Monthly water situation report: Hertfordshire and North London Area

1 Summary - September 2025

September was generally near average across the Hertfordshire and North London area in terms of rainfall, receiving 96% of the long term average. All areal units recorded rainfall in the normal band. Despite this, soil moisture deficits remained elevated with very little effective rainfall. River baseflows were mixed: flows in chalk catchments were mostly in the normal band, while clay and urban rivers were generally below normal. Groundwater levels across the area continued to be stable overall, with the Mid-Chilterns Chalk in the normal band and most Upper Lee Chalk sites remaining above normal, including some notably high levels.

1.1 Rainfall

September was a generally near-average month across the Hertfordshire and North London area (the Area), receiving 51mm of rainfall, 96% of the long term average (LTA). All five areal rainfall units finished the month in the normal band. Additionally, over the past six months, rainfall across the Area was in the notably low band, with the Roding unit in the exceptionally low band. Over the past three months, rainfall across the Area was below normal. Over the last 12 months, rainfall was mostly notably low, with Roding remaining in the exceptionally low band. Despite the generally near-average month, a fair amount of rain fell early in the month, most notably on 2 September. On this day, the highest rainfall total was 20.2mm recorded at Weston STW (Lee Chalk unit). The highest monthly total was 95.2mm recorded at Prestwood Reservoir (Chilterns East Colne unit). In total, there were 16 dry days during September (under 0.2mm of rain recorded).

1.2 Soil moisture deficit and recharge

Soil moisture deficits remained above their LTAs during September. As was the case with August, very little effective rainfall was received in the Area during September. A small amount of effective rainfall was recorded in the chalk catchments, while none was received in clay and urban catchments.

1.3 River flows

During September, river baseflows showed a mixed picture. In chalk catchments, indicator sites were mostly in the normal band. The Mimram at Panshanger recorded a notably high flow for the time of year, the sixth highest September on record and the second highest since 2001. In contrast, the clay and urban rivers generally recorded monthly flows in the below normal band. Only minor rainfall-related flow responses were observed and no flood alerts or warnings were issued during the month.

1.4 Groundwater levels

Groundwater levels across the Area were stable during September, with indicator sites ranging from the normal to notably high bands. In the Mid-Chilterns Chalk, all indicator sites recorded end of month levels in the normal band. Meanwhile, the Upper Lee Chalk still had most sites in the above normal band, with some sites in the notably high band.

1.5 Reservoir stocks

The Lee Valley reservoir group began September at 91% of live capacity and finished the month at 90%. The lower Thames group started September at 66% of live capacity and finished at 64%.

1.6 Environmental impact

In the Colne catchment, the chalk river sources remained similar to their locations in August.

- The River Gade started flowing downstream of Hoo Lodge.
- The River Bulbourne was flowing at Mandalyns before drying and gaining a steadier flow downstream of Stag's Lane, Berkhamstead.
- The source of the River Chess was still just upstream of Chesham.
- The River Misbourne started flowing at Deep Mill Lane.

The chalk river sources in the Upper Lee also remained similar to their location in August.

- The River Mimram started flowing above Whitwell Gas Compound.
- The source of the River Beane was just above Walkern.
- The River Rib started flowing in Buntingford.
- The source of the River Ash (Herts) was just upstream of Much Hadham.
- The River Stort flowed briefly between Clavering and Manuden but ran dry before gaining a steadier flow at Stansted Springs.

To protect the environment, during September a number of abstraction licence flow constraints were in force. This ranged between 5 and 11 per week, out of a maximum of 32.

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2 Rainfall

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 30 September 2025), classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

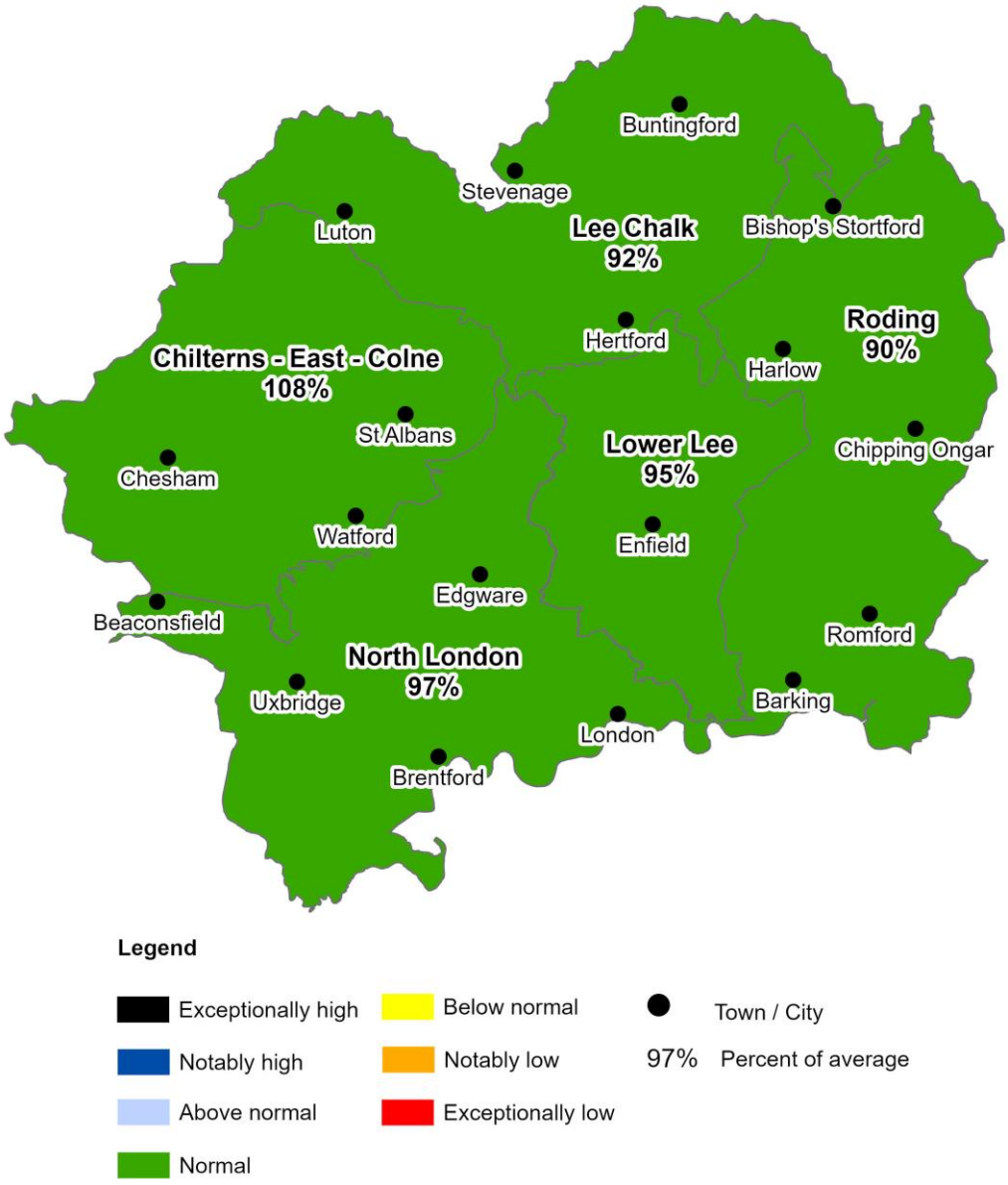
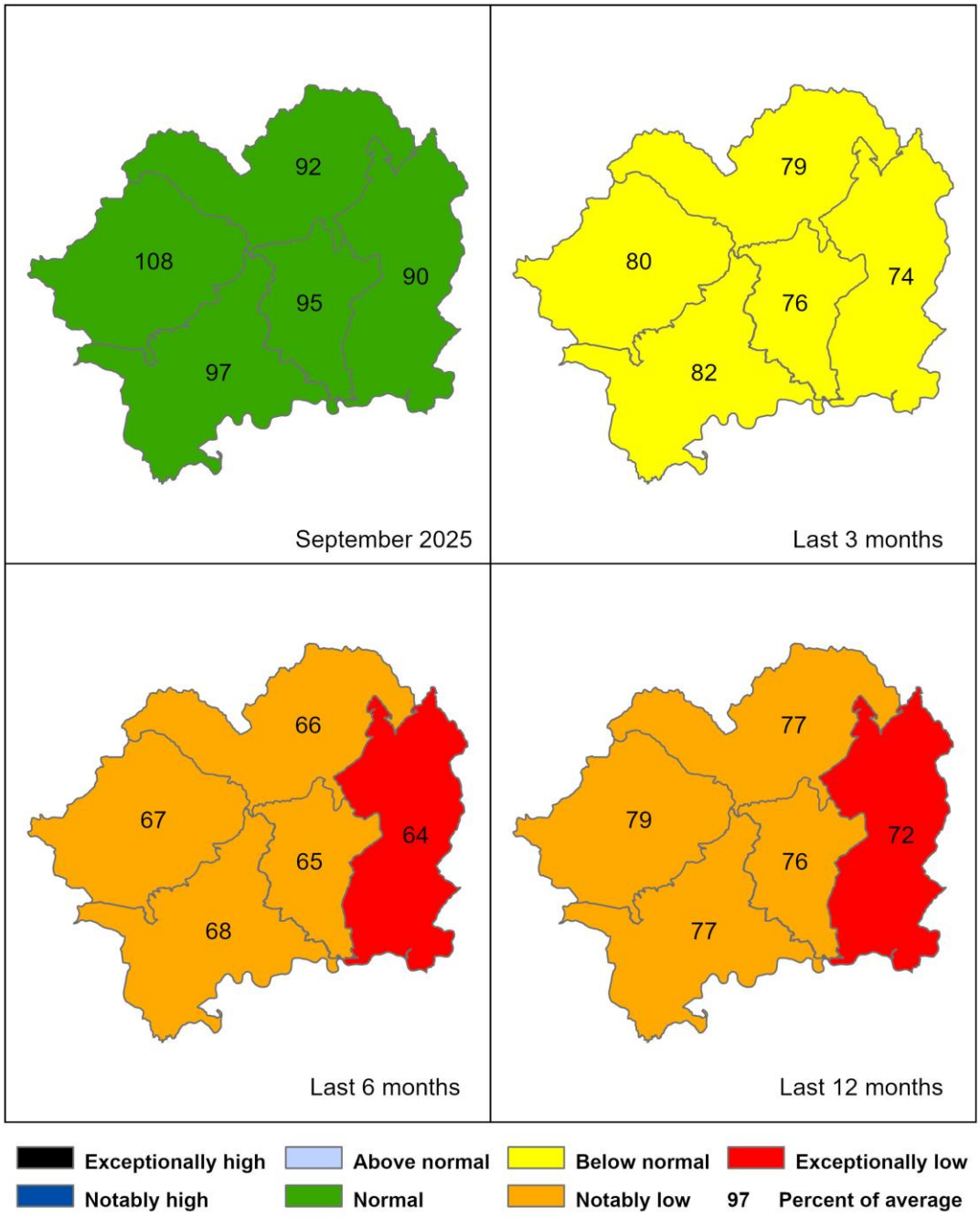


Figure 2.2: Total rainfall for hydrological areas for the current month (up to 30 September 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

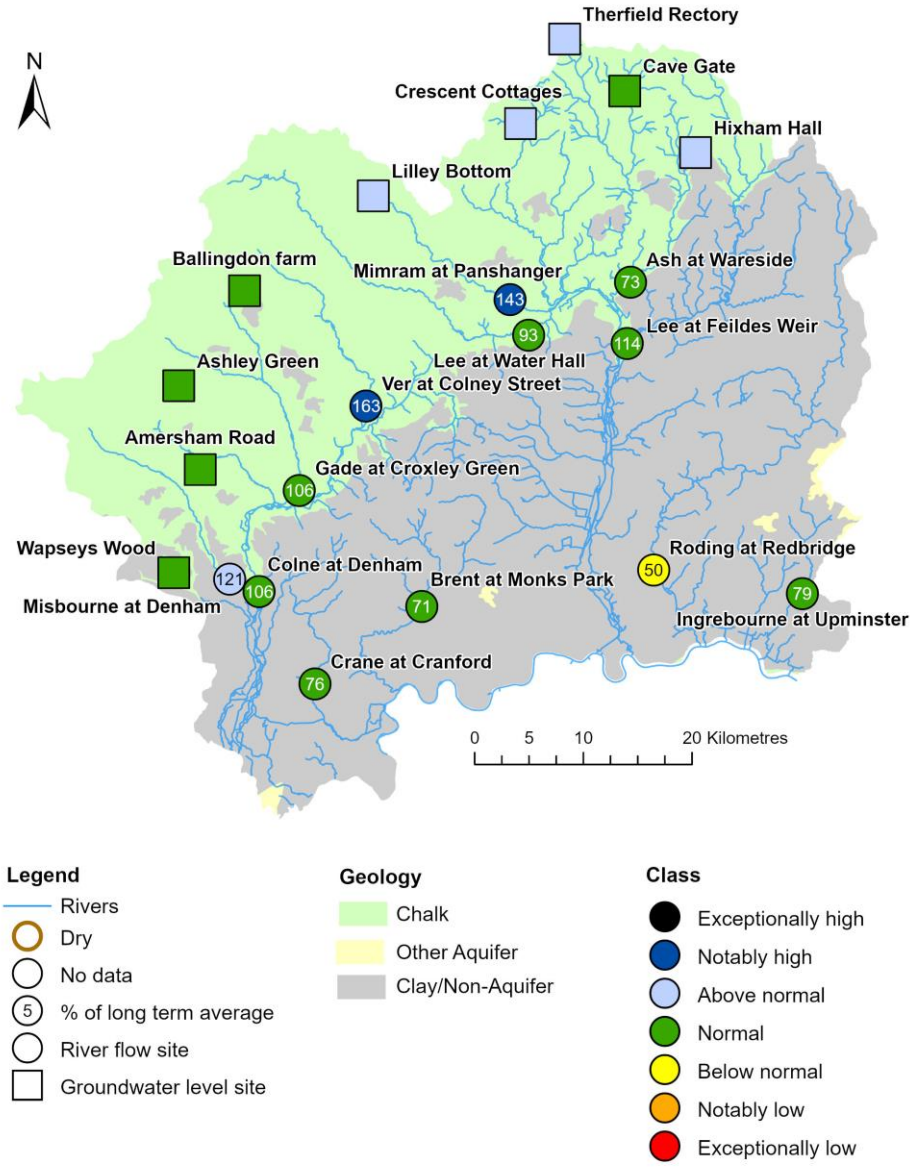


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. © Ordnance Survey Crown Copyright and Database Rights 2025 AC0000807064.

