

# Monthly water situation report: North East Area

## 1 Summary - September 2026

September rainfall totals were below average across the area. Monthly mean river flows increased at half of the indicator sites and decreased at the other half. Soil moisture deficits (SMDs) remained within the same ranges as last month, but are now much drier than average in 2 catchments. Most reservoirs recorded a decrease in stocks and remained below average for the time of year. Groundwater levels showed a variable response, decreasing at 3 out of the 5 indicator sites and increasing at 2.

### 1.1 Rainfall

Rainfall remained below average for the time of year this month. September totals were more spatially varied than in August, ranging from 35% of the LTA in the Seaham catchment to 68% in the Tyne catchment. September totals were normal in the Tyne catchment and below normal in the Tweed, Wear, and Tees catchments. Totals were notably low in the Northumbria North Sea Tribs and Seaham catchments. Changeable weather at the end of August continued through much of September, with rainfall recorded on most days. However, daily totals were generally modest. The highest daily totals were typically recorded on 2, 14, and 17 September.

Cumulative 3-month totals were notably low in the Tweed catchment and exceptionally low in all other catchments. Cumulative 6-month totals were exceptionally low across all catchments, whilst cumulative 12-month totals were normal across all catchments. Rainfall has remained below average for 7 consecutive months in the Tweed and Northumbria North Sea Tribs catchments, 6 consecutive months in the Tyne catchment, and 4 consecutive months in the remaining catchments. Additionally, it has been the driest 4 months ending in September since at least 1871 in the Wear and Seaham catchments.

### 1.2 Soil moisture deficit

SMDs remained within the same ranges as last month across all catchments, with little sign of autumn recovery. Deficits were highest in the Seaham catchment, in the 101 to 130mm range, and lowest in the Tyne catchment, in the 41 to 70mm range. Across all other catchments, deficits fell in the 71 to 100mm range. Soils remained drier than average for the time of year. SMDs increased to 51 to 75mm above the LTA in the Tweed and Northumbria North Sea Tribs catchments. SMDs were 26 to 50mm above the LTA in all other catchments.

### 1.3 River flows

Monthly mean river flows increased at half of the 8 indicator sites, whilst the other half recorded decreases. Monthly mean flows fell in the below normal, notably low, or exceptionally

low ranges. Flows varied from just 11% of the LTA at Mitford on the River Wansbeck to 62% of the LTA at Middleton-in-Teesdale on the River Tees. Flows at Middleton-in-Teesdale are impacted by upstream releases from Cow Green reservoir.

At most indicator sites, daily mean flows were lower at the end of September than at the beginning, despite a slight increase in the final days. The largest peaks in daily mean flows generally occurred around 4, 16, and 19 September. By the end of the month, daily mean flows were normal at only one indicator site, which was Middleton-in-Teesdale.

The banding at Heaton Mill has been revised since last month to use rated rather than ultrasonic flow data. As a result, the daily and monthly mean flows presented in this report differ to those in previous reports. Revised mean monthly flows at Heaton Mill have been notably low since June 2026.

## **1.4 Groundwater levels**

In the Fell Sandstone, levels decreased at Royalty Observation, but remained in the normal range, and increased at Townlaw, but remained in the below normal range. In the Magnesian Limestone, groundwater levels decreased at Aycliffe Nra2 and Red Lion, and increased at West Hall Farm. Levels remained normal at Aycliffe Nra2 and above normal at West Hall Farm, for the time of year. Levels at Red Lion changed from the above normal range to normal range.

## **1.5 Reservoir stocks**

Most reservoirs recorded a decline in stocks and remained below average for the time of year. Kielder was the only reservoir to record an increase, with stocks rising slightly from 76.8% to 77.2%. Overall, stocks appear to have stabilised compared to last month, with the largest decrease being 6.9 percentage points in the North Tynedale group.

The Kielder transfer system has been in operation since 28 May to support stocks in Waskerley reservoir within the Durham group. Additional support began on 13 July through releases at Frosterley to maintain flows in the River Wear and sustain public water supply abstraction. Substitution of the Derwent reservoir compensation flow began on 22 July. Hury reservoir in the Lune and Balder group has been drawn down since April for planned maintenance.

| Reservoir or reservoir group | Percentage of current stocks | Percentage of previous month stocks |
|------------------------------|------------------------------|-------------------------------------|
| Kielder                      | 77.2                         | 76.8                                |
| North Tynedale group         | 45.3                         | 52.2                                |
| Derwent                      | 52.4                         | 58.5                                |
| Durham group                 | 44.7                         | 46.1                                |
| Lune and Balder group        | 56.8                         | 57.3                                |
| Cow Green                    | 40.4                         | 43.3                                |

