hull, flows increased steeply from above normal to exceptionally high in the first two weeks of the month in response to rising Chalk groundwater levels. Flows continued to rise more gradually, then levelled off and declined slightly from day 26 onwards, again following the groundwater level trend. Nevertheless, the flows remained elevated and exceptionally high at month end.

1.4 Groundwater levels

Magnesian Limestone

The groundwater level within the Magnesian Limestone increased 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 normal for the time of year. *It should be noted that this observation borehole is used for water abstraction by means of a pump. Therefore, the groundwater level recorded here may be subject to the effects of this.*

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 decreased at Sproxton and was above normal for the time of year. At Malton, rising groundwater levels caused groundwater to emerge at the surface around 19 or 20 December, resulting in localised flooding in parts of the town. This is a known occurrence during times of high groundwater levels here and pumps were put in place ahead of the flooding to manage it. Pumping operations ceased during the final week of the month.

Chalk

The groundwater level increased steeply at Wetwang and was exceptionally high for the time of year. The groundwater level also increased steeply at Dalton Estate Well and was notably high for the time of year.

1.5 Reservoir stocks

Yorkshire reservoirs remained close to capacity throughout the month, with total stocks increasing by 5% between 1 December and 29 December. In the last week of December the reservoir total stocks were 92.4% of capacity, which was 2.7% above the long-term average.

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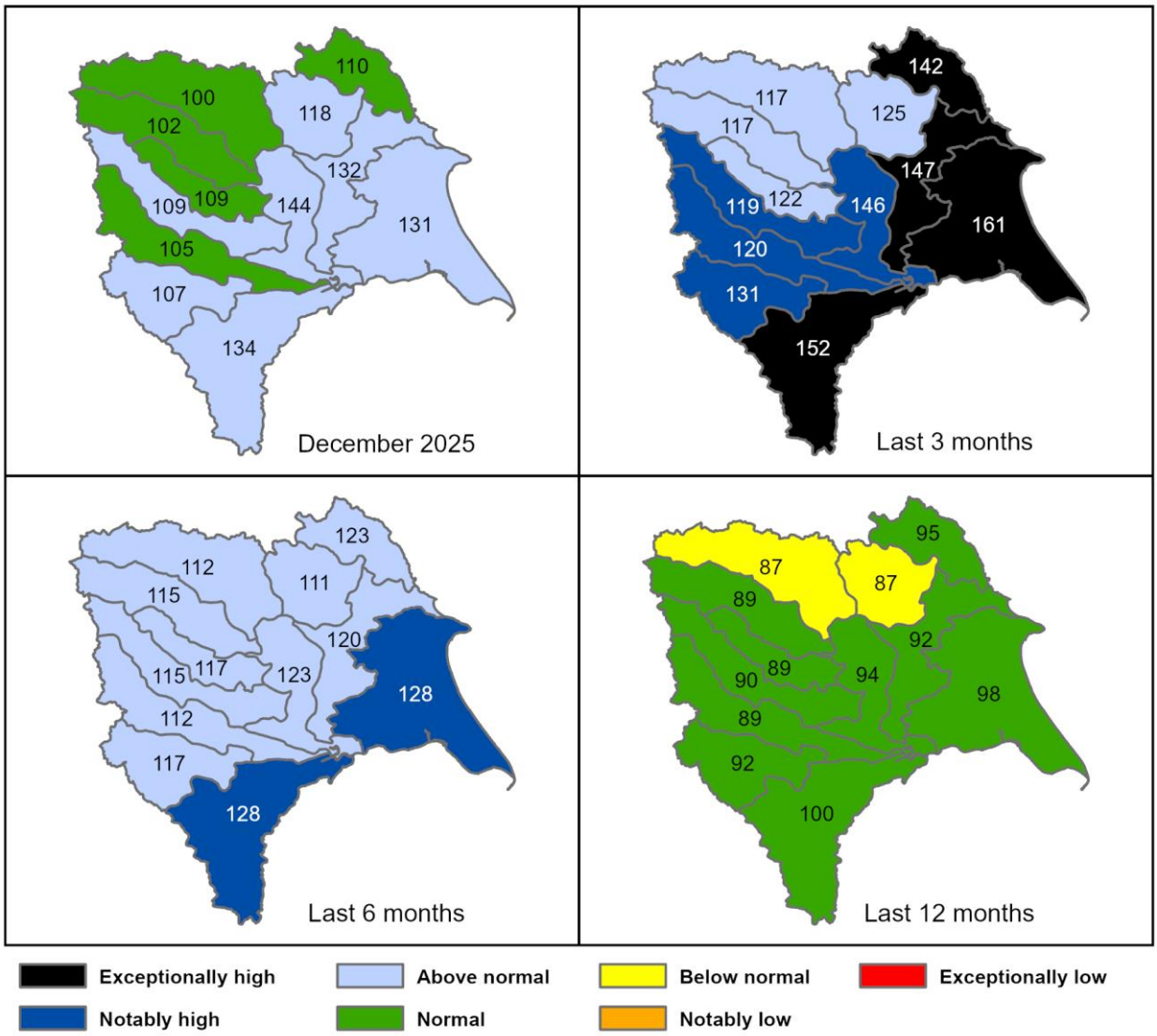
2 Rainfall

