Monthly water situation report: Yorkshire Area

1 Summary - August 2025

Rainfall in Yorkshire this month was well below average for the time of year. River flows were exceptionally low in most catchments, and many sites recorded new lowest mean monthly flows for August. Soils remained mostly very dry and groundwater levels decreased across all aquifers. Reservoir stocks continued to decline and remained below the historic minimum levels for the time of year.

1.1 Rainfall

There was a significant lack of rainfall across Yorkshire in August, with the area receiving just 29.5% of the long term average (LTA) rainfall. Catchment average rainfall totals ranged from 24% of the LTA in the Ouse to 36% of the LTA in the Ure. August was characterised by a few wet days at the start and end of the month, with 3 weeks of almost dry weather in between in most catchments

On average across Yorkshire, it was the second driest August on record with 1887 being the only other year seeing less rainfall in this month.

In the last 12 months, 8 months had below LTA rainfall and this was the second month less than 30% of the LTA.

Within the Ouse catchment, this was the driest February to August in the Met Office Had-UK rainfall record, starting 1871. For most of the other catchments, it was the second driest February to August.

1.2 Soil moisture deficit

Soils across Yorkshire were very dry in August and soil moisture deficits were very high for most of the month. The deficit was only slightly reduced by rainfall at the start and end of the month in the north-west and south of the area.

1.3 River flows

Monthly mean flows for August were low in all catchments when compared to their respective LTAs. They ranged from 16% of the LTA at Kildwick on the River Aire to 53% at Doncaster on the River Don.

Some sites experienced record low August mean flows including, Crakehill Topcliffe on the River Swale, Briggswath on the River Esk, Ness on the River Rye, Buttercrambe on the River Derwent and Whittington on the River Rother.

After starting the month below normal or notably low for the time of year, flows in the Pennine catchments responded to rainfall near the start of the month and peaked around days 4, 5 and 6. Following this, flows in these rivers receded and remained low for the rest of the month. The Swale and Calder both became exceptionally low.

The River Ouse followed the same pattern. It peaked rapidly on day 5 and then gradually declined and became exceptionally low by the month's end.

The River Esk, River Rye and River Derwent were exceptionally low for much of the month, and their flows did not fluctuate significantly.

Flows in the Don and Rother catchments fluctuated between being notably low and exceptionally low before increasing slightly in the final week of the month after small amounts of rain from day 27 onwards.

The chalk-fed West Beck was notably low for the whole of August.

1.4 Groundwater levels

Magnesian Limestone

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

Millstone Grit

The groundwater level within the Millstone Grit decreased at Hill Top Farm and was notably 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 decreased at Great Ouseburn and was normal for the time of year. The groundwater level decreased slightly at Riccall Approach Farm and was below normal for the time of year.

Corallian Limestone

The groundwater level within the Corallian Limestone decreased 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 continued to decline at an average rate of around 3% per week. At the end of August, stocks were at 32.3%. This is the lowest reservoir stocks have been on record for the time of year, 3.3% lower than in 1995.

1.6 Environmental impact

At the end of August, there were 130 abstraction licences with a Hands Off Flow condition in force, and another 17 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.

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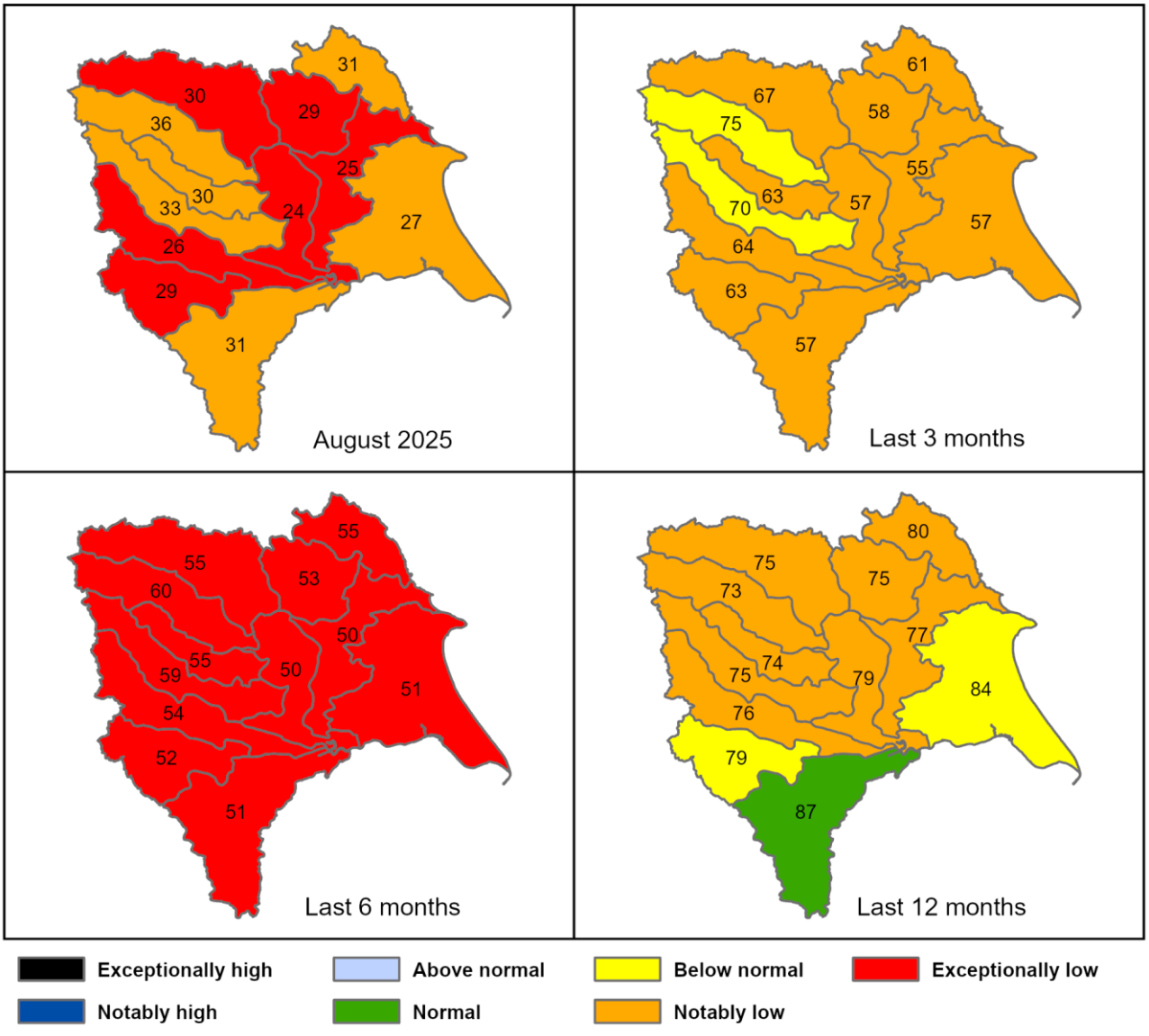
2 Rainfall