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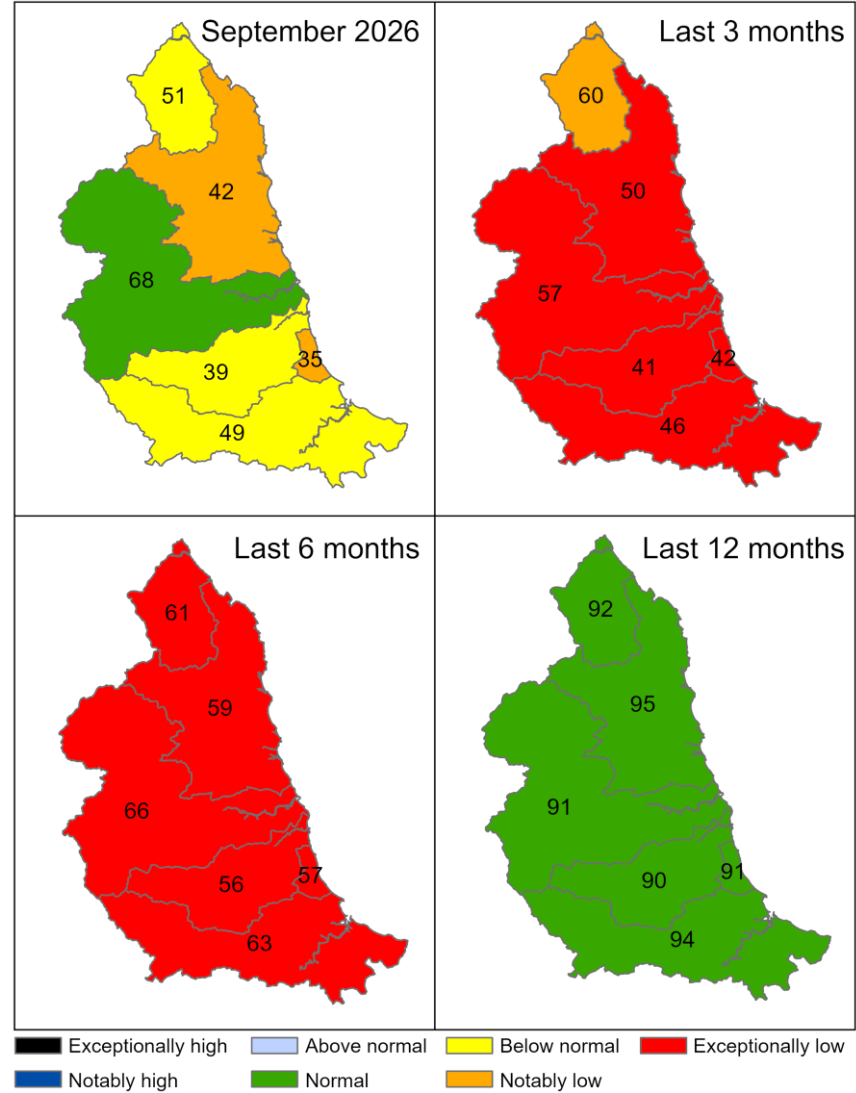
Contact Details: 03708 506 506

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## 2 Rainfall

### 2.1 Rainfall map

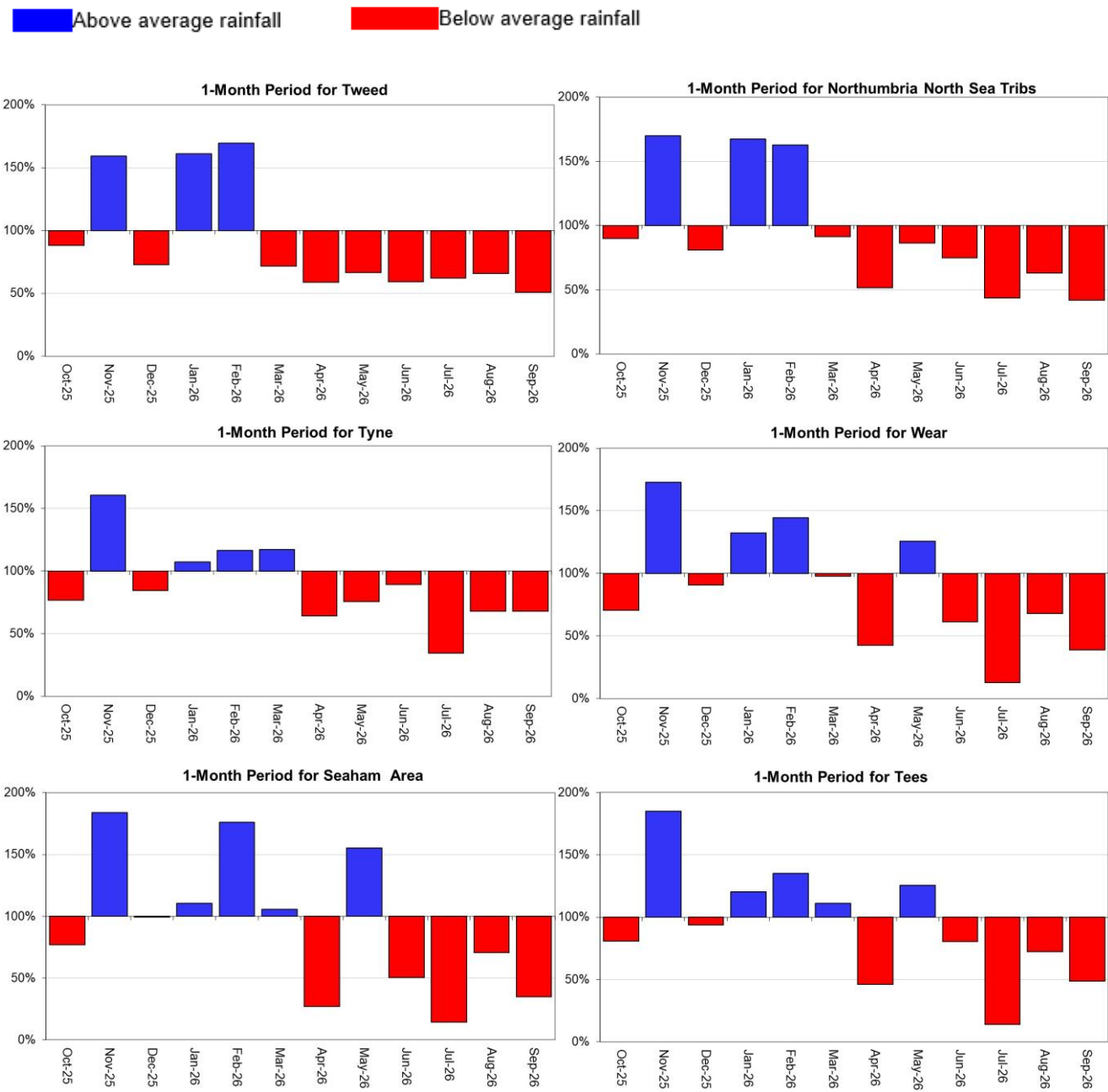
Figure 2.1: Total rainfall for hydrological areas, expressed as a percentage of the 1991 to 2020 LTA. Rainfall is shown for the current month (up to 30 September 2026), the last 3 months, the last 6 months, and the last 12 months. Totals are classed relative to an analysis of respective historic totals. September totals were below normal in the Tweed, Wear, and Tees catchments, and notably low in the Northumbria North Sea Tribs and Seaham catchments. Totals were normal in the Tyne catchment. Cumulative 3-month totals were notably low in the Tweed catchment and exceptionally low in all other catchments. Totals were normal in the Tyne catchment. Cumulative 3-month totals were notably low in the Tweed catchment and exceptionally low in all other catchments. Map of catchments and table with detailed information available in the appendices.



Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, AC0000807064, 2026).

2.2 Rainfall charts

Figure 2.2: Monthly rainfall totals for the past 12 months as a percentage of the 1991 to 2020 LTA for each catchment.

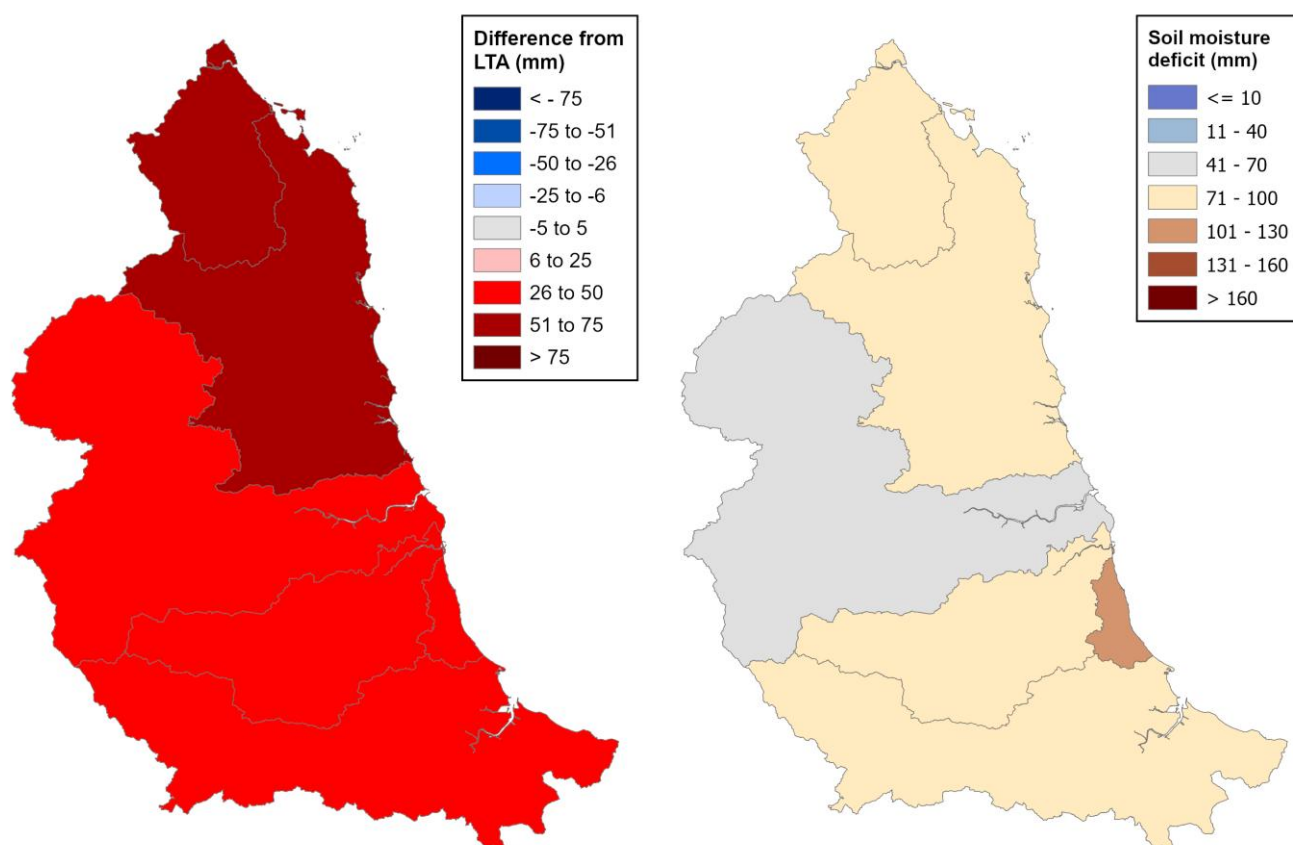


Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 2026).

## 3 Soil moisture deficit

### 3.1 Soil moisture deficit map

Figure 3.1: SMDs for week ending 30 September 2026. Right panel shows actual SMDs (mm) in each catchment. Left panel shows the difference (mm) of the actual from the 1991 to 2020 LTA SMDs in each catchment. SMDs were 51 to 75mm above the LTA in the Tweed and Northumbria North Sea Tribs catchments. SMDs were 26 to 50mm above the LTA in all other catchments. Actual SMDs were highest in the Seaham catchment, falling in the 101 to 130mm range, and lowest in the Tyne catchment, in the 41 to 70mm range. Actual SMDs were 71 to 100mm in all other catchments. Calculated from MORECS data for real land use. Map of catchments available in the appendices.

