

# Monthly water situation report: Midlands

## 1 Summary - January 2025

Please see Section 7.3 for a map detailing the Midlands regional coverage of this report.

**Rainfall** - Rainfall monthly totals for January were normal or above normal across the Midlands.

**Soil moisture deficit (SMD)** - By the end of January, all hydrological catchments in the Midlands recorded a SMD of less than or equal to 10mm. Soils do not have a moisture deficit so are wetter when compared to long term average (LTA) for the time of year.

**River flows** - January monthly mean river flows were normal or higher than normal across the Midlands

**Groundwater levels** - At the end of January all groundwater reported levels were above normal or higher.

**Reservoir stocks** - All reported reservoirs had a storage above 90% at the end of January. The reservoirs were also all above their long term average (LTA) for the time of year.

### 1.1 Rainfall

Monthly rainfall totals for January were normal or above normal across all the Midlands hydrological catchments. The above normal rainfall totals occurred in east Midlands and in some southern parts of the region (Avon to Evesham, Lower Severn Estuary).

The previous 3 month cumulative rainfall totals were normal or above normal across the Midlands. The previous 12 months (February 2024 to January 2025) cumulative rainfall totals recorded that most of the Midlands had exceptionally high or notably high rainfall. These totals were between 120% and 150% of the LTA. This wet pattern occurred through much of the previous year, with most of Midlands rainfall totals showing only 2 or 3 months where rainfall was less than 100% of the LTA.

### 1.2 Soil moisture deficit and recharge

By the end of January, all hydrological catchments in the Midlands recorded a soil moisture deficit (SMD) of less than or equal to 10mm. This is similar to December, which also reported

no significant SMD. The figures show soils are slightly wetter than LTA however, this is considered typical for the time of year.

### **1.3 River flows**

January monthly mean river flows were normal or higher than normal across the Midlands hydrological catchments. Within the Midlands, normal monthly mean flows were recorded at 5 flow monitoring sites ranging between 98% and 129% of the LTA. These occurred mainly in the west of the Midlands including the Upper Severn, Teme and Wye but also in Derwent. Eleven sites recorded above normal monthly mean flows ranging from 123% to 155% of the LTA. These occurred through much of the middle and lower Severn, Avon, Frome (Glos.), Tame, Dove, Soar and middle and lower Trent. Notably high monthly mean flows were recorded at 3 sites including Walcot (River Tern), Great Bridgeford (River Sow) and Auckley (River Torne). These notably high sites ranged from 143% to 187% of the LTA. Two sites had exceptional high flow levels; these were Wedderburn Bridge (River Leadon) and Worksop (River Ryton) with 219% and 245% of LTA respectively.

Daily river flow charts show individual storm events as abrupt rises in level followed by a recession. In the majority of sites January's storm events are particularly shown at the start (first 10 days) and end of the month.

### **1.4 Groundwater levels**

At the end of January all groundwater reported levels were above normal or higher relative to their LTA.

Sandstone aquifers recorded 1 site (Crossley Hill) at above normal, 2 sites (St Mary's Church and Four Crosses) at notably high and 3 at exceptional high (Weir Farm, Anthonys cross and Coxmoor). Magnesian limestone (Southards Lane) recorded above normal as did the Permo Carboniferous (Ram Hall). The Carboniferous Limestone (Rider Point) was notably high.

### **1.5 Reservoir stocks**

All reported reservoirs had a storage above 90% at the end of January. The reservoirs were also all above their LTA for the time of year. In most cases, reservoir storage either increased slightly or remained relatively similar at the end of the month to the start. In several cases, the reservoirs would have spilled as storage reached 100%.

## 1.6 River Severn operations

The River Severn is regulated to maintain a minimum flow at Bewdley gauging station. This ensures sufficient water flows along the river to support environmental and water supply requirements. Regulation is instigated when flows drop below a threshold. The 2025 regulation season has not yet started.

## 1.7 River Wye operations

For all of January, storage in the Elan Valley reservoirs was above the release control line and the flows at Redbrook gauging station were above the regulation threshold. Therefore, regulation releases were not in operation. As of 7 February 2025, this was still the case. Environmental releases started to be made from 13 January up until the storm event when Caban Coch reservoir became full and started spilling on 27 January. As of 6 February 2025, environmental releases recommenced once Caban Coch had stopped spilling.

## 1.8 Water abstraction restrictions

As of 4 February 2025 there are 5 water abstraction licence restrictions in place across the Midlands affecting 6 licences in total.

Table 1.1: Water abstraction licence restrictions

Area	Rivers and stations restricted
West Midlands	Severn Vale at Wedderburn Bridge, Worcester Middle Severn at Burlington Weir and Puxton, Wye at Three Elms and Marstow Mill
East Midlands	None

Author: Midlands Hydrology, [midlandshydrology@environment-agency.gov.uk](mailto:midlandshydrology@environment-agency.gov.uk)

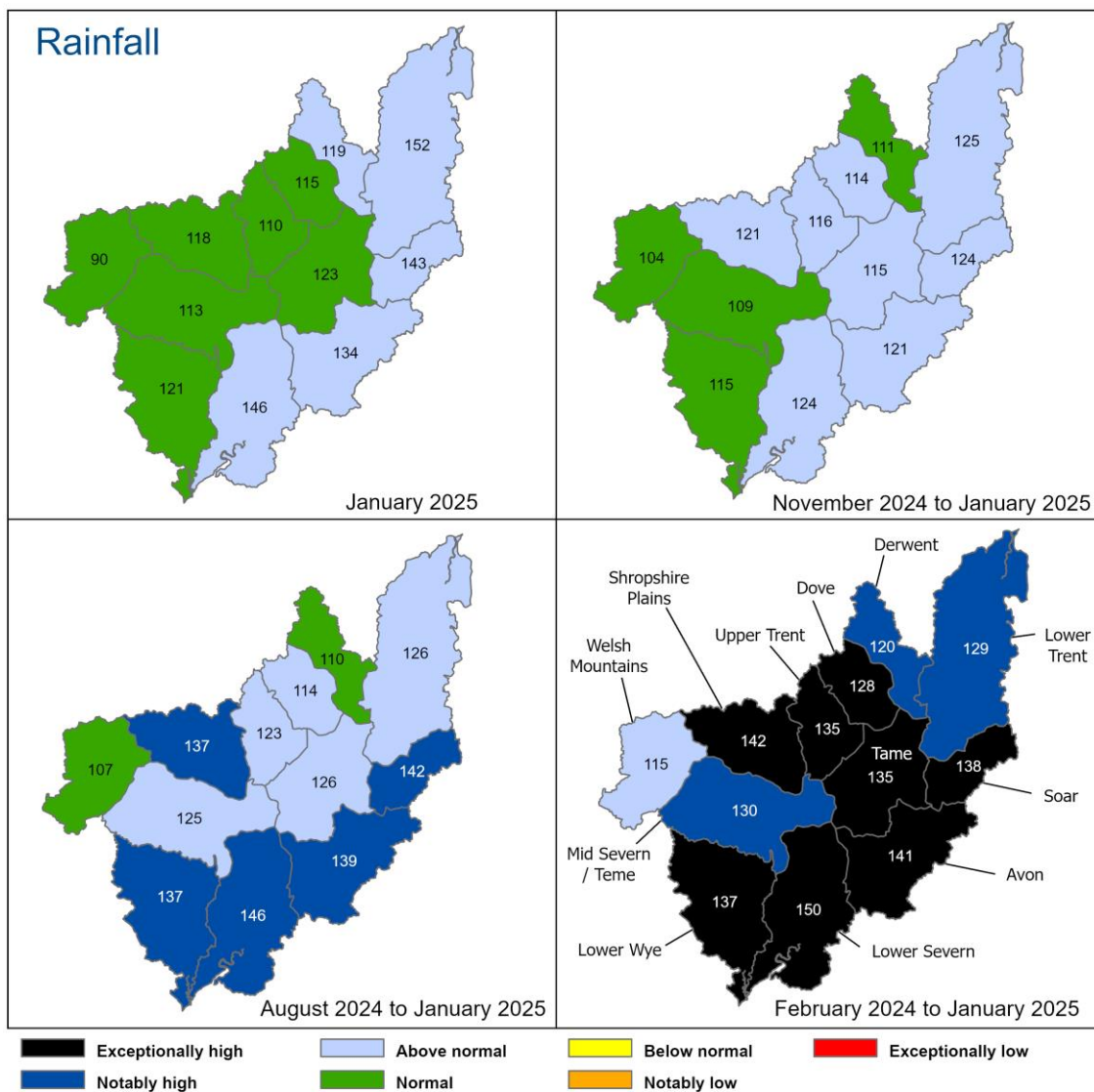
Contact Details: 03708 506 506

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## 2 Rainfall

### 2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological catchments for the current month (up to 31 January 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.