3 River flows and Groundwater levels

3.1 River flows and Groundwater level map

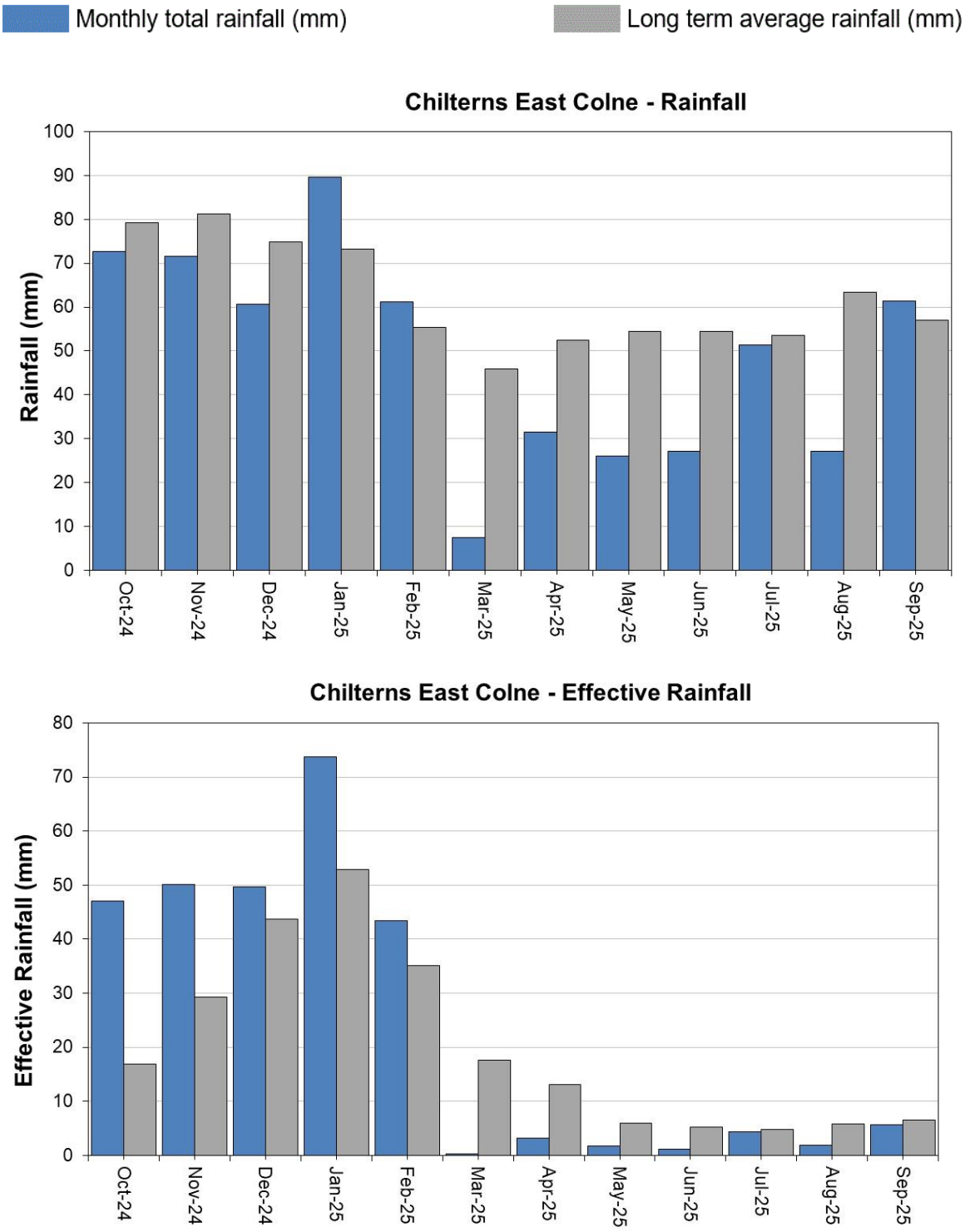
Figure 3.1: Monthly mean river flow and groundwater levels at our indicator sites for September 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic September monthly means. Table available in the appendices with detailed information.



4 Colne Catchment

4.1 Colne Rainfall and effective rainfall charts

Figure 4.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average for the Colne.

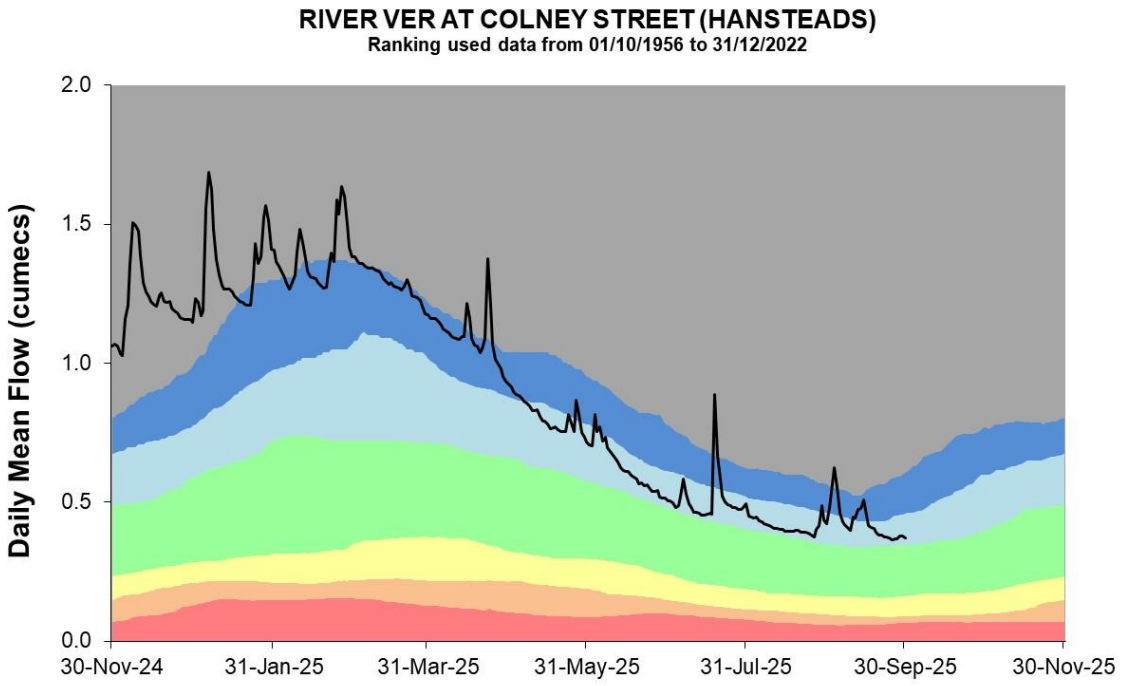


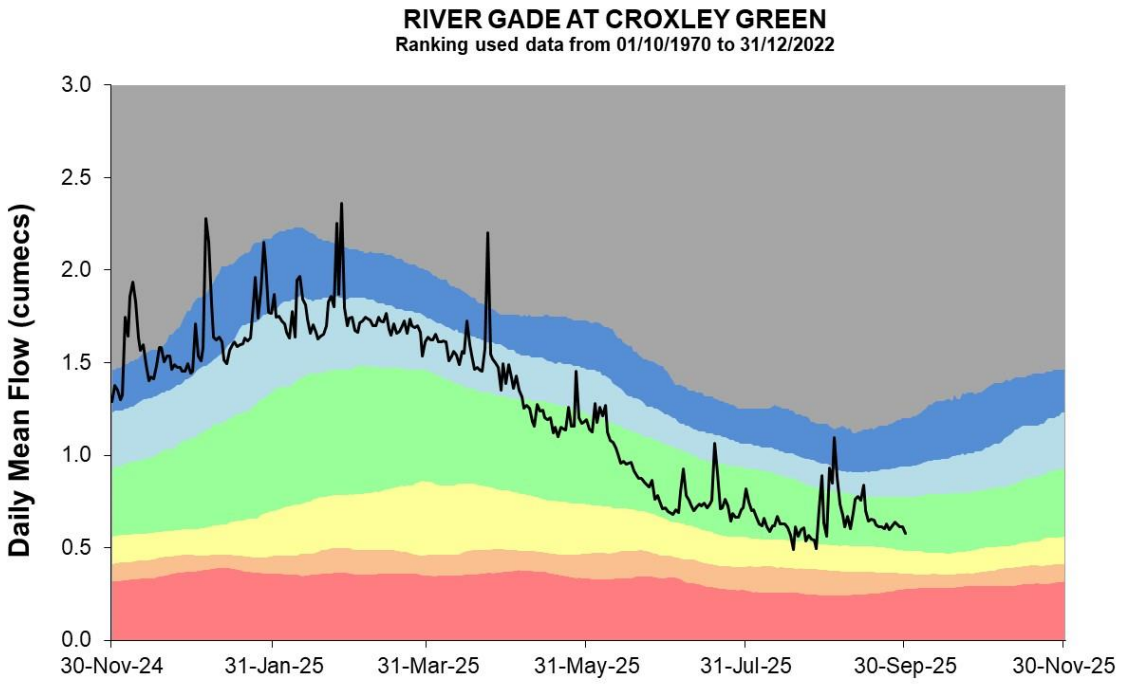
HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

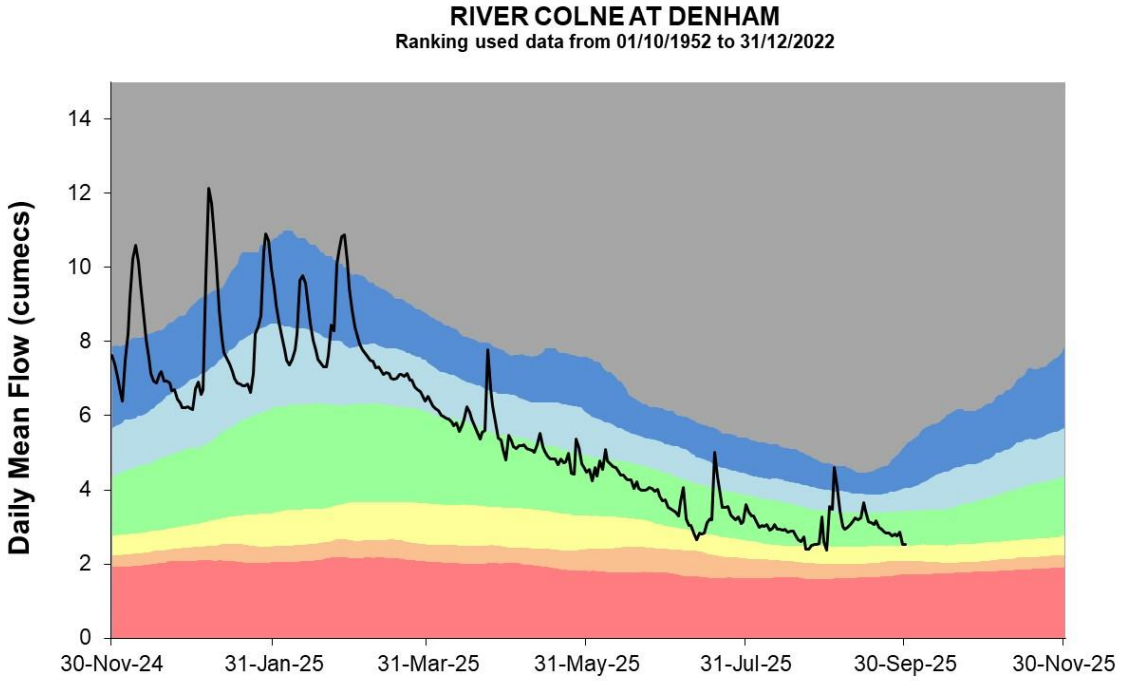
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