2.1 Rainfall map

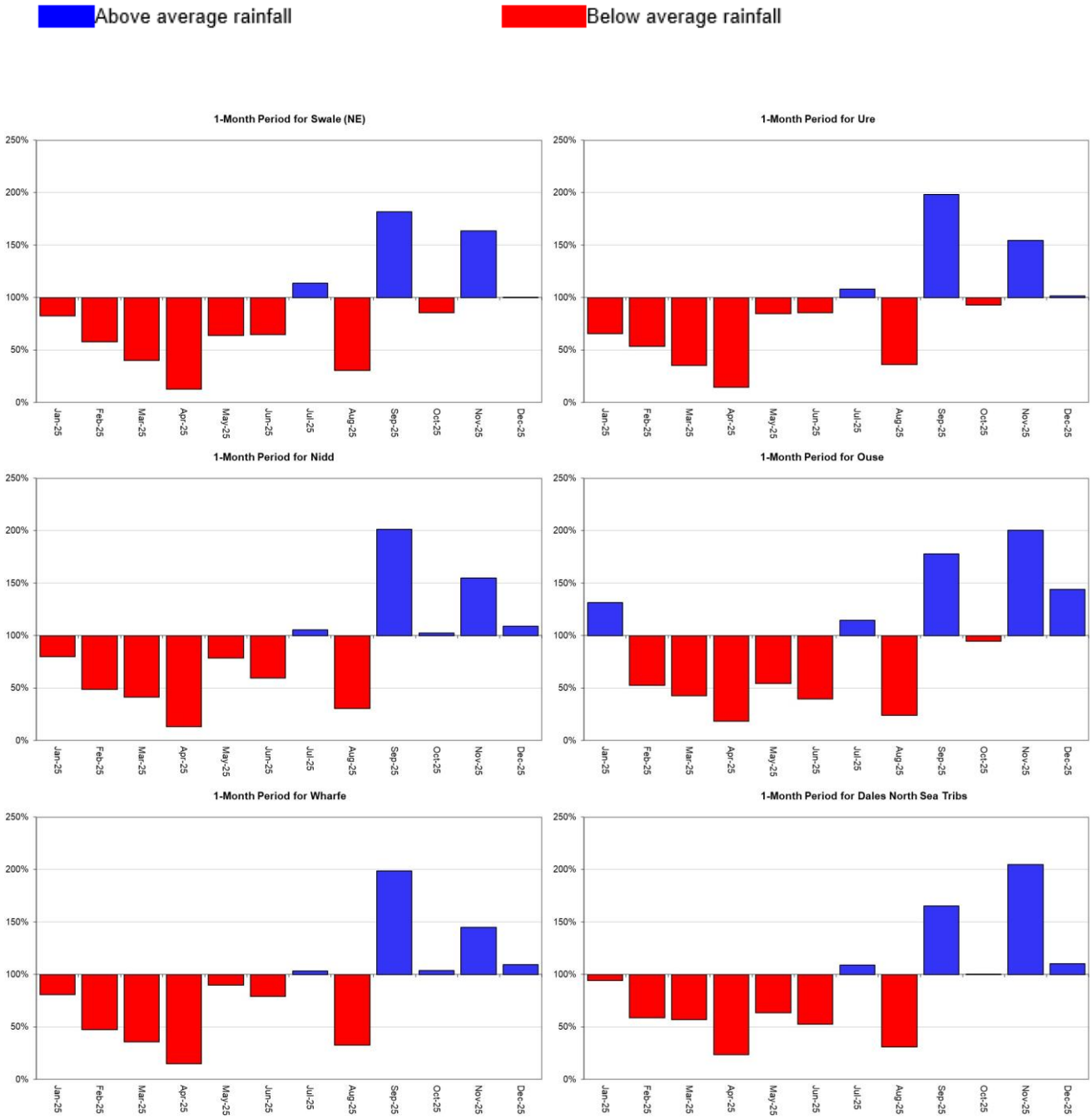
2.1: Total rainfall for hydrological areas across Yorkshire, expressed as a percentage of the 1990 to 2020 long term average rainfall, for the current month (up to 31 December 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals.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