2.1 Rainfall map

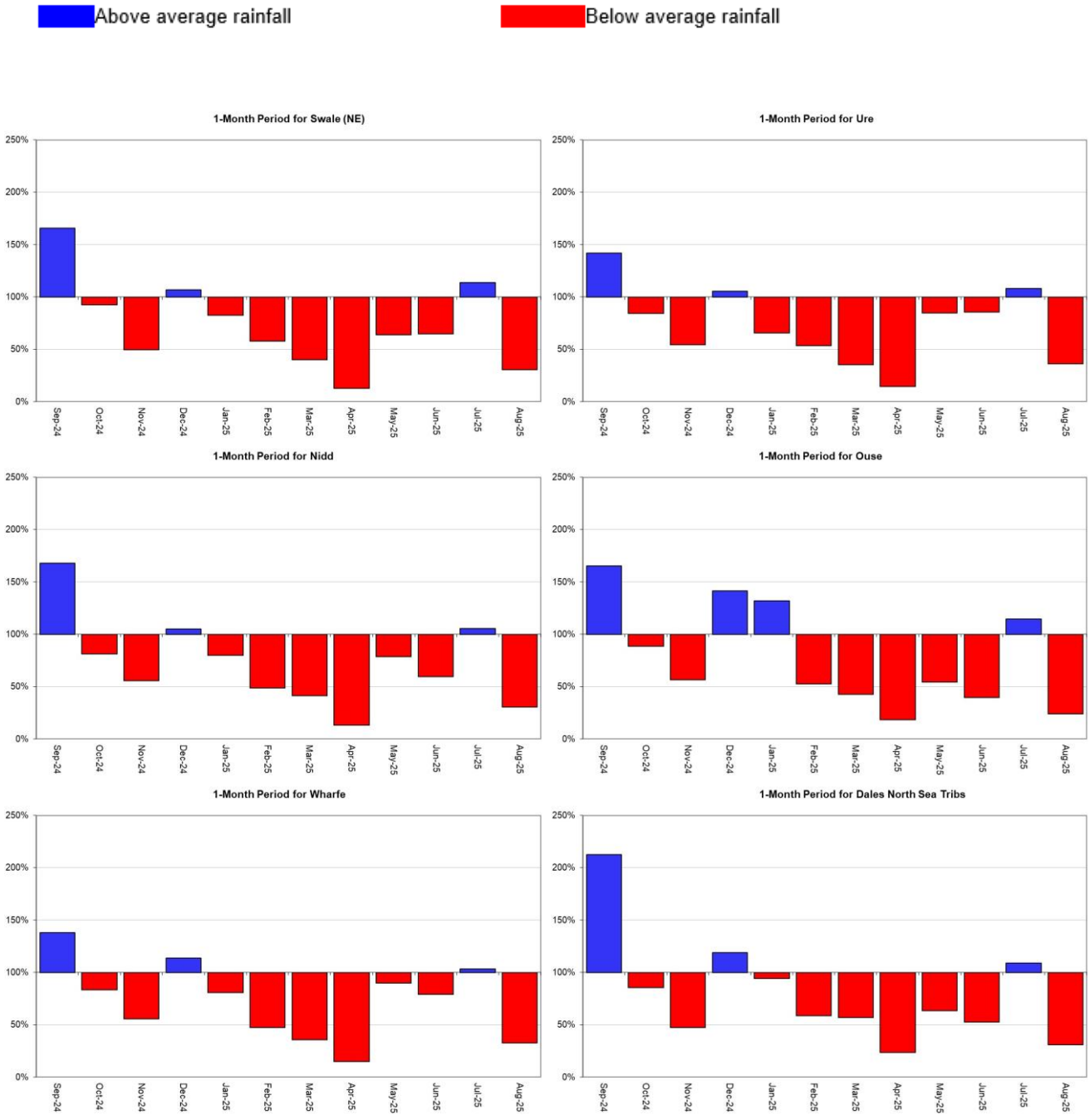
2.1: Total rainfall for hydrological areas across Yorkshire, expressed as a percentage of the 1990 to 2020 long term average rainfall, for the current month (up to 31 August 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals.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