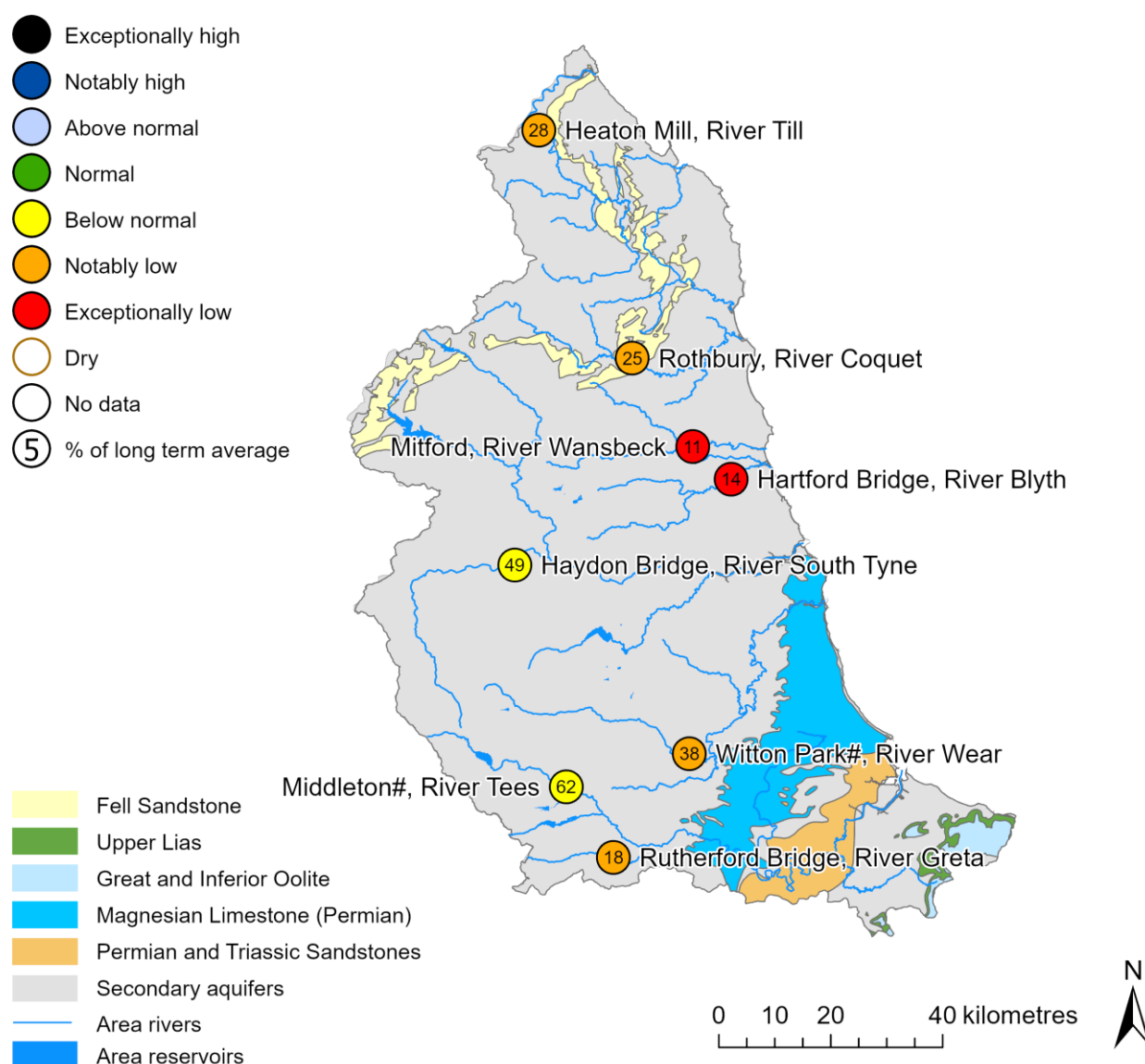


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## 4 River flows

### 4.1 River flows map

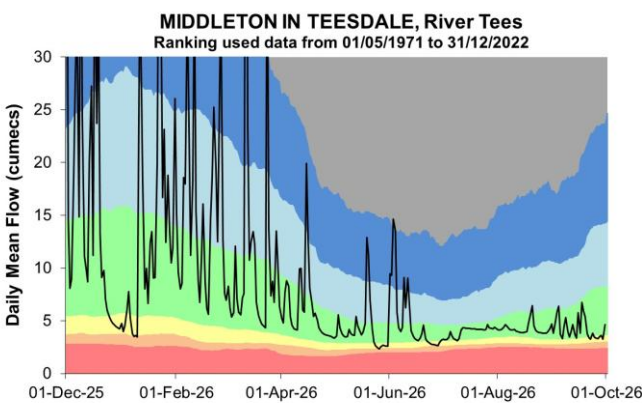
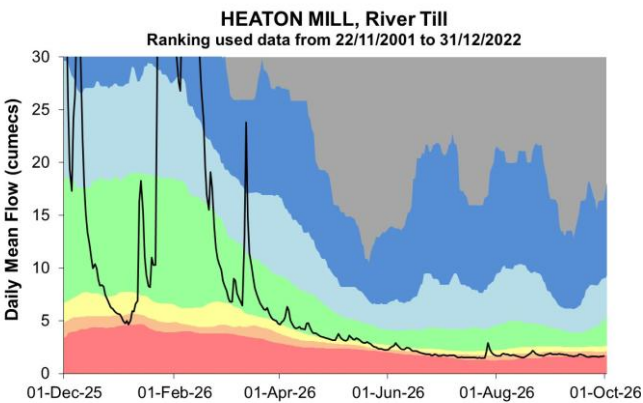
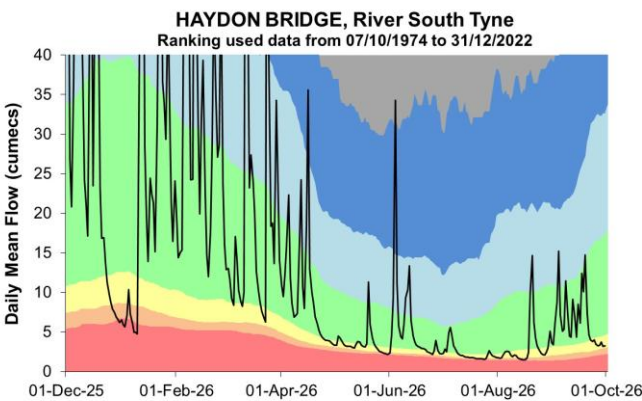
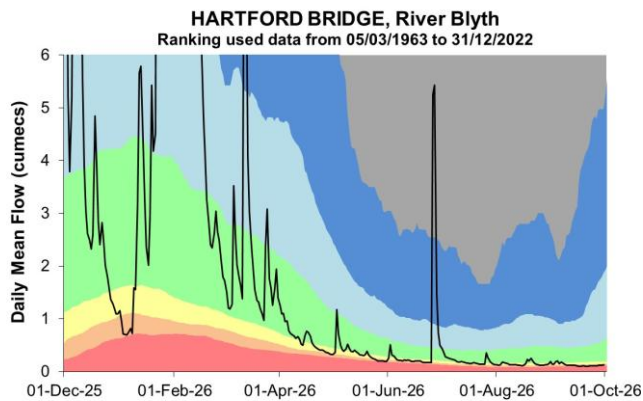
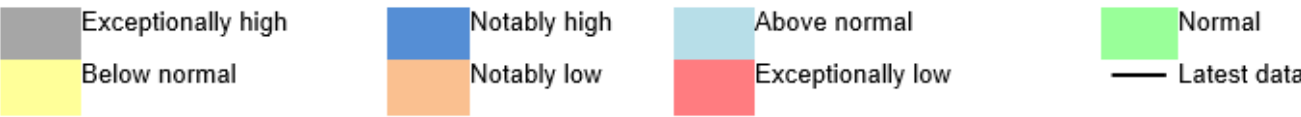
Figure 4.1: Monthly mean river flows for indicator sites for September 2026, expressed as a percentage of the respective LTA. Flows are classed relative to an analysis of historic September monthly means. Monthly mean flows were exceptionally low at Mitford and Hartford Bridge, and notably low at Heaton Mill, Rothbury, Witton Park, and Rutherford Bridge. Monthly mean flows were below normal at Haydon Bridge and Middleton-in-Teesdale. Table available in the appendices with detailed information. # Flows may be impacted by upstream reservoir releases.

