Monthly water situation report: Hertfordshire and North London Area

1 Summary - August 2025

August was generally dry across the Hertfordshire and North London area, receiving only 41% of the long term average rainfall. Almost all areal units recorded rainfall in the notably low band and despite a fairly wet end to the month, soil moisture deficits increased further, with very little effective rainfall. River baseflows decreased during August but remained stable in chalk catchments, in contrast to the clay and urban rivers, where some indicator sites recorded their lowest August flows on record. Groundwater levels across the area also declined during August but remained in the normal band in the Mid-Chilterns Chalk, while most sites in the Upper Lee Chalk stayed in the above normal band.

1.1 Rainfall

August was a generally dry month across the Hertfordshire and North London area (the Area), receiving 25mm of rainfall, 41% of the long term average (LTA). Four of five areal rainfall units finished the month in the notably low band, with the exception being Chilterns East Colne, which was in the below normal band. Additionally, over the past six months, rainfall across the Area was in the exceptionally low band. Despite the generally dry weather, a fair amount of rain fell towards the end of the month, most notably on 28 August. On this day, the highest rainfall totals were recorded in the east of the Area, with 21.0mm recorded at Havering Bower (Roding unit) and 17.4mm recorded at Dane End (Lee Chalk unit). In total, there were 15 dry days during August (under 0.2mm of rain recorded).

1.2 Soil moisture deficit and recharge

Soil moisture deficits continued to increase throughout the area during August, meaning all areal rainfall units finished the month well above their LTAs. As was the case with July, very little effective rainfall was received in the Area during August. 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 August, river baseflows continued their seasonal decline. In chalk catchments, all indicator sites recorded monthly flows in the normal band, apart from Colney Street (River Ver) and Panshanger (River Mimram), which recorded in the above normal and notably high bands respectively. Compared to July, monthly flows in chalk areas contrasted a lot more with the clay and urban rivers in August, were all indicator sites recorded in the exceptionally low band. Cranford Park (River Crane) and Monks Park (River Brent) recorded their lowest August flows on record (records begin in 1978 and 1979 respectively), while Upminster (River Ingrebourne) was at its second lowest August flow, exceeded only by 1976 (records begin in 1970). The only notable flow peak across the area occurred on 29 August, in response to high rainfall the previous day, meaning no flood alerts or warnings were issued during the month.

1.4 Groundwater levels

Despite continuing to decline, groundwater levels across the Area remained stable during August, 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, apart from Therfield Rectory, which recorded its end of month level in the notably high band.

1.5 Reservoir stocks

The Lee Valley reservoir group began August at 95% of live capacity and finished the month at 91%, meaning it remained above its average level. The lower Thames group started August at 79% of live capacity and finished at 67%, meaning it fell further below its average level for the time of year. This drop in levels is due to a fall in the flow of the River Thames coming into London.

1.6 Environmental impact

In the Colne catchment, the chalk river sources moved slightly downstream from their locations in July overall.

- The River Ver started flowing below Markyate.
- The River Gade started flowing upstream of Great Gaddesden.
- The River Bulbourne was flowing at Northchurch 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 upstream of Little Missenden.

The chalk river sources in the Upper Lee also mostly moved downstream since July.

- The River Mimram started flowing above Whitwell.
- 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 August a number of abstraction licence flow constraints were in force. This ranged between 9 and 12 per week, out of a maximum of 31.

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2 Rainfall

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 August 2025), classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

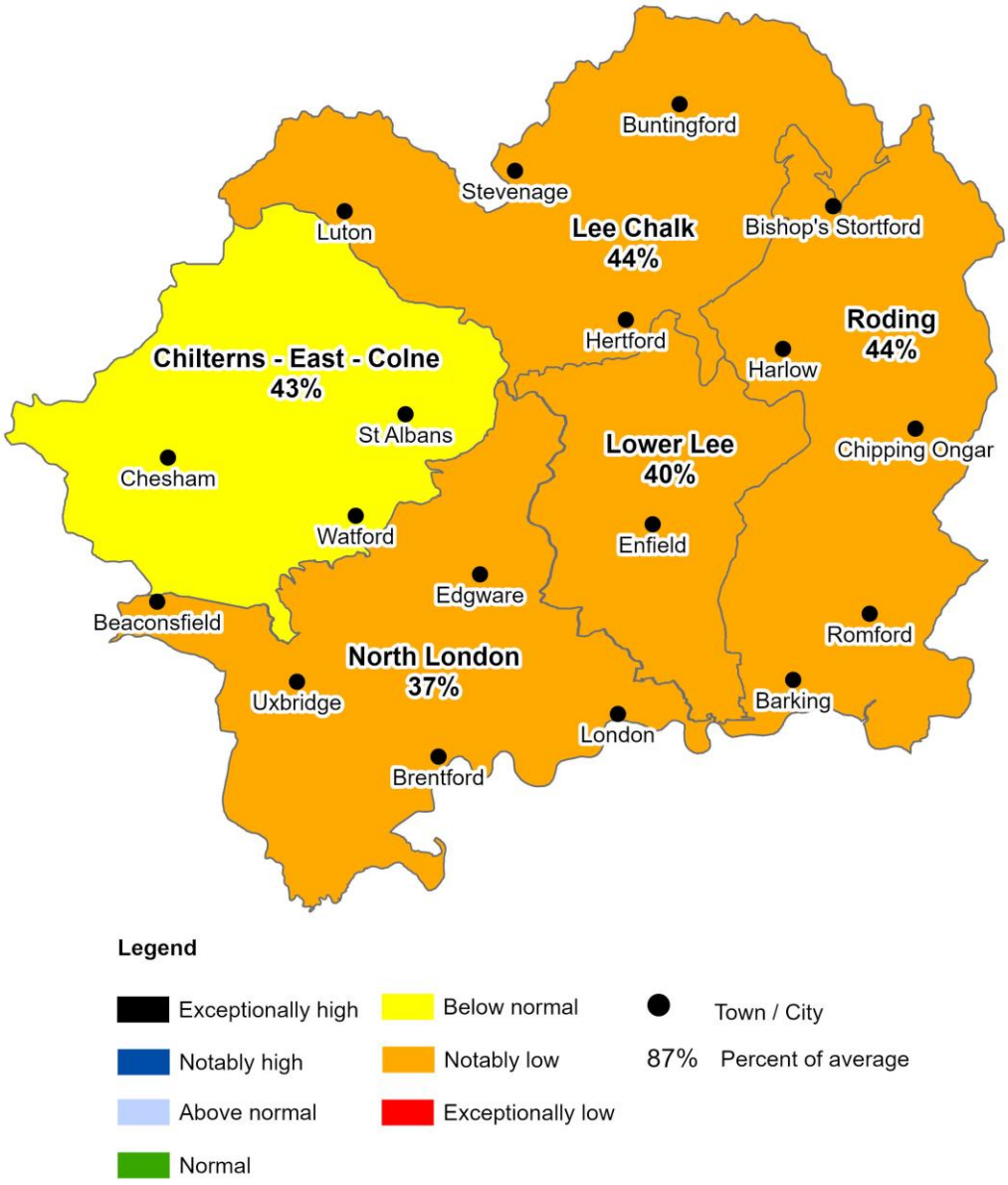
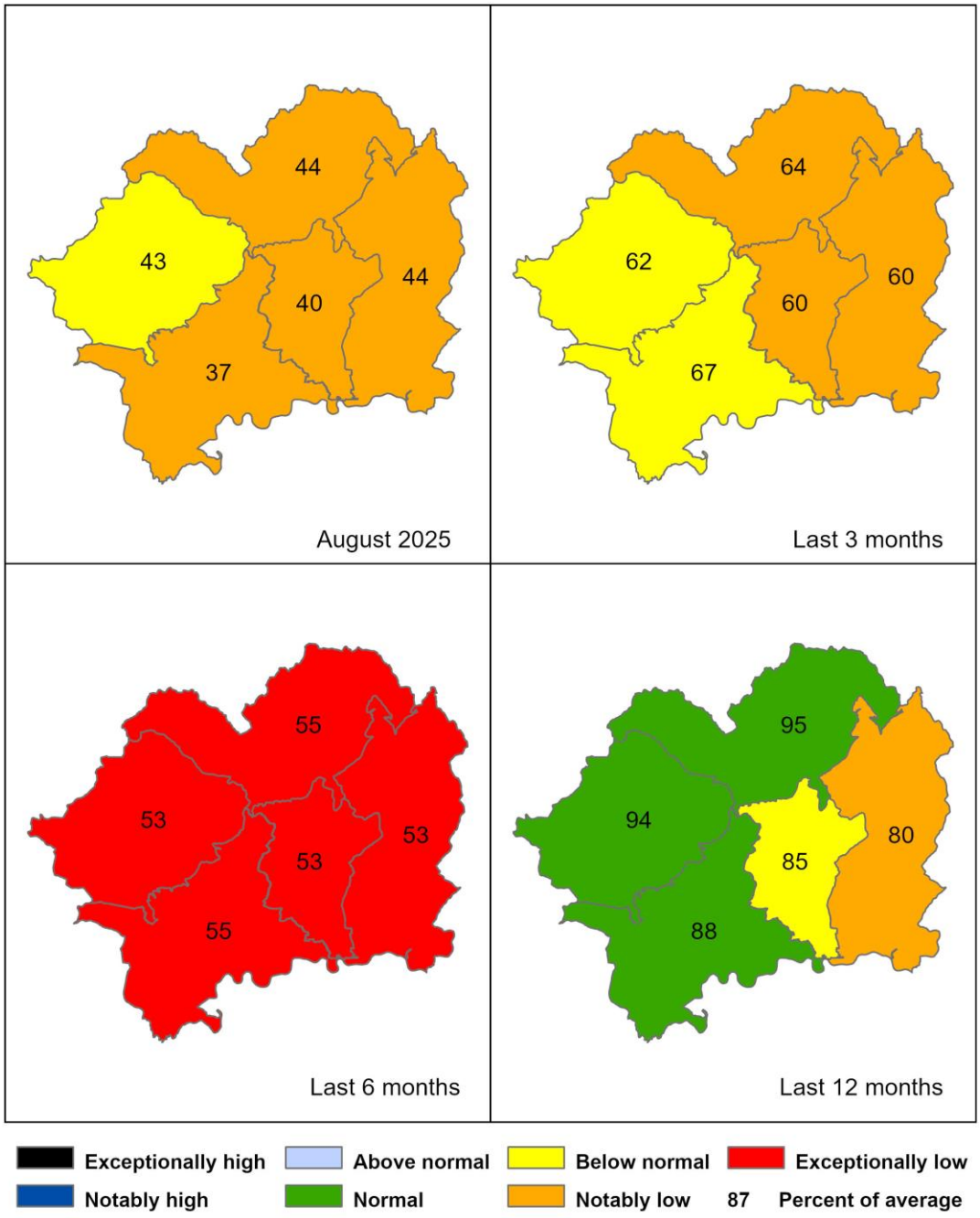


Figure 2.2: Total rainfall for hydrological areas for the current month (up to 31 August 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