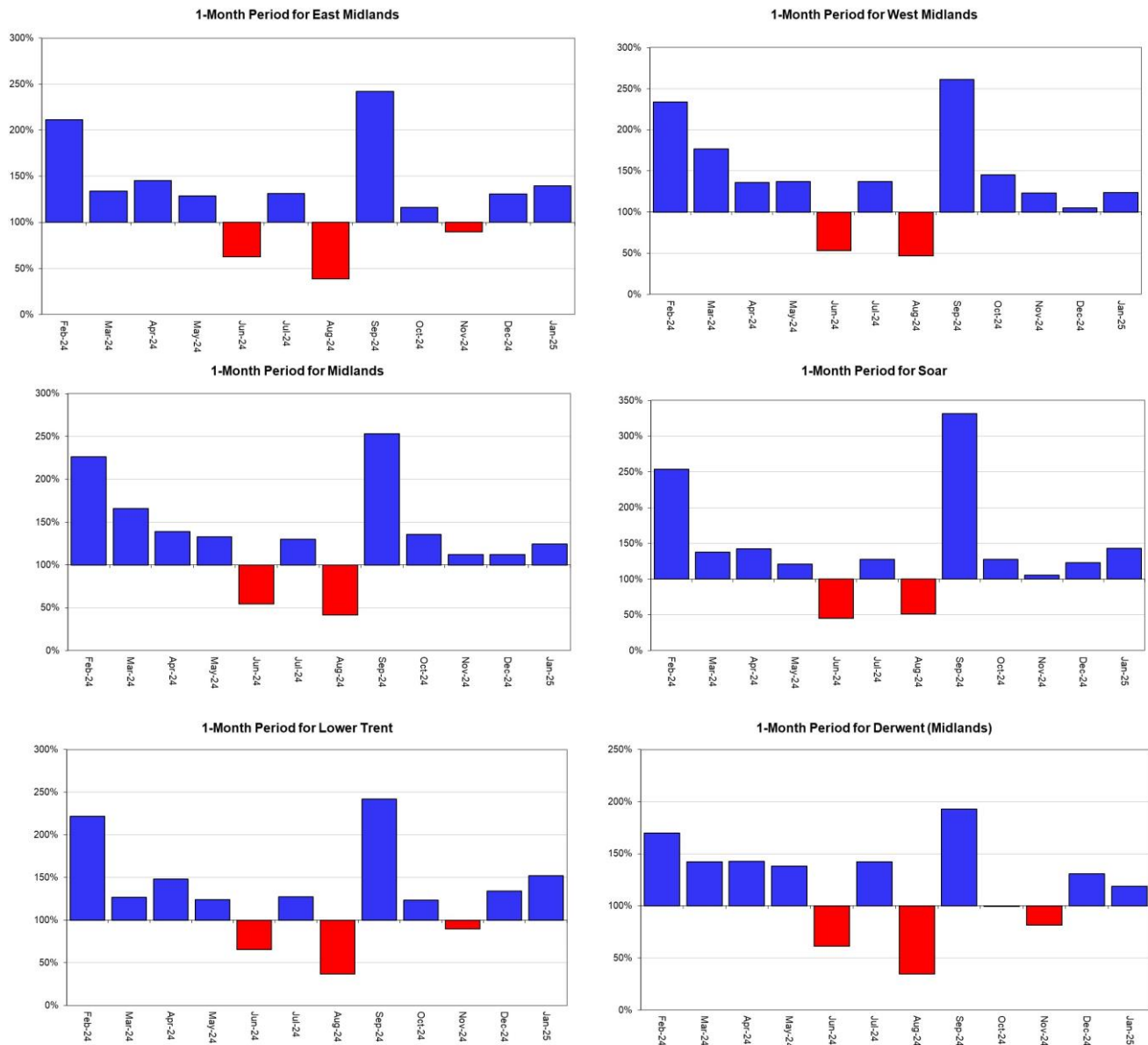
Rainfall data for Oct 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to Oct 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2025).

## 2.2 Rainfall charts

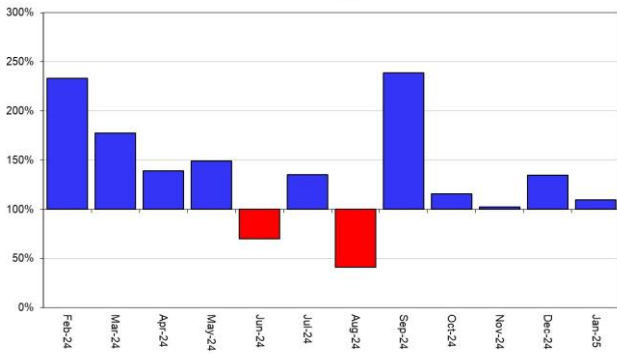
Figure 2.2: Monthly rainfall totals for the past 12 months as a percentage of the 1961 to 1990 long term average for hydrological catchments across the Midlands region.

■ Above average rainfall

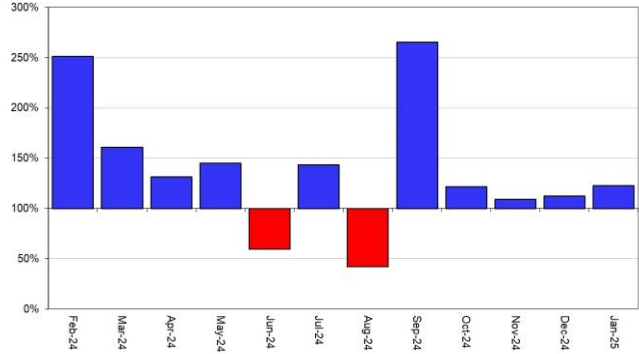
■ Below average rainfall



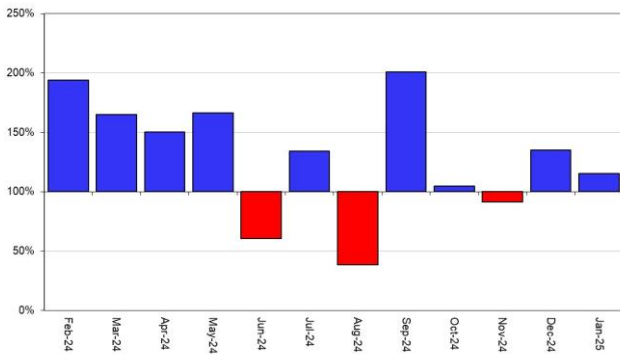
1-Month Period for Upper Trent



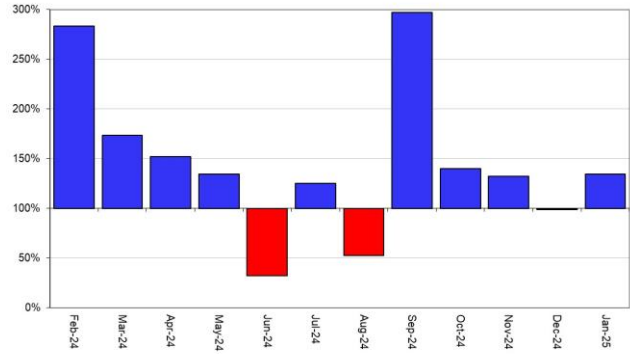
1-Month Period for Tame



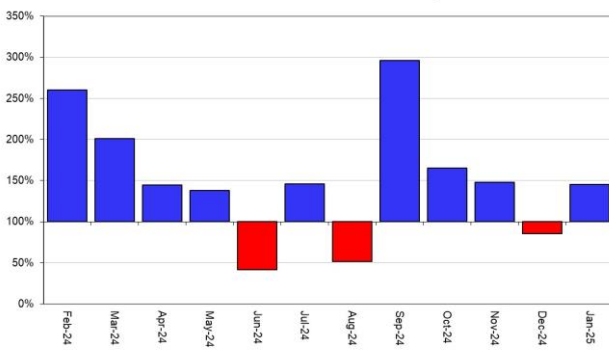
1-Month Period for Dove



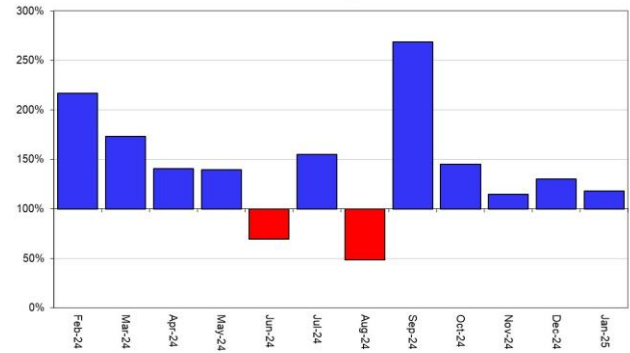
1-Month Period for Avon to Evesham

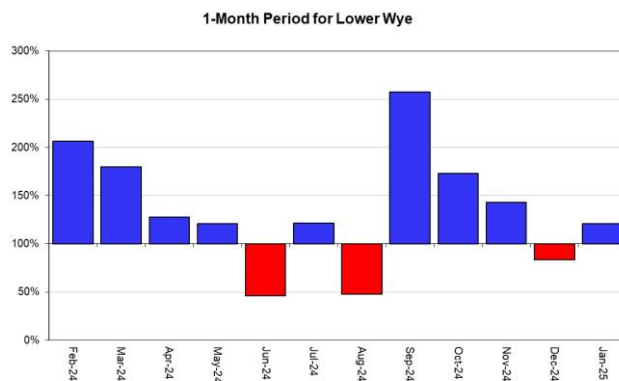
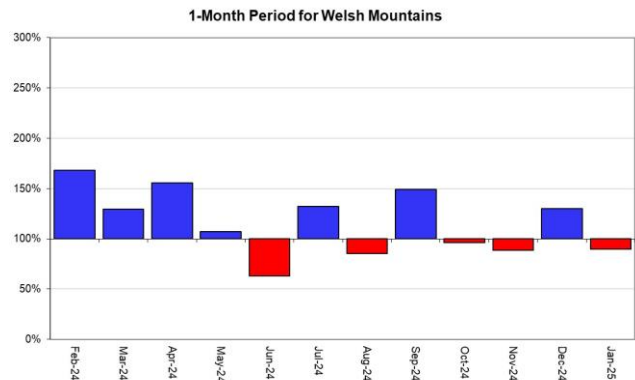
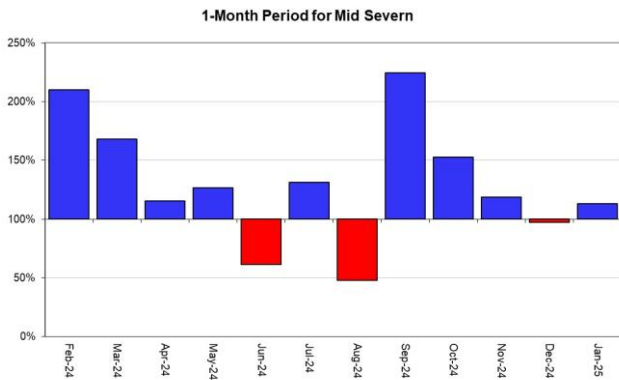