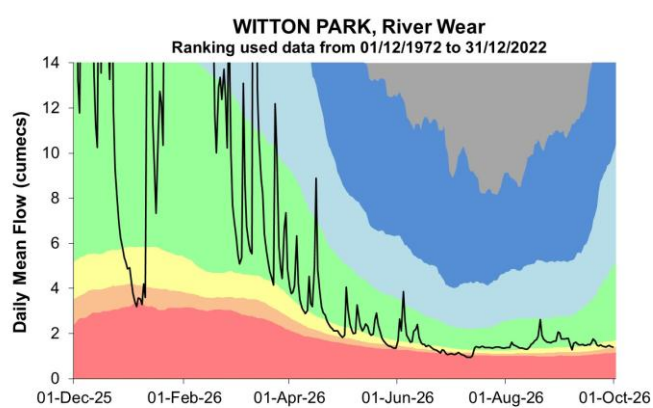
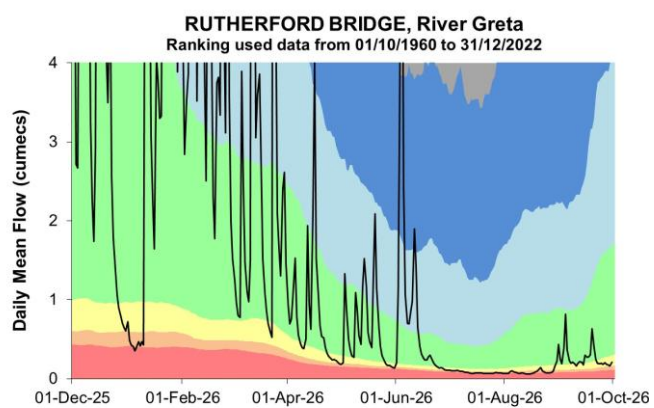
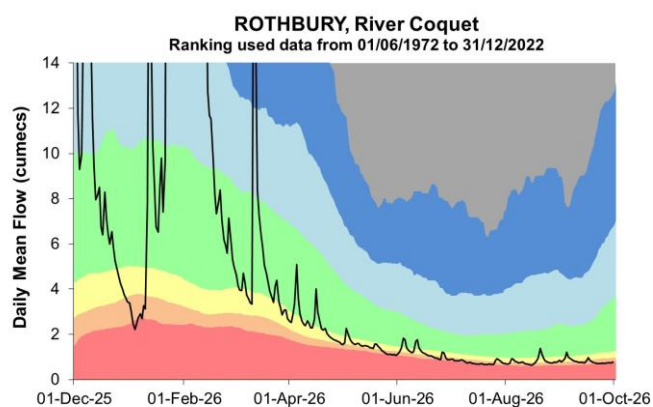
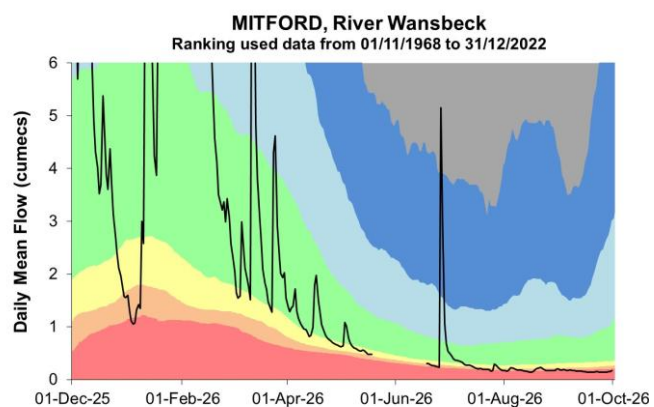


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4.2 River flow charts

Figure 4.2: Daily mean river flows for indicator sites over the past 10 months, compared to an analysis of historic daily mean flows.