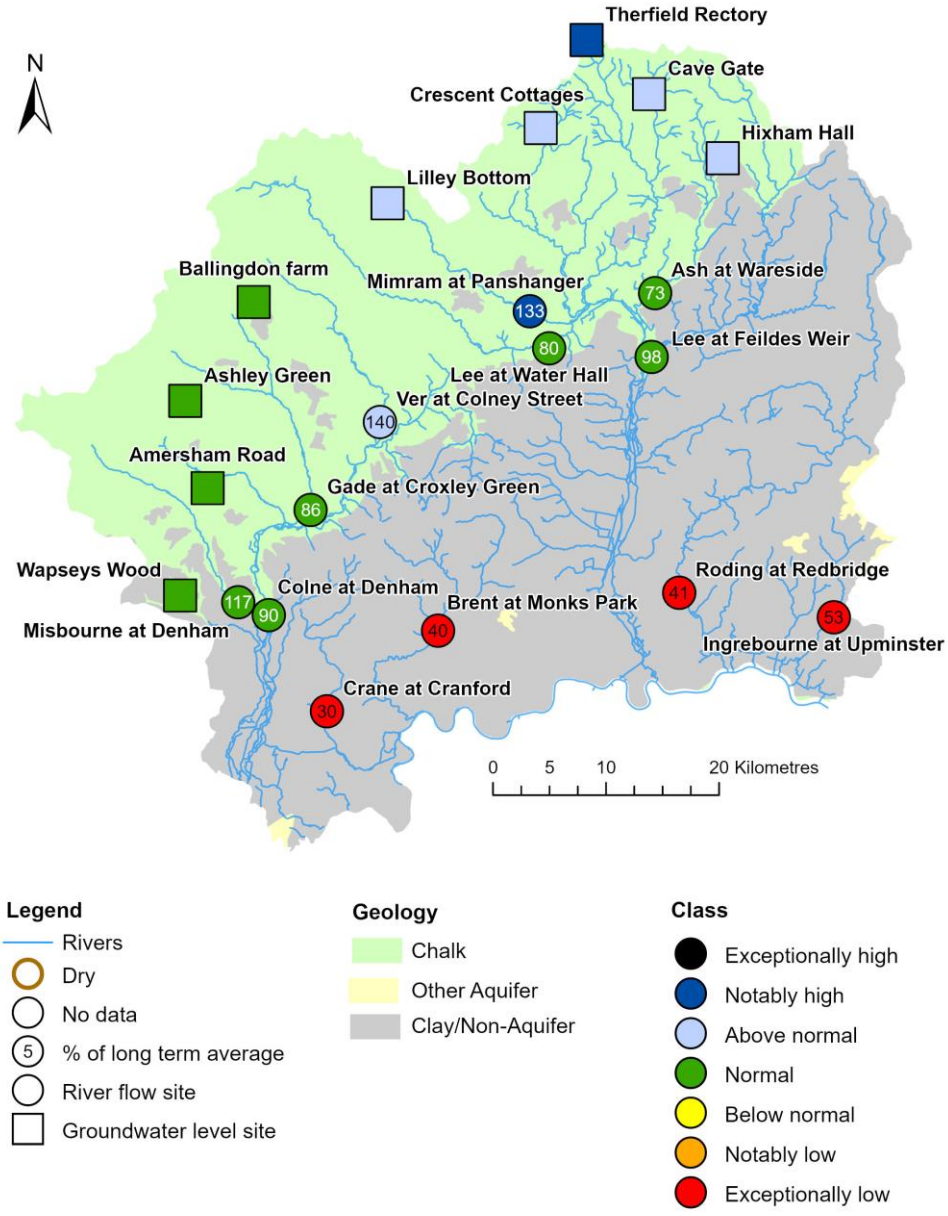


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

3 River flows and Groundwater levels

3.1 River flows and Groundwater level map

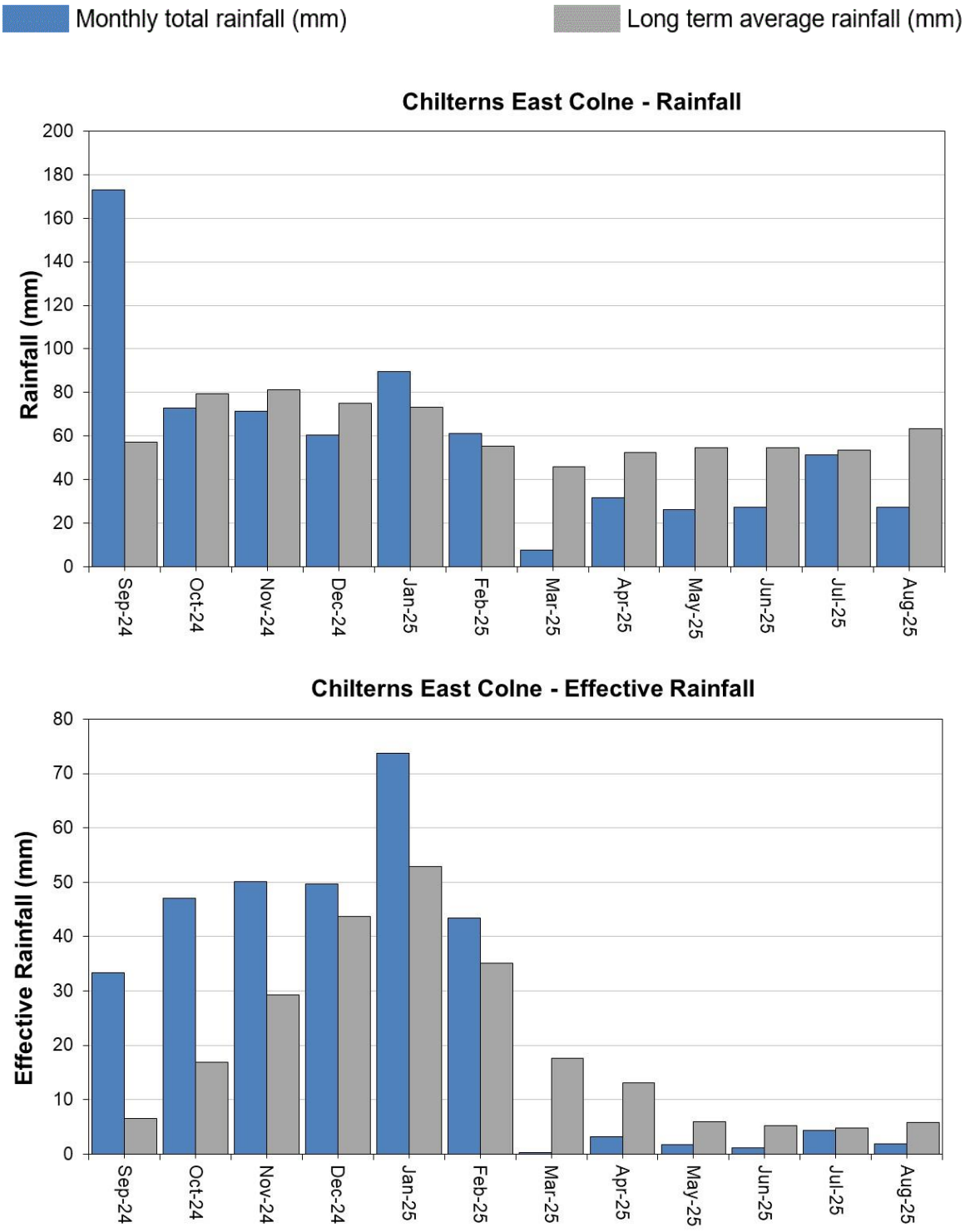
Figure 3.1: Monthly mean river flow and groundwater levels at our indicator sites for August 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic August monthly means. Table available in the appendices with detailed information.



4 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.

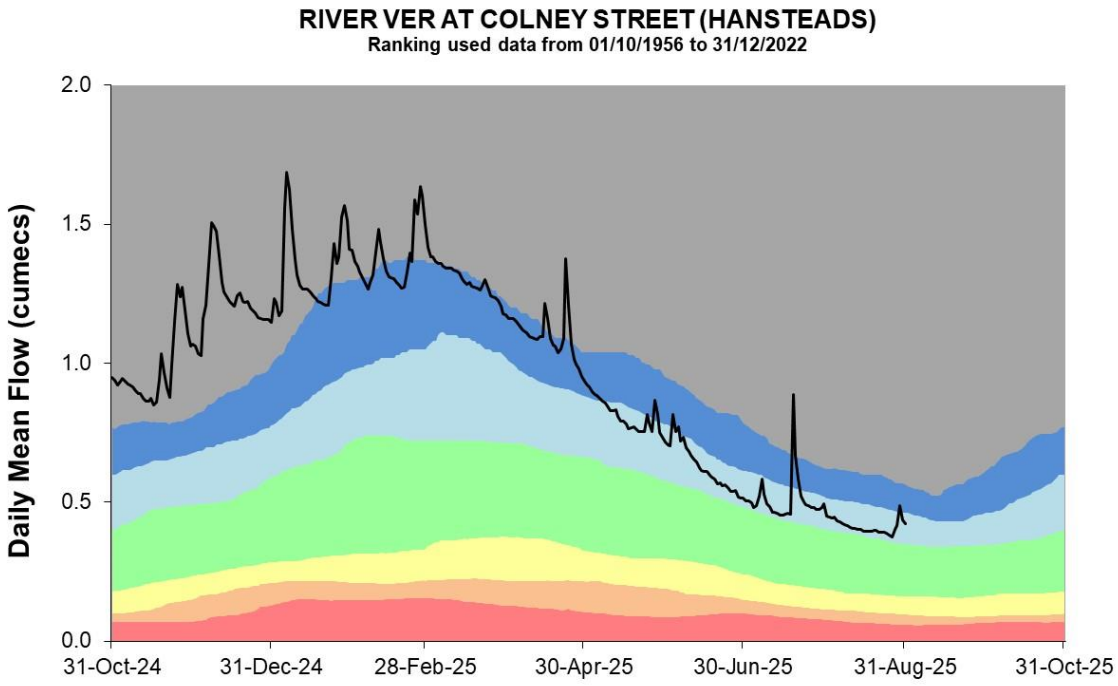


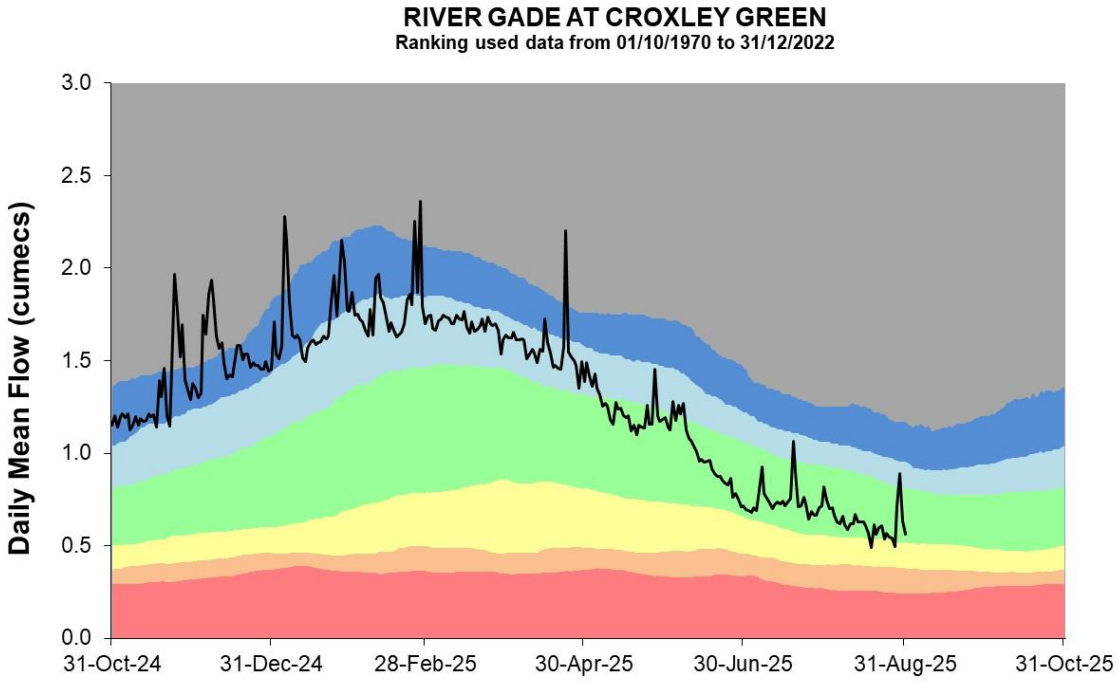
HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