1-Month Period for Lower Severn Estuary



1-Month Period for Shropshire Plains





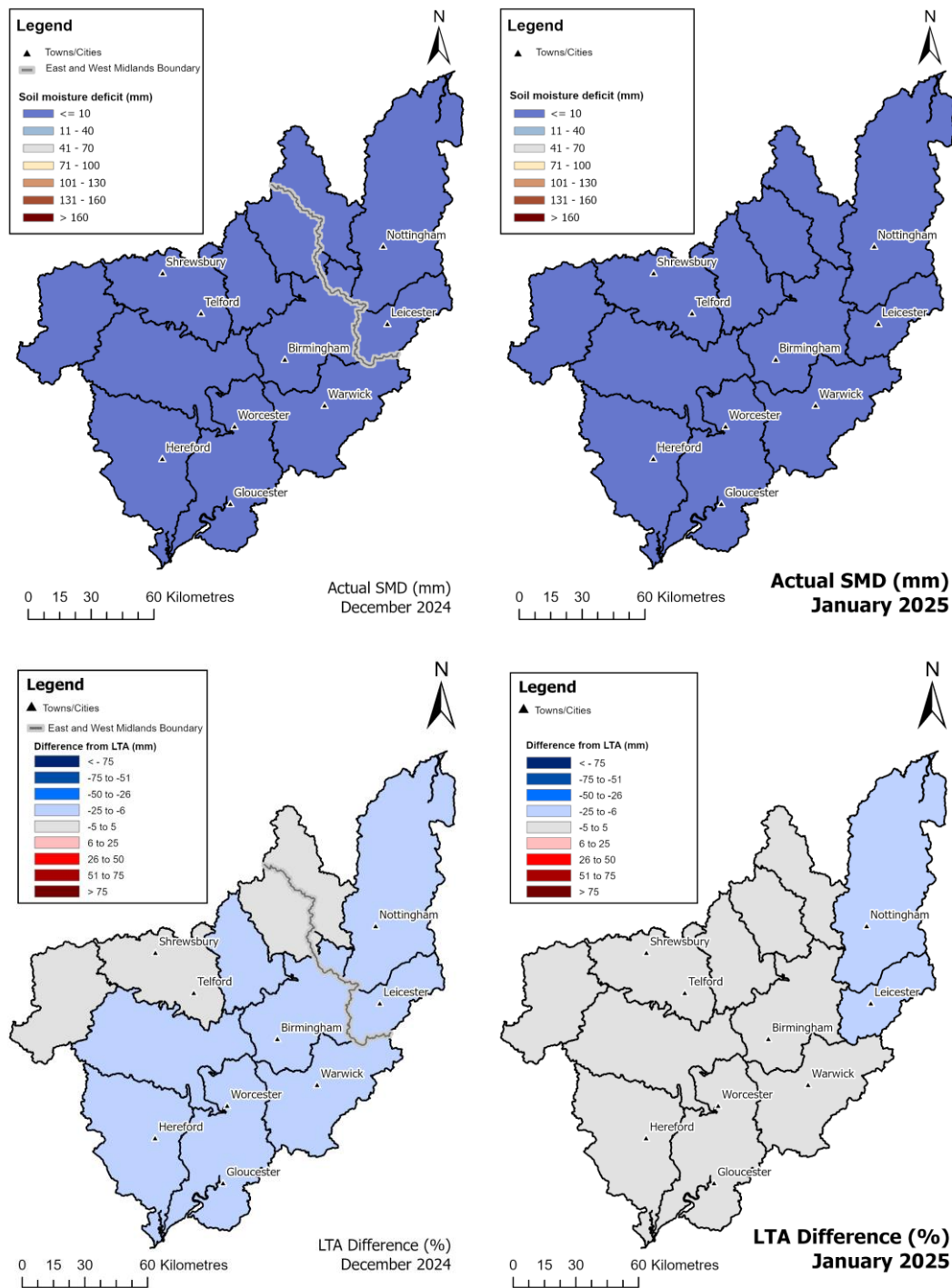
Rainfall data for Oct 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to Oct 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2025).



# 3 Soil moisture deficit

## 3.1 Soil moisture deficit map

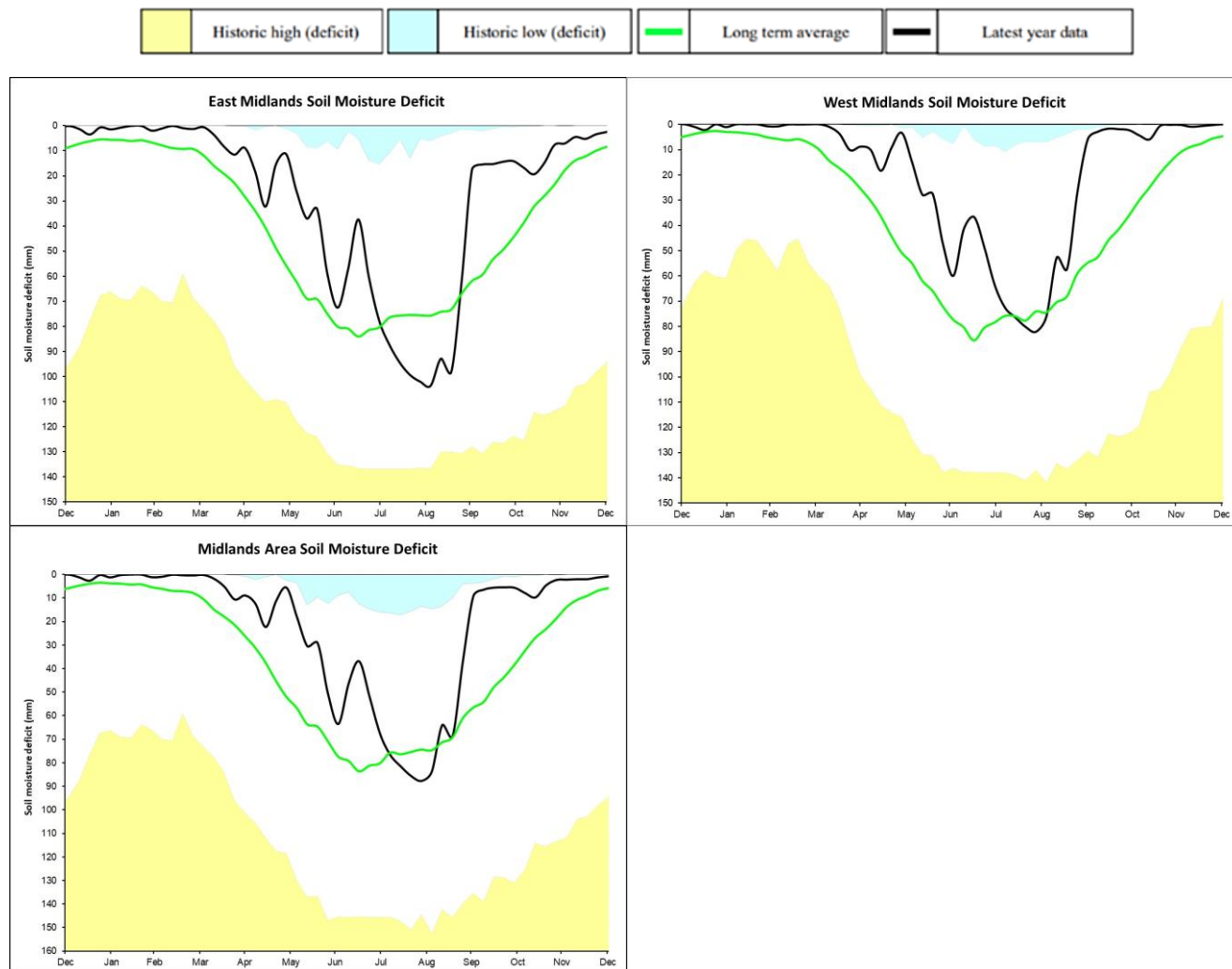
Figure 3.1: Soil moisture deficits for weeks ending 31 January 2025. Shows the difference (mm) of the actual soil moisture deficit from the 1961 to 1990 long term average soil moisture deficits. MORECS data for real land use.



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

### 3.2 Soil moisture deficit charts

Figure 3.2: Latest soil moisture deficit charts for selected areas across the Midlands.