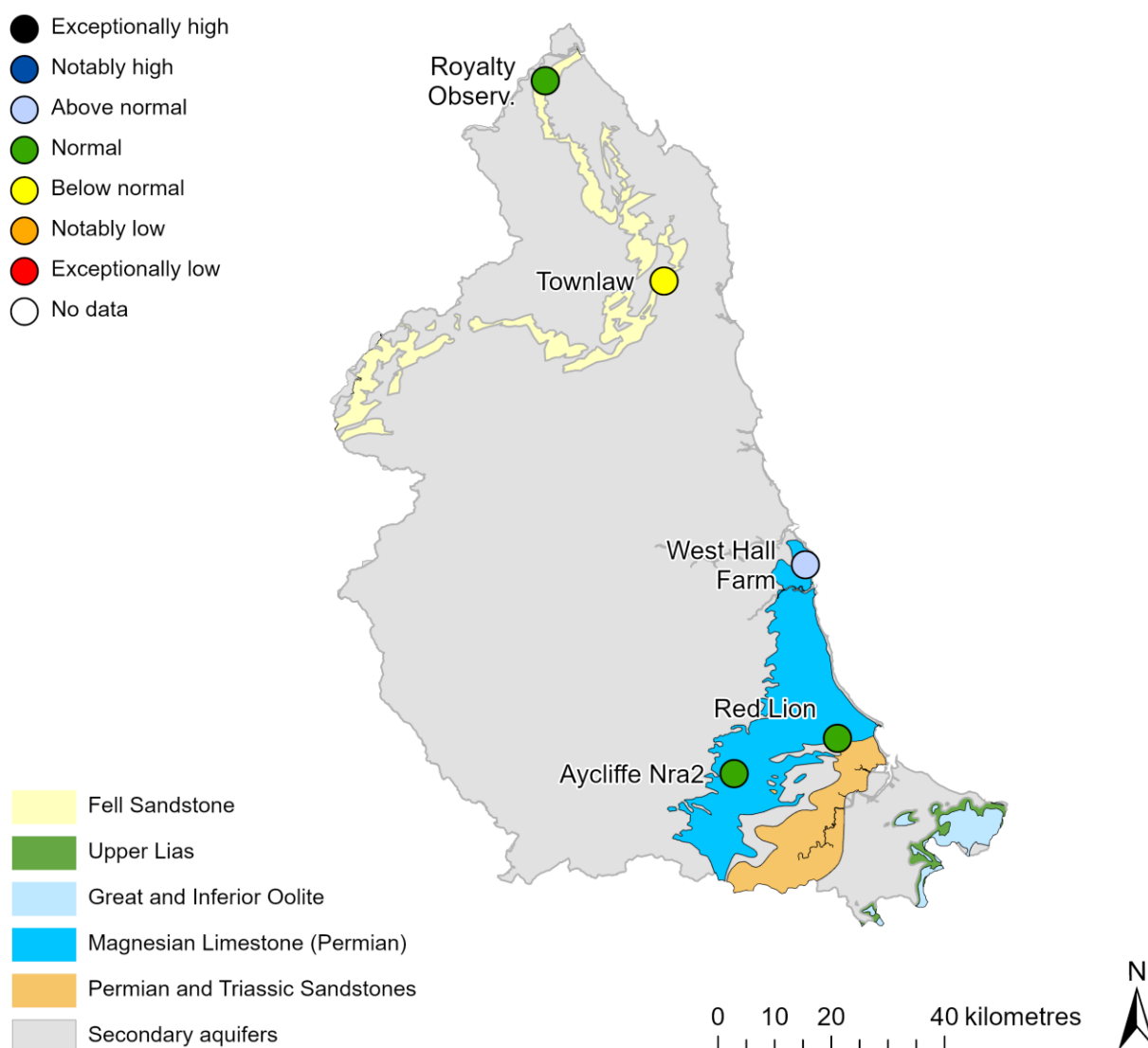


(Source: Environment Agency).

## 5 Groundwater levels

### 5.1 Groundwater levels map

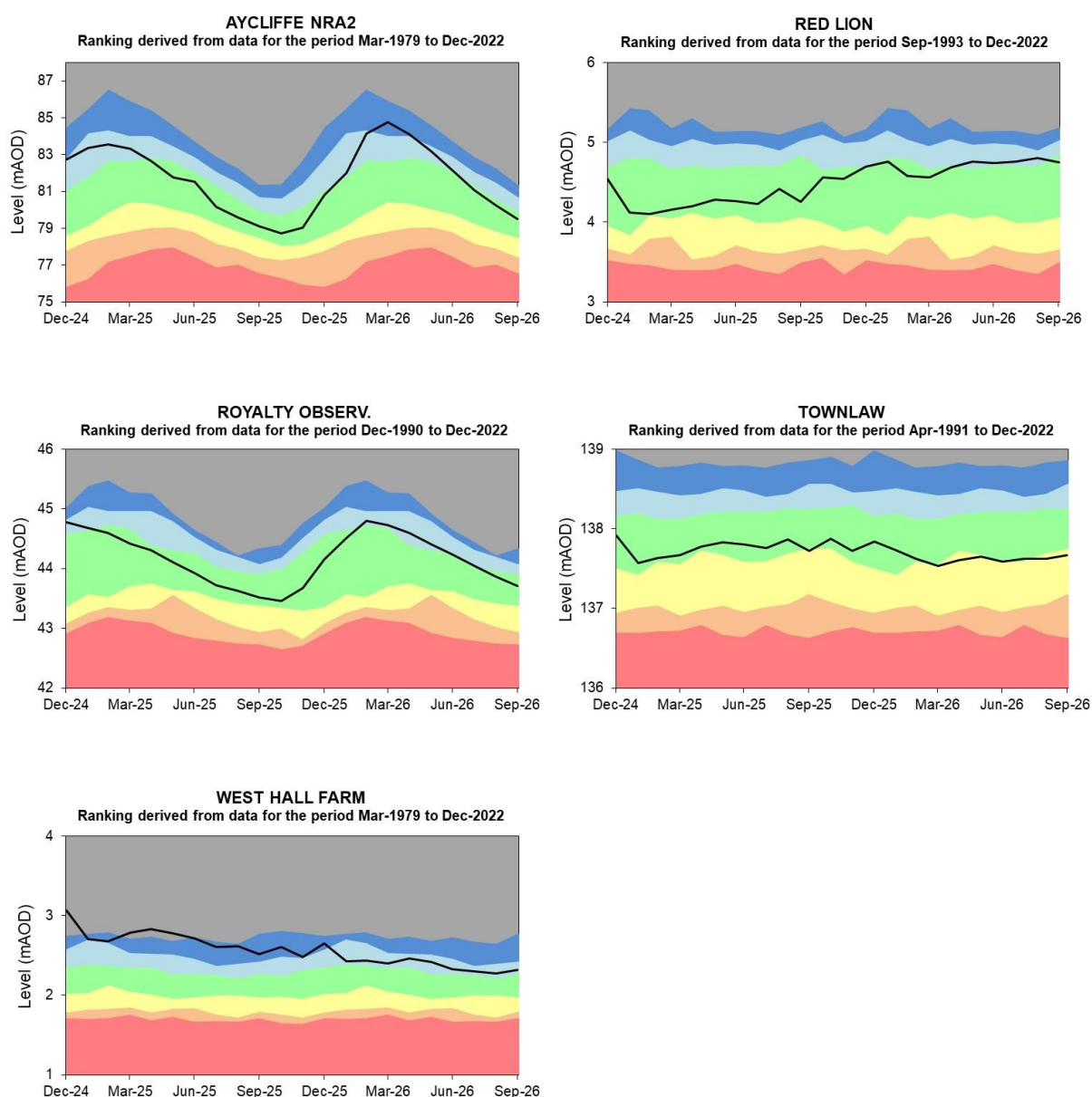
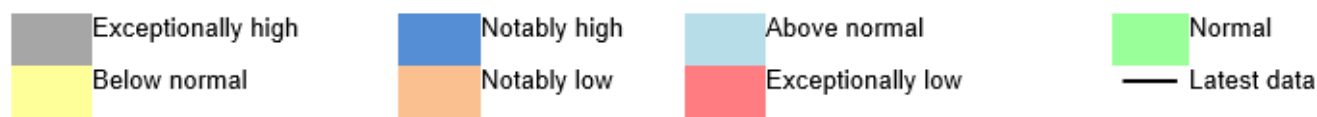
Figure 5.1: Groundwater levels for indicator sites at the end of September 2026, classed relative to an analysis of respective historic end of September levels. Groundwater levels were below normal at Townlaw and normal at Royalty Observation, Red Lion, and Aycliffe Nra2. Groundwater levels were above normal at West Hall Farm. Table available in the appendices with detailed information.