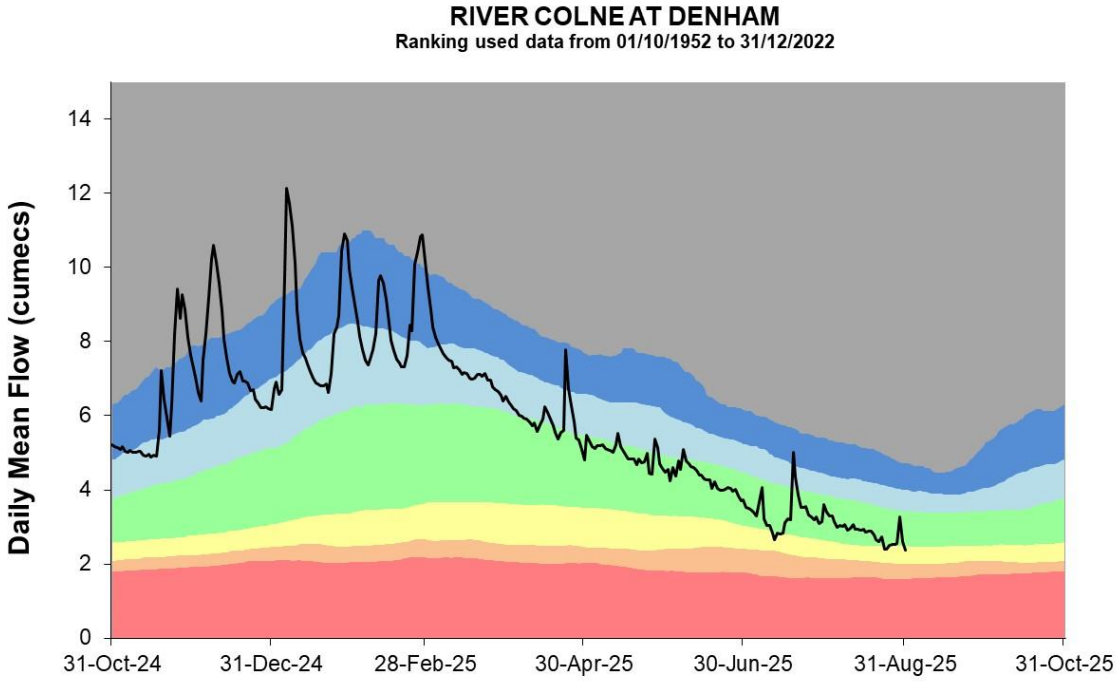
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

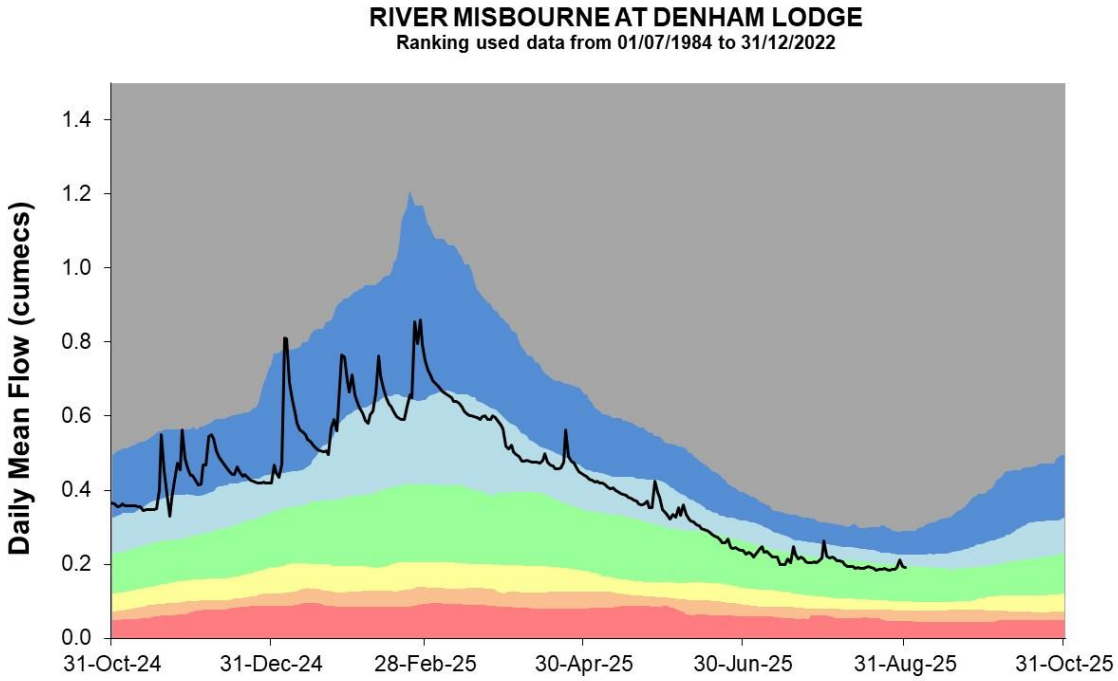
4.2 Colne River flow charts

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.





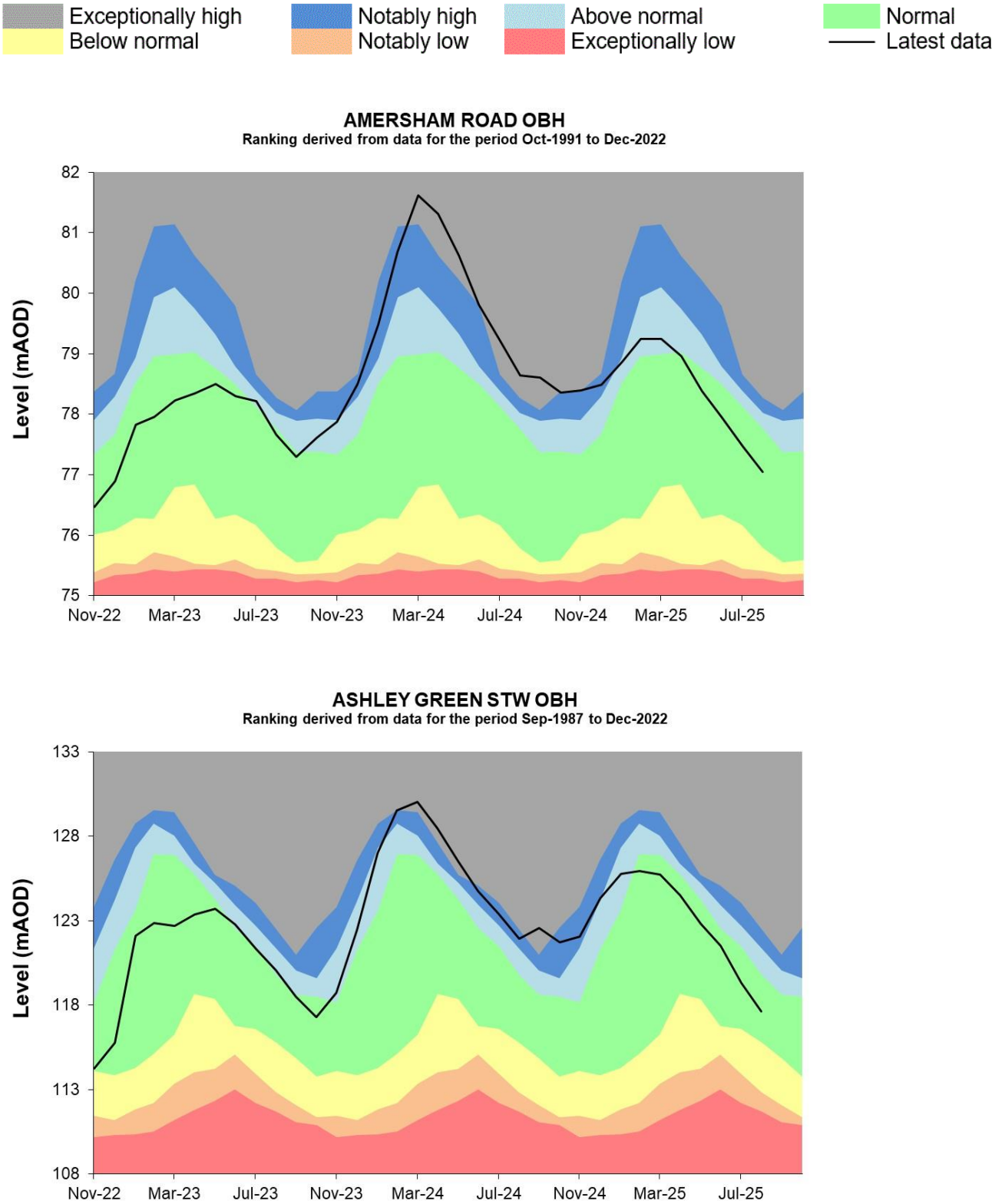


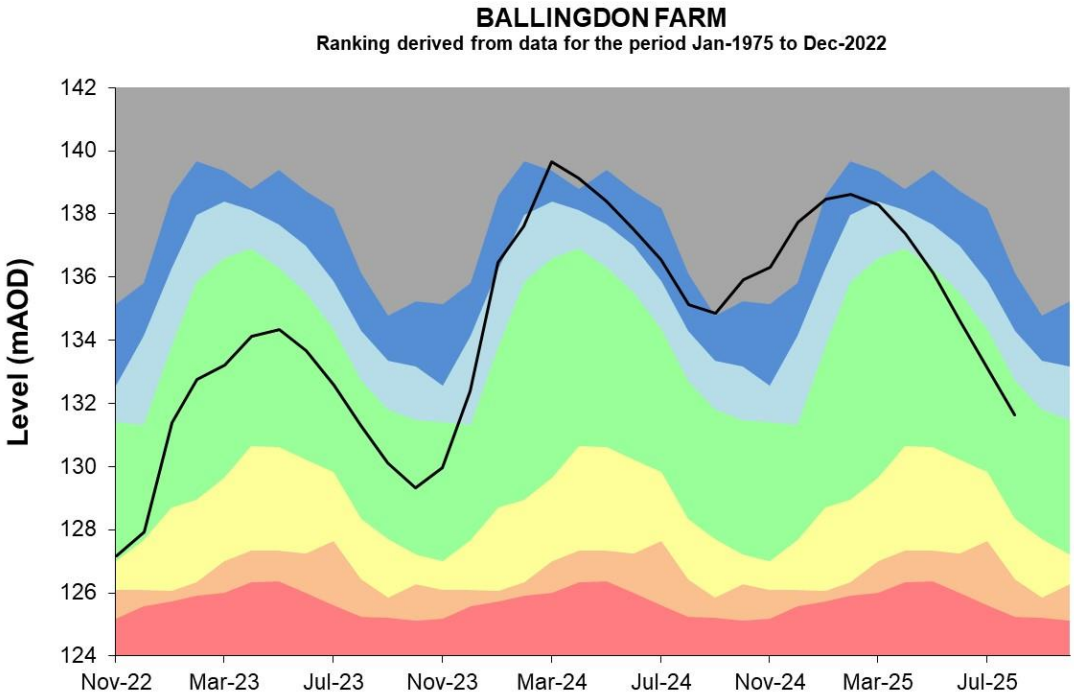


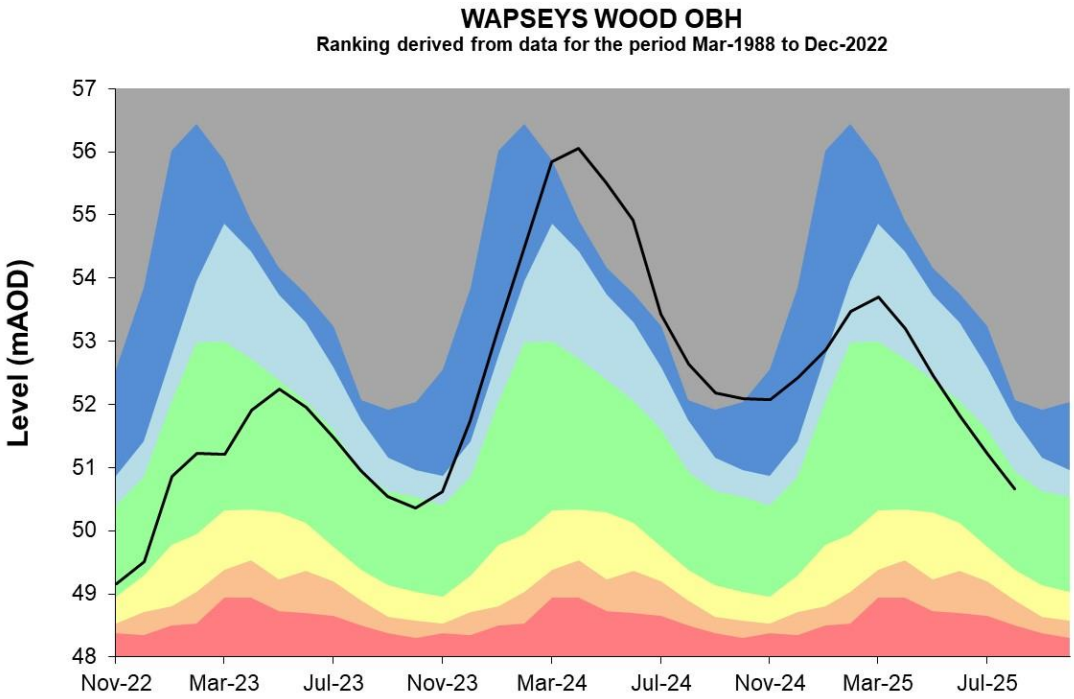
Source: Environment Agency, 2025

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.