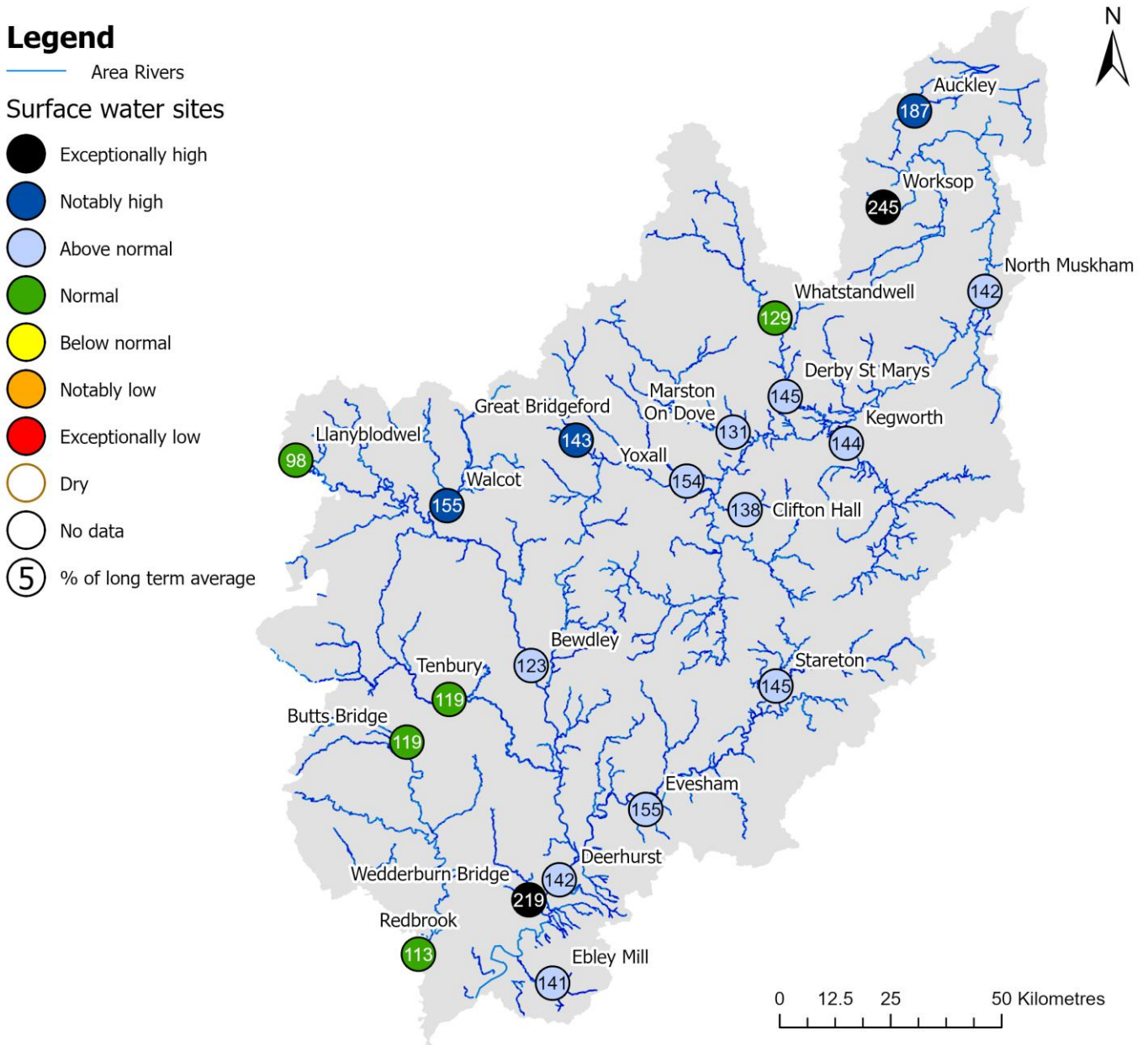


(Source: Met Office. Crown copyright, 2025). All rights reserved. Environment Agency, 100024198, 2025

# 4 River flows

## 4.1 River flows map

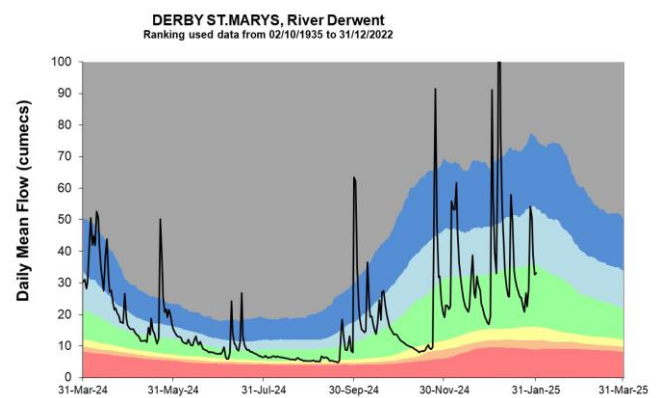
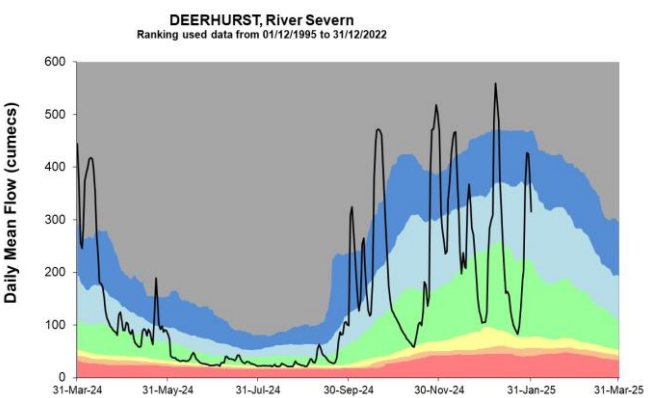
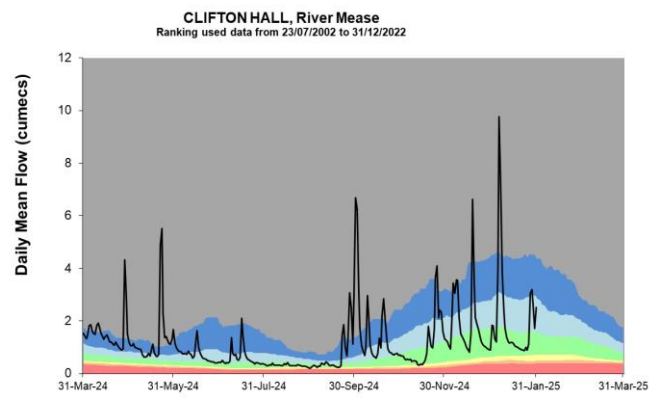
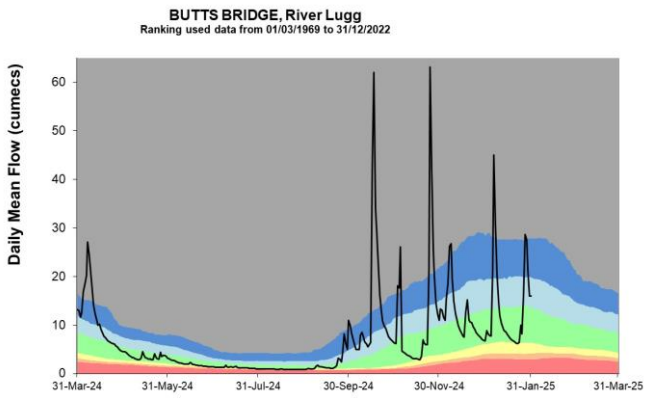
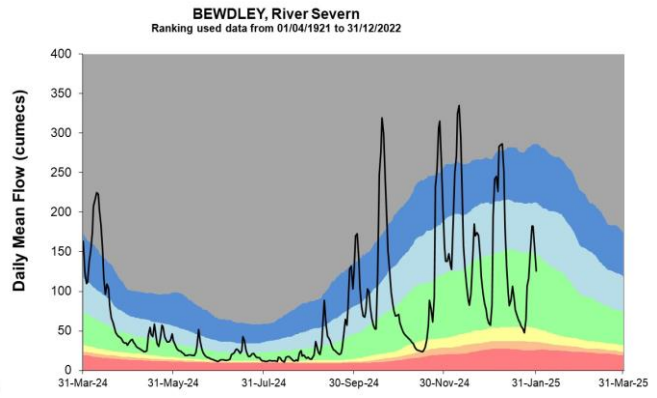
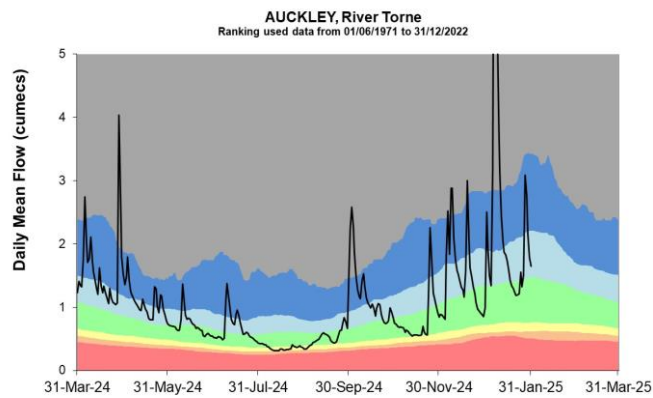
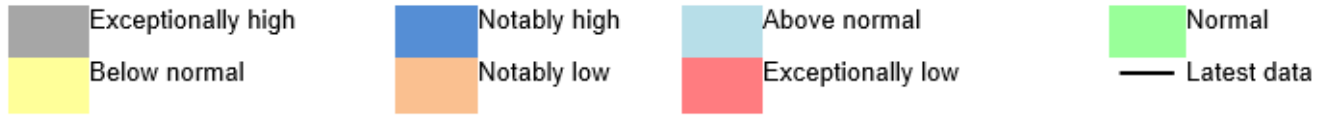
Figure 4.1: Monthly mean river flow for indicator sites for January 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic January monthly means. Table available in the appendices with detailed information.



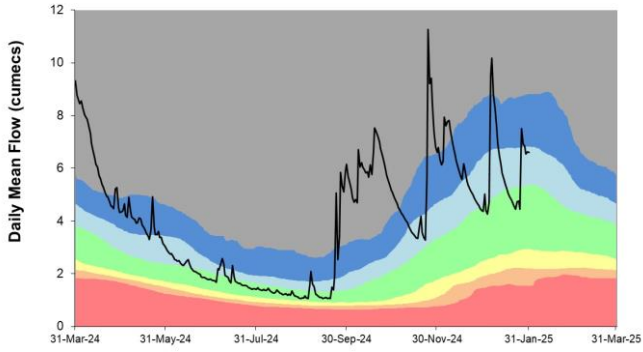
(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

## 4.2 River flow charts

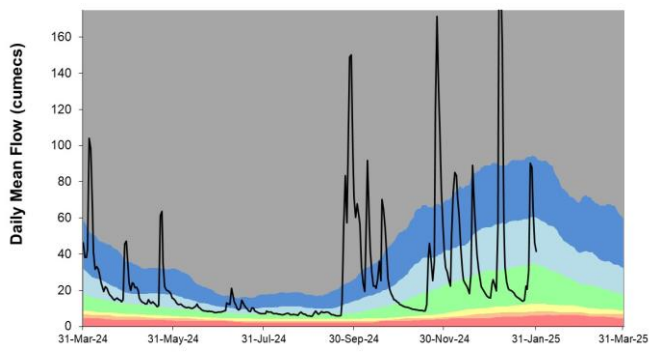
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



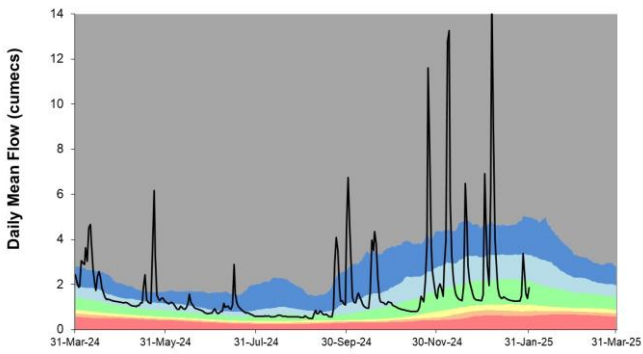
**EBLEY MILL, River Frome**  
Ranking used data from 01/04/1969 to 31/12/2022