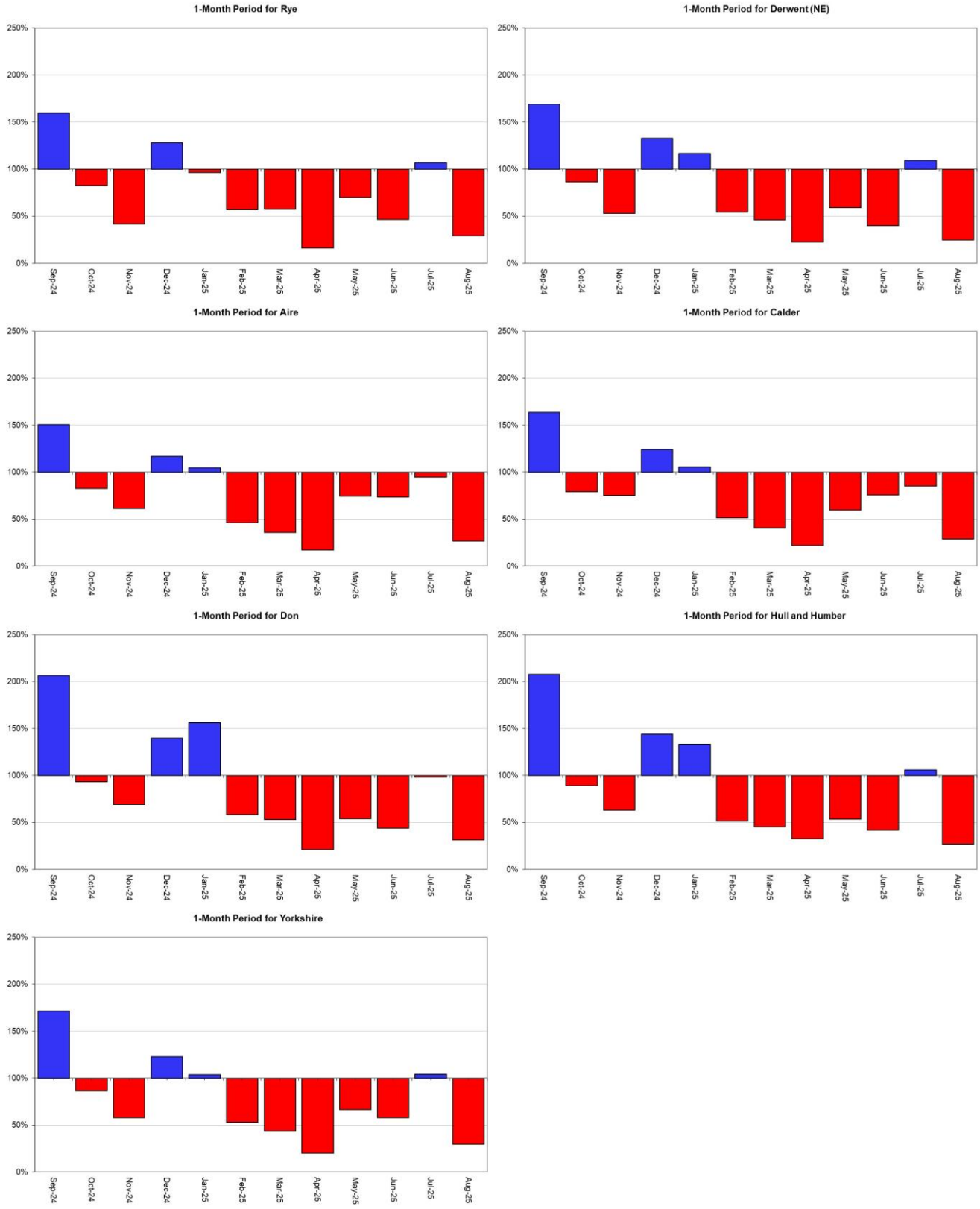


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved.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