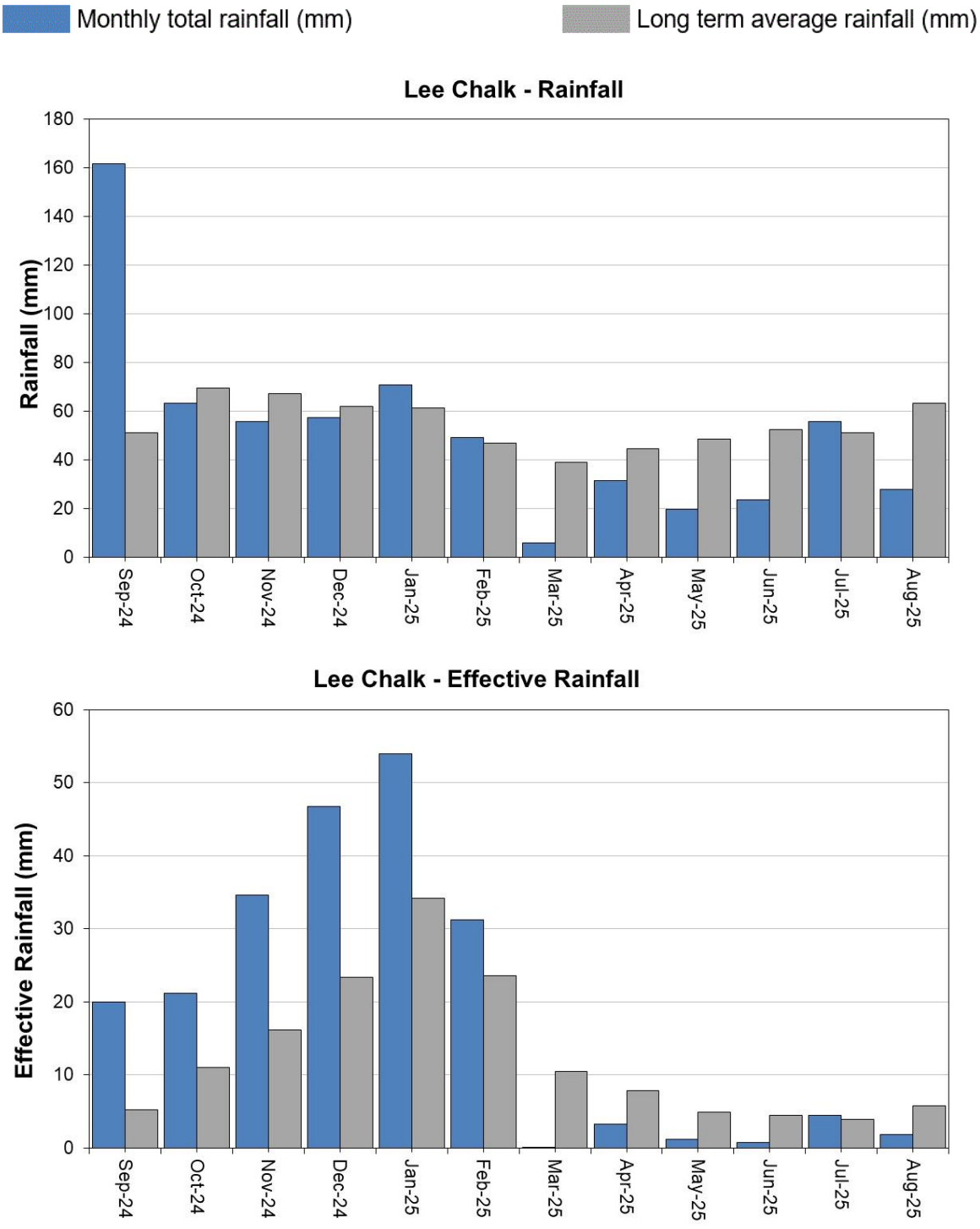


Source: Environment Agency, 2025

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.

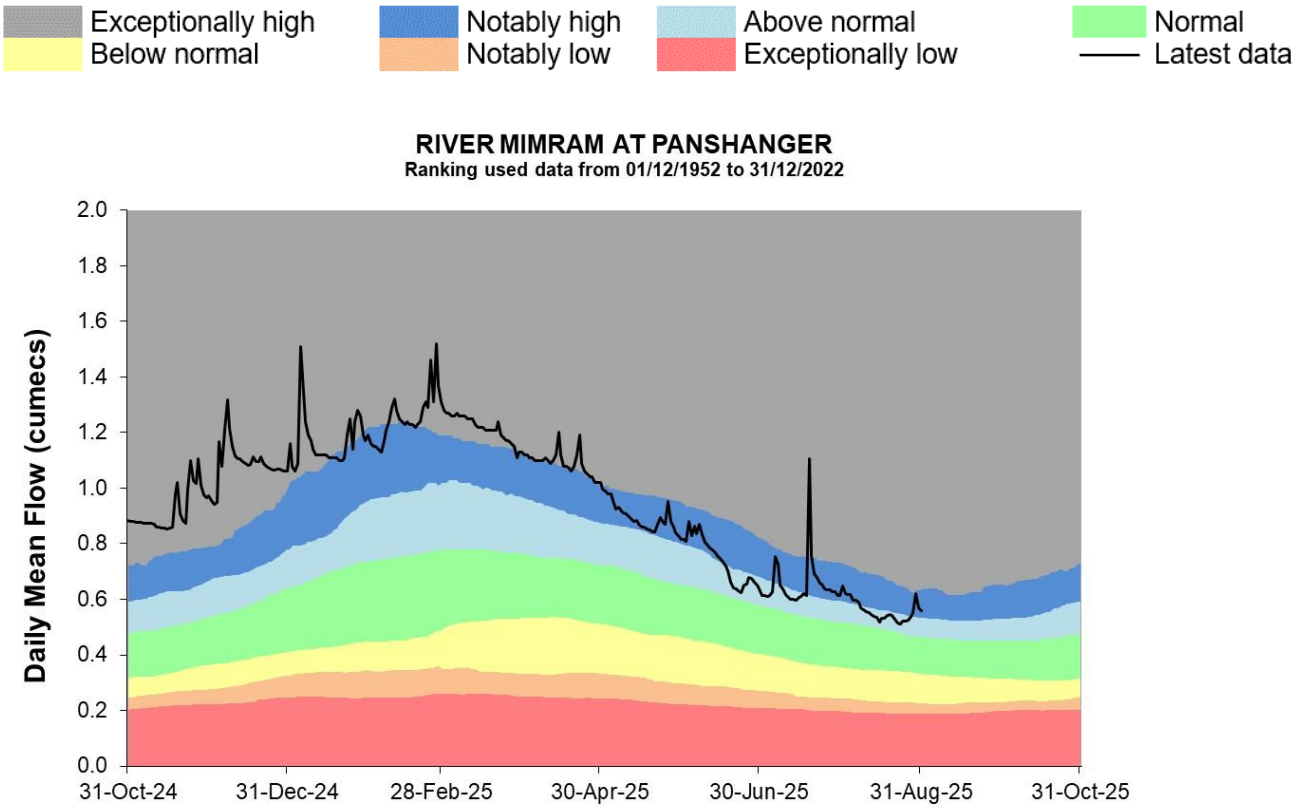


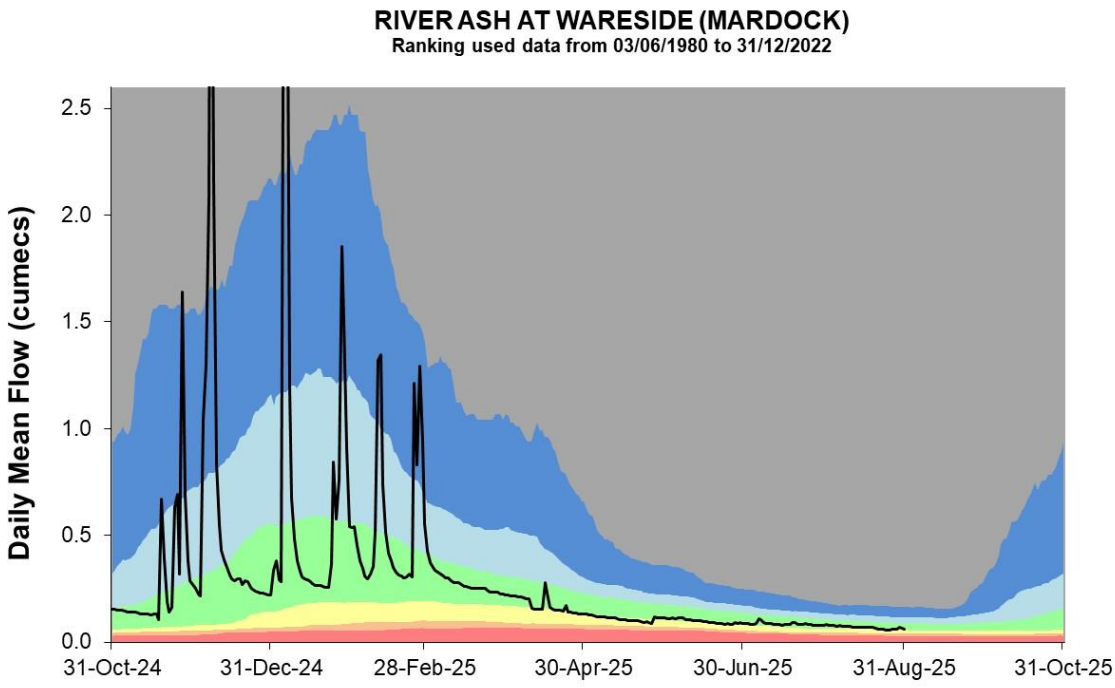
HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

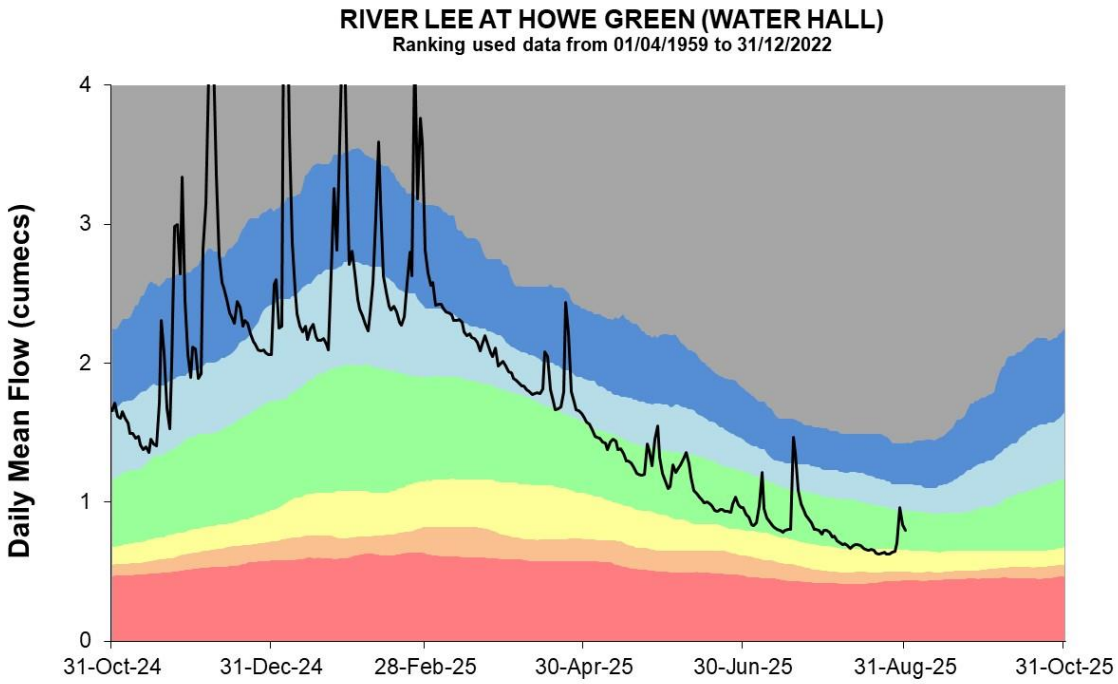
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