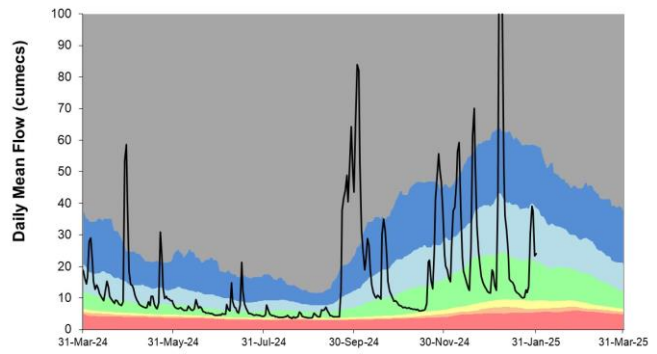
**EVESHAM, River Avon**  
Ranking used data from 01/12/1936 to 31/12/2022



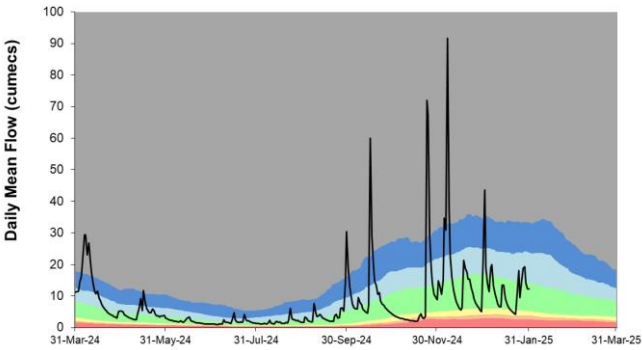
**GREAT BRIDGFORD, River Sow**  
Ranking used data from 18/01/1971 to 31/12/2022



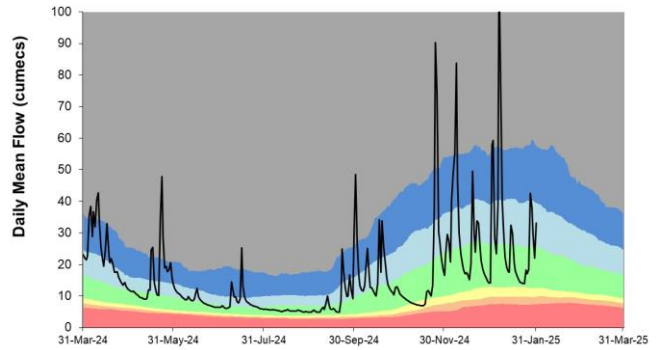
**KEGWORTH, River Soar**  
Ranking used data from 01/12/1978 to 31/12/2022



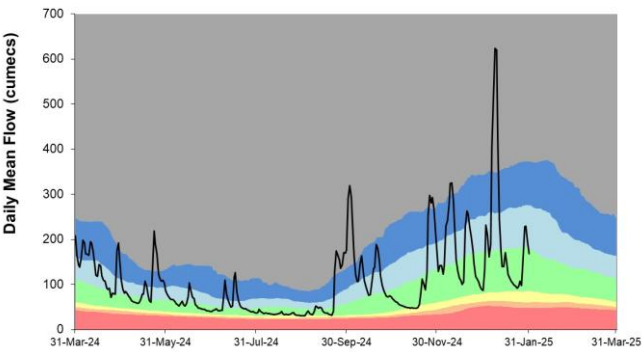
**LLANYBLODWEL, Afon Tanat**  
Ranking used data from 01/06/1973 to 31/12/2022



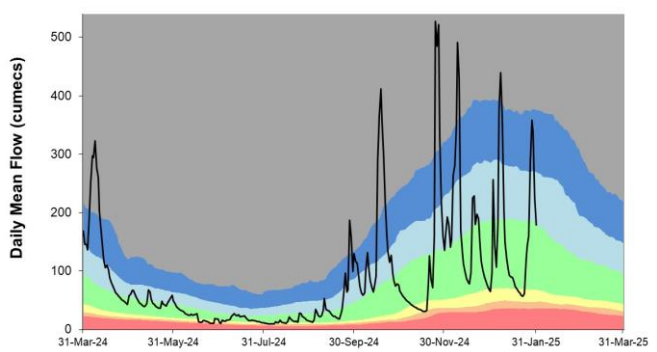
**MARSTON ON DOVE, River Dove**  
Ranking used data from 01/07/1965 to 31/12/2022



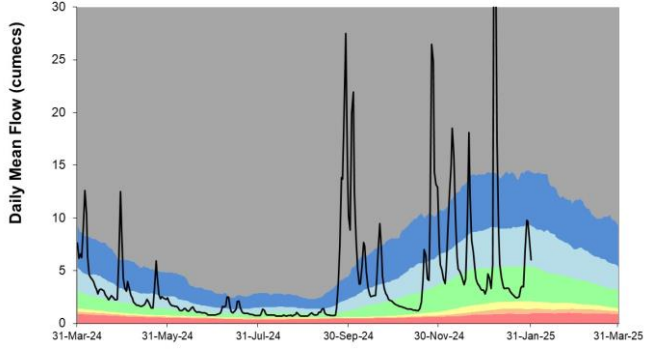
**NORTH MUSKHAM, River Trent**  
Ranking used data from 03/10/1969 to 31/12/2022



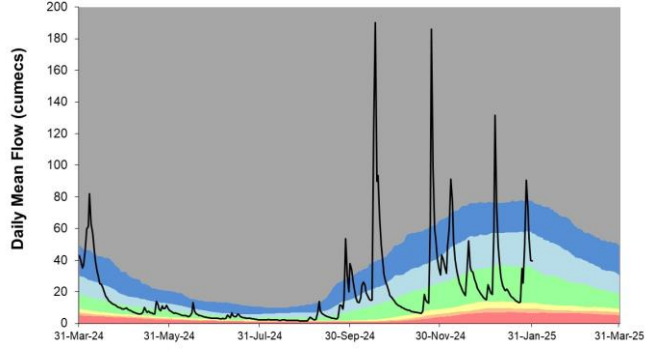
**REDBROOK, River Wye**  
Ranking used data from 01/10/1969 to 31/12/2022



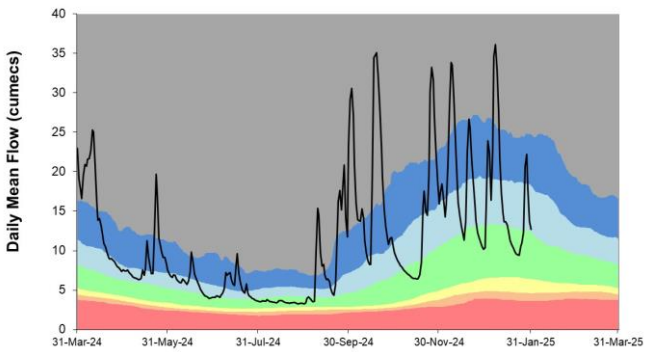
**STARETON, River Avon**  
Ranking used data from 01/10/1962 to 31/12/2022



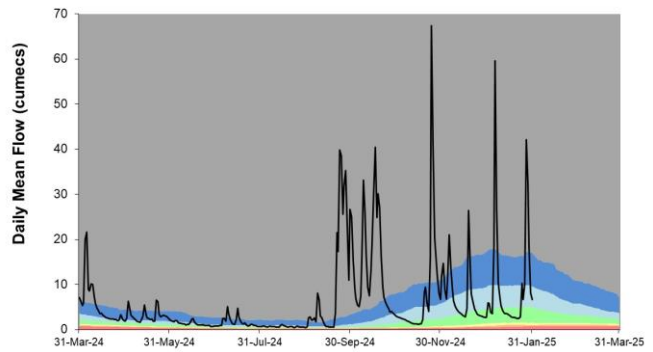
**TENBURY, River Teme**  
Ranking used data from 01/10/1956 to 31/12/2022



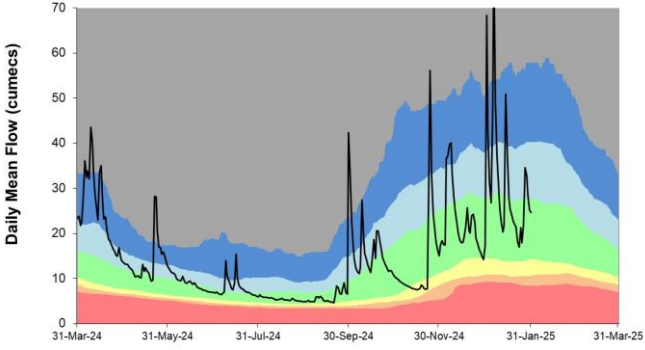
**WALCOT, River Tern**  
Ranking used data from 01/10/1960 to 31/12/2022



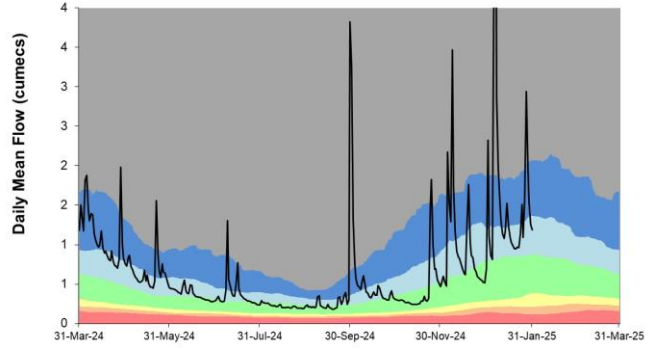
**WEDDERBURN BRIDGE, River Leadon**  
Ranking used data from 21/07/1961 to 31/12/2022



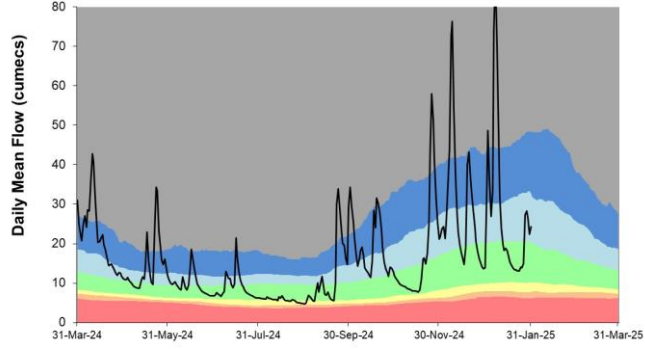
**WHATSTANDWELL, River Derwent**  
Ranking used data from 01/10/1992 to 31/12/2022