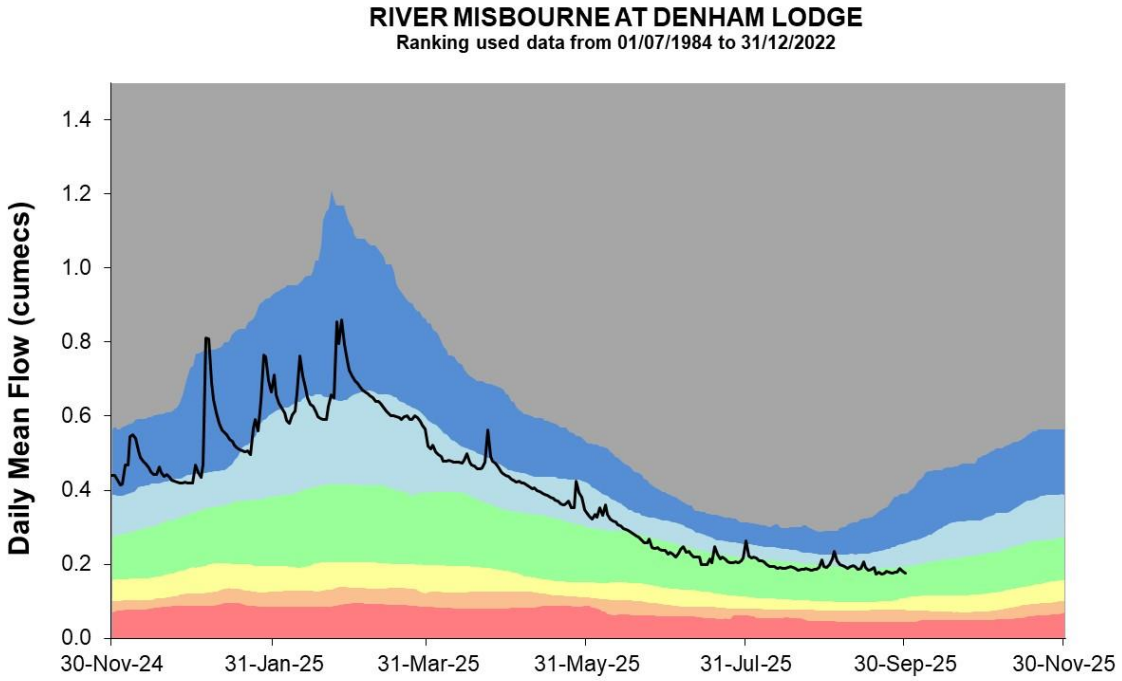
4.2 Colne River flow charts

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.





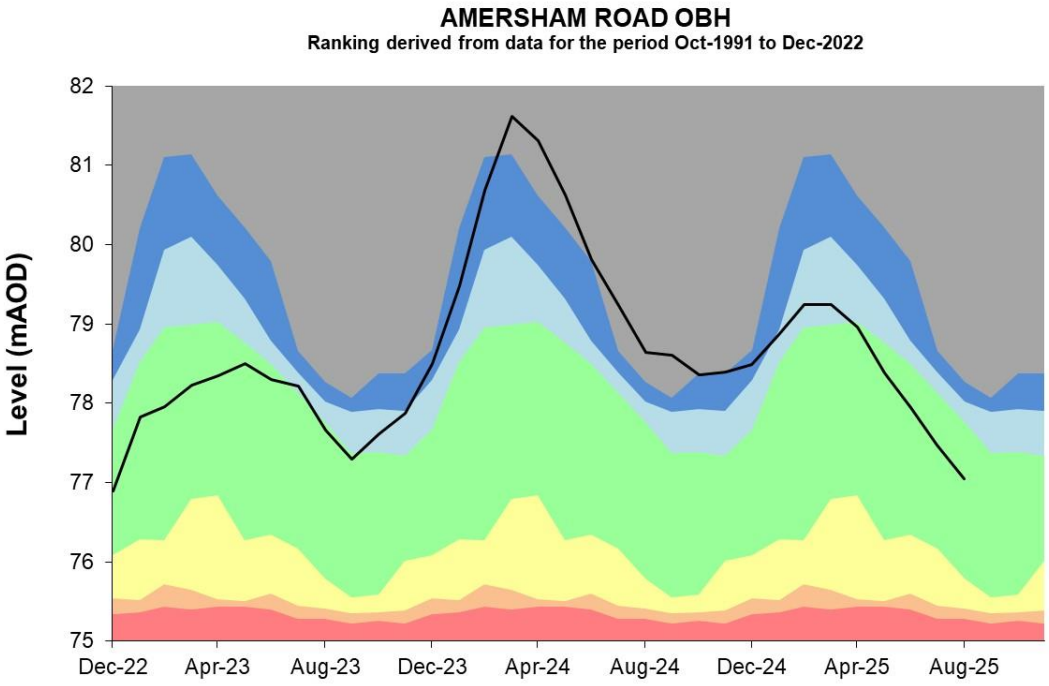


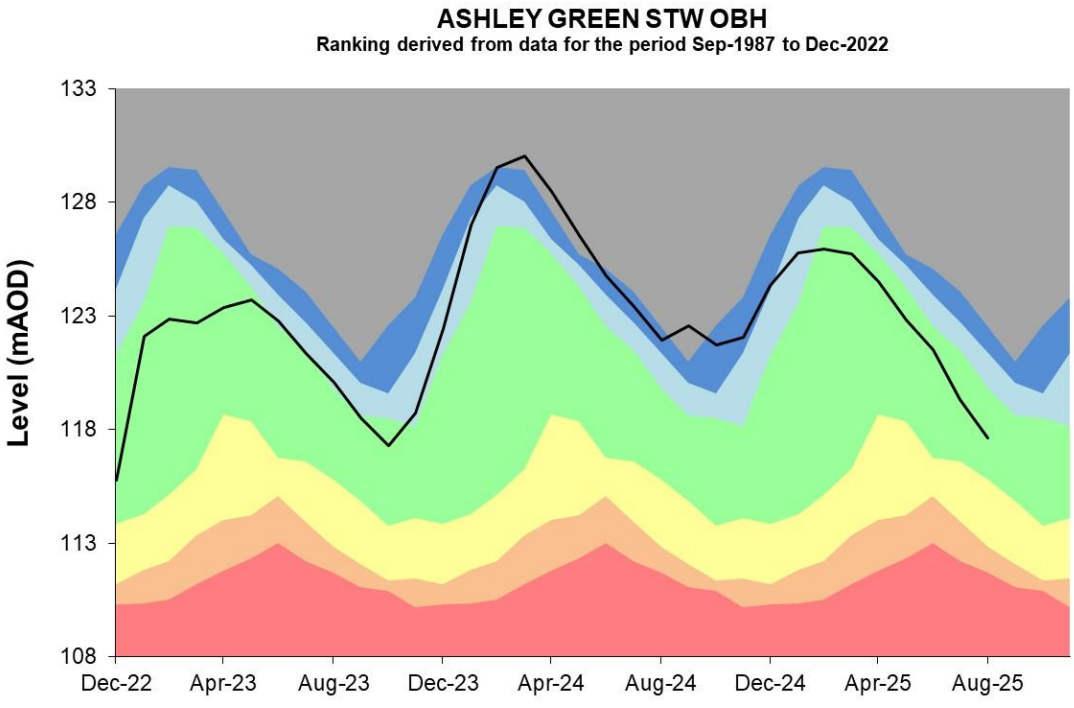


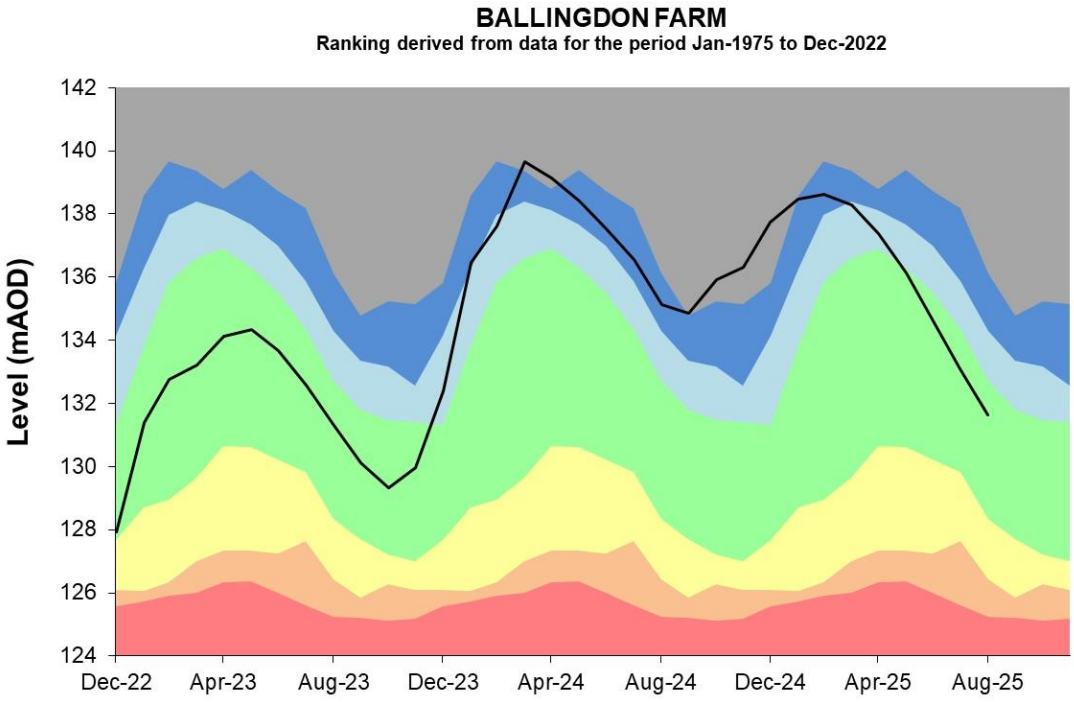
Source: Environment Agency, 2025

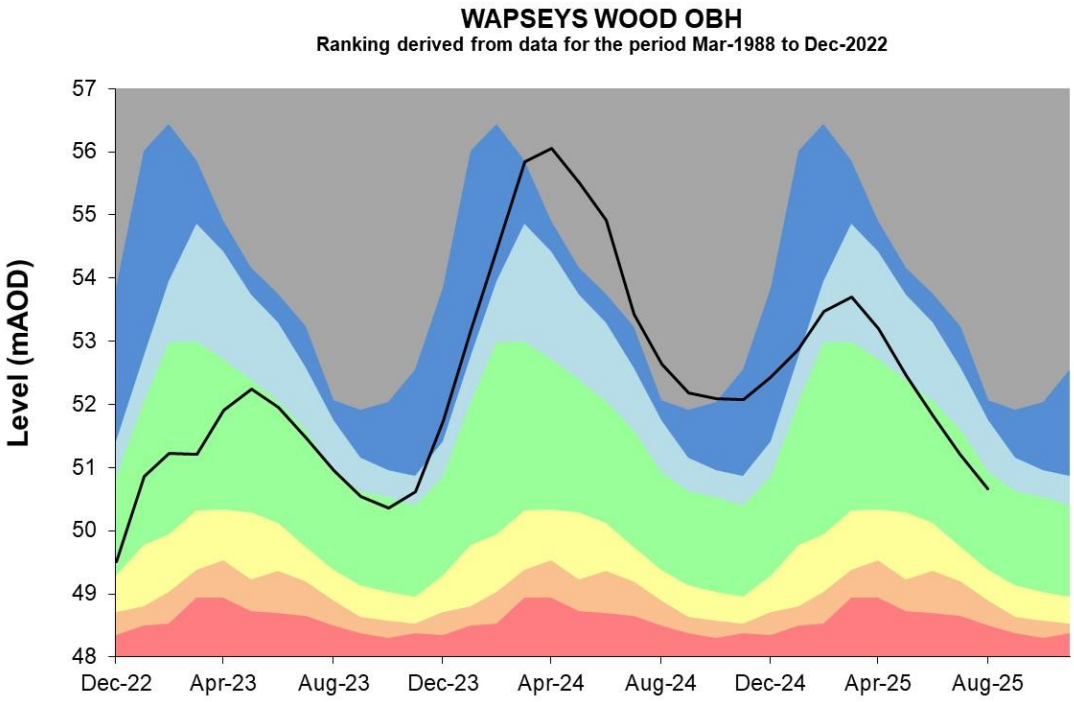
4.3 Colne Groundwater level charts

Figure 4.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.