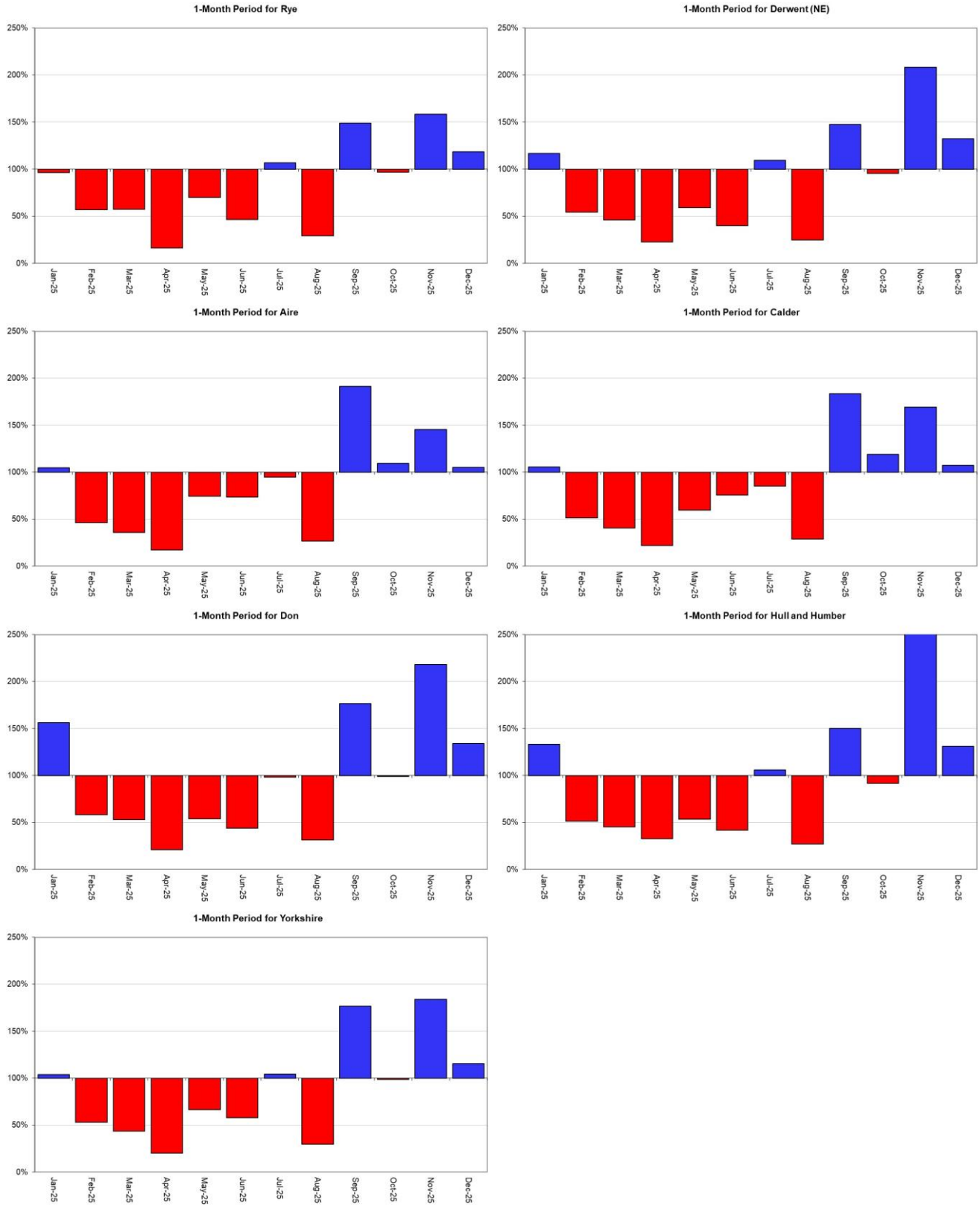


Rainfall data for January 2025 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026). Rainfall data prior to January 2025, extracted from Met Office HadUK 1km gridded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

2.2 Rainfall charts

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





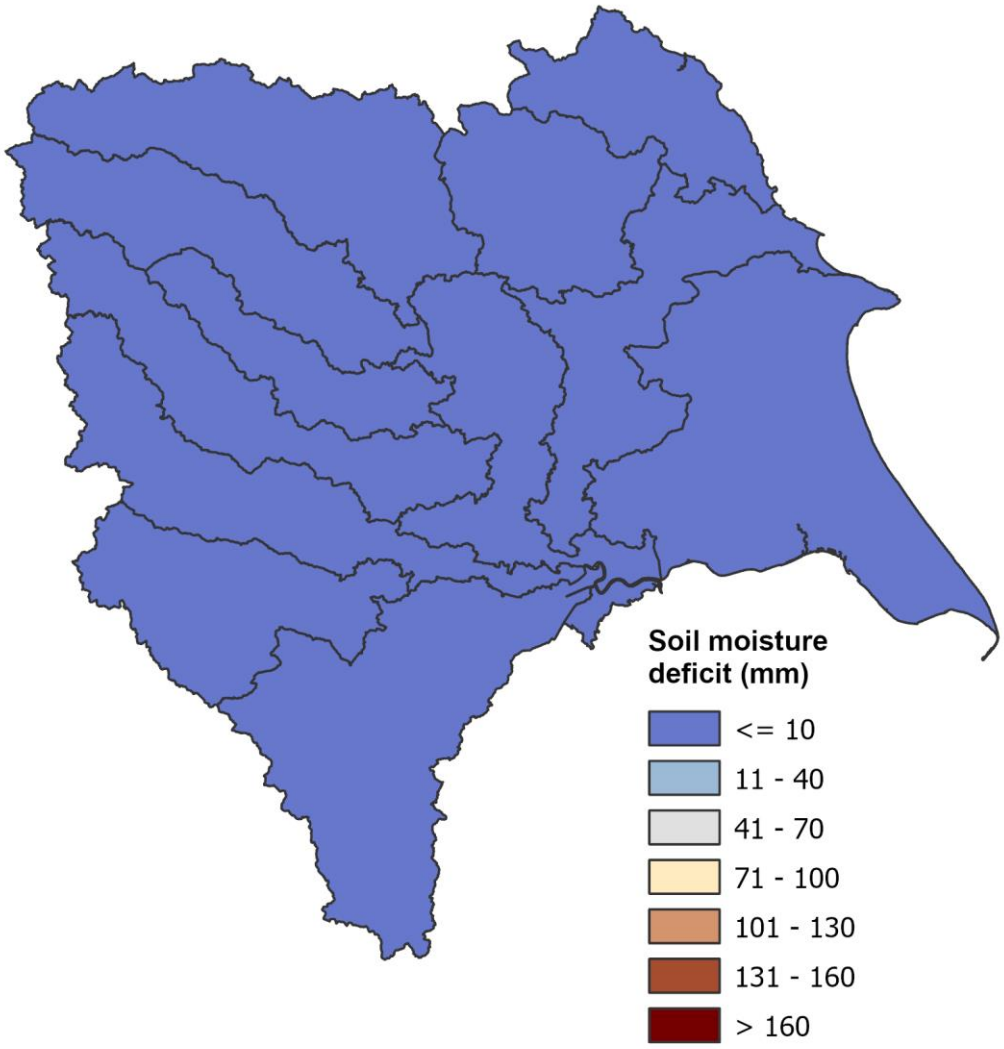
Rainfall data for January 2025 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment