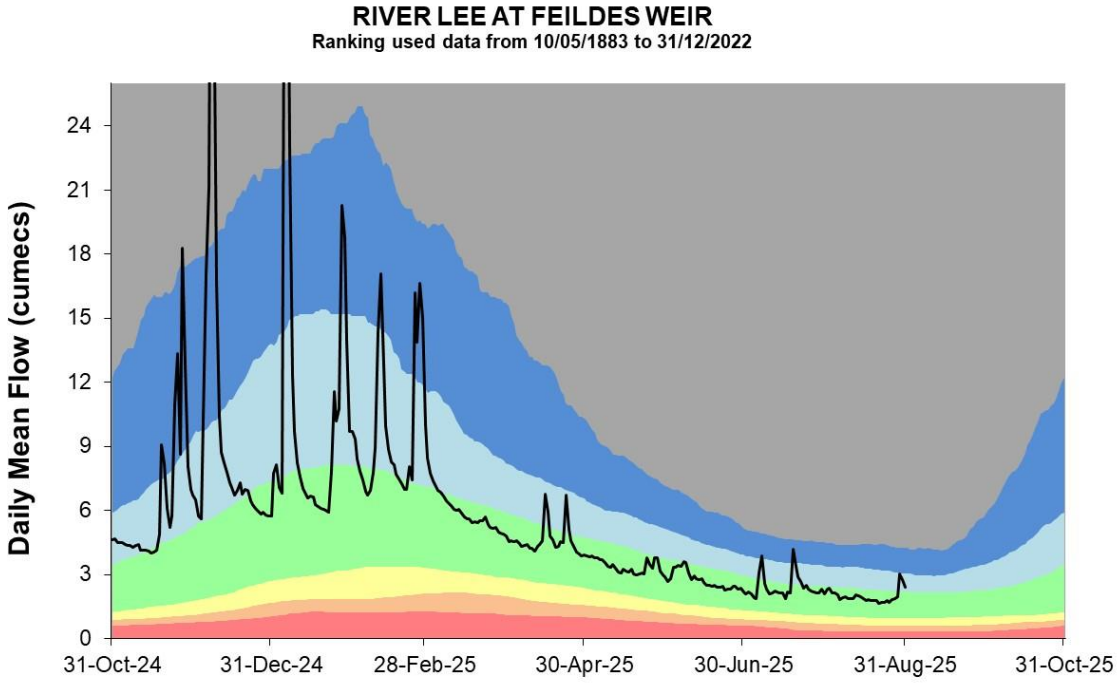
5.2 Upper Lee River flow charts

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.





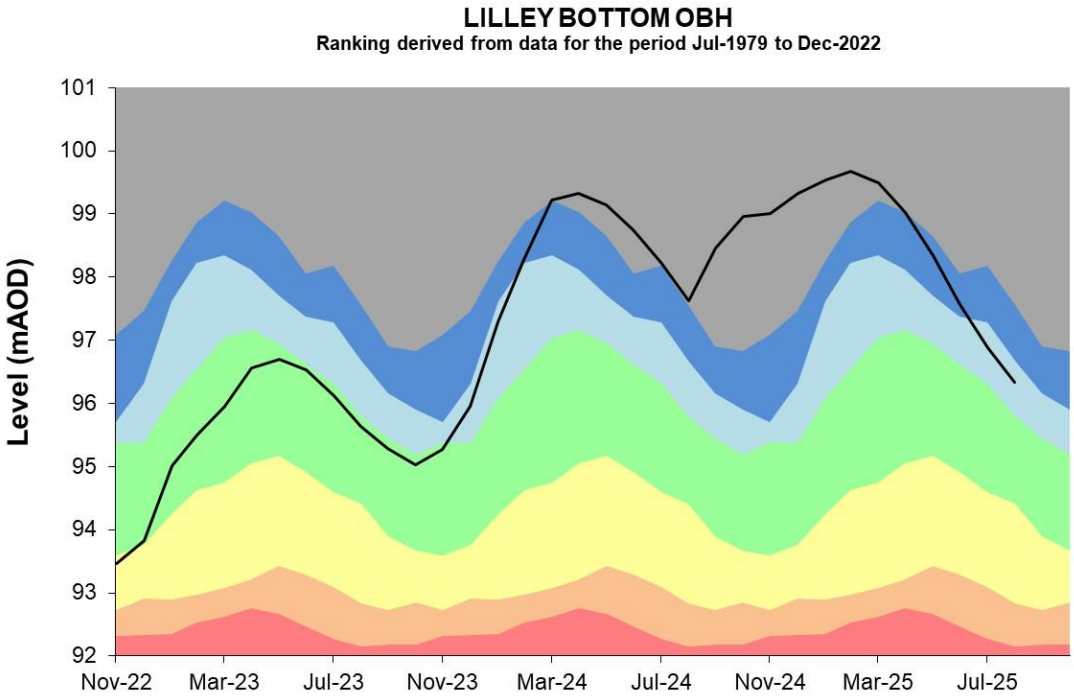


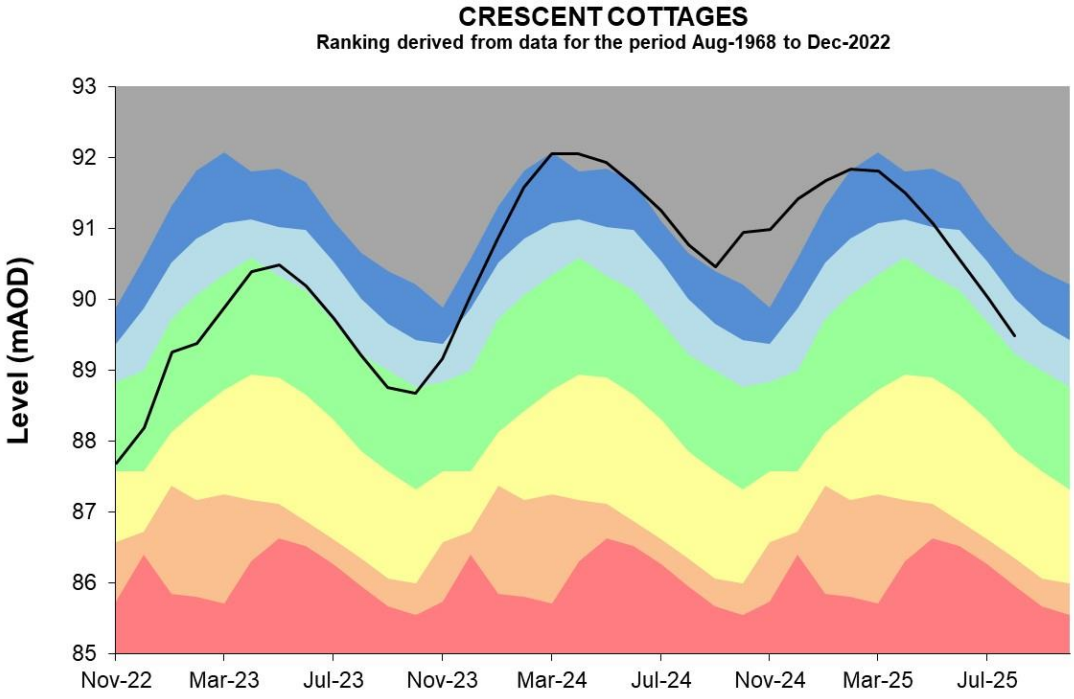


Source: Environment Agency, 2025

5.3 Upper Lee Groundwater level charts

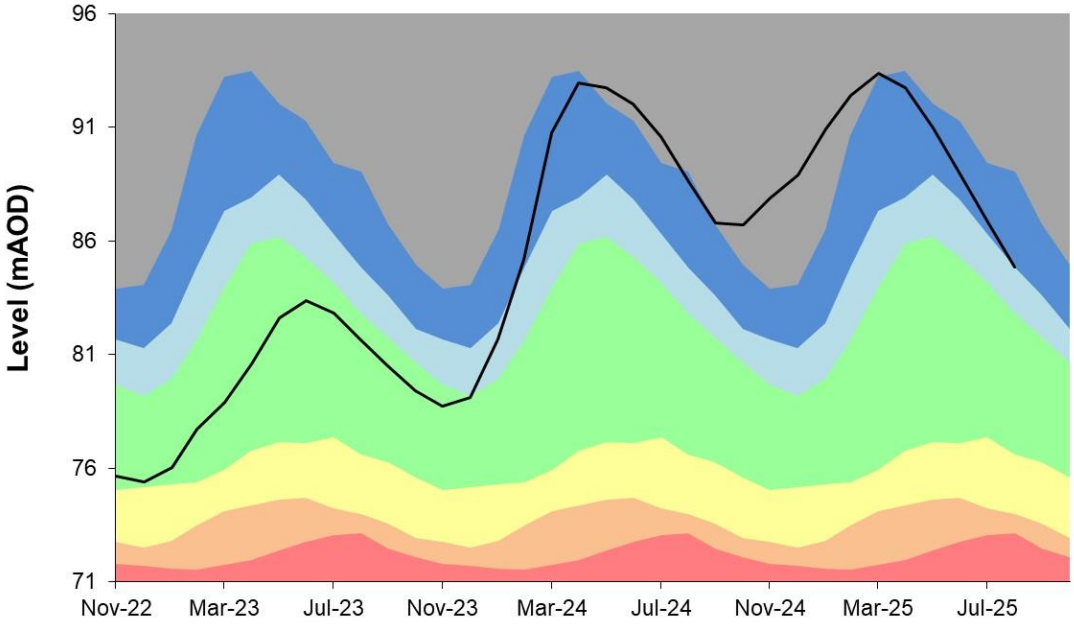
Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.





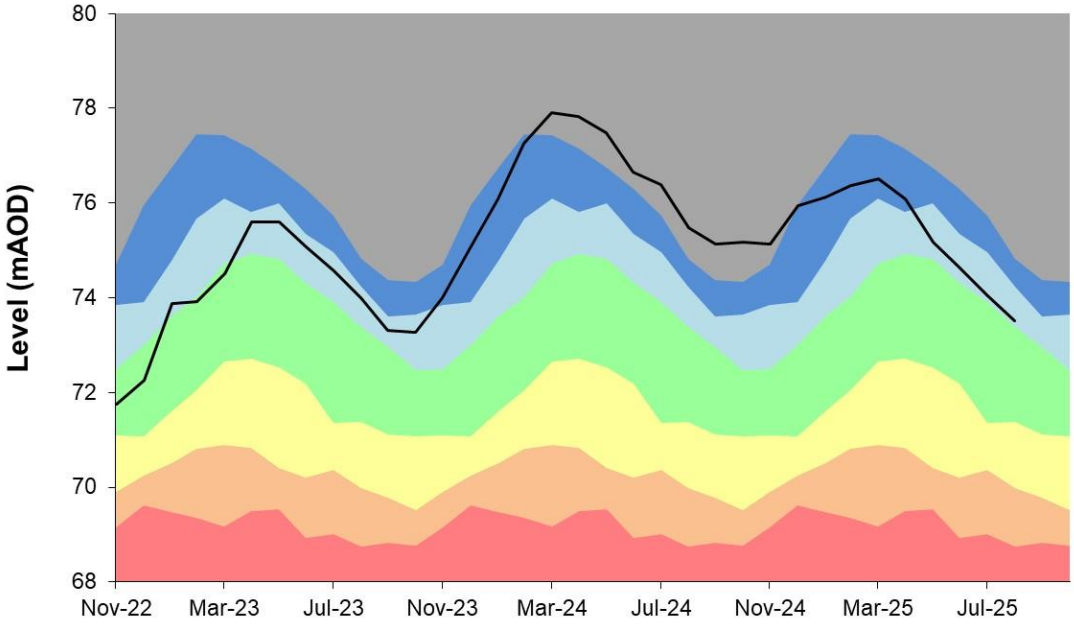
THERFIELD RECTORY

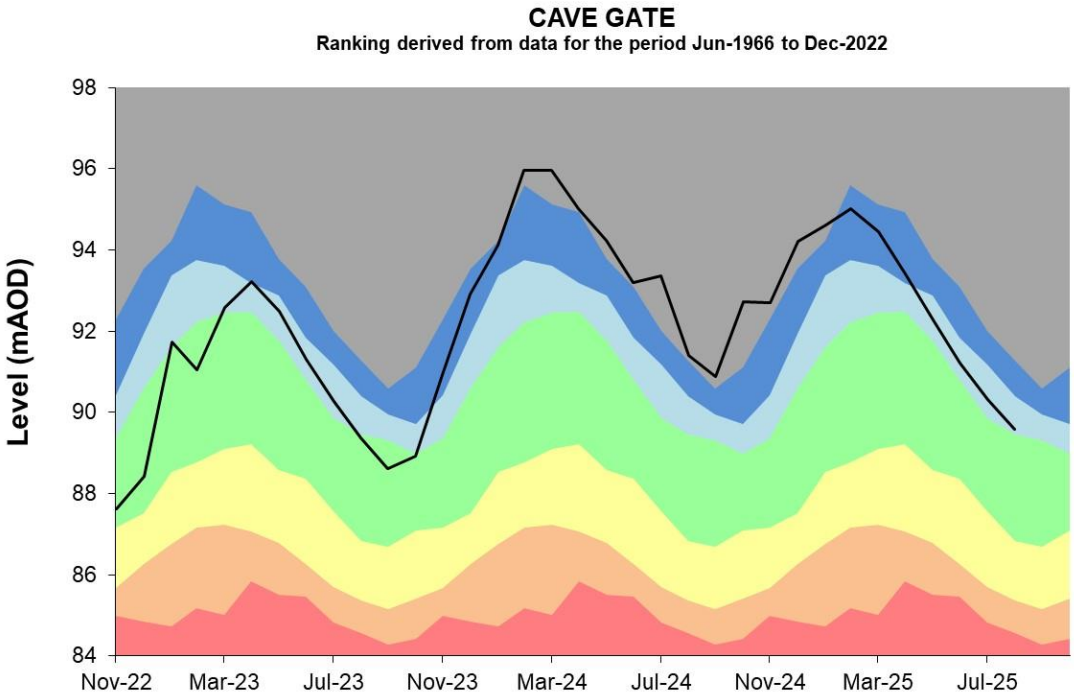
Ranking derived from data for the period Jan-1883 to Dec-2022