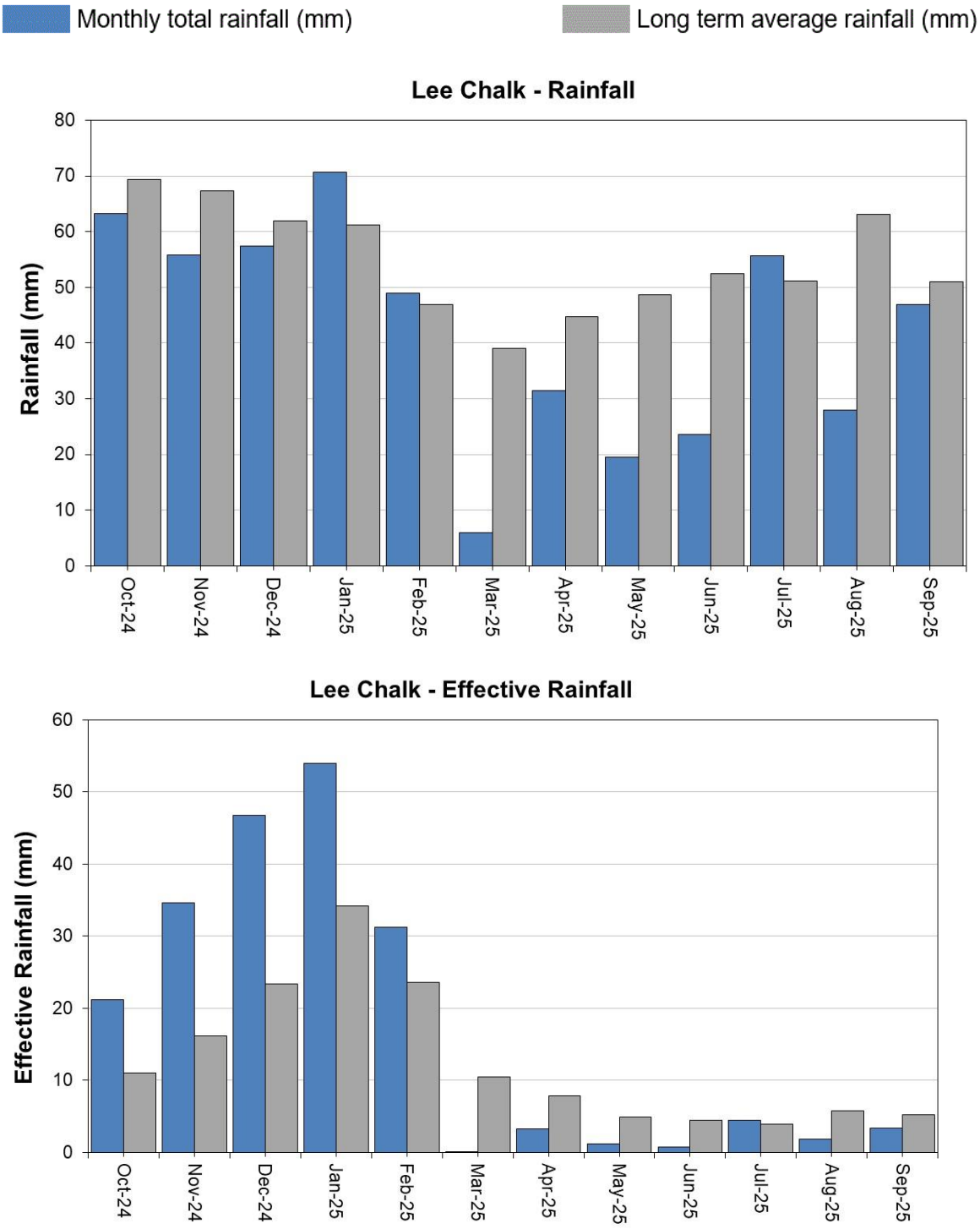


Source: Environment Agency, 2025

5 Upper Lee Catchment

5.1 Upper Lee Rainfall and Effective rainfall charts

Figure 5.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average for each region and for England.

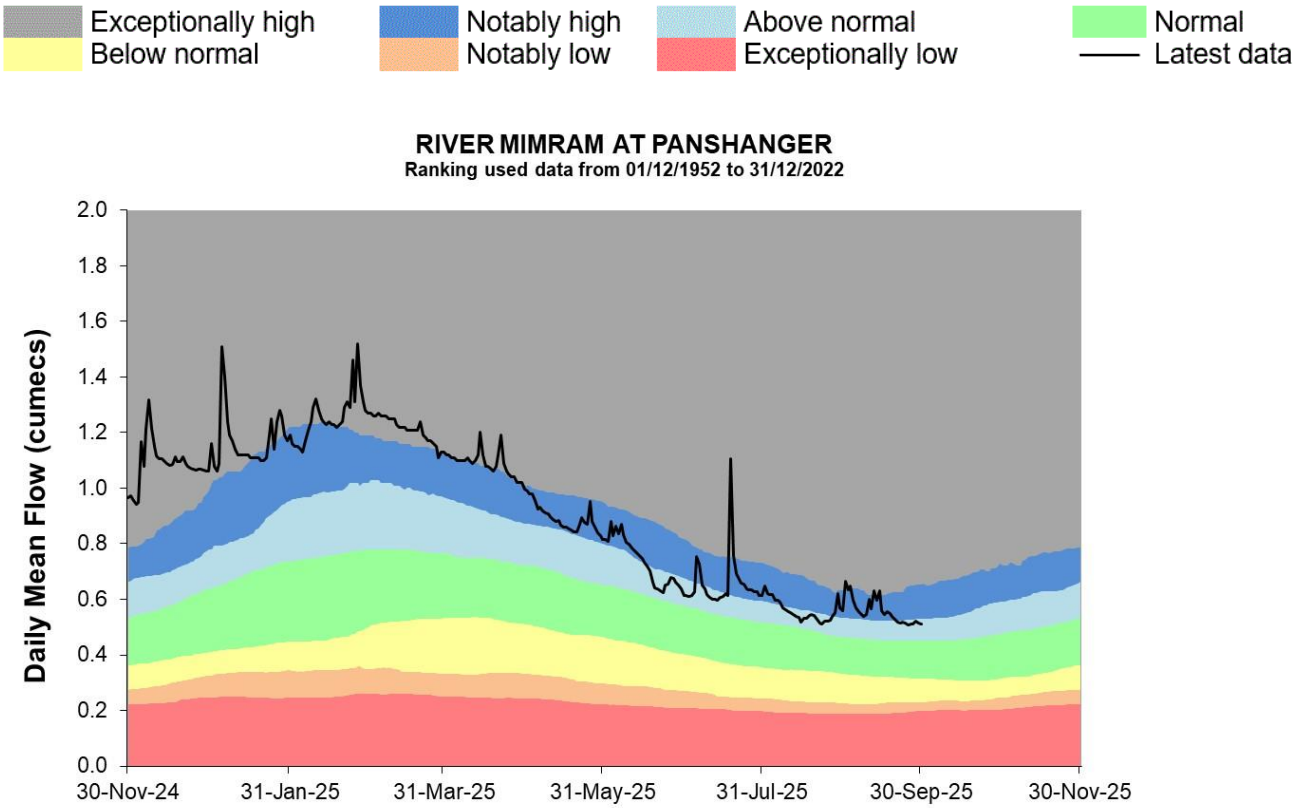


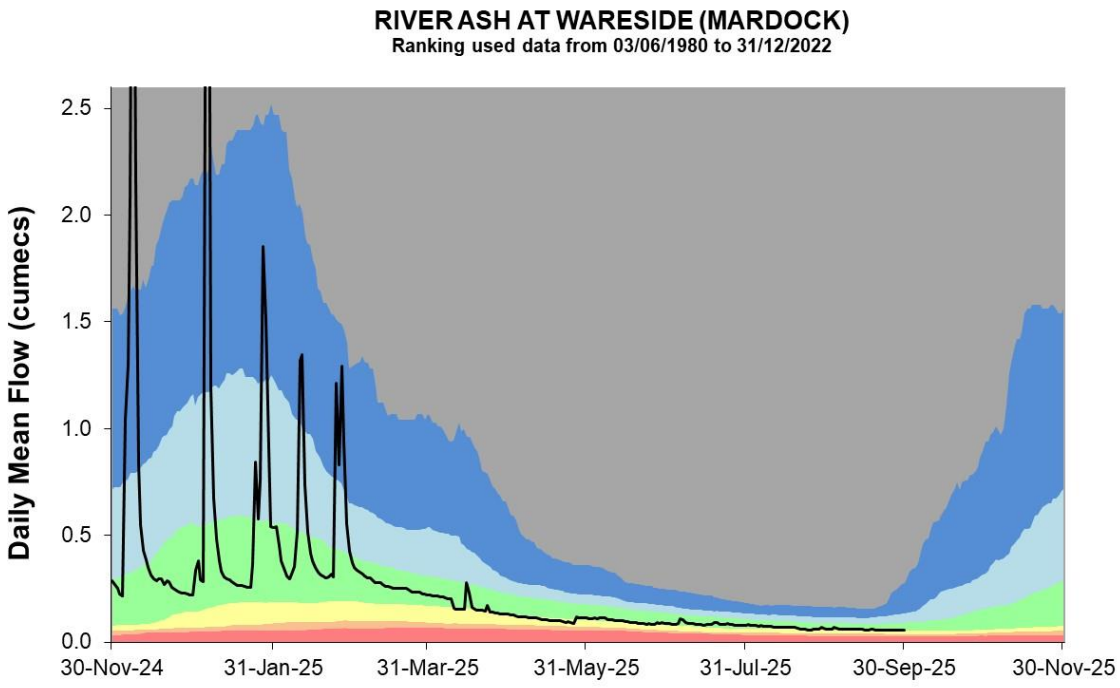
HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

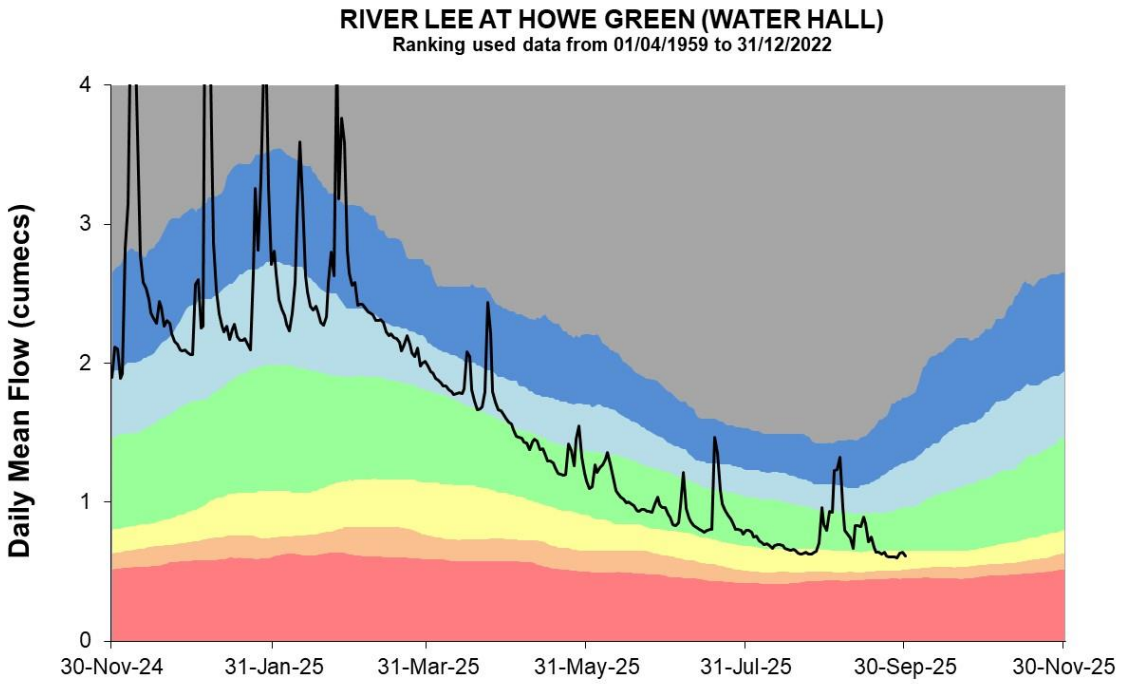
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