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

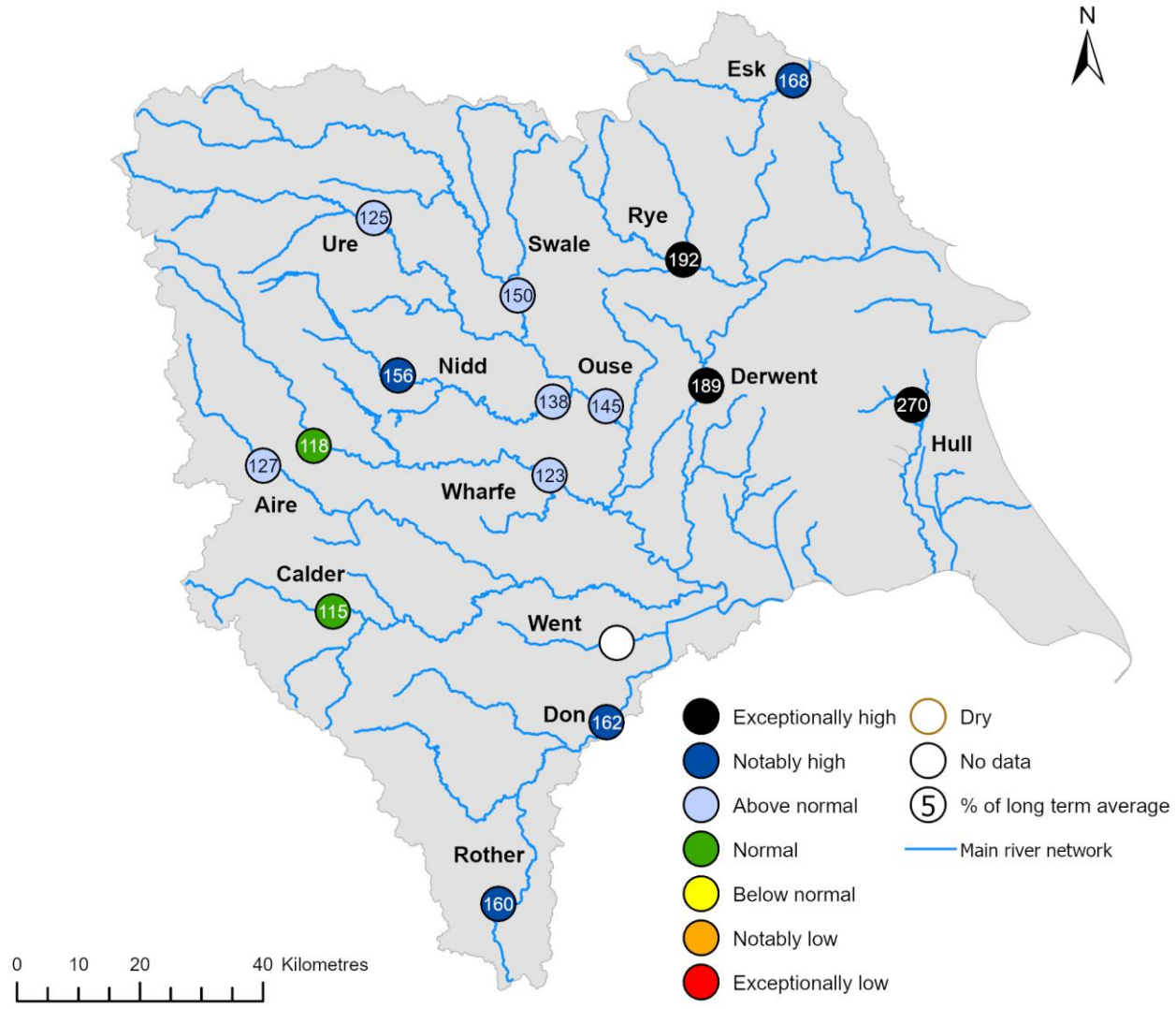
3.1: Soil moisture deficits for weeks ending 31 December 2025. Shows the actual soil moisture deficits (mm) within each hydrological area. Calculated from MORECS data for real land use.