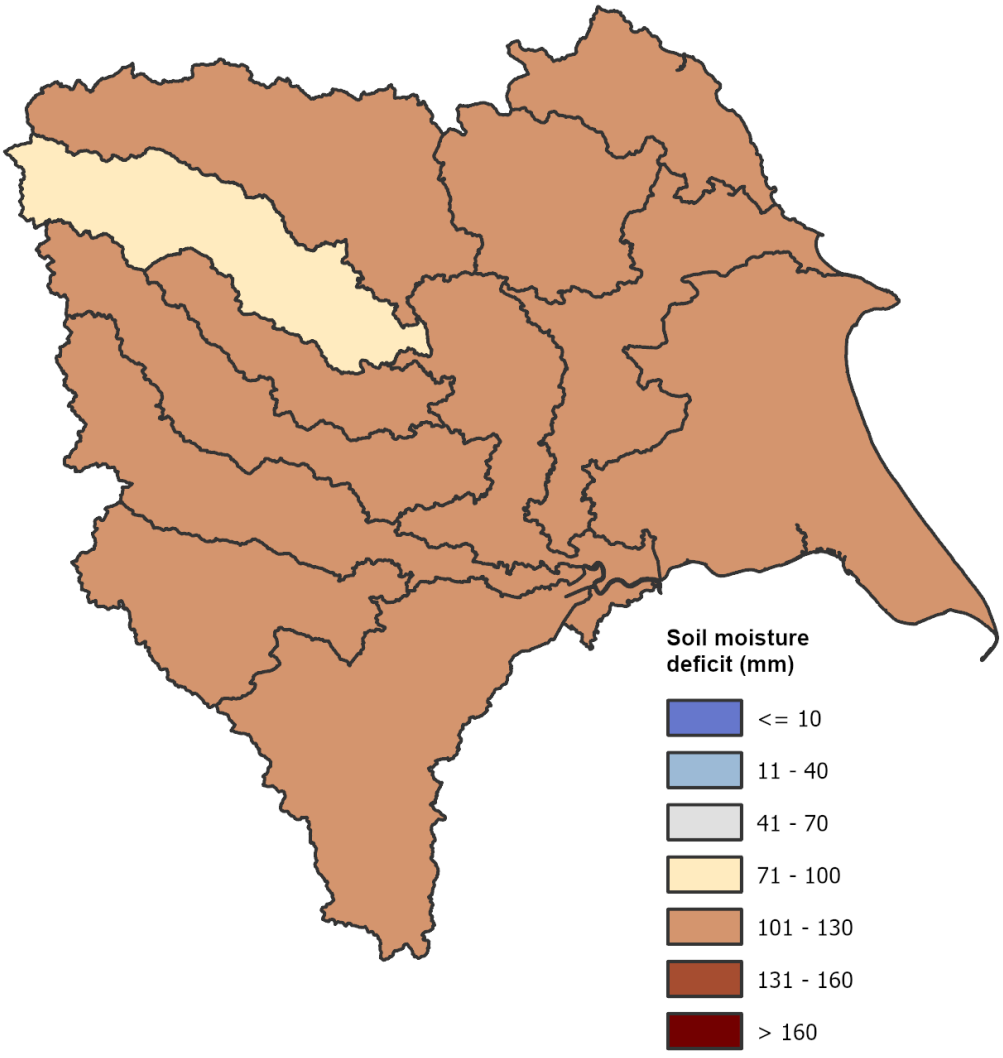


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

3 Soil moisture deficit

3.1 Soil moisture deficit map

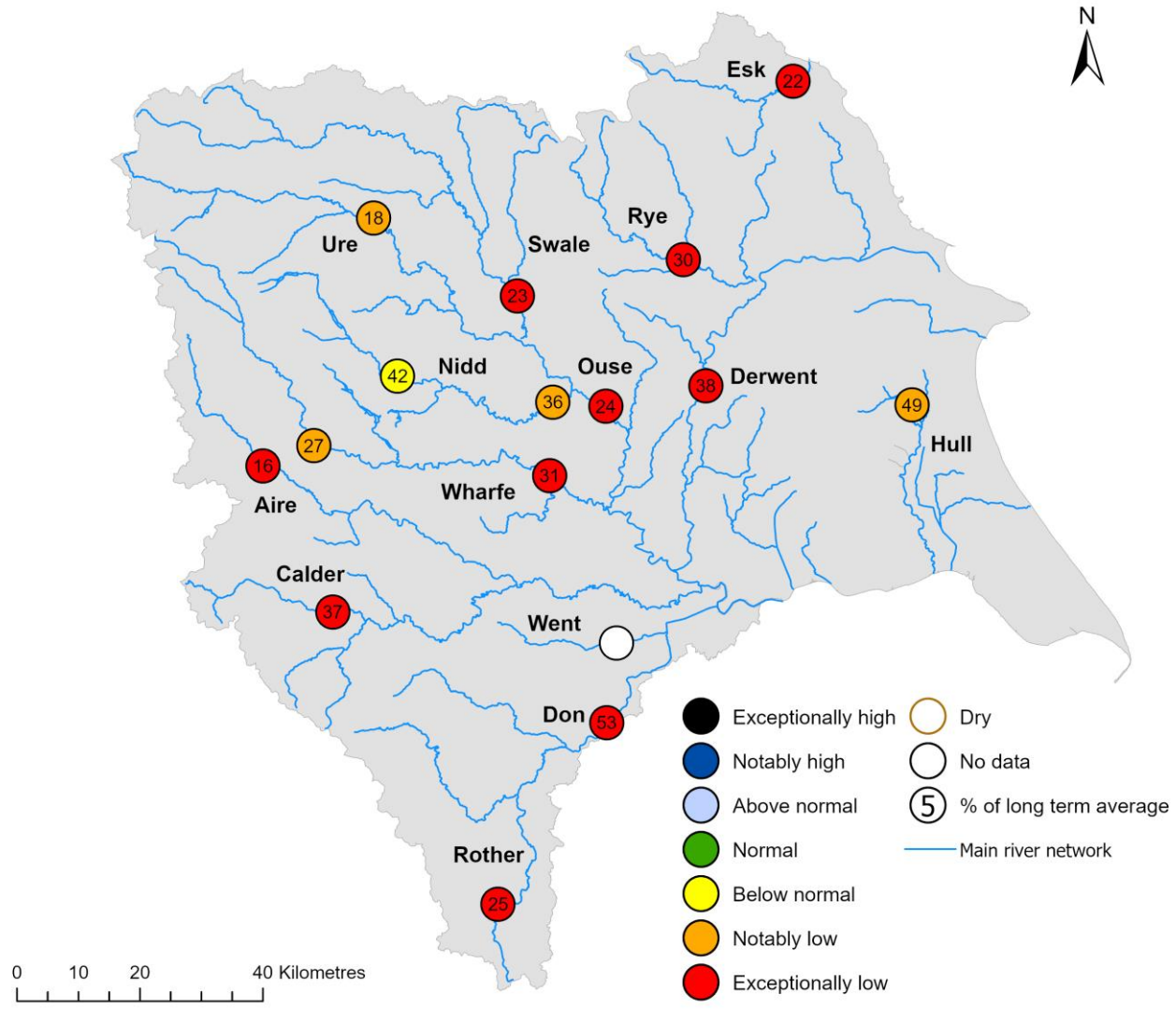
3.1: Soil moisture deficits for weeks ending 31 August 2025. Shows the actual soil moisture deficits (mm) within each hydrological area. Calculated from MORECS data for real land use.



4 River flows

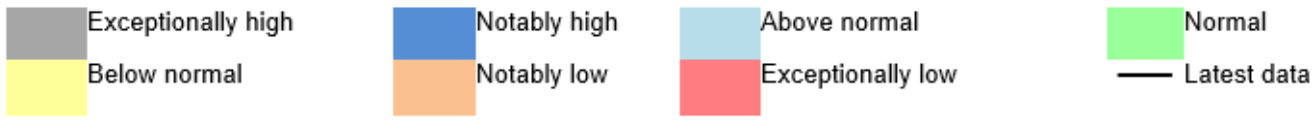
4.1 River flows map

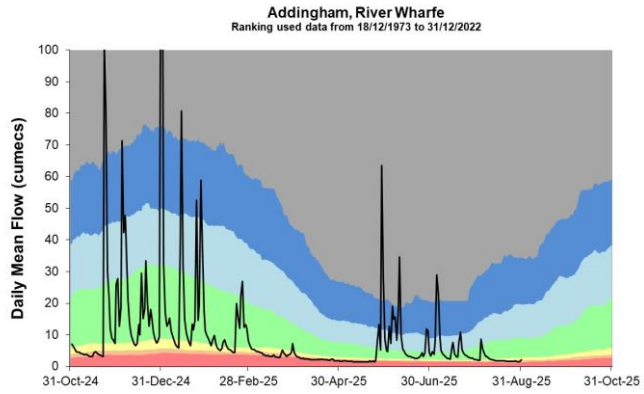
4.1: Monthly mean river flow for indicator sites for August 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic August monthly means. Table available in the appendices with detailed information.

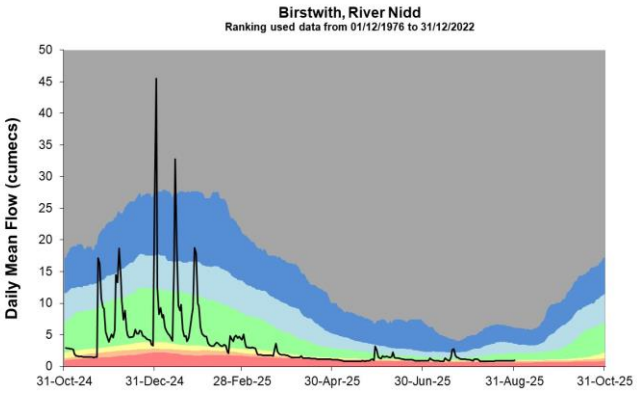


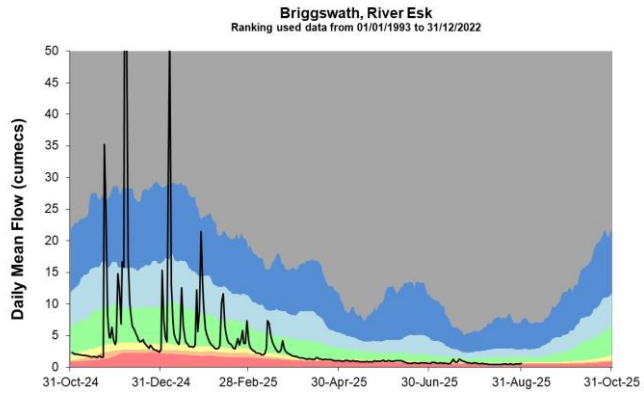
4.2 River flow charts

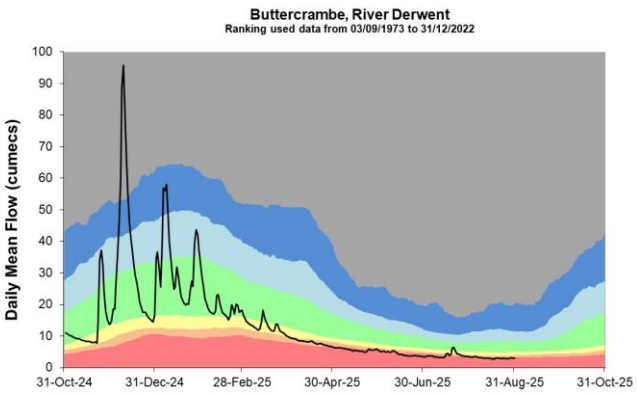
4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.