HIXHAM HALL

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



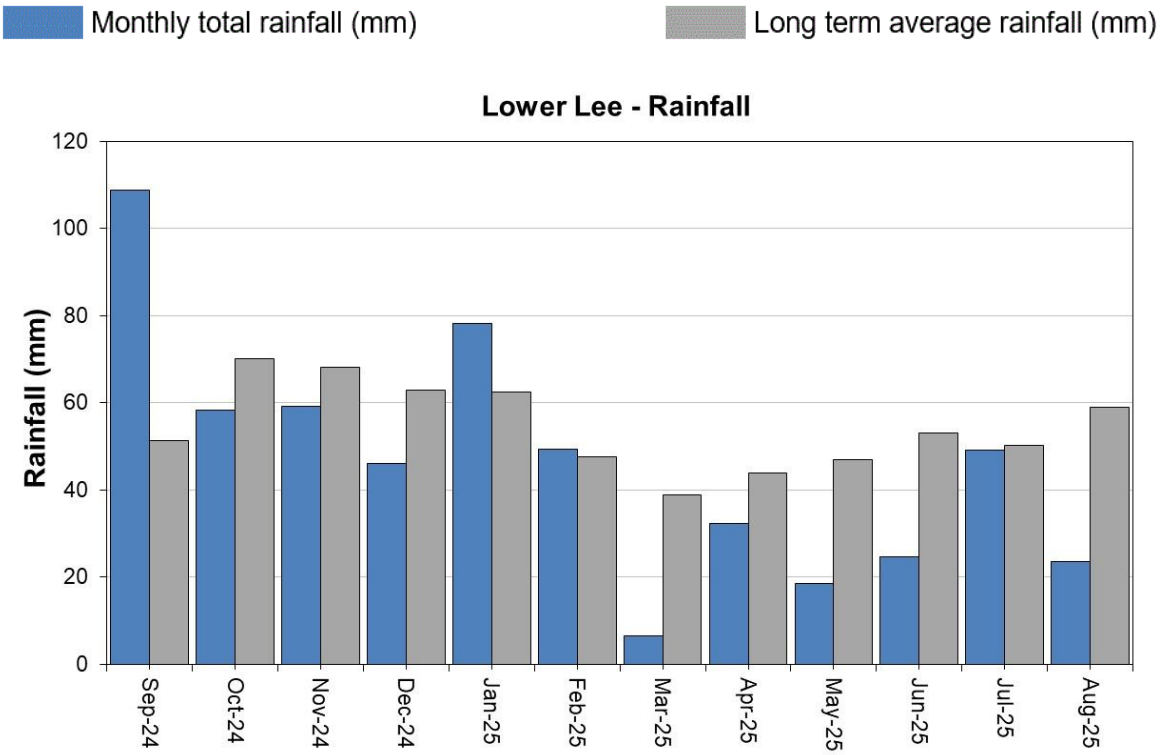


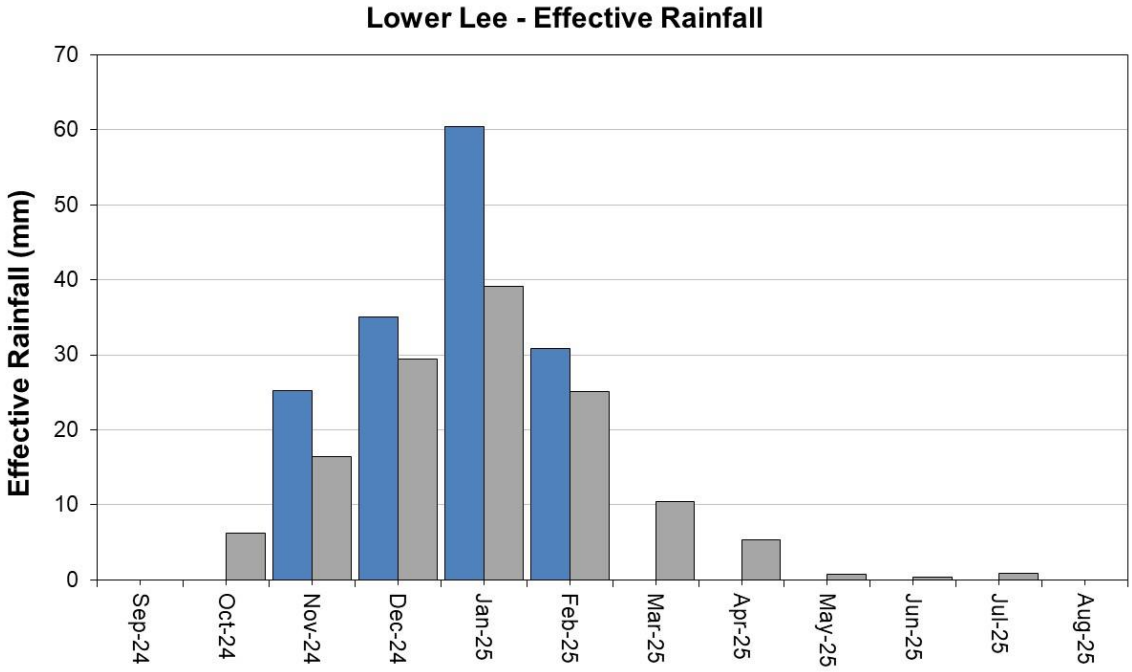
Source: Environment Agency, 2025

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.



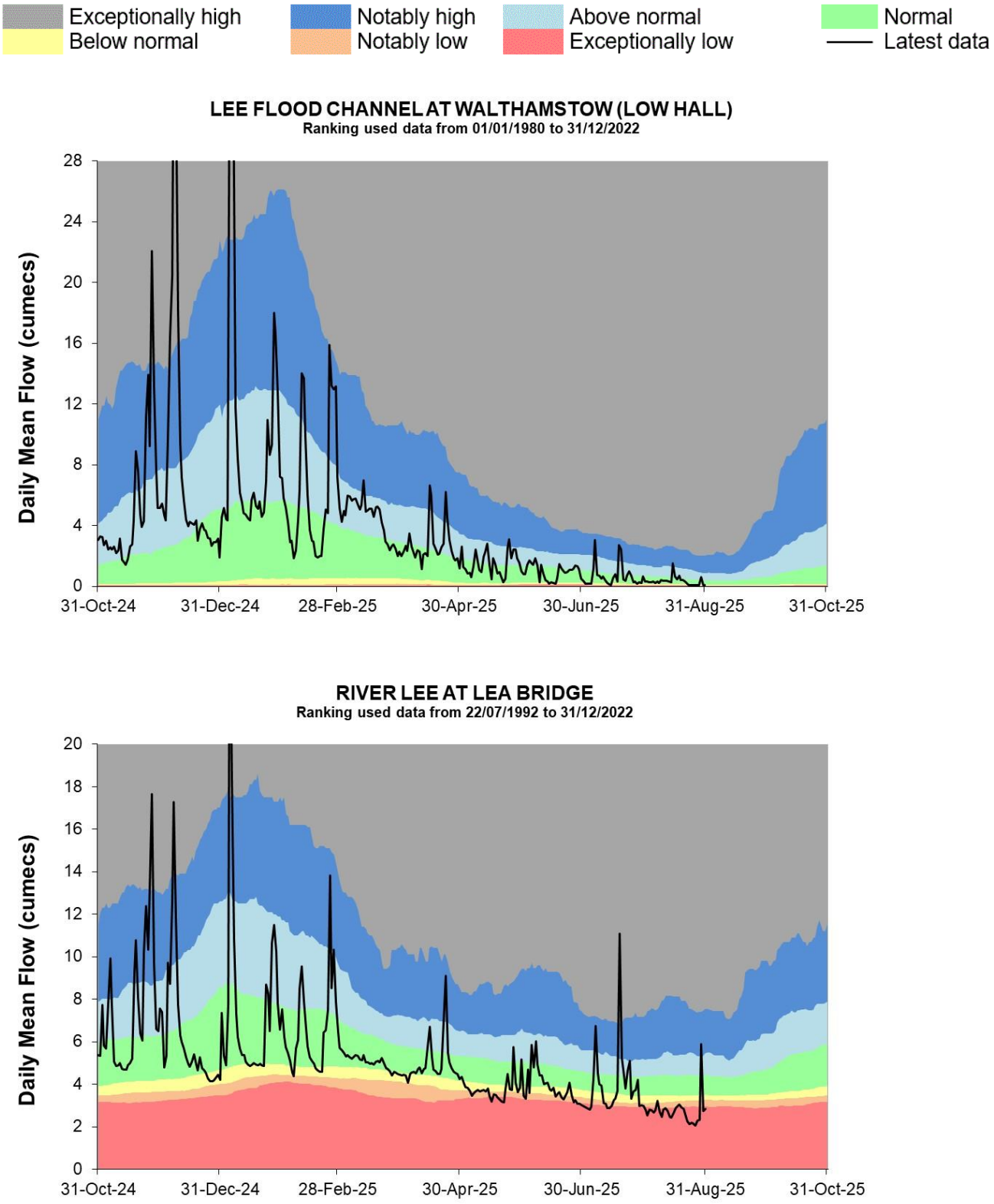


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.