**WORKSOP, River Ryton**  
Ranking used data from 18/06/1970 to 31/12/2020



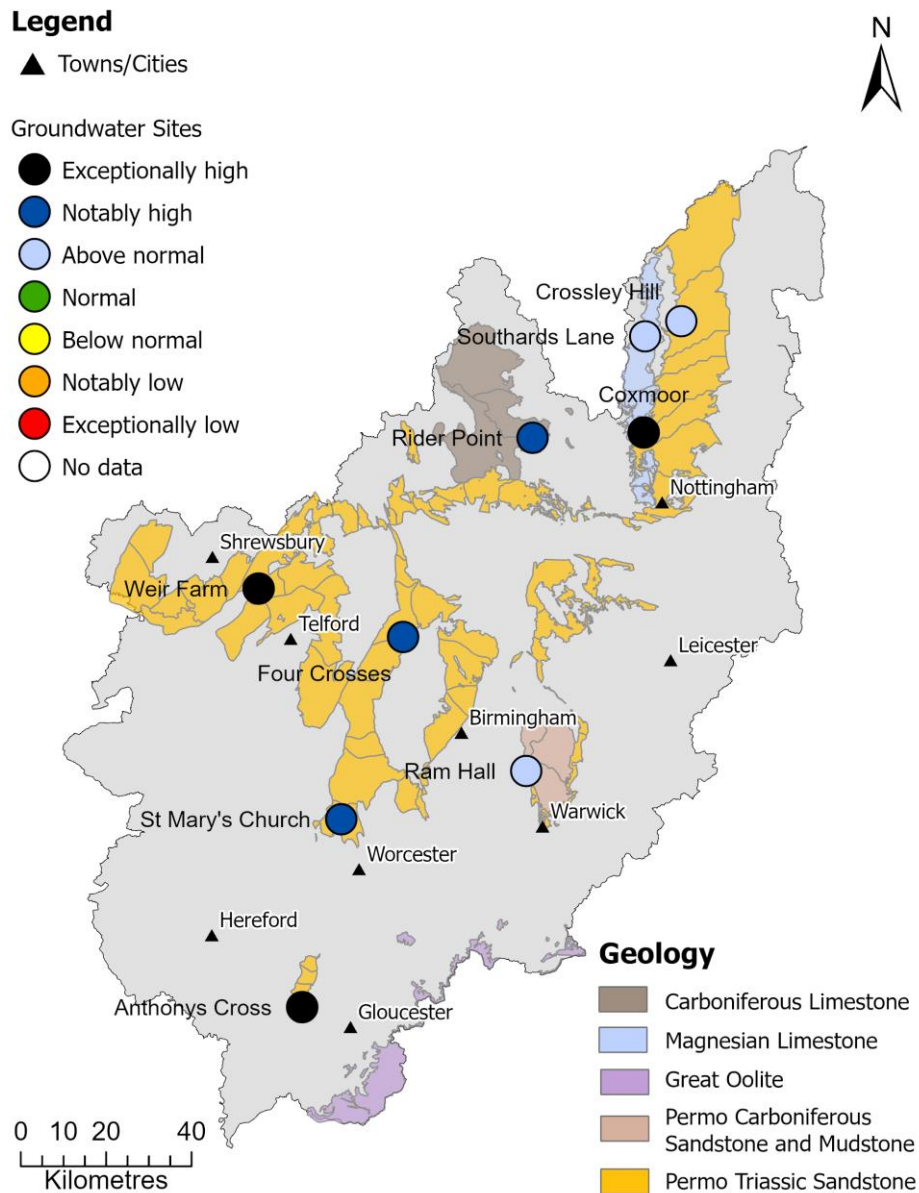
**YOXALL, River Trent**  
Ranking used data from 01/10/1958 to 31/12/2022



# 5 Groundwater levels

## 5.1 Groundwater levels map

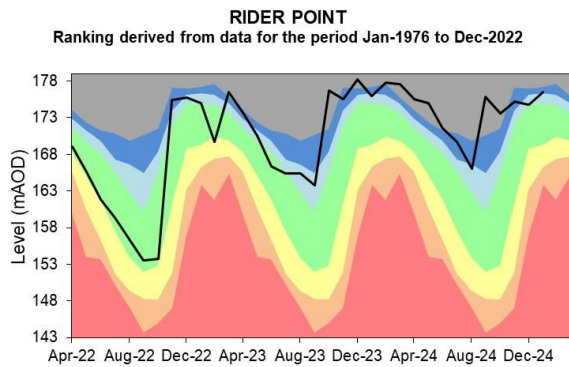
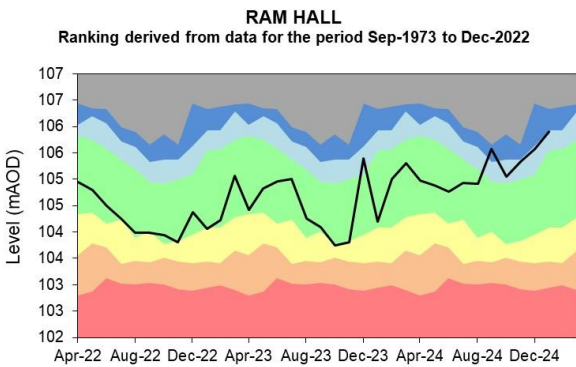
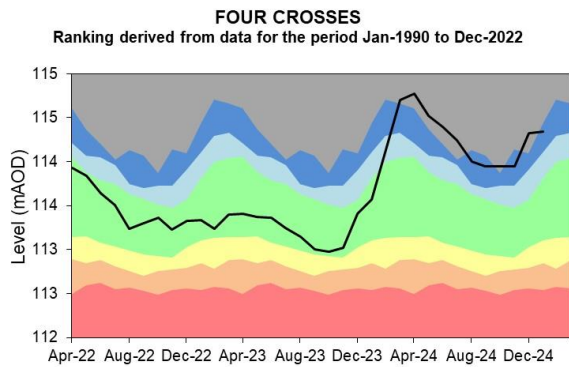
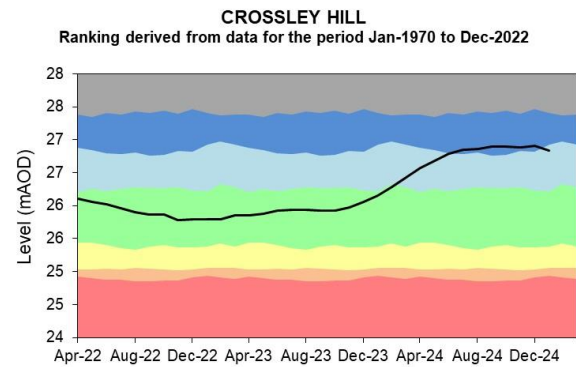
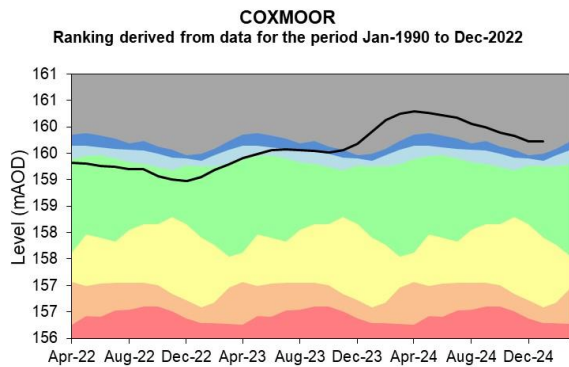
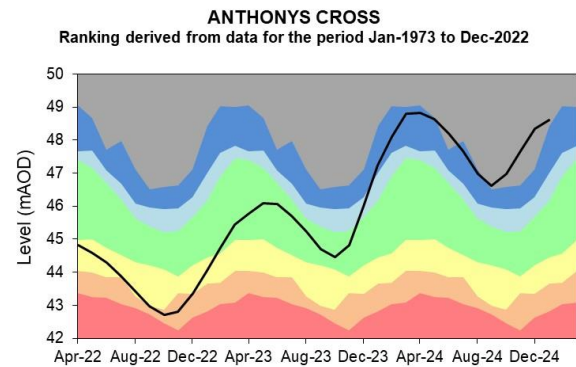
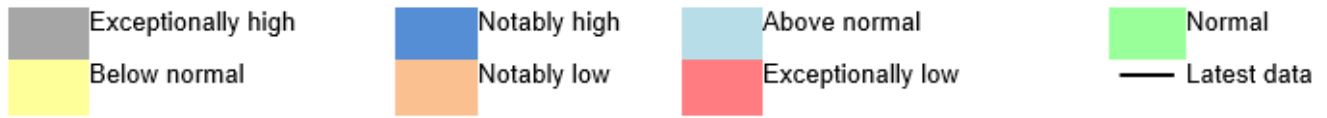
Figure 5.1: Groundwater levels for indicator sites at the end of January 2025, classed relative to an analysis of respective historic January levels. Table available in the appendices with detailed information, including aquifer type.