4 River flows

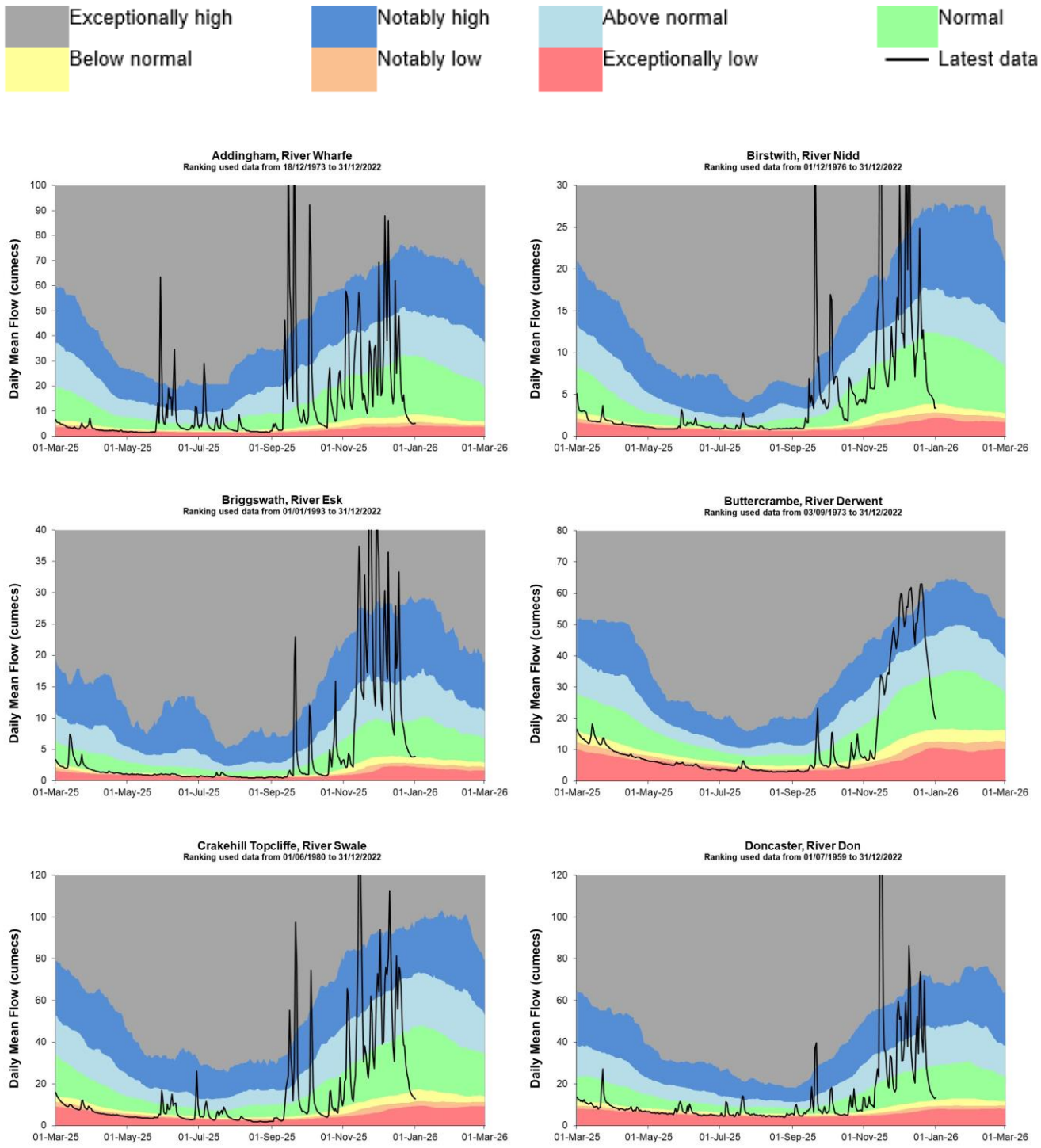
4.1 River flows map

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

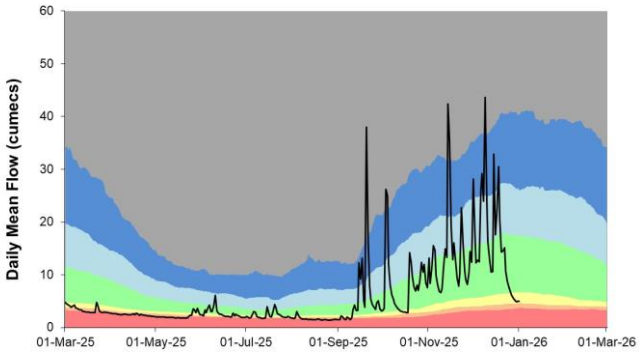


4.2 River flow charts

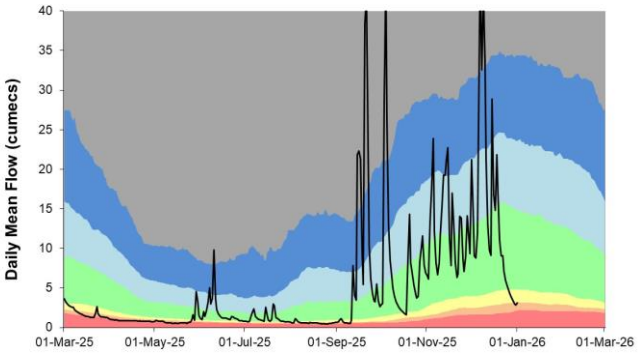
4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



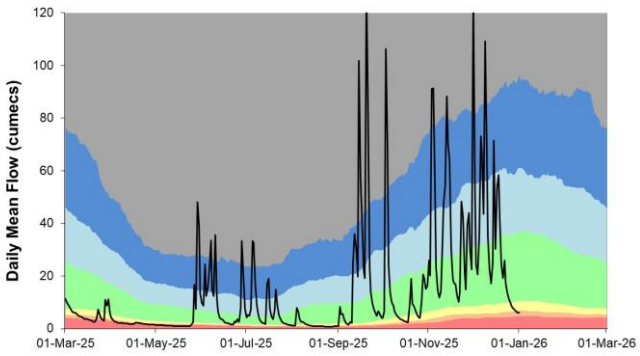
Elland, River Calder
Ranking used data from 01/07/1971 to 31/12/2022



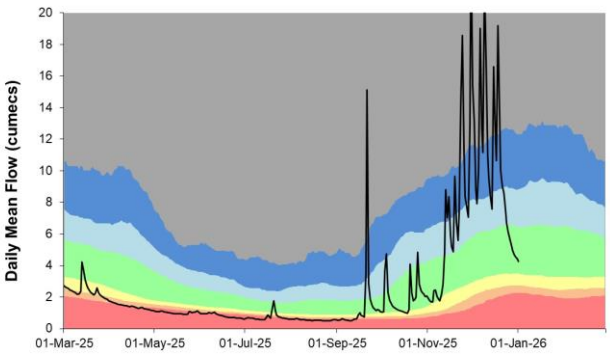
Kildwick, River Aire
Ranking used data from 01/08/1971 to 31/12/2022



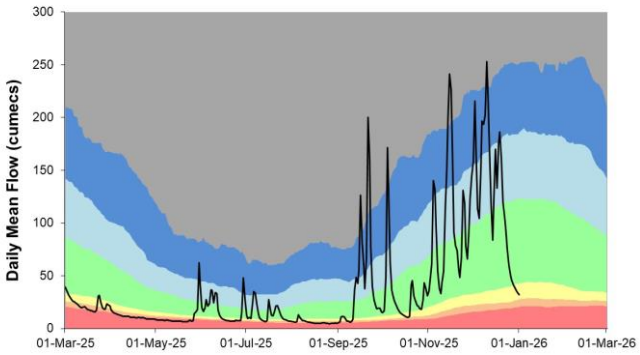
Kilgram Bridge, River Ure
Ranking used data from 01/08/1971 to 31/12/2022



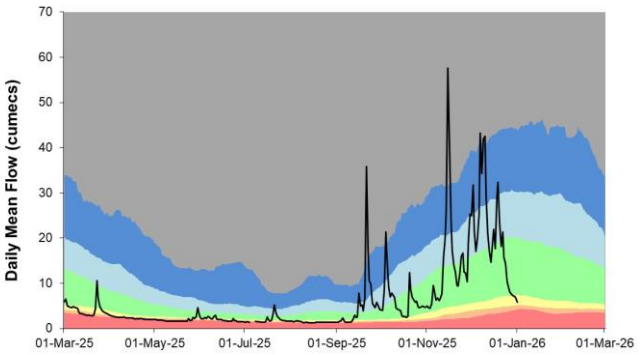
Ness, River Rye
Ranking used data from 01/09/1974 to 31/12/2022

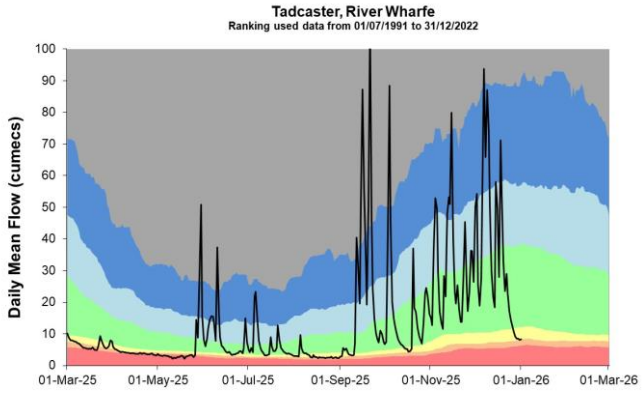


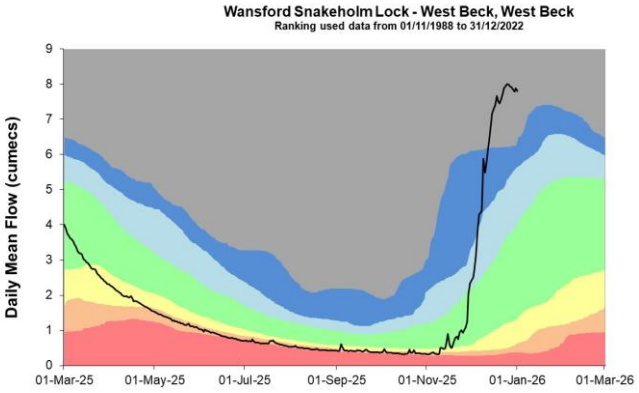
Skelton, River Ouse
Ranking used data from 18/09/1969 to 31/12/2022