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## 5.2 Groundwater level charts

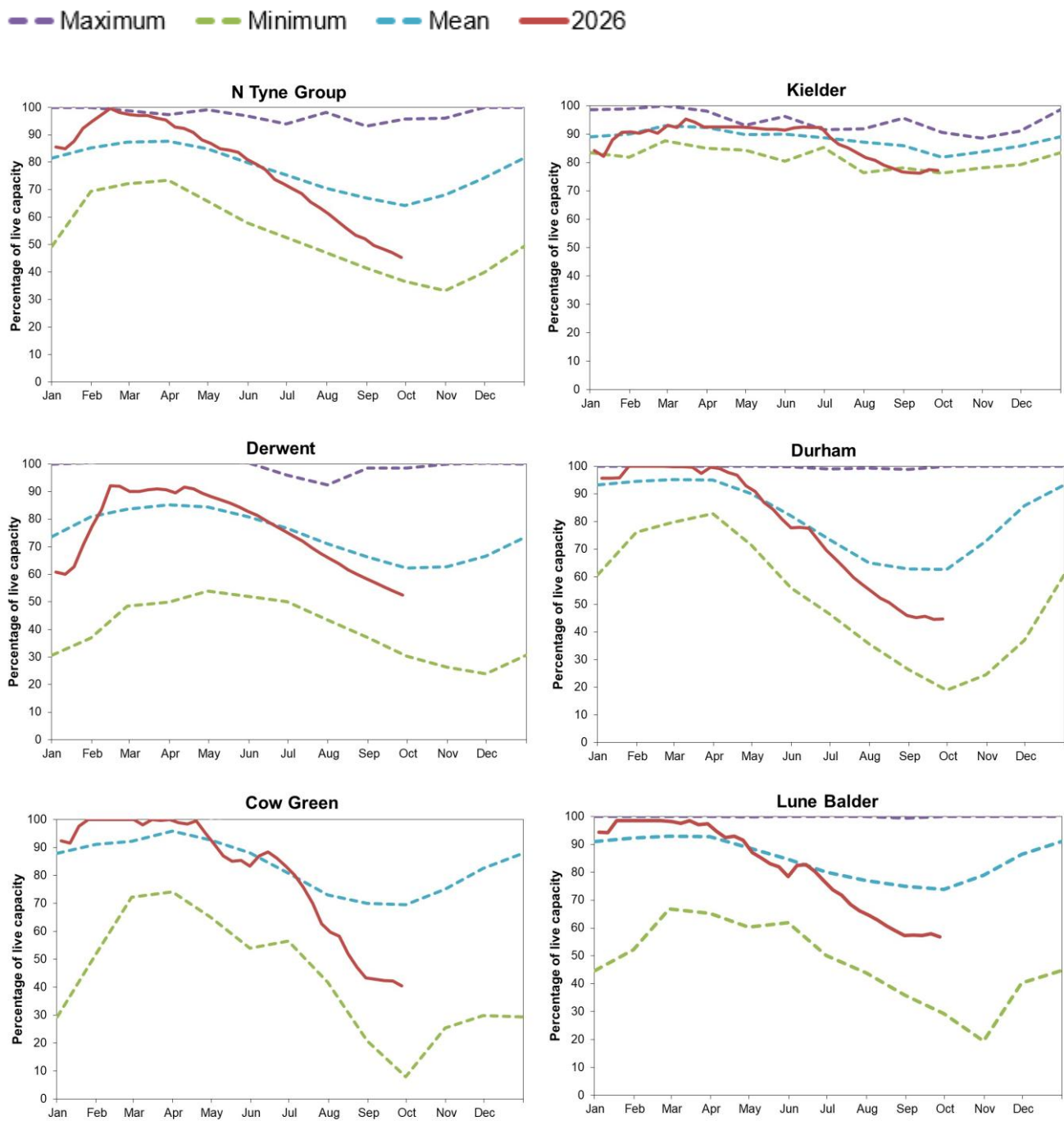
Figure 5.2: End of month groundwater levels at indicator groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of September levels.



(Source: Environment Agency, 2026).

# 6 Reservoir stocks

Figure 6.1: End of month reservoir stocks compared to long term maximum, minimum, and mean stocks. Note: Historic records of individual reservoirs and reservoir groups vary in length. Kielder reservoir levels are lower than historic levels due to a new flood alleviation control curve in use.



(Source: Northumbrian 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 ( $\text{m}^3\text{s}^{-1}$ ).