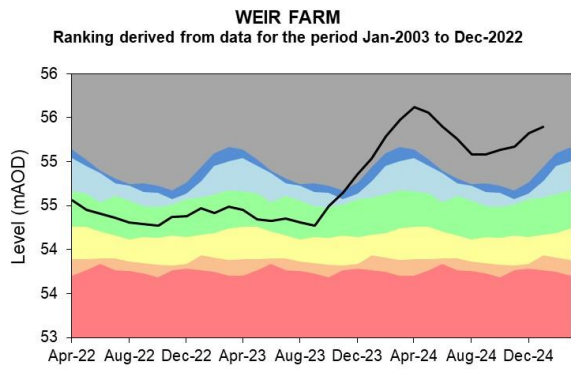
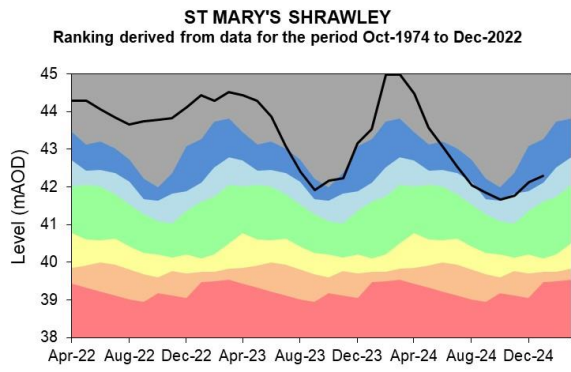
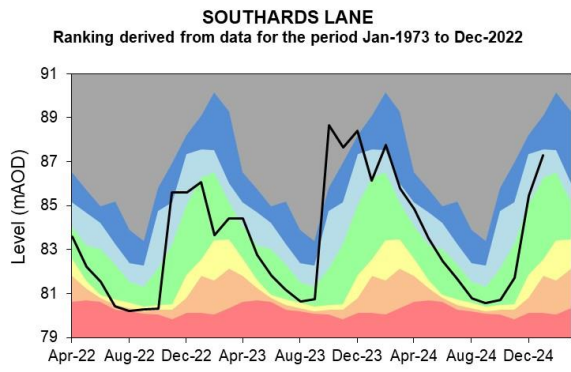
(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

## 5.2 Groundwater level charts

Figure 5.2: End of month groundwater levels at index groundwater level sites for major aquifers. Thirty four months compared to an analysis of historic end of month levels.



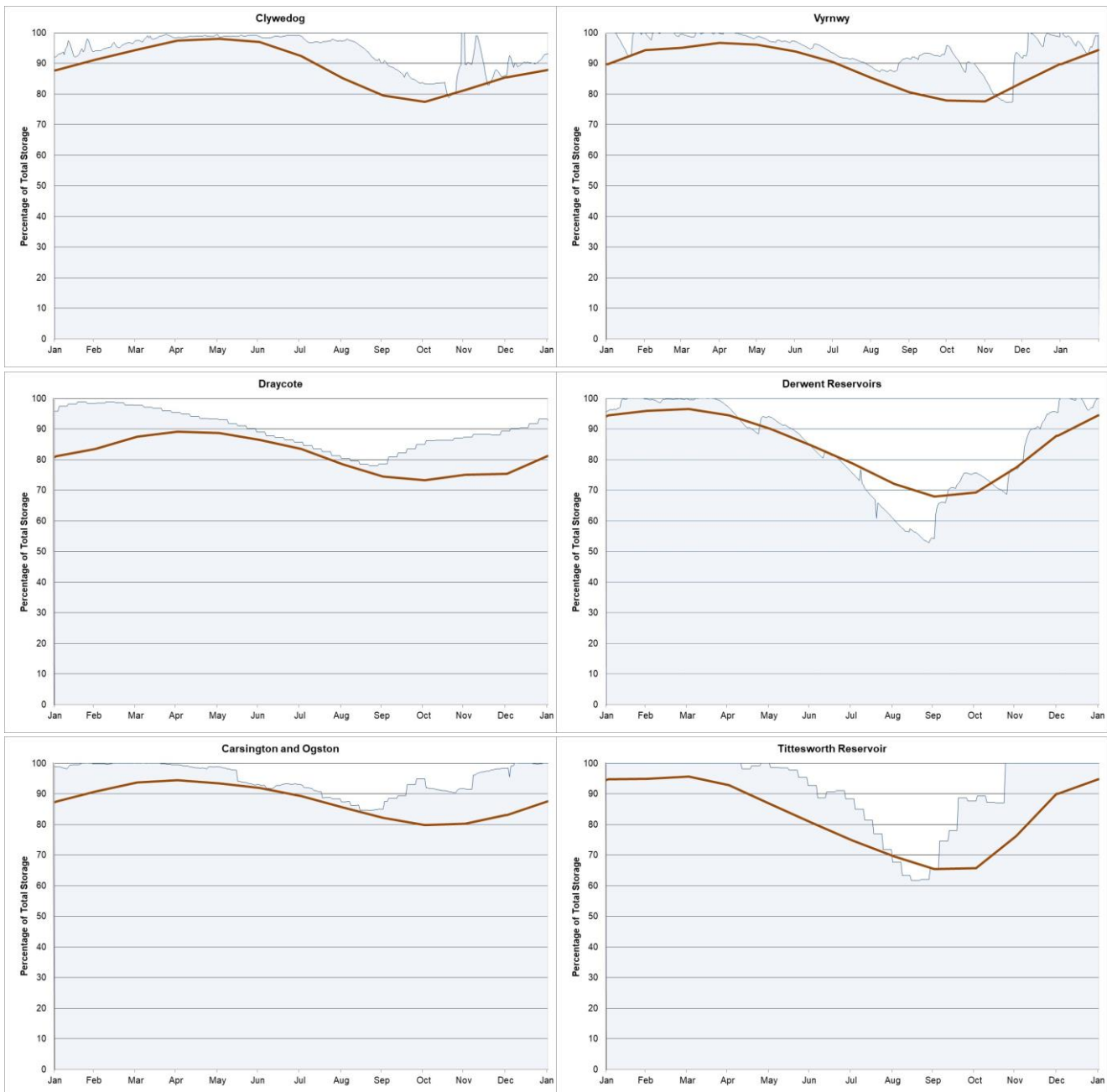


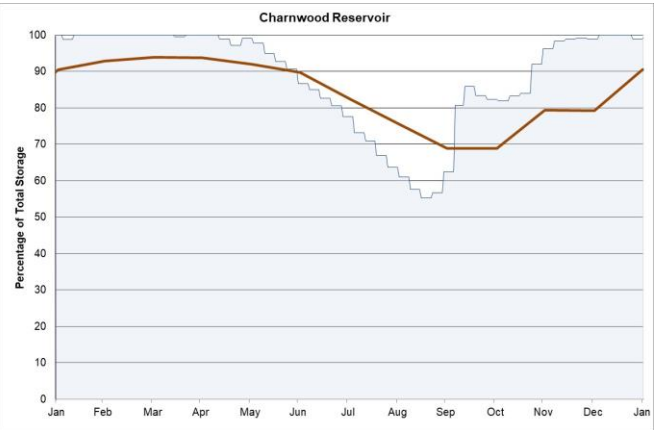
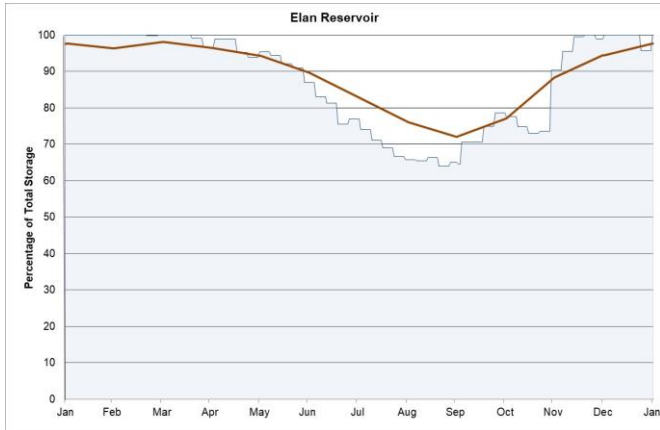
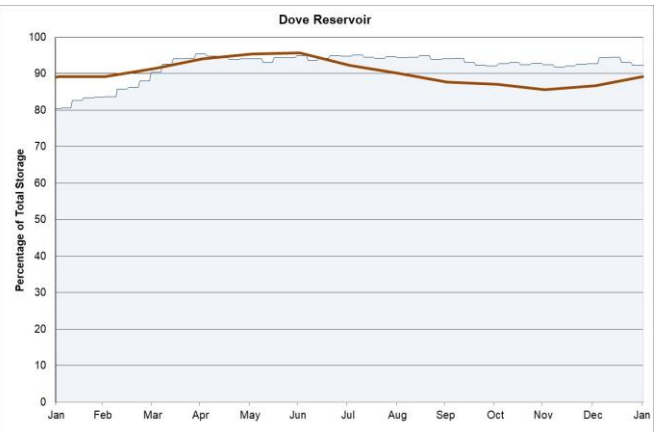


Source: Environment Agency, 2025.

## 6 Reservoir stocks

Figure 6.1: End of month regional reservoir stocks compared to long term average stocks. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length. Please see Section 7.4 for a map detailing the locality of the Midlands reservoirs reported on.





(Source: water companies).

## 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 1961 to 1990. 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**