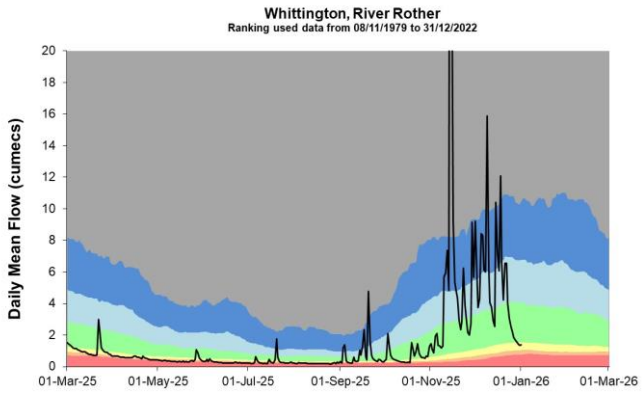


Skip Bridge Kirk Hammerton, River Nidd
Ranking used data from 12/06/1979 to 31/12/2022







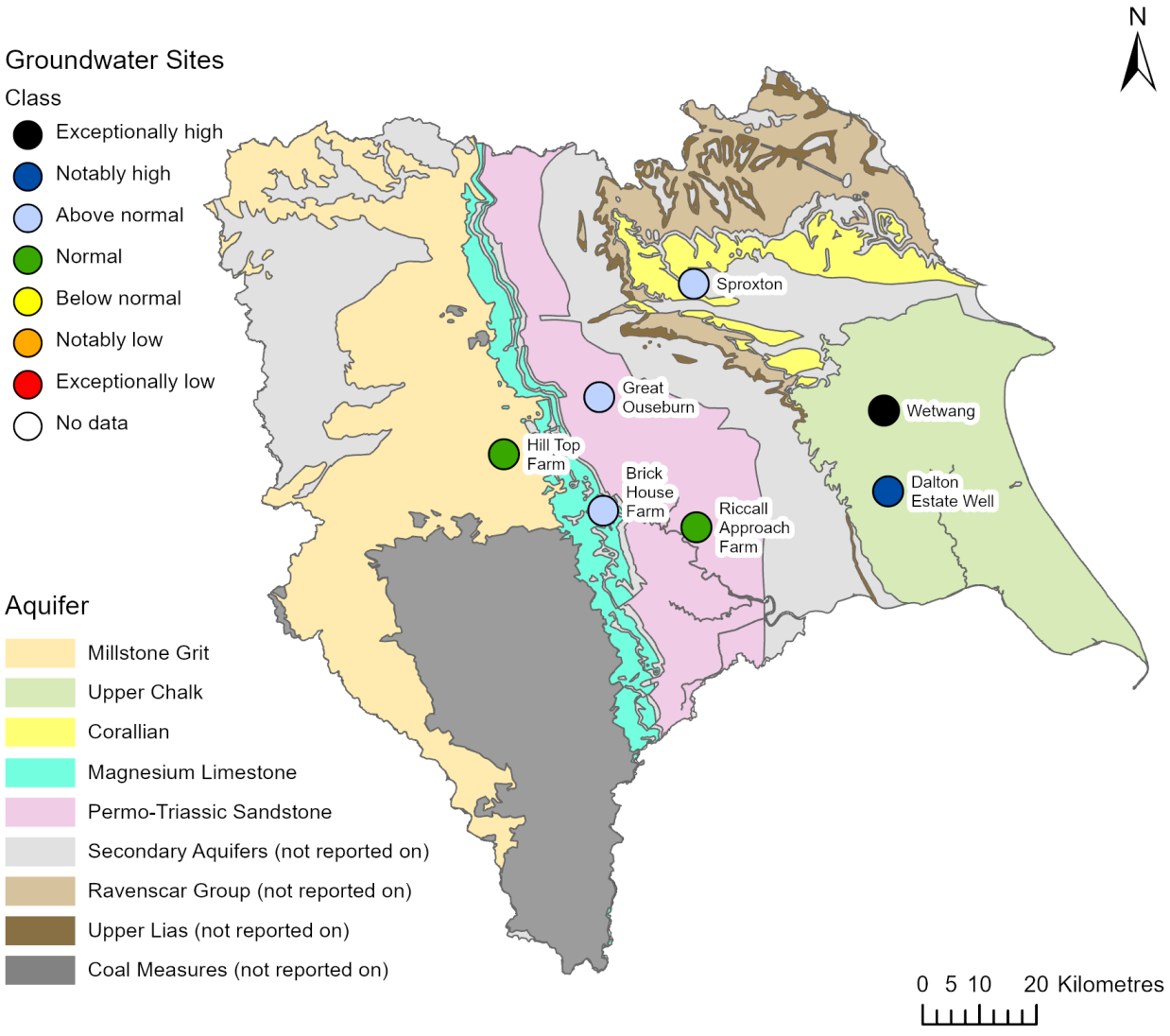


(Source: Environment Agency).