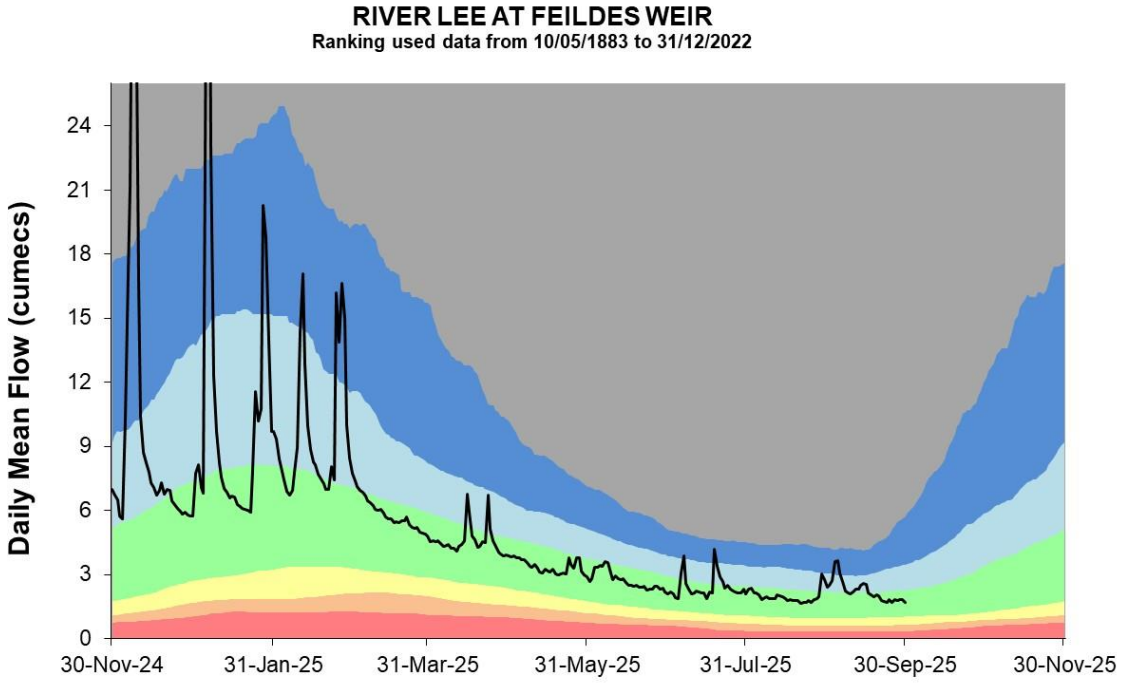
5.2 Upper Lee River flow charts

Figure 5.2 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.





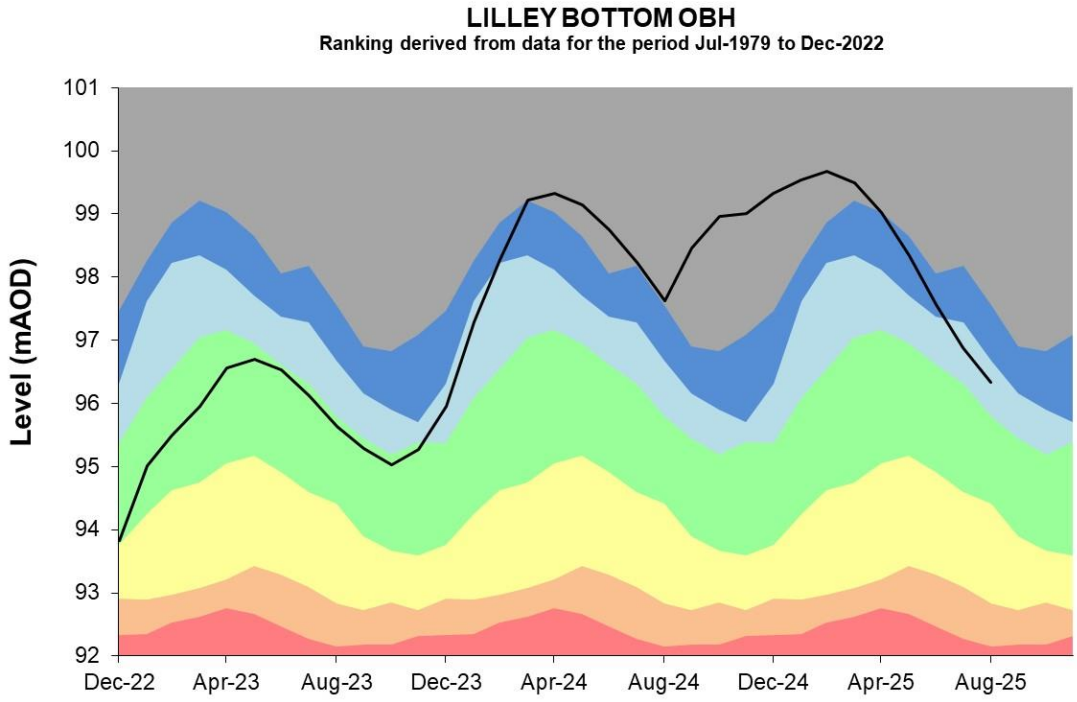


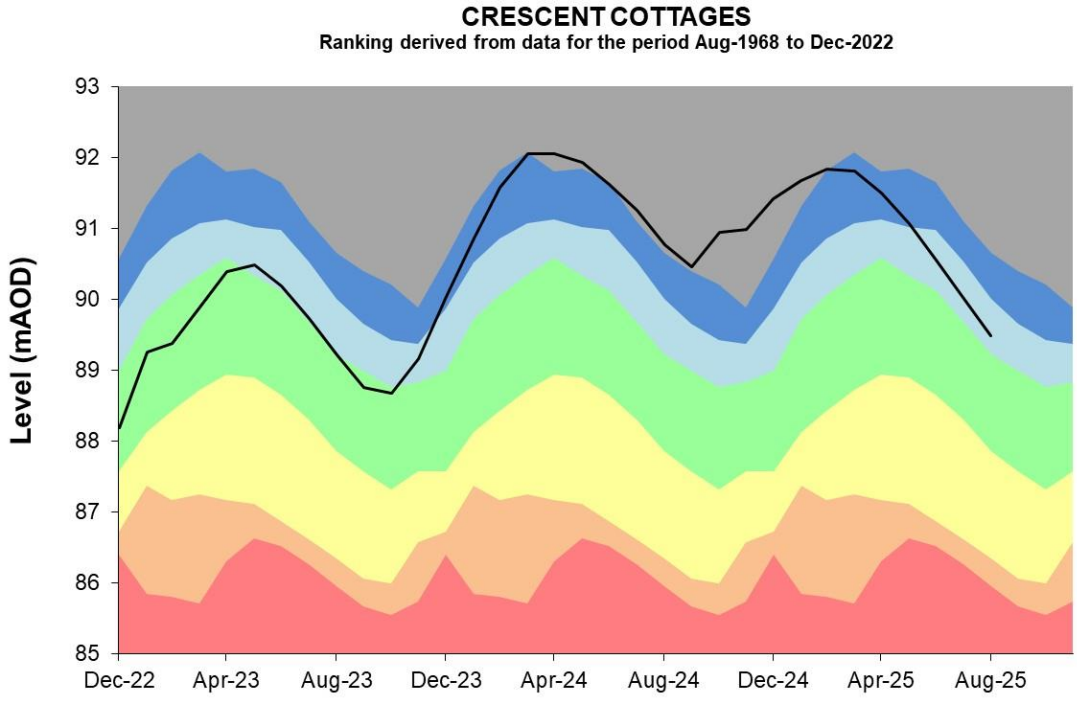


Source: Environment Agency, 2025

5.3 Upper Lee Groundwater level charts

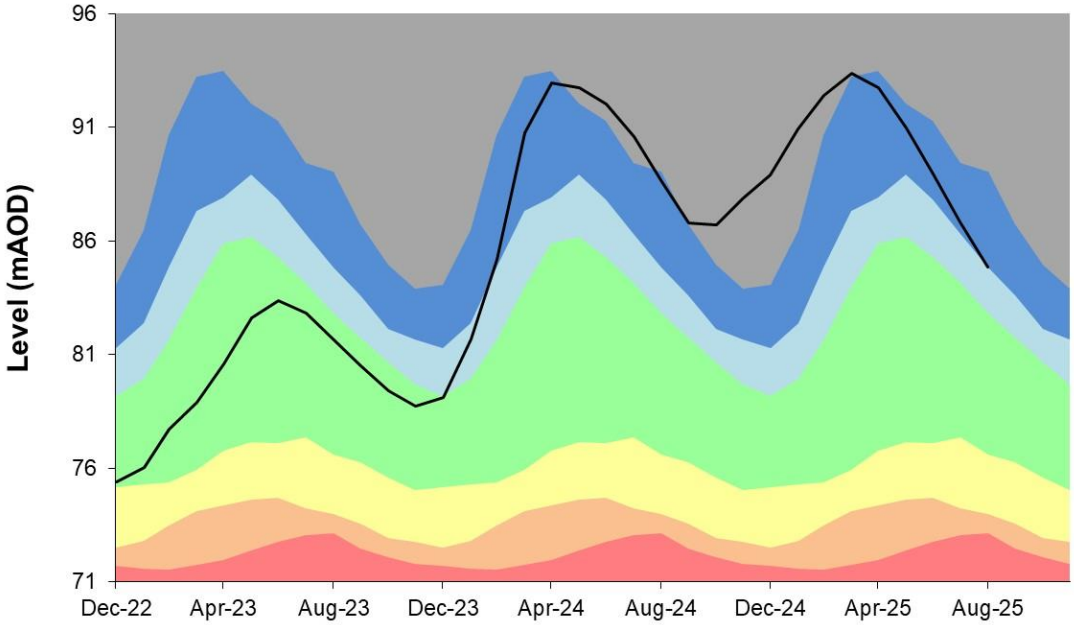
Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.