#### **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 40km 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 1km 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**

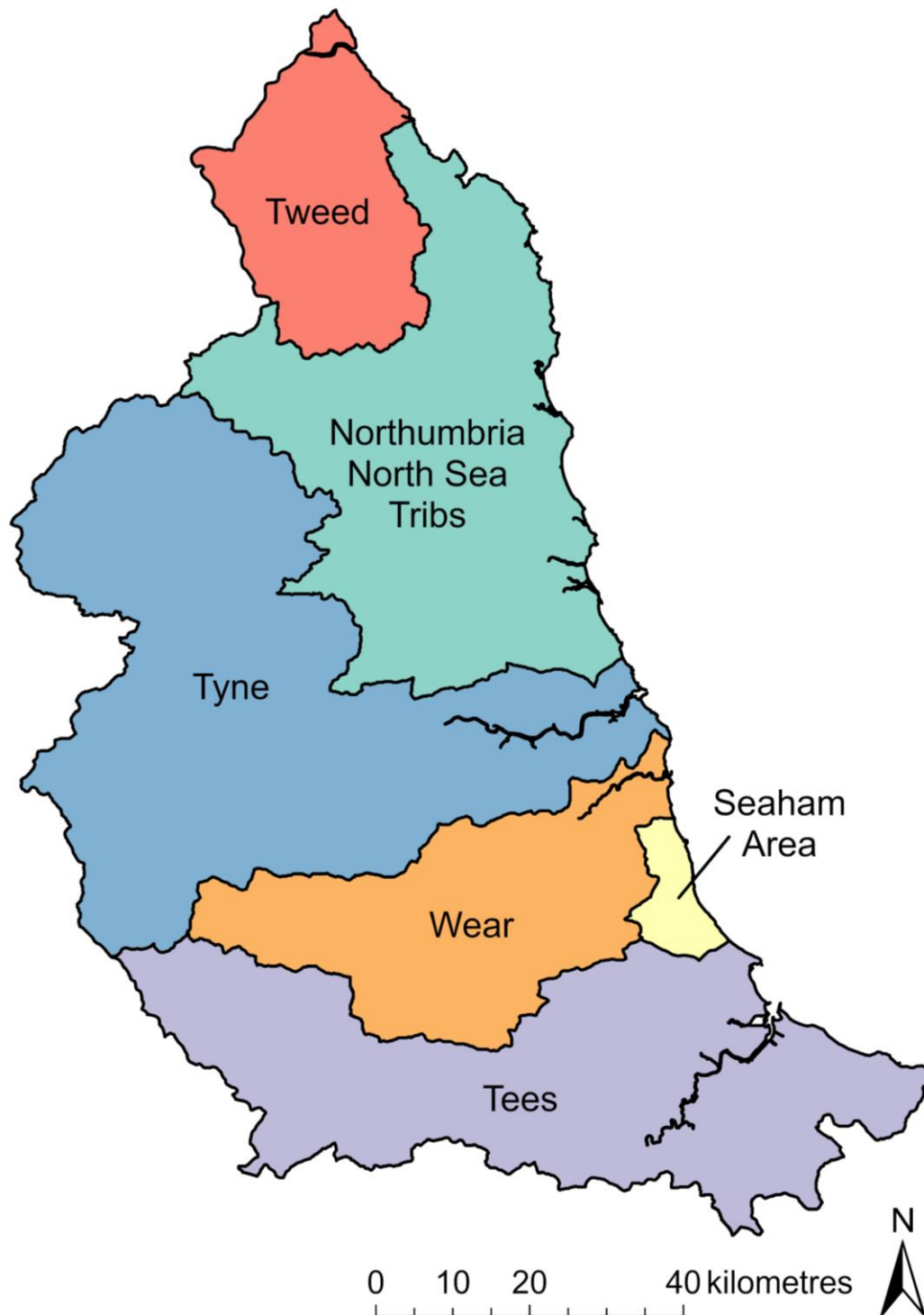
Value likely to fall within this band 8% of the time.

### **Exceptionally low**

Value likely to fall within this band 5% of the time.

## 8 Appendices

### 8.1 Catchment areas map



## 8.2 Rainfall table

| Hydrological area                  | Sep 2026 rainfall % of long term average 1991 to 2020 | Sep 2026 band | Jul 2026 to September cumulative band | Apr 2026 to September cumulative band | Oct 2025 to September cumulative band |
|------------------------------------|-------------------------------------------------------|---------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Northumbria<br>North Sea<br>Tribes | 42                                                    | Notably low   | Exceptionally low                     | Exceptionally low                     | Normal                                |
| Seaham Area                        | 35                                                    | Notably low   | Exceptionally low                     | Exceptionally low                     | Normal                                |
| Tees                               | 49                                                    | Below normal  | Exceptionally low                     | Exceptionally low                     | Normal                                |
| Tweed                              | 51                                                    | Below normal  | Notably low                           | Exceptionally low                     | Normal                                |
| Tyne                               | 68                                                    | Normal        | Exceptionally low                     | Exceptionally low                     | Normal                                |
| Wear                               | 39                                                    | Below normal  | Exceptionally low                     | Exceptionally low                     | Normal                                |

### 8.3 River flows table

| Site name             | River      | Catchment  | Sep 2026 band     | Aug 2026 band     |
|-----------------------|------------|------------|-------------------|-------------------|
| Hartford Bridge       | Blyth      | Blyth      | Exceptionally low | Below normal      |
| Haydon Bridge         | South Tyne | South Tyne | Below normal      | Notably low       |
| Heaton Mill           | Till       | Till       | Notably low       | Exceptionally low |
| Middleton-in-Teesdale | Tees       | Tees       | Below normal      | Normal            |
| Mitford               | Wansbeck   | Wansbeck   | Exceptionally low | Exceptionally low |
| Rothbury              | Coquet     | Coquet     | Notably low       | Notably low       |
| Rutherford Bridge     | Greta      | Greta      | Notably low       | Notably low       |
| Witton Park           | Wear       | Wear       | Notably low       | Below normal      |

## 8.4 Groundwater table

| Site name       | Aquifer                    | End of Sep 2026<br>band | End of Aug 2026<br>band |
|-----------------|----------------------------|-------------------------|-------------------------|
| Aycliffe Nra2   | Skerne Magnesian Limestone | Normal                  | Normal                  |
| Red Lion        | Skerne Magnesian Limestone | Normal                  | Above normal            |
| Royalty Observ. | Till Fell Sandstone        | Normal                  | Normal                  |
| Townlaw         | Till Fell Sandstone        | Below normal            | Below normal            |
| West Hall Farm  | Wear Magnesian Limestone   | Above normal            | Above normal            |