5 Groundwater levels

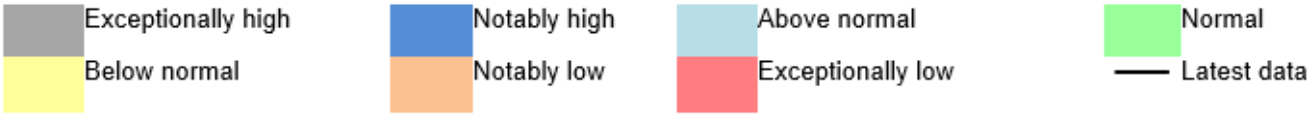
5.1 Groundwater levels map

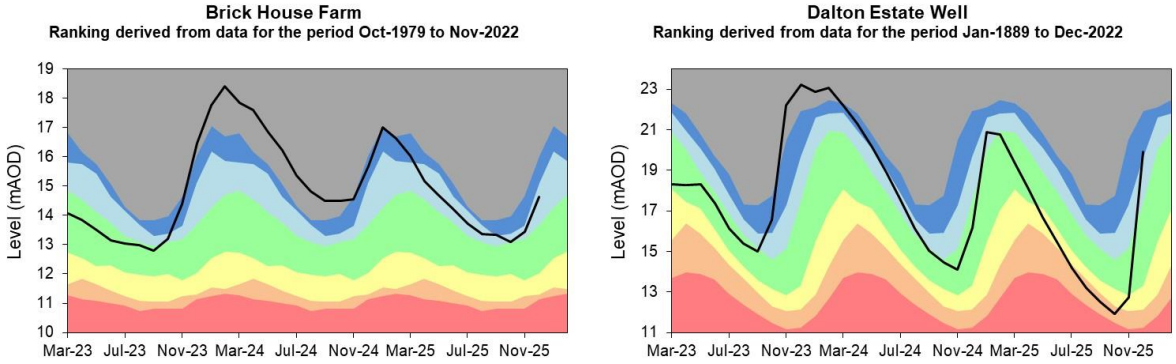
5.1: Groundwater levels for indicator sites at the end of December 2025, classed relative to an analysis of respective historic December levels. Table available in the appendices with detailed information.

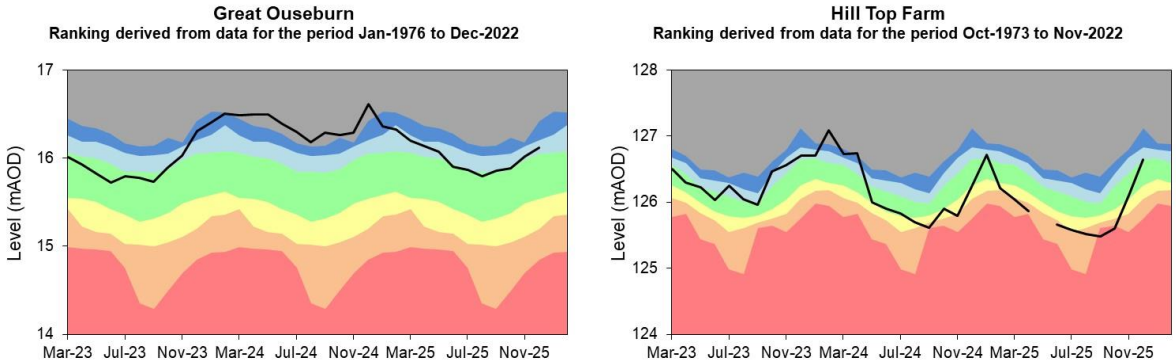


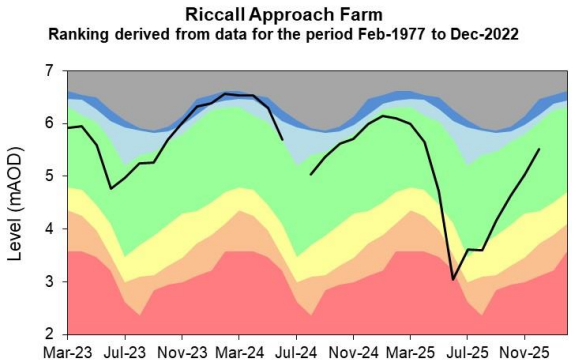
5.2 Groundwater level charts

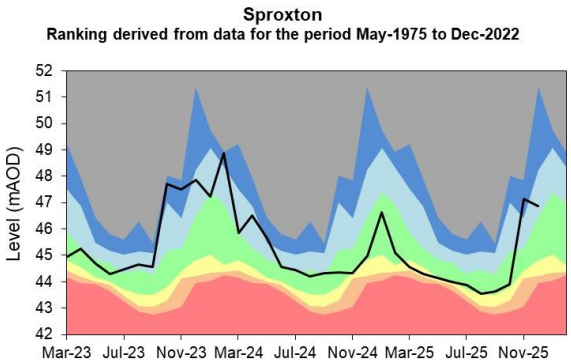
5.2: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