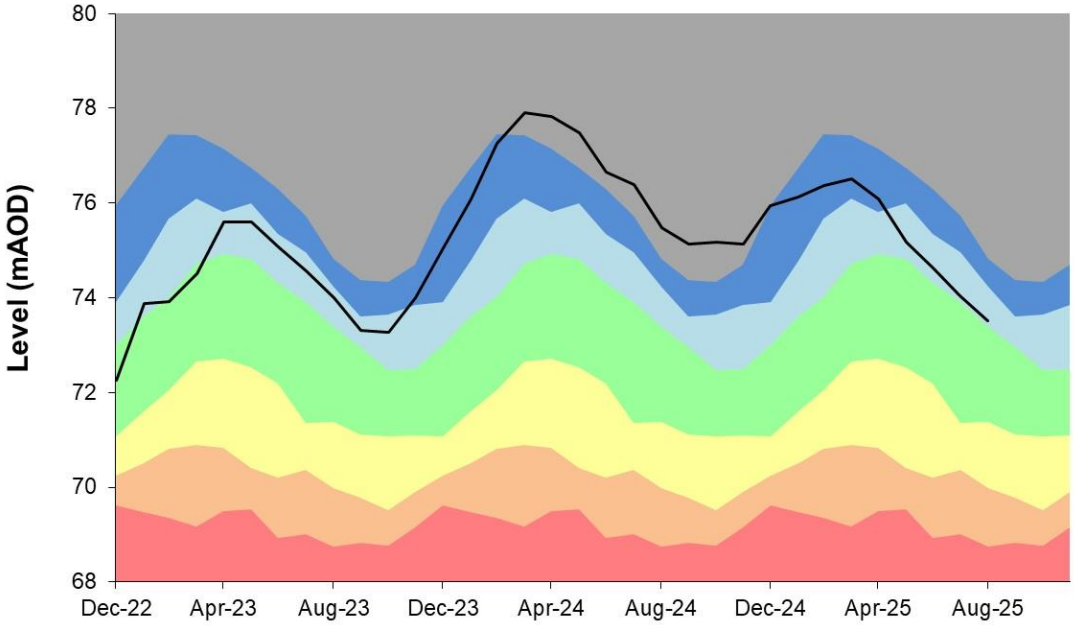
THERFIELD RECTORY

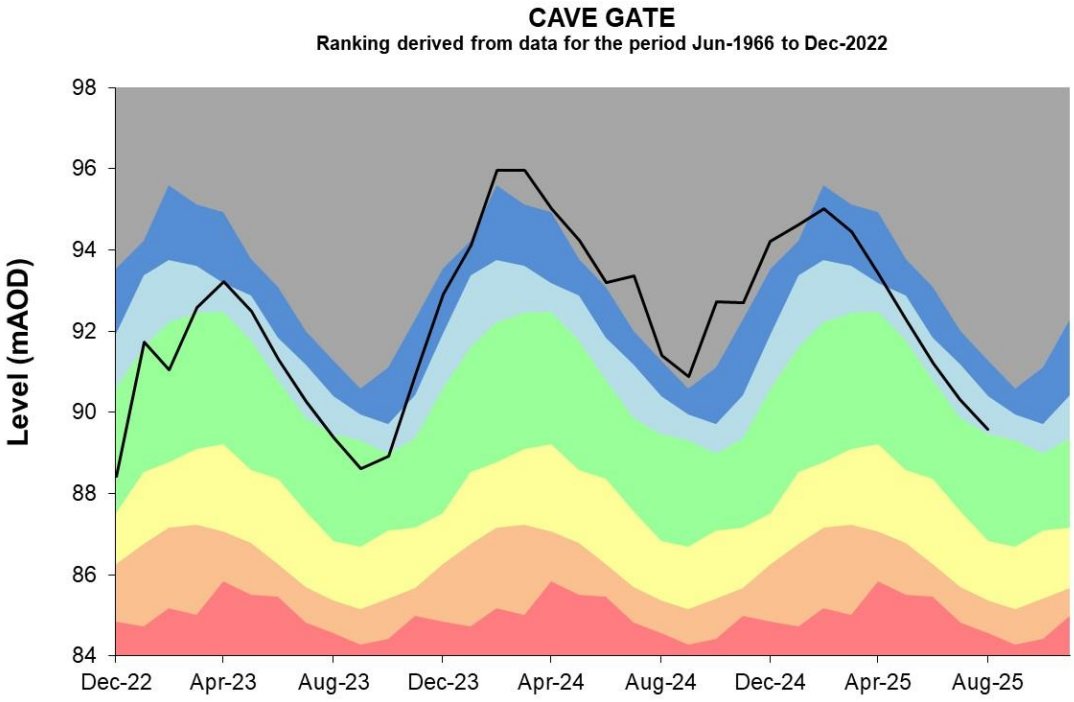
Ranking derived from data for the period Jan-1883 to Dec-2022



HIXHAM HALL

Ranking derived from data for the period Jun-1964 to Dec-2022



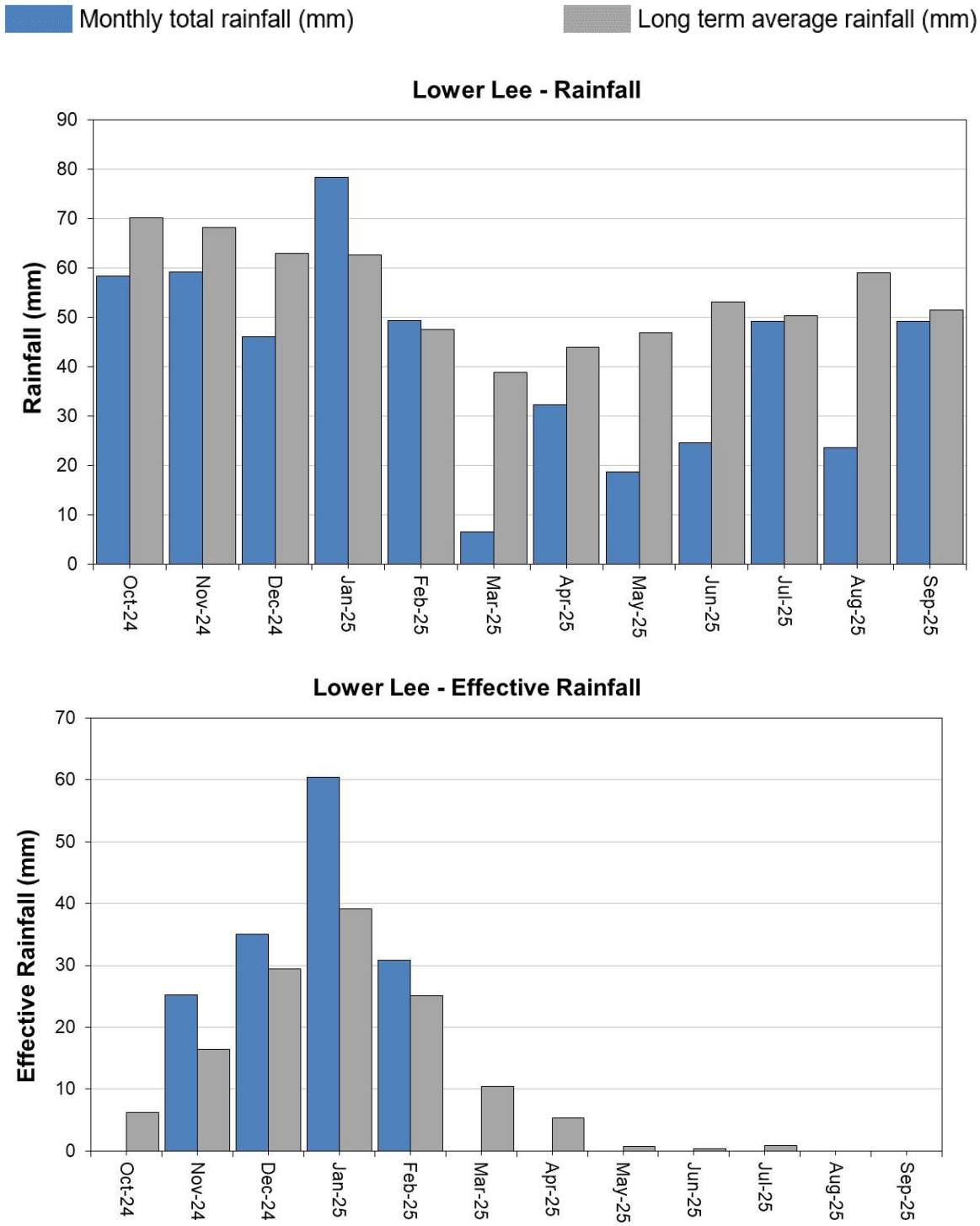


Source: Environment Agency, 2025

6 Lower Lee Catchment

6.1 Lower Lee Rainfall and Effective Rainfall charts

Figure 6.1: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average for the Lower Lee.

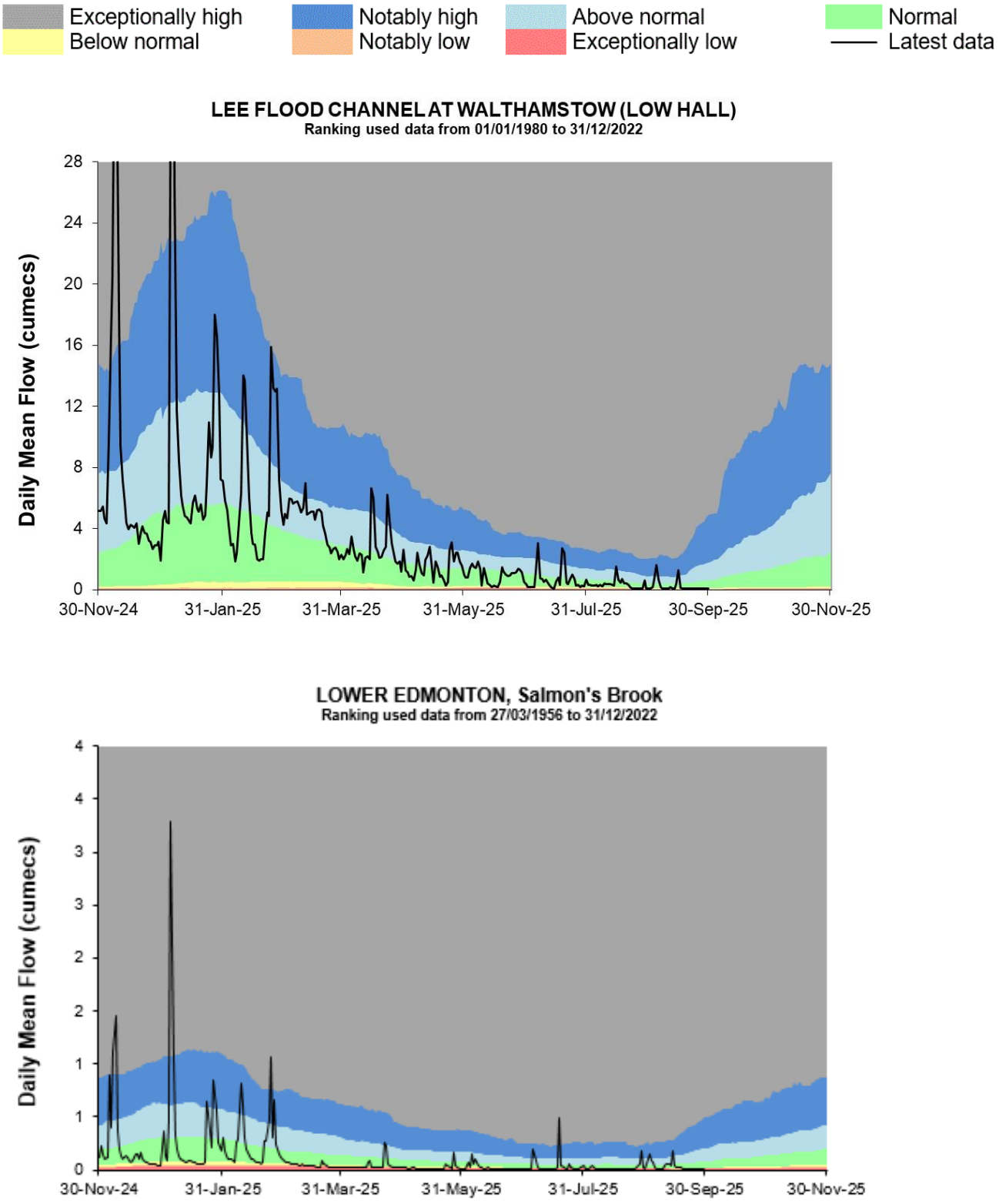


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

6.2 Lower Lee River flow charts

Figure 6.2: 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.

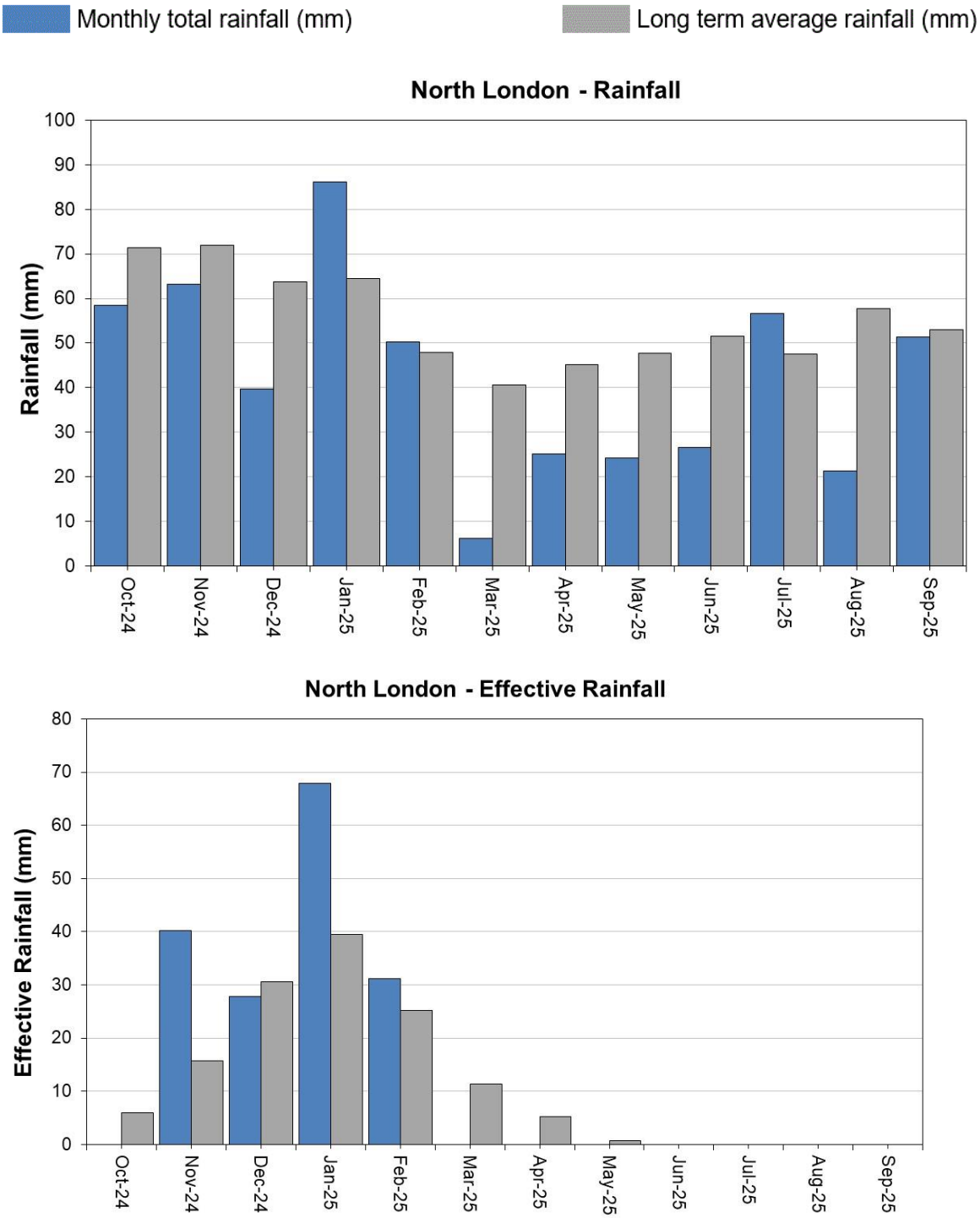


Source: Environment Agency, 2025

7 North London Catchment

7.1 North London Rainfall and Effective Rainfall charts

Figure 7.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average for each region and for England.