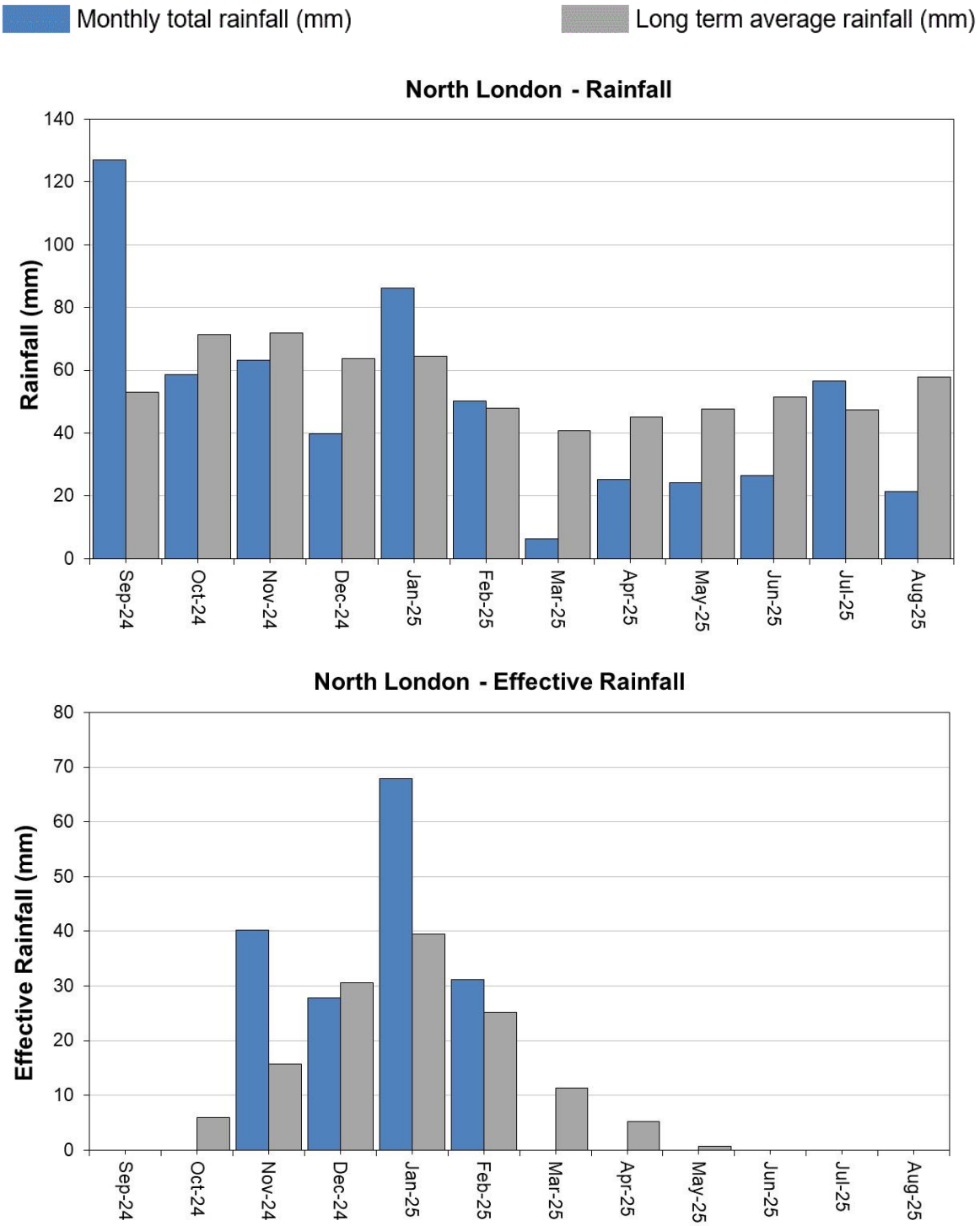


Source: Environment Agency, 2025

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.

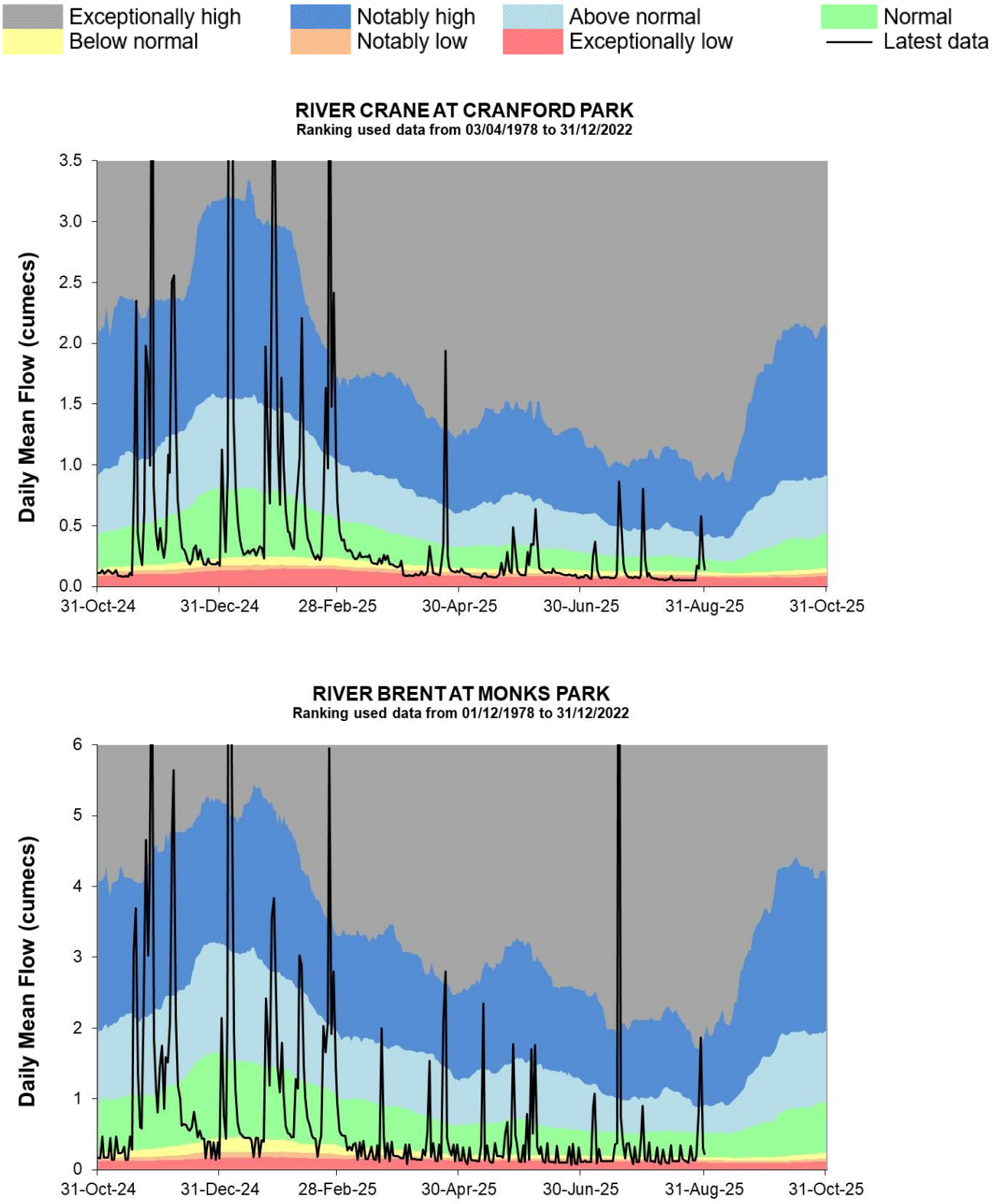


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.

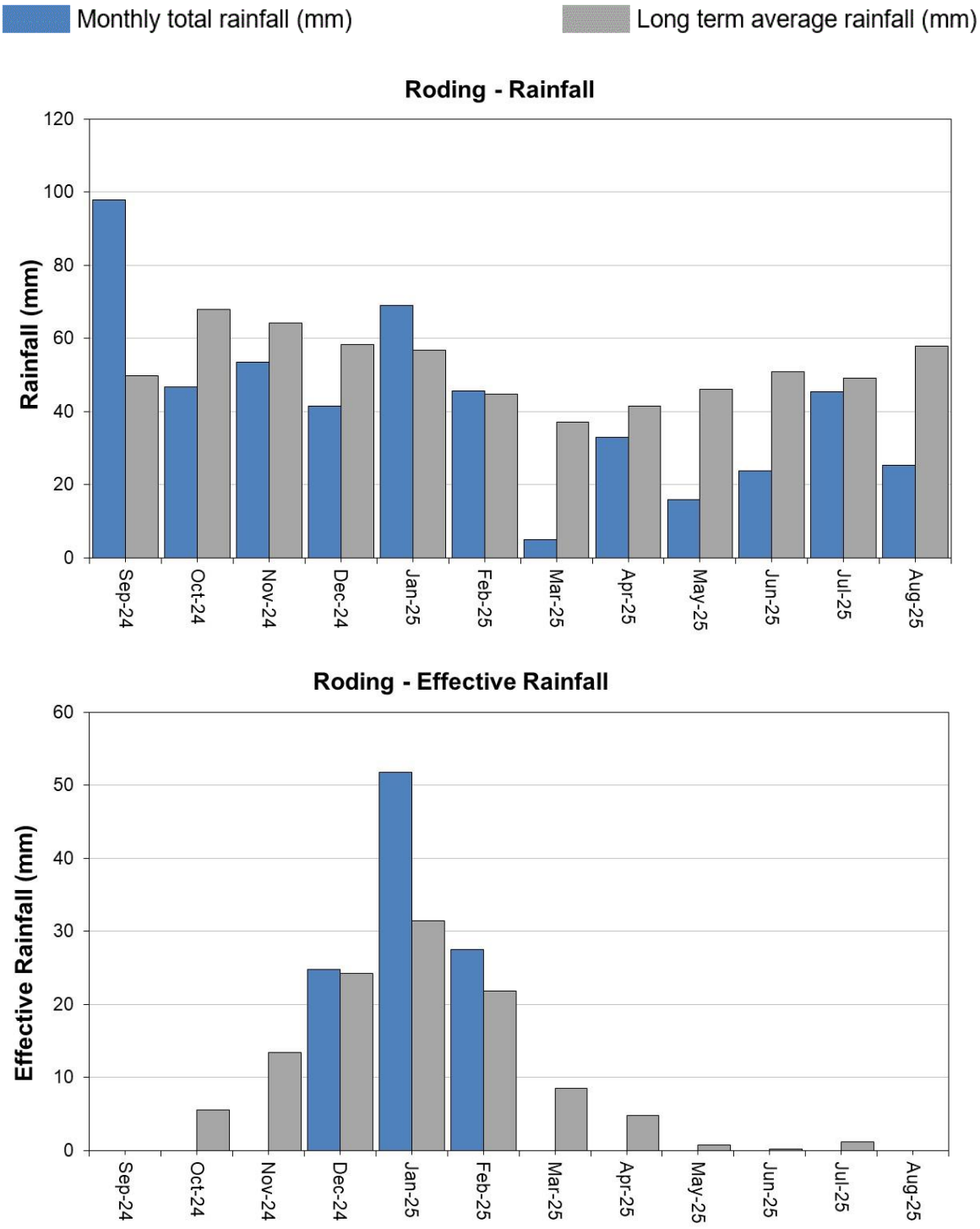


Source: Environment Agency, 2025

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.

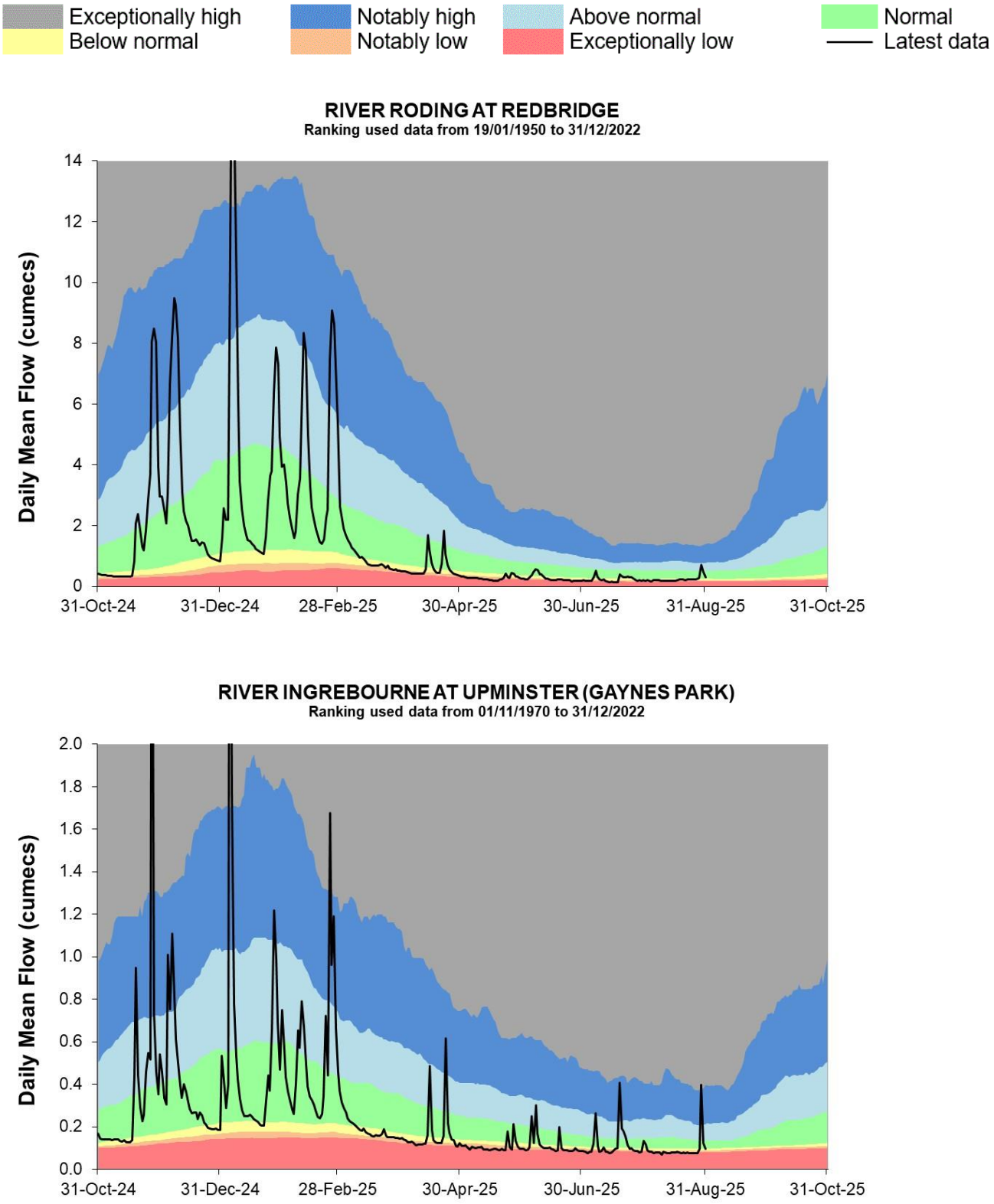


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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