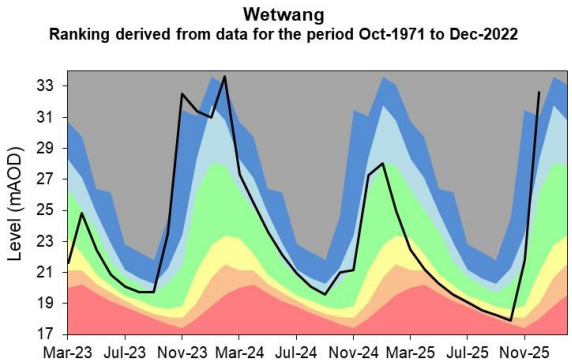










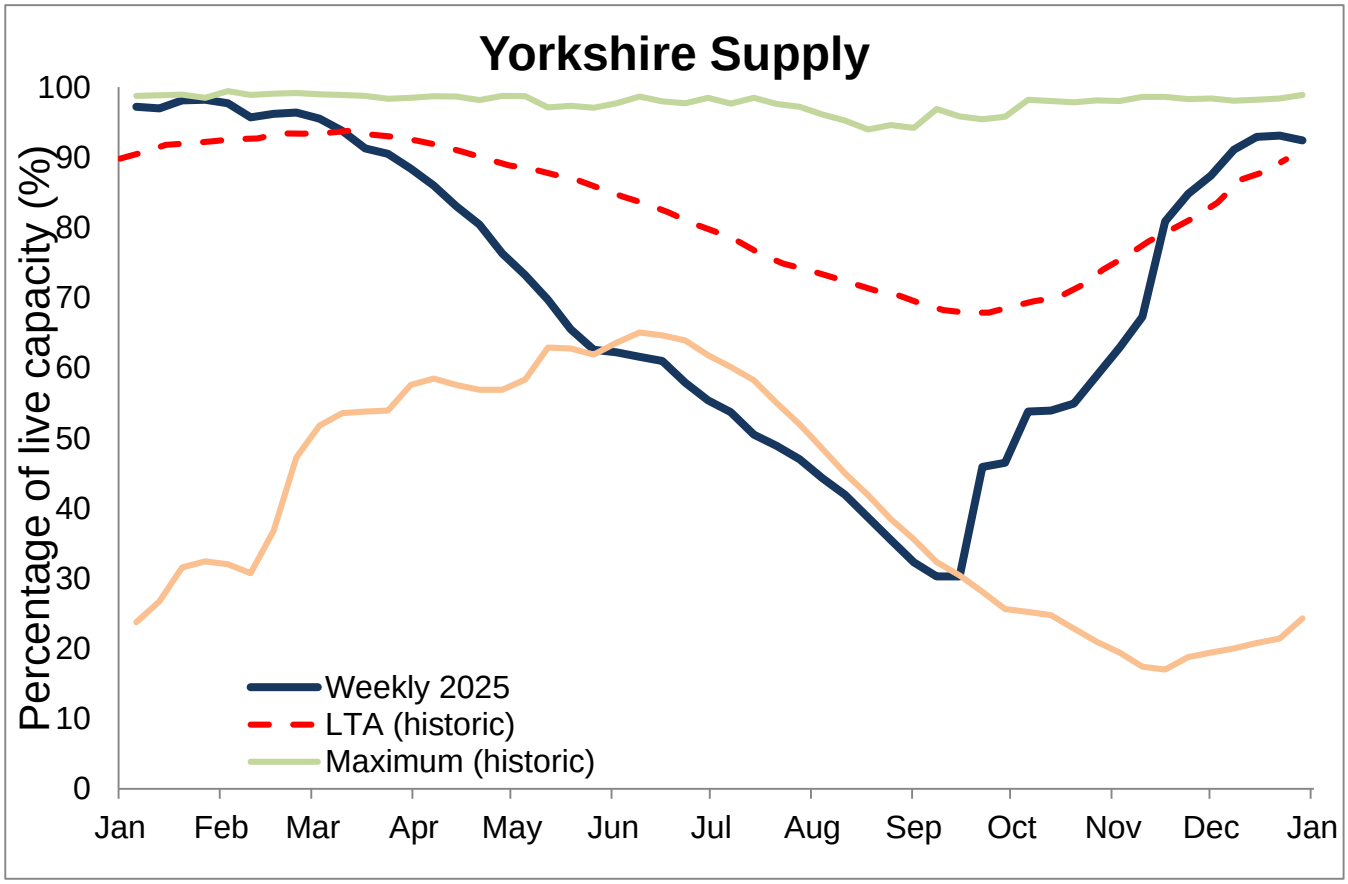


(Source: Environment Agency, 2026).

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

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	Dec 2025 rainfall % of long term average 1991 to 2020	Dec 2025 band	Oct 2025 to December cumulative band	Jul 2025 to December cumulative band	Jan 2025 to December cumulative band
Aire	105	Normal	Notably high	Above normal	Normal
Calder	107	Above Normal	Notably high	Above normal	Normal
Dales North Sea Tributaries	110	Normal	Exceptionally high	Above normal	Normal
Derwent (ne)	132	Above Normal	Exceptionally high	Above normal	Normal
Don	134	Above Normal	Exceptionally high	Notably high	Normal
Hull And Humber	131	Above Normal	Exceptionally high	Notably high	Normal
Nidd	109	Normal	Above normal	Above normal	Normal
Ouse	144	Above Normal	Notably high	Above normal	Normal
Rye	118	Above Normal	Above normal	Above normal	Below normal
Swale (ne)	100	Normal	Above normal	Above normal	Below normal

Hydrological area	Dec 2025 rainfall % of long term average 1991 to 2020	Dec 2025 band	Oct 2025 to December cumulative band	Jul 2025 to December cumulative band	Jan 2025 to December cumulative band
Ure	102	Normal	Above normal	Above normal	Normal
Wharfe	109	Above Normal	Notably high	Above normal	Normal

8.2 River flows table

Site name	River	Catchment	Dec 2025 band	Nov 2025 band
Addingham	Wharfe	Wharfe Middle	Normal	Above normal
Birstwith	Nidd	Nidd Middle	Notably high	Notably high
Briggswath	Esk	Esk Yorks	Notably high	Exceptionally high
Buttercrambe	Derwent	Derwent Yorks Middle	Exceptionally high	Notably high
Crakehill Topcliffe	Swale	Swale Lower	Above normal	Notably high
Doncaster	Don	Don Lower	Notably high	Notably high
Elland	Calder	Calder Yorks Upper	Normal	Normal
Kildwick	Aire	Aire Upper	Above normal	Normal
Kilgram Bridge	Ure	Ure Middle	Above normal	Above normal
Ness	Rye	Rye	Exceptionally high	Notably high
Skelton	Ouse	Ouse Yorks	Above normal	Above normal
Tadcaster	Wharfe	Wharfe Lower	Above normal	Normal
Wansford Snakeholm Lock	West Beck	Hull Upper	Exceptionally high	Normal

Site name	River	Catchment	Dec 2025 band	Nov 2025 band
Whittington	Rother	Rother Yorks	Notably high	Notably high

8.3 Groundwater table

Site name	Aquifer	End of Dec 2025 band	End of Nov 2025 band
Dalton Estate Well	Hull & East Riding Chalk	Notably high	Below normal
Wetwang	Hull & East Riding Chalk	Exceptionally high	Above normal
Hill Top Farm	Millstone Grit	Normal	Normal
Great Ouseburn	Sherwood Sandstone	Above normal	Above normal
Riccall Approach Farm	Sherwood Sandstone	Normal	Normal
Sproxton	Corallian Limestone	Above normal	Notably high
Brick House Farm	Wharfe Magnesian Limestone	Above normal	Above normal