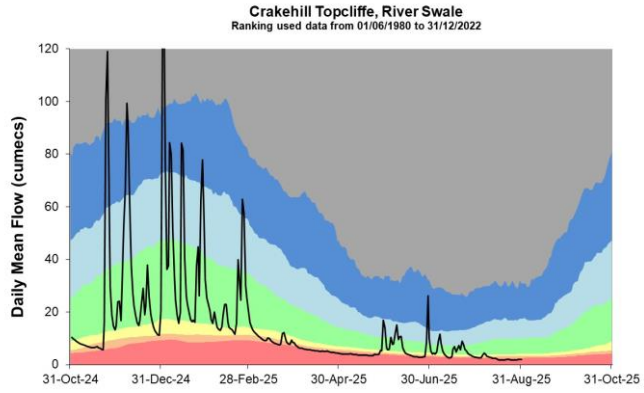


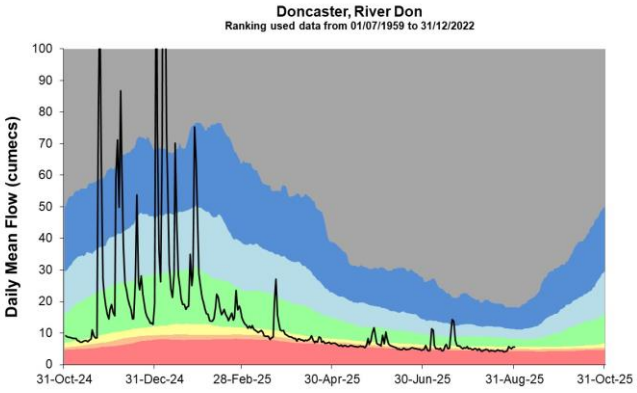


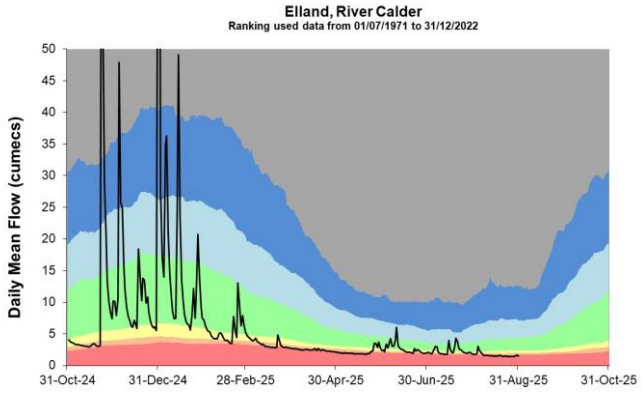


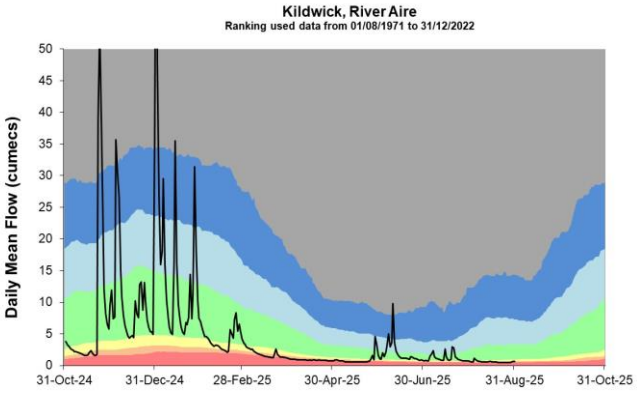


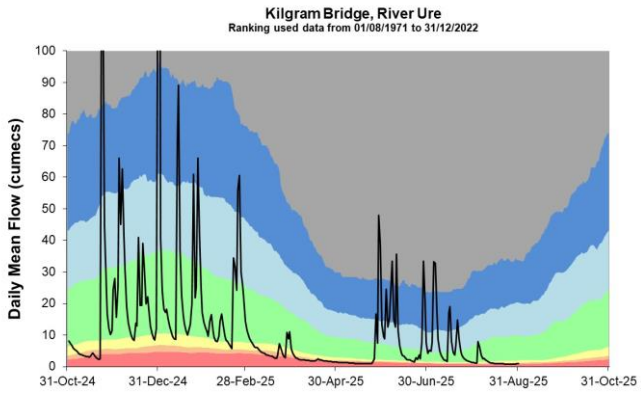


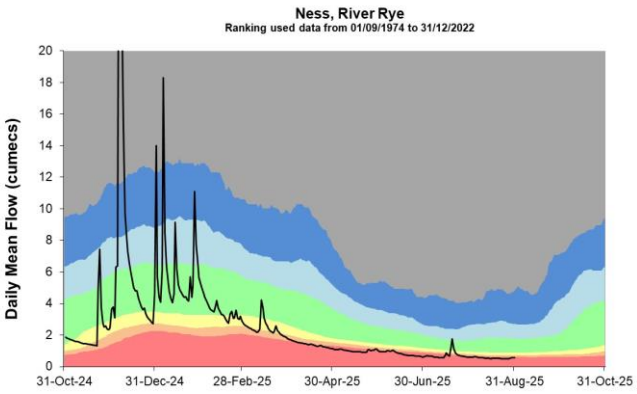


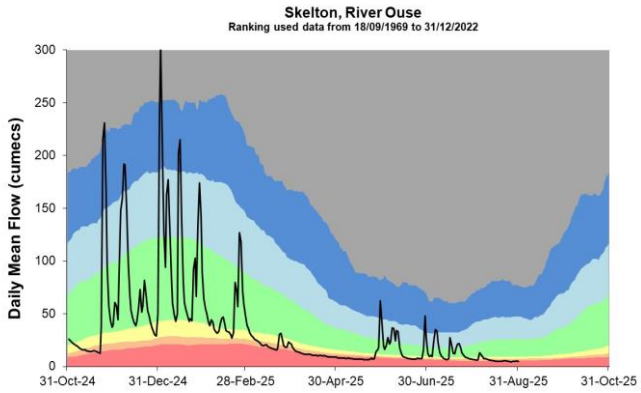


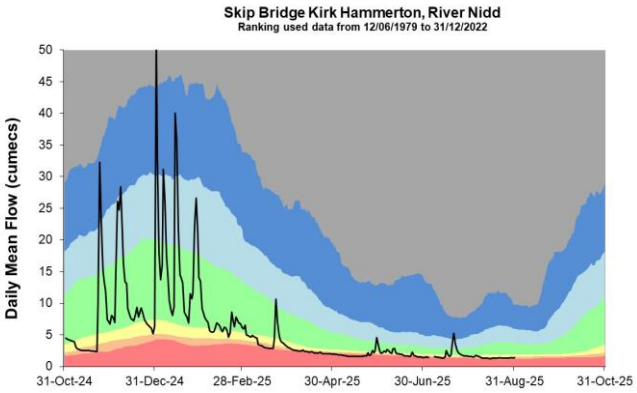

Elland, River Calder
Ranking used data from 01/07/1971 to 31/12/2022
Daily Mean Flow (cumecs)
0
5
10
15
20
25
30
35
40
45
50
31-Oct-24
31-Dec-24
28-Feb-25
30-Apr-25
30-Jun-25
31-Aug-25
31-Oct-25