8.2 Roding River flow charts

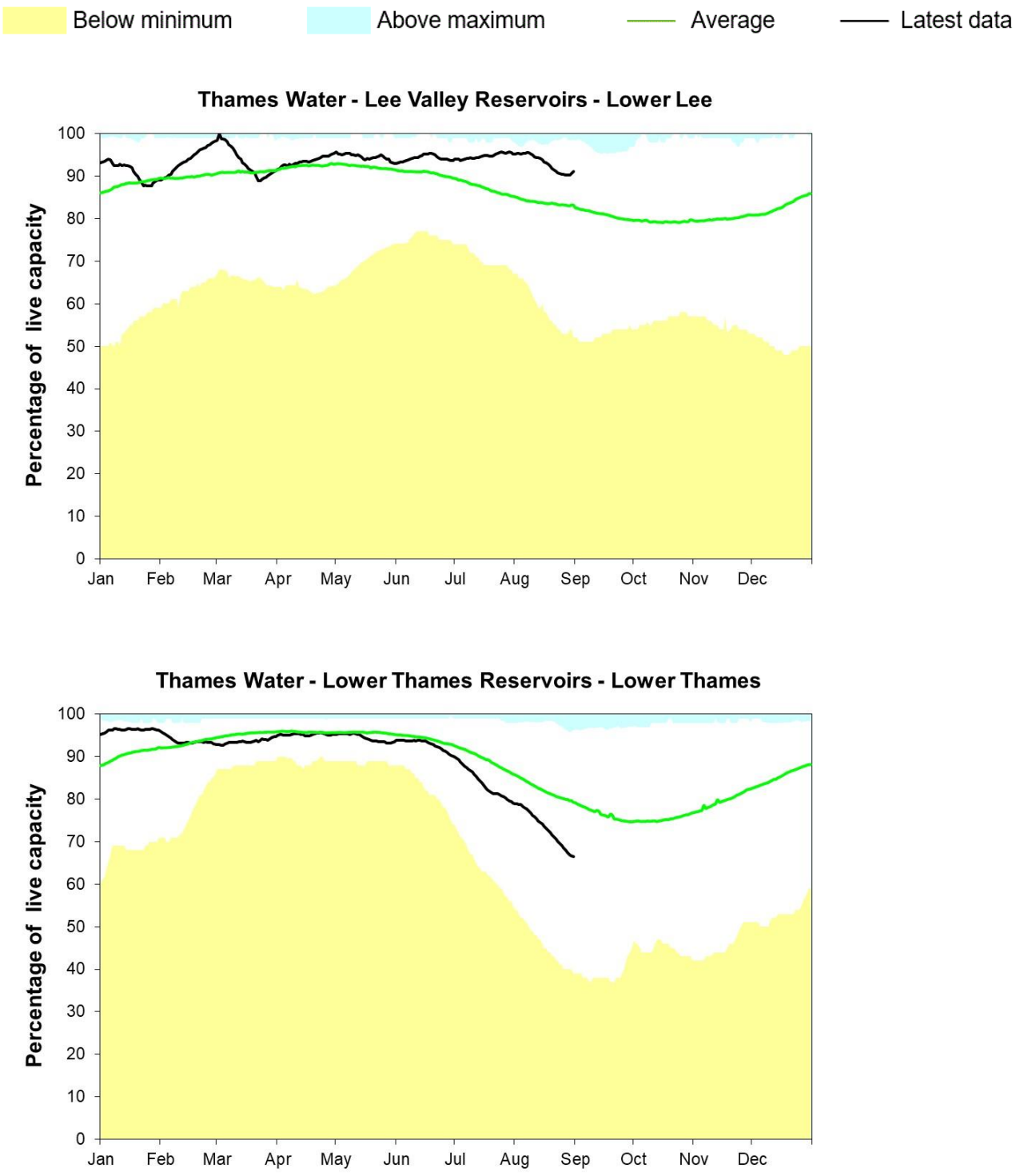
Figure 8.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025

9 Reservoir stocks

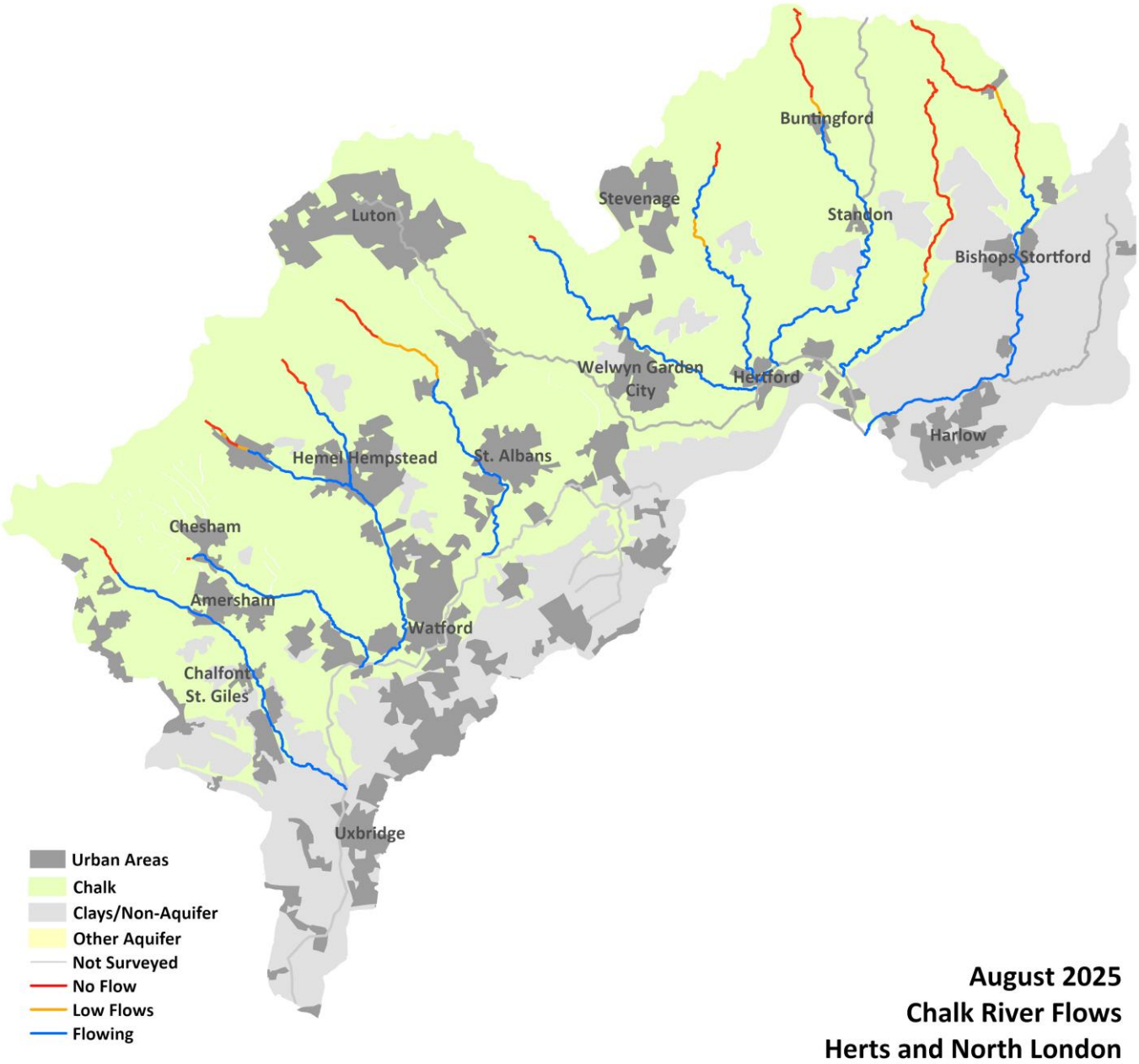
Figure 9.1: End of month reservoir stocks for the Lower Thames reservoir group and the Lee Valley reservoir group compared to long term maximum, minimum and average stocks. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.



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	Aug 2025 total rainfall in mm	Aug 2025 rainfall long term average 1991 to 2020	Aug 2025 rainfall % of long term average 1991 to 2020	Summer Apr 2025 to Aug 2025 total rainfall in mm	Summer Apr 2025 to Aug 2025 rainfall % of long term average 1991 to 2020
Chilterns East Colne	27	63	43	163	58
Lee Chalk	28	63	44	158	60
Lower Lee	24	59	40	148	58
North London	21	58	37	154	61
Roding	25	58	44	143	58
Herts and North London total	25	60	41	153	59

12.2 Rainfall banding table

Hydrological area	Aug 2025 band	Jun 2025 to Aug 2025 cumulative band	Mar 2025 to Aug 2025 cumulative band	Sep 2024 to Aug 2025 cumulative band
Chilterns East Colne	Below normal	Below normal	Exceptionally low	Normal
Lee Chalk	Notably low	Notably low	Exceptionally low	Normal
Lower Lee	Notably low	Notably low	Exceptionally low	Below normal
North London	Notably low	Below normal	Exceptionally low	Normal
Roding	Notably low	Notably low	Exceptionally low	Notably low

12.3 Effective Rainfall table

Hydrological area	Aug 2025 total effective rainfall in mm	Aug 2025 effective rainfall long term average 1991 to 2020 in mm	Aug 2025 effective rainfall % of long term average 1991 to 2020	Summer Apr 2025 to Aug 2025 total effective rainfall in mm	Summer Apr 2025 to Aug 2025 effective rainfall % of long term average 1991 to 2020
Chilterns East Colne	2	6	33	12	36
Lee Chalk	2	6	32	12	43
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	1	2	32	5	29

12.4 Soil Moisture Deficit table

Hydrological area	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	Jul 2025 end of month Soil Moisture Deficit in mm	Jul 2025 end of month Soil Moisture Deficit long term average 1991 to 2020 in mm
Chilterns East Colne	169	105	152	92
Lee Chalk	172	118	154	105
Lower Lee	172	110	152	98
North London	173	114	152	101
Roding	172	112	155	99
Herts and North London total	171	112	153	99

12.5 River flows table

Site name	River	Catchment	Aug 2025 band	Jul 2025 band
Colney Street (Hansteads)	Ver	Colne	Above normal	Above normal
Croxley Green	Gade	Colne	Normal	Normal
Denham Lodge	Misbourne	Colne	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	Exceptionally low	Normal
Cranford (Cranford Park)	Crane	North London	Exceptionally low	Below normal
Redbridge	Roding	Roding, Beam and Ingrebourne	Exceptionally low	Notably low
Upminster (Gaynes Park)	Ingrebourne	Roding, Beam and Ingrebourne	Exceptionally low	Below normal

12.6 Groundwater table

Site name	Aquifer	Aug 2025 band	Jul 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	Above normal	Above normal
Hixham Hall	Upper Lee Chalk	Above normal	Above normal
Therfield Rectory	Upper Lee Chalk	Notably high	Notably high

12.7 Abstraction licence flow constraints

Number of flow constraints in force between 28 July and 3 August 2025	Number of flow constraints in force between 4 and 10 August 2025	Number of flow constraints in force between 11 and 17 August 2025	Number of flow constraints in force between 18 and 24 August 2025	Number of flow constraints in force between 25 and 31 August 2025
10	12	9	10	12