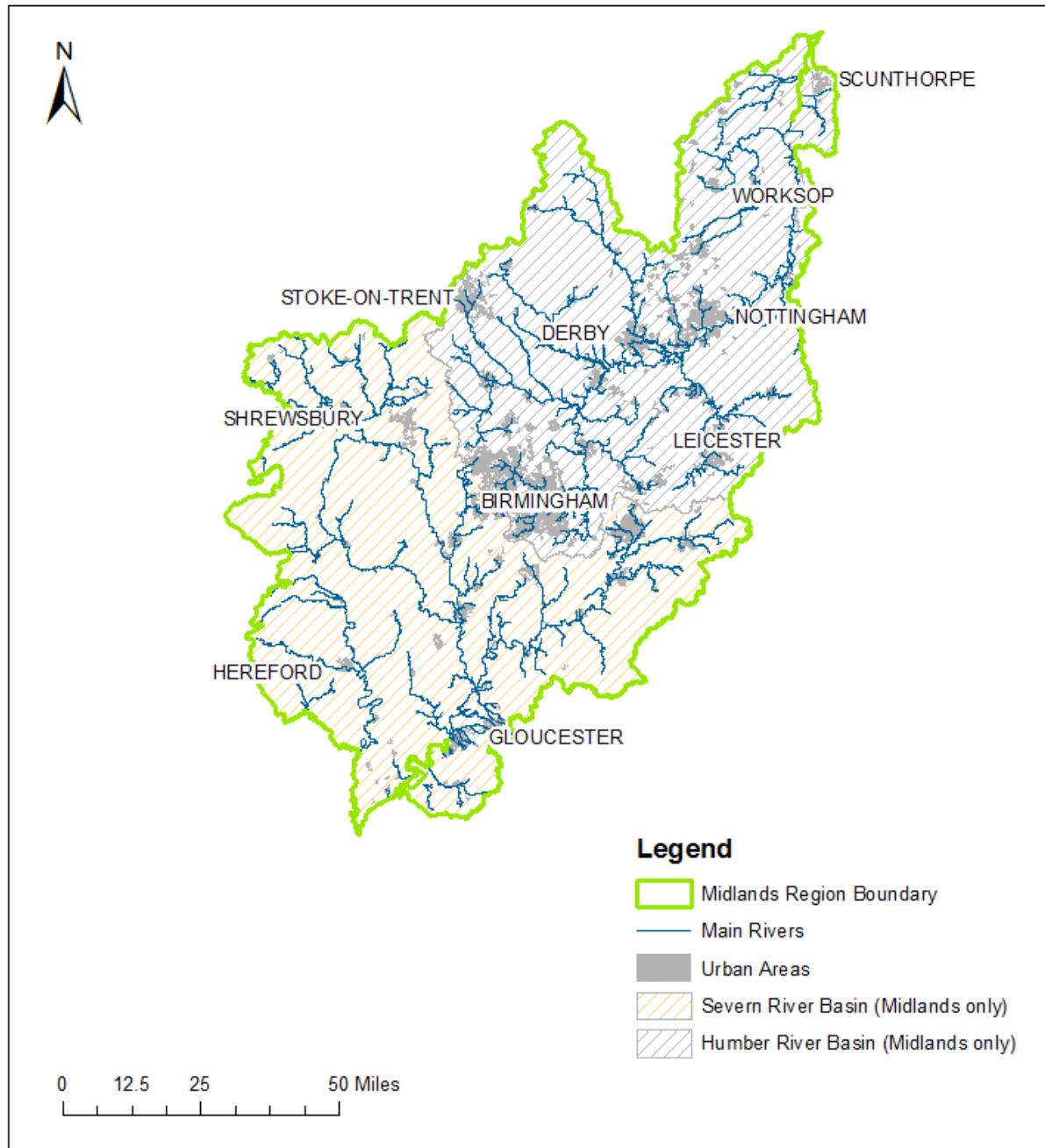
Value likely to fall within this band 8% of the time.

### **Exceptionally low**

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

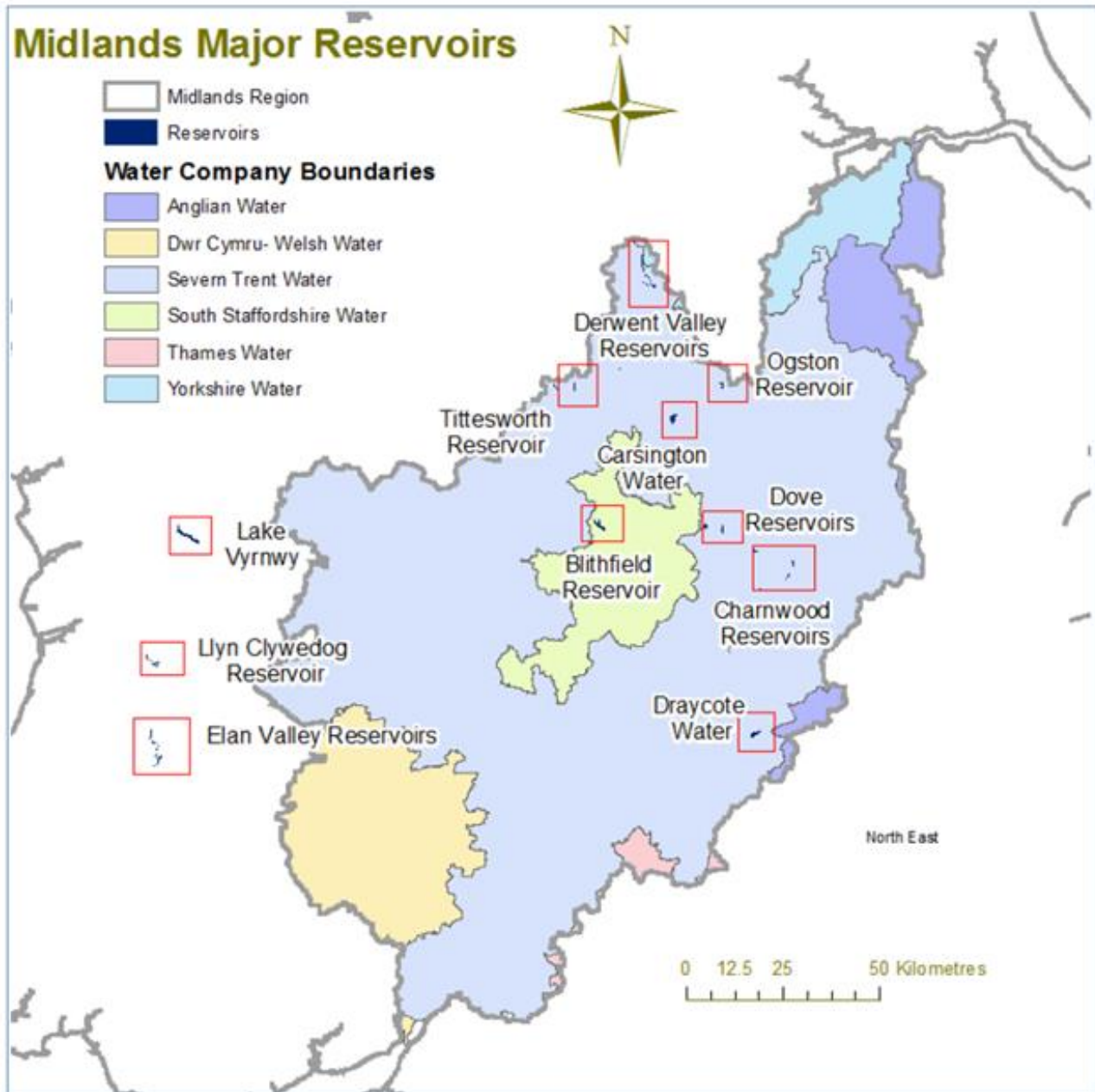
### 7.3 Midlands regional coverage

Figure 7.1: The Midlands regional boundary and the hydrological boundaries of the River Severn and River Trent.



## 7.4 Midlands major reservoirs

Figure 7.2: Location of major reservoirs in the Midlands.



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## 8 Appendices

### 8.1 Rainfall table

Hydrological area	Jan 2025 rainfall % of long term average 1961 to 1990	Jan 2025 band	Nov 2024 to January cumulative band	Aug 2024 to January cumulative band	Feb 2024 to January cumulative band
Avon To Evesham	134	Above normal	Above normal	Notably high	Exceptionally high
Derwent (midlands)	119	Above normal	Normal	Normal	Notably high
Dove	115	Normal	Above normal	Above normal	Exceptionally high
Lower Severn Estuary	146	Above normal	Above normal	Notably high	Exceptionally high
Lower Trent	152	Above normal	Above normal	Above normal	Notably high
Lower Wye	121	Normal	Normal	Notably high	Exceptionally high
Mid Severn	113	Normal	Normal	Above normal	Notably high
Shropshire Plains	118	Normal	Above normal	Notably high	Exceptionally high
Soar	143	Above normal	Above normal	Notably high	Exceptionally high

Tame	123	Normal	Above normal	Above normal	Exceptionally high
Upper Trent	110	Normal	Above normal	Above normal	Exceptionally high
Welsh Mountains	90	Normal	Normal	Normal	Above normal

## 8.2 River flows table

Site name	River	Catchment	Jan 2025 band	Dec 2024 band
Auckley	Torne	Torne	Notably high	Above normal
Bewdley	Severn	Severn Lower Mid	Above normal	Above normal
Butts Bridge	Lugg	Lugg	Normal	Normal
Clifton Hall	River Mease	Mease	Above normal	Above normal
Deerhurst	Severn	Severn Lower	Above normal	Above normal
Derby St. Marys	Derwent	Derwent Der to Markeaton con	Above normal	Normal
Ebley Mill	Frome (glos)	Frome Gloucs	Above normal	Notably high
Evesham	Avon (mi)	Avon Warwks Lower	Above normal	Above normal
Great Bridgford	Sow	Sow Upper	Notably high	Notably high
Kegworth	Soar	Soar to Kingston Brook confl	Above normal	Above normal
Llanyblodwel	Tanat	Severn Upper River Tanat	Normal	Above normal
Marston On Dove	Dove (mi)	Dove Derb to Hilton Br confl	Above normal	Above normal
North Muskham	Trent	Trent to Cromwell	Above normal	Above normal

Redbrook	Wye (herefordshire)	Wye H and W d s Lugg	Normal	Normal
Stareton	Avon (mi)	Avon Warwks Upper	Above normal	Notably high
Tenbury	Teme	Teme	Normal	Above normal
Walcot	Tern	Tern	Notably high	Notably high
Wedderburn Bridge	Leadon	Leadon	Exceptionally high	Above normal
Whatstandwell	Derwent	Derwent Derb to Amber conf	Normal	Normal
Worksop	Ryton	Ryton Upper to Oldcoates Dyke	Exceptionally high	Above normal
Yoxall	Trent	Trent to Tame Mease confl	Above normal	Notably high

### 8.3 Groundwater table

Site name	Aquifer	End of Jan 2025 band	End of Dec 2024 band
Anthony's Cross	Severn Vale Permo Triassic Sandstone	Exceptionally high	Exceptionally high
Coxmoor	Permo Triassic Sandstone	Exceptionally high	Exceptionally high
Crossley Hill	Permo Triassic Sandstone	Above normal	Notably high
Four Crosses	Permo Triassic Sandstone	Notably high	Exceptionally high
Ram Hall, Meriden	Grimsby Ancholme Louth Limestone	Above normal	Above normal
Rider Point Via Gellia	Carboniferous Limestone	Notably high	Normal
Southards Lane, Bolsover	Magnesian Limestone	Above normal	Above normal
Weir Farm	Bridgnorth Sandstone Formation	Exceptionally high	Exceptionally high