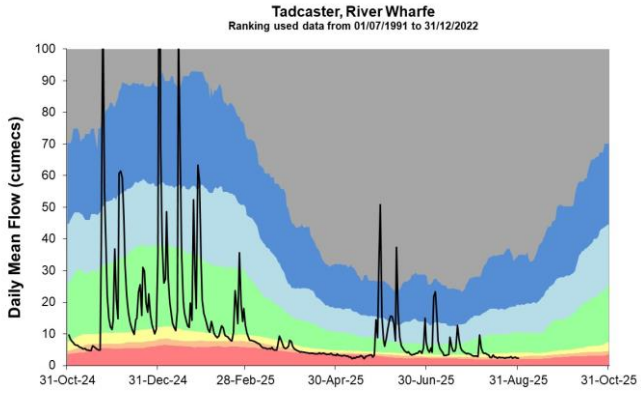

Kildwick, River Aire
Ranking used data from 01/08/1971 to 31/12/2022
Daily Mean Flow (cumecs)
0
5
10
15
20
25
30
35
40
45
50
31-Oct-24
31-Dec-24
28-Feb-25
30-Apr-25
30-Jun-25
31-Aug-25
31-Oct-25

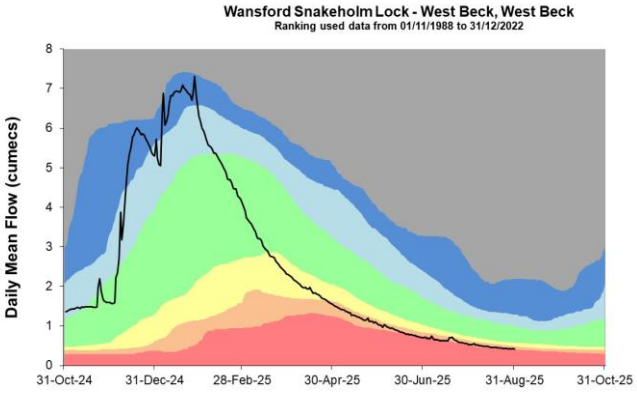

Kilgram Bridge, River Ure
Ranking used data from 01/08/1971 to 31/12/2022
Daily Mean Flow (cumecs)
0
10
20
30
40
50
60
70
80
90
100
31-Oct-24
31-Dec-24
28-Feb-25
30-Apr-25
30-Jun-25
31-Aug-25
31-Oct-25

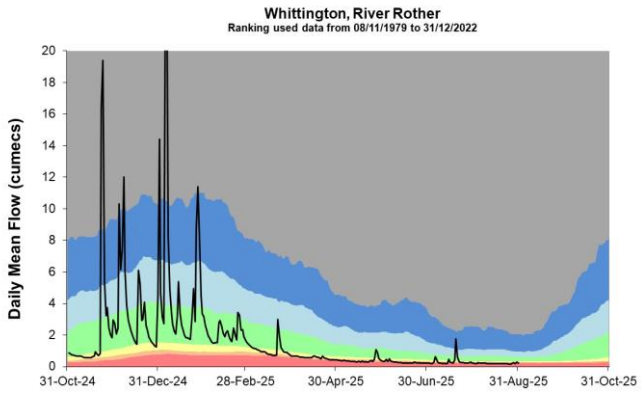

Ness, River Rye
Ranking used data from 01/09/1974 to 31/12/2022
Daily Mean Flow (cumecs)
0
2
4
6
8
10
12
14
16
18
20
31-Oct-24
31-Dec-24
28-Feb-25
30-Apr-25
30-Jun-25
31-Aug-25
31-Oct-25


Skelton, River Ouse
Ranking used data from 18/09/1969 to 31/12/2022
Daily Mean Flow (cumecs)
0
50
100
150
200
250
300
31-Oct-24
31-Dec-24
28-Feb-25
30-Apr-25
30-Jun-25
31-Aug-25
31-Oct-25


Skip Bridge Kirk Hammerton, River Nidd
Ranking used data from 12/06/1979 to 31/12/2022
Daily Mean Flow (cumecs)
0
5
10
15
20
25
30
35
40
45
50
31-Oct-24
31-Dec-24
28-Feb-25
30-Apr-25
30-Jun-25
31-Aug-25
31-Oct-25