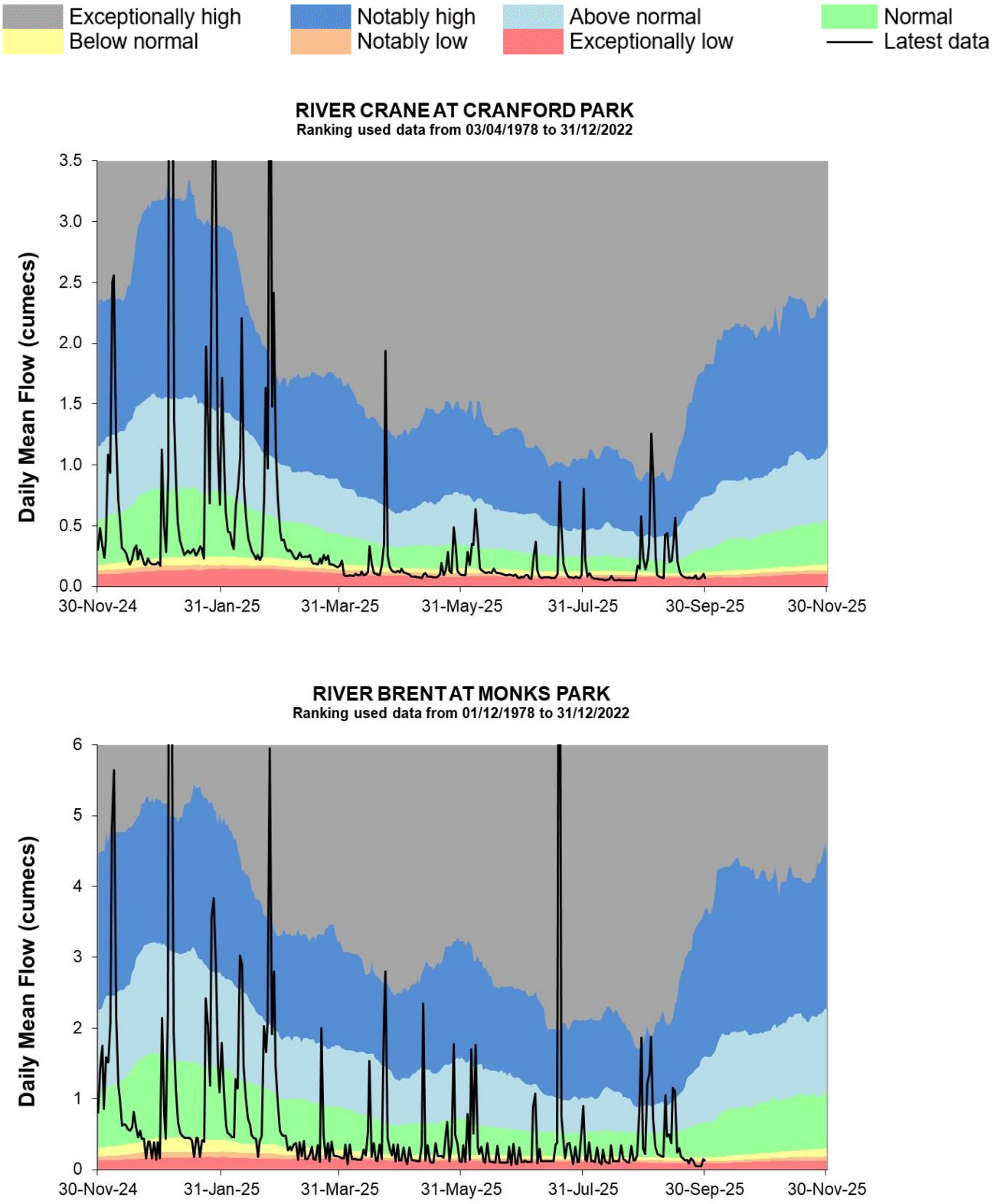


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

7.2 North London River flow charts

Figure 7.2: 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.

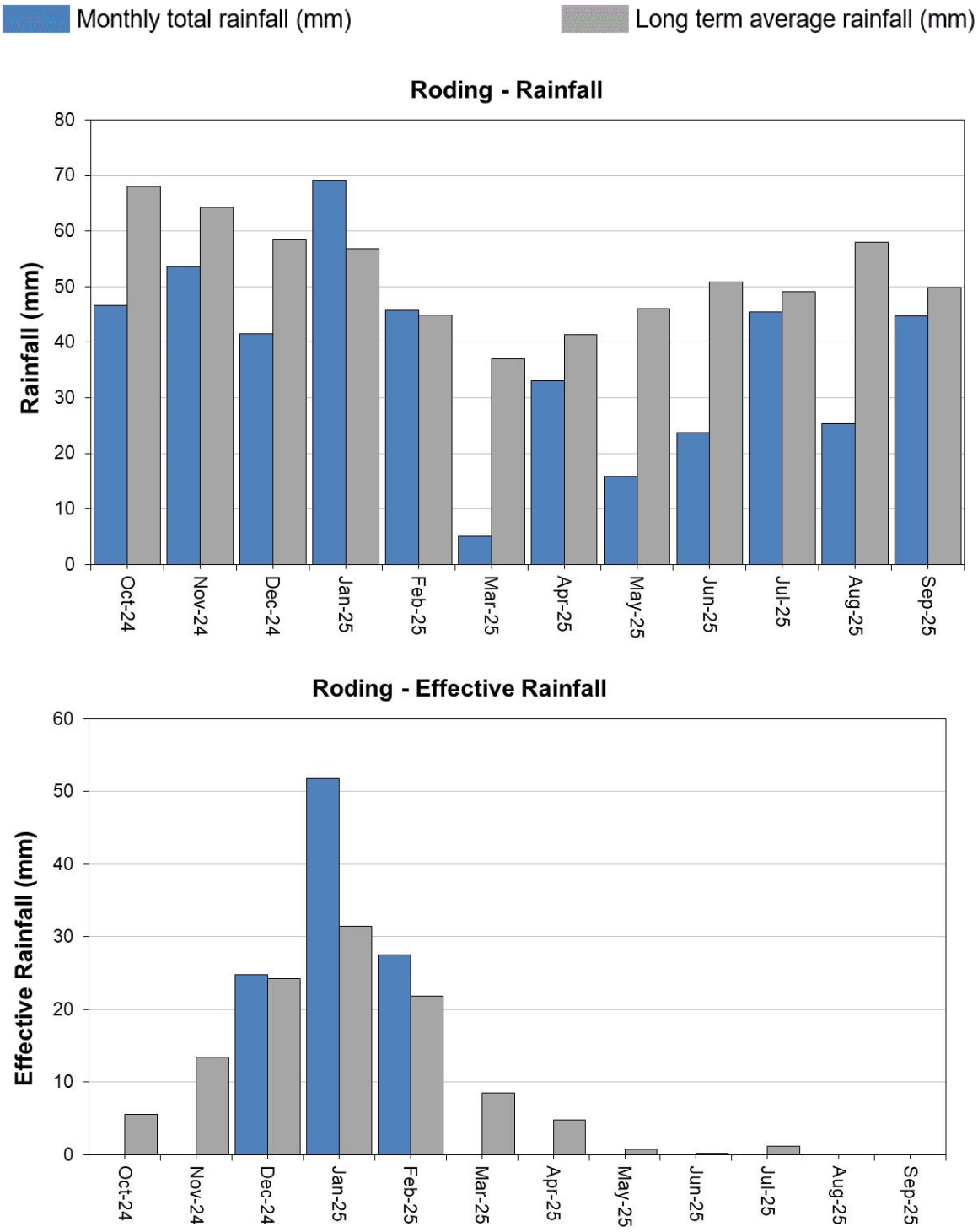


Source: Environment Agency, 2025

8 Roding Catchment

8.1 Roding Rainfall and Recharge chart

Figure 8.1: Monthly rainfall and recharge totals for the past 12 months compared to the 1991 to 2020 long term average for each region and for England.

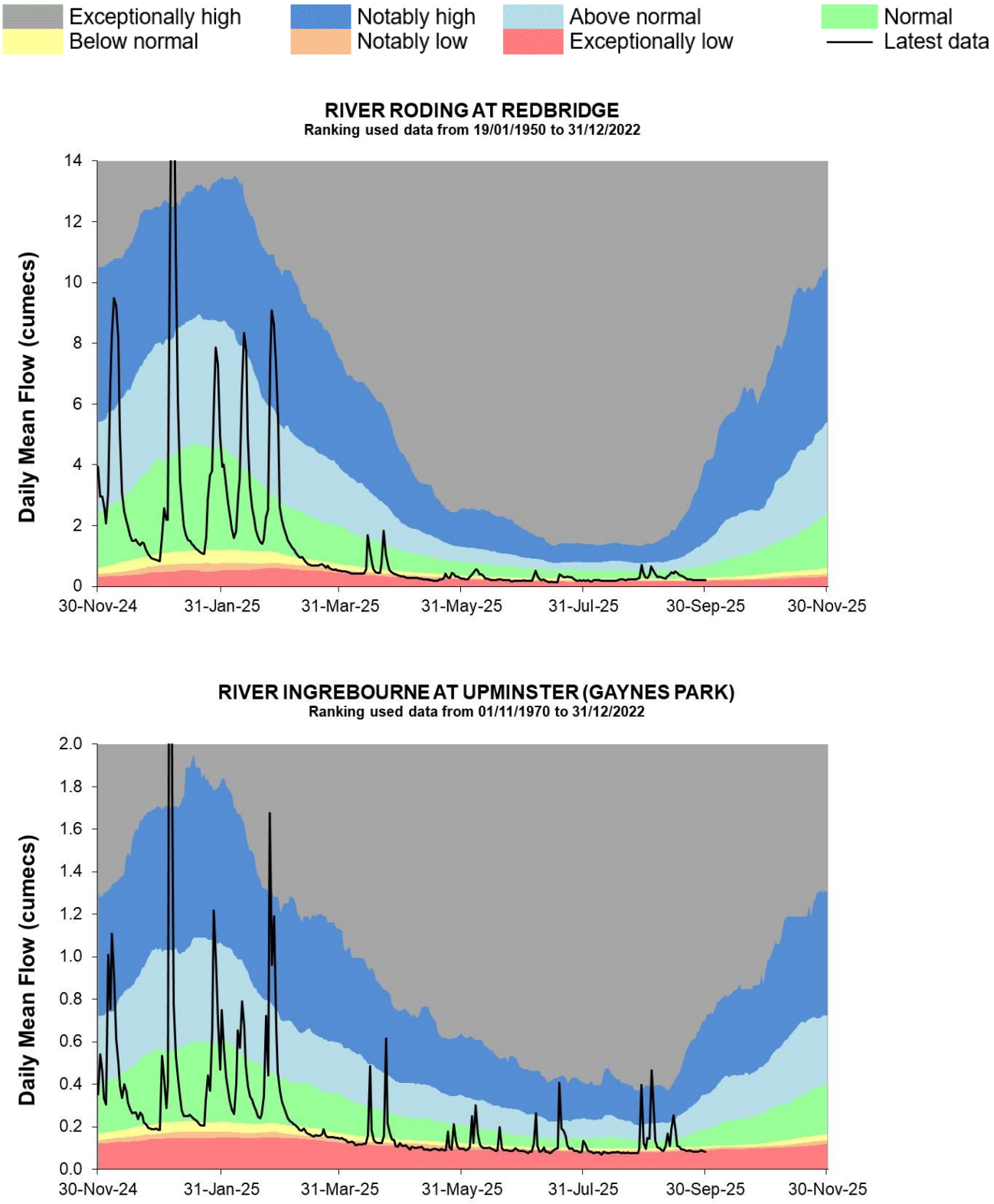


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

8.2 Roding River flow charts

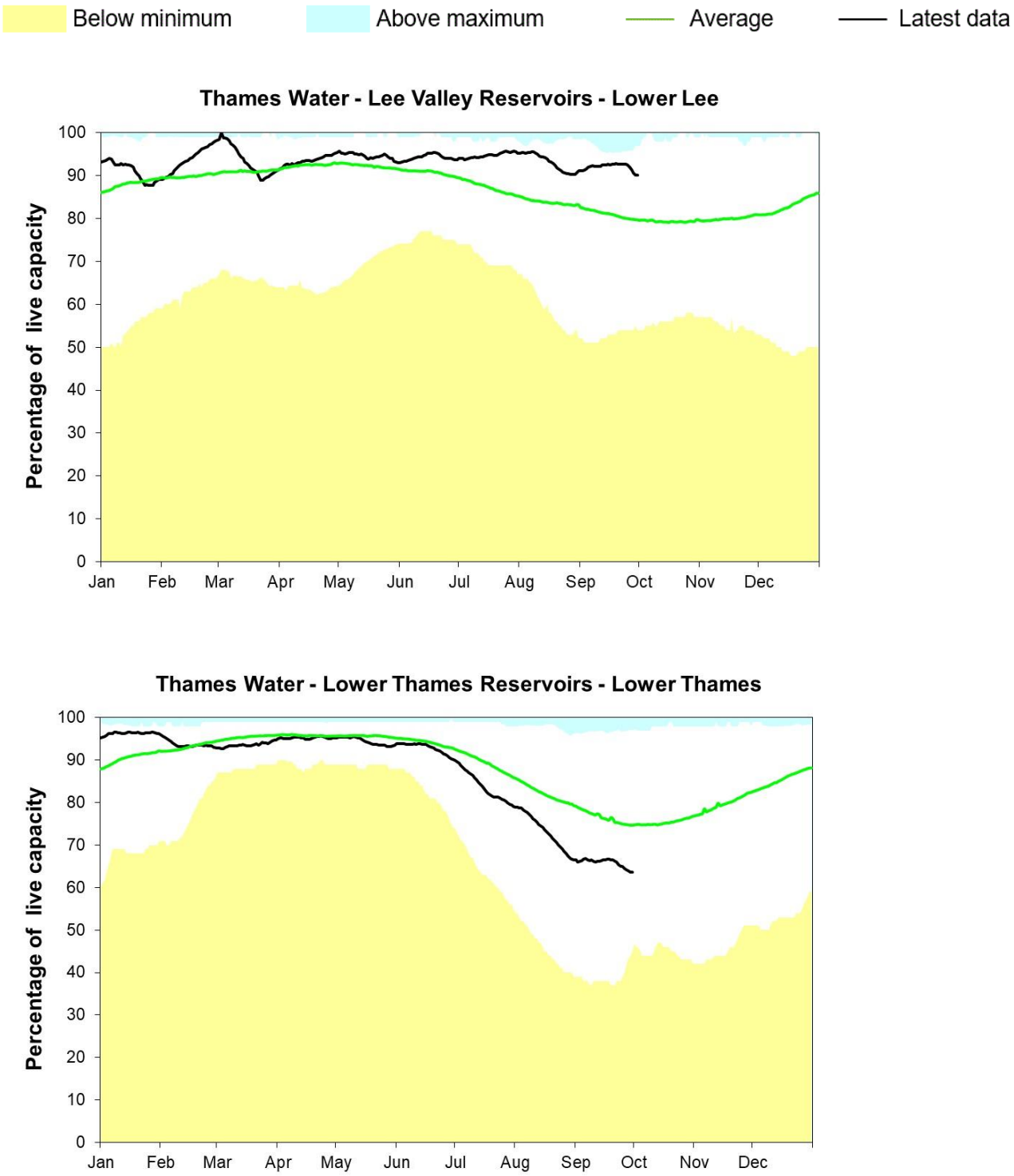
Figure 8.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025

9 Reservoir stocks

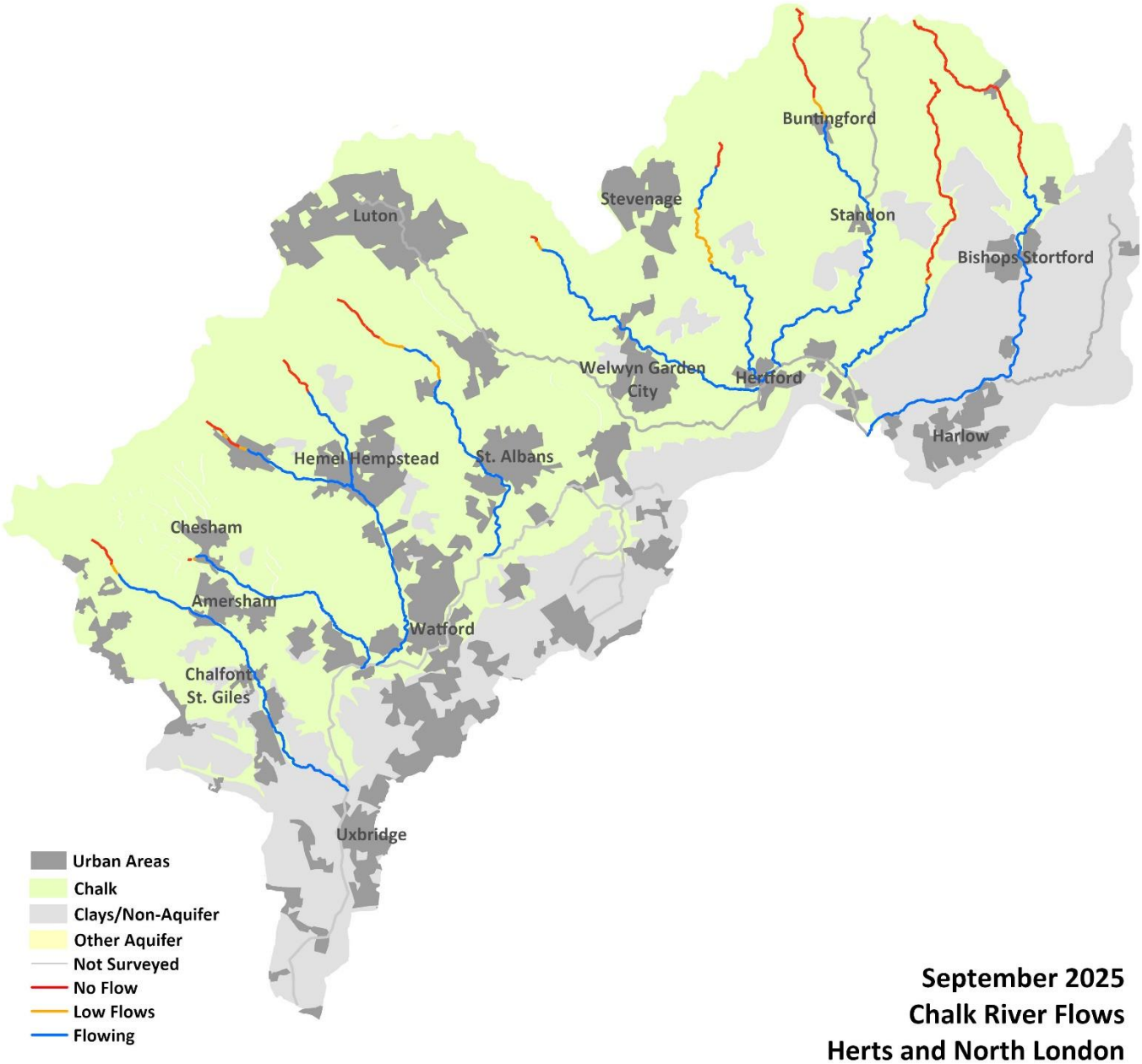
Figure 9.1: End of month reservoir stocks for the Lower Thames reservoir group and the Lee Valley reservoir group compared to long term maximum, minimum and average stocks. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.



Source: water companies, 2025

10 Chalk Rivers

Figure 10.1: Length of Chalk Rivers surveyed during the month and categorised as: Flowing, Low Flows, No Flow or Not Surveyed.



Source: Environment Agency, 2025

11 Glossary

11.1 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).

11.2 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.

12 Appendices

12.1 Rainfall table

Hydrological area	Sep 2025 total rainfall in mm	Sep 2025 rainfall long term average 1991 to 2020	Sep 2025 rainfall % of long term average 1991 to 2020	Summer Apr 2025 to Sep 2025 total rainfall in mm	Summer Apr 2025 to Sep 2025 rainfall % of long term average 1991 to 2020
Chilterns East Colne	61	57	108	224	67
Lee Chalk	47	51	92	205	66
Lower Lee	49	51	95	197	65
North London	51	53	97	205	68
Roding	45	50	90	188	64
Herts and North London total	51	52	96	204	66

12.2 Rainfall banding table

Hydrological area	Sep 2025 band	Jul 2025 to Sep 2025 cumulative band	Apr 2025 to Sep 2025 cumulative band	Oct 2024 to Sep 2025 cumulative band
Chilterns East Colne	Below normal	Notably low	Normal	Normal
Lee Chalk	Normal	Below normal	Normal	Above normal
Lower Lee	Normal	Below normal	Normal	Normal
North London	Below normal	Notably low	Below normal	Normal
Roding	Normal	Below normal	Below normal	Normal

12.3 Effective Rainfall table

Hydrological area	Sep 2025 total effective rainfall in mm	Sep 2025 effective rainfall long term average 1991 to 2020 in mm	Sep 2025 effective rainfall % of long term average 1991 to 2020	Summer Apr 2025 to Sep 2025 total effective rainfall in mm	Summer Apr 2025 to Sep 2025 effective rainfall % of long term average 1991 to 2020
Chilterns East Colne	6	7	85	18	43
Lee Chalk	3	5	65	15	46
Lower Lee	0	0	0	0	0
North London	0	0	0	0	0
Roding	0	0	0	0	0
Herts and North London total	2	2	77	7	35

12.4 Soil Moisture Deficit table

Hydrological area	Sep 2025 end of month Soil Moisture Deficit in mm	Sep 2025 end of month Soil Moisture Deficit long term average 1991 to 2020 in mm	Aug 2025 end of month Soil Moisture Deficit in mm	Aug 2025 end of month Soil Moisture Deficit long term average 1991 to 2020 in mm
Chilterns East Colne	172	107	169	105
Lee Chalk	186	124	172	118
Lower Lee	182	114	173	110
North London	181	118	173	114
Roding	186	117	172	112
Herts and North London total	181	116	171	112

12.5 River flows table

Site name	River	Catchment	Sep 2025 band	Aug 2025 band
Colney Street (Hansteads)	Ver	Colne	Notably high	Above normal
Croxley Green	Gade	Colne	Normal	Normal
Denham Lodge	Misbourne	Colne	Above normal	Normal
Denham Colne	Colne	Colne	Normal	Normal
Howe Green (Water Hall)	Lee	Upper Lee	Normal	Normal
Panshanger	Mimram	Upper Lee	Notably high	Notably high
Wareside (Mardock)	Ash	Upper Lee	Normal	Normal
Feildes Weir (naturalised)	Lee	Upper Lee	Normal	Normal
Brent (Monks Park)	Brent	North London	Normal	Exceptionally low
Cranford (Cranford Park)	Crane	North London	Normal	Exceptionally low
Redbridge	Roding	Roding, Beam and Ingrebourne	Below normal	Exceptionally low
Upminster (Gaynes Park)	Ingrebourne	Roding, Beam and Ingrebourne	Normal	Exceptionally low

12.6 Groundwater table

Site name	Aquifer	Sep 2025 band	Aug 2025 band
Ashley Green	Mid-Chilterns Chalk	Normal	Normal
Ballingdon Farm	Mid-Chilterns Chalk	Normal	Normal
Amersham Road	Mid-Chilterns Chalk	Normal	Normal
Wapseys Wood	Mid-Chilterns Chalk	Normal	Normal
Lilley Bottom	Upper Lee Chalk	Above Normal	Above Normal
Crescent Cottages	Upper Lee Chalk	Above Normal	Above Normal
Cave Gate	Upper Lee Chalk	Normal	Above normal
Hixham Hall	Upper Lee Chalk	Above normal	Above normal
Therfield Rectory	Upper Lee Chalk	Above Normal	Notably High

12.7 Abstraction licence flow constraints

Number of flow constraints in force between 1 and 7 September 2025	Number of flow constraints in force between 8 and 14 September 2025	Number of flow constraints in force between 15 and 21 September 2025	Number of flow constraints in force between 22 and 28 September 2025
6	5	11	10