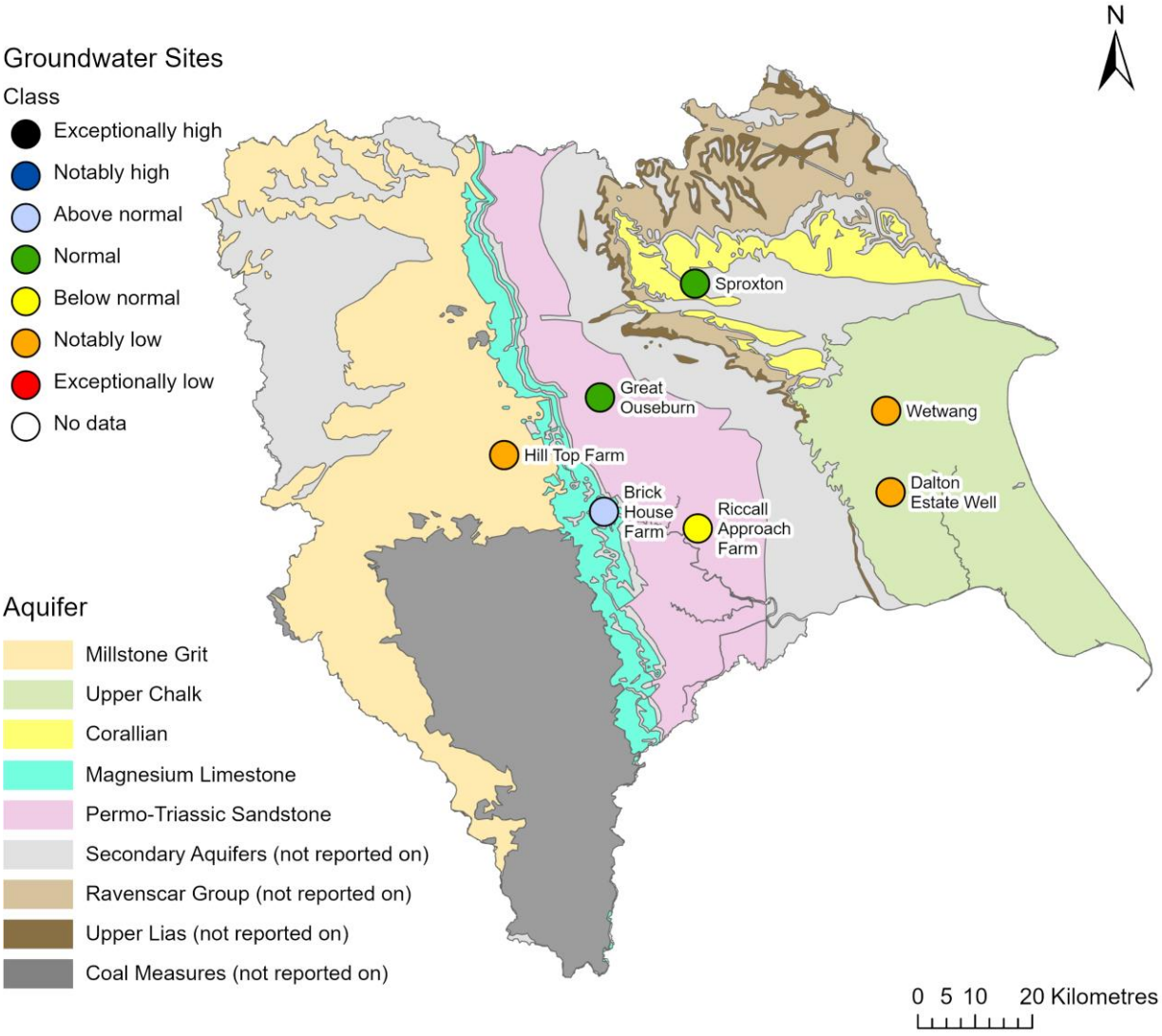


Source: Environment Agency.

5 Groundwater levels

5.1 Groundwater levels map

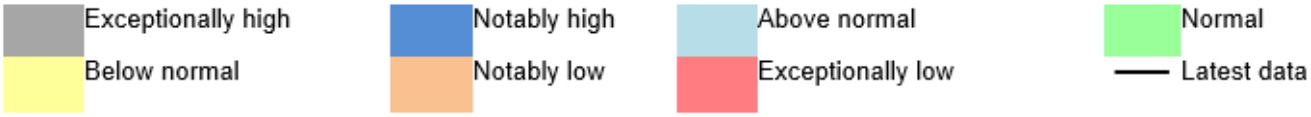
5.1: Groundwater levels for indicator sites at the end of August 2025, classed relative to an analysis of respective historic August levels. Table available in the appendices with detailed information.

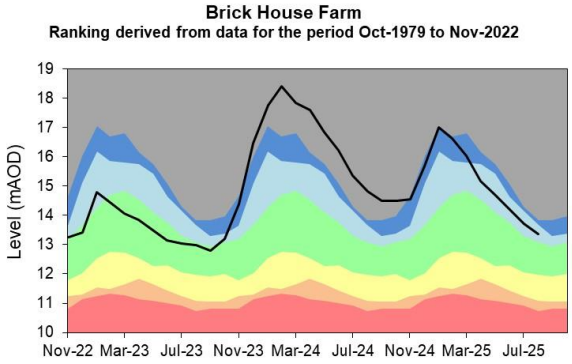


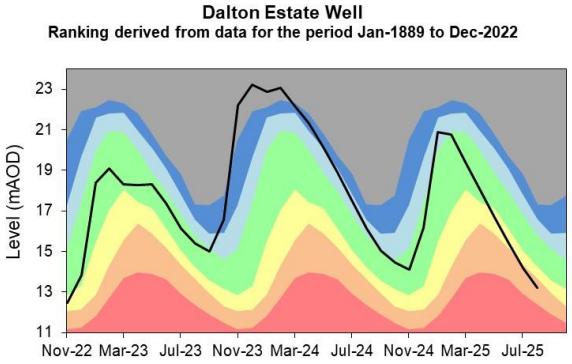
(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

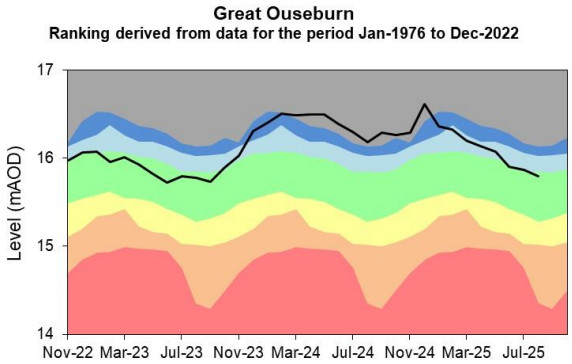
5.2 Groundwater level charts

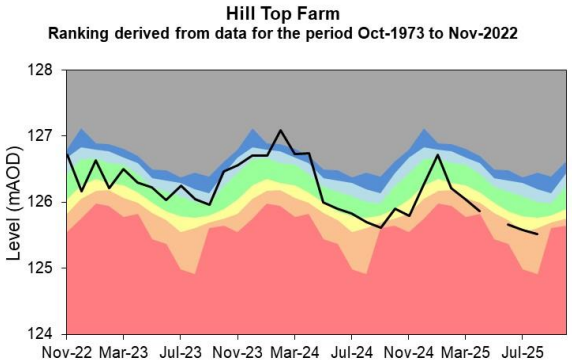
5.2: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

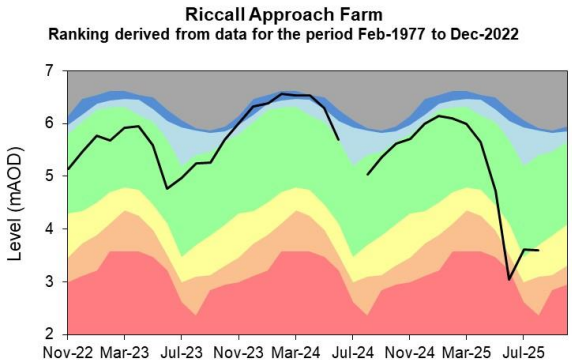


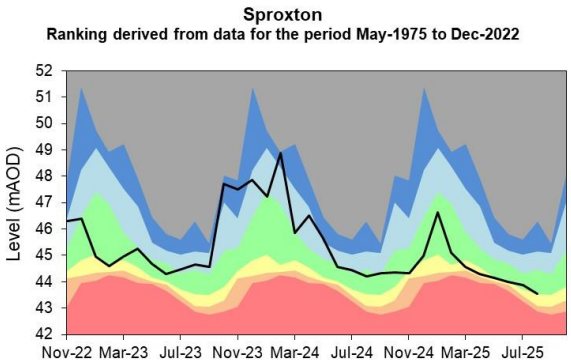


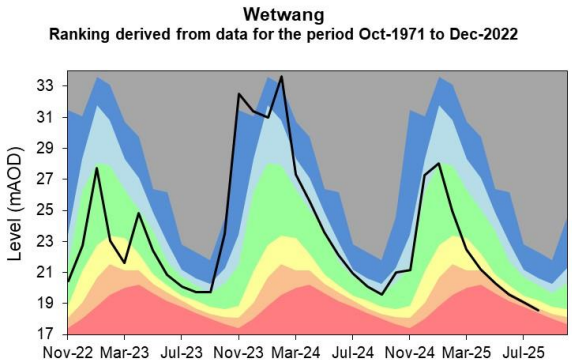










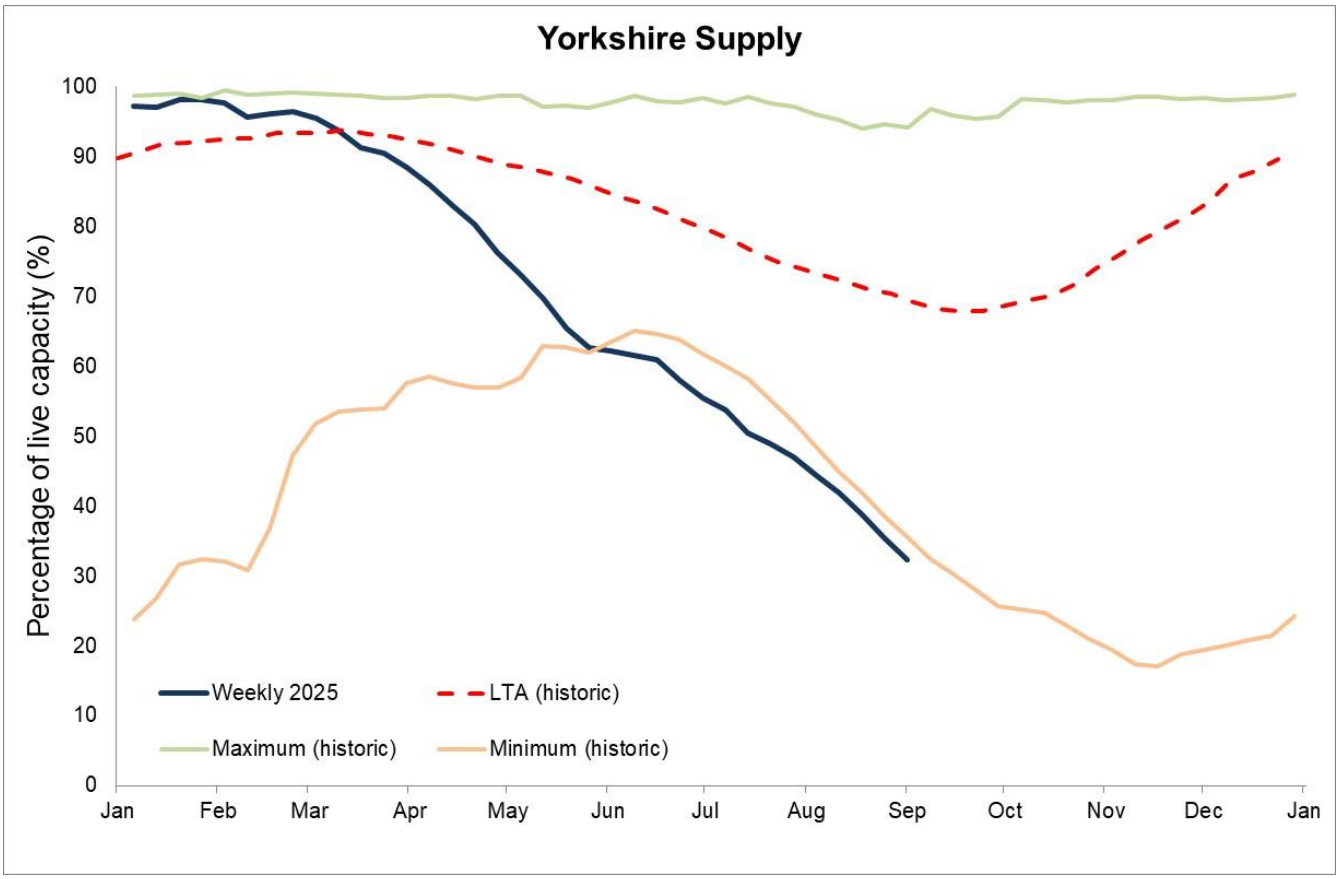


Source: Environment Agency, 2025.

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	Aug 2025 rainfall % of long term average 1991 to 2020	Aug 2025 band	Jun 2025 to August cumulative band	Mar 2025 to August cumulative band	Sep 2024 to August cumulative band
Aire	26	Exceptionally low	Notably low	Exceptionally low	Notably low
Calder	29	Exceptionally low	Notably low	Exceptionally low	Below normal
Dales North Sea Tributaries	31	Notably low	Notably low	Exceptionally low	Notably low
Derwent (NE)	25	Exceptionally low	Notably low	Exceptionally low	Notably low
Don	31	Notably low	Notably low	Exceptionally low	Normal
Hull and Humber	27	Notably low	Notably low	Exceptionally low	Below normal
Nidd	30	Notably low	Notably low	Exceptionally low	Notably low
Ouse	24	Exceptionally low	Notably low	Exceptionally low	Notably low
Rye	29	Exceptionally low	Notably low	Exceptionally low	Notably low

Hydrological area	Aug 2025 rainfall % of long term average 1991 to 2020	Aug 2025 band	Jun 2025 to August cumulative band	Mar 2025 to August cumulative band	Sep 2024 to August cumulative band
Swale (NE)	30	Exceptionally low	Notably low	Exceptionally low	Notably low
Ure	36	Notably low	Below normal	Exceptionally low	Notably low
Wharfe	33	Notably low	Below normal	Exceptionally low	Notably low

8.2 River flows table

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

Site name	River	Catchment	Aug 2025 band	Jul 2025 band
Skelton	Ouse	Ouse Yorks	Exceptionally low	Normal
Tadcaster	Wharfe	Wharfe Lower	Exceptionally low	Normal
Wansford Snakeholm Lock	West Beck	Hull Upper	Notably low	Exceptionally low
Whittington	Rother	Rother Yorks	Exceptionally low	Notably low

8.3 Groundwater table

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