

Monthly water situation report: Hertfordshire and North London Area

1 Summary - October 2025

October was a slightly below average month for rainfall in the Hertfordshire and North London area, with 89% of the long term average and all areal units in the normal band. Soil moisture deficits decreased during October but remained well above the long term average, with a small amount of effective rainfall recorded. River baseflows decreased but remained stable overall, with most chalk river indicator sites recording monthly flows in the normal band. Due to several rainstorms causing spikes in river flows, the clay and urban indicator sites also recorded monthly flows in the normal band. Groundwater levels fell across the area, with most indicator sites ending October in the normal band.

1.1 Rainfall

In the Hertfordshire and North London area (the Area), October's rainfall was lower than average, with 64mm of rainfall recorded (89% of the long term average or LTA). Like in September, all five areal units finished the month in the normal band. Despite this, the total rainfall for the last 6 months (apart from the North London unit) and the last 12 months was in the notably low band for all units in the Area. The wettest day of the month was 22 October, with high rainfall recorded in all areal units. The largest daily rainfall totals were seen in the Roding unit, with 19.7mm at Nags Head Lane, 17.3mm at Havering Bower and 16.7mm at Gascoigne Road. Notable rainfall totals were also recorded on 31 October, with 17.6mm recorded at Luxborough Lane (Roding unit) and 16.8mm at Holland Park (North London unit). Despite there being days with heavy rainfall during the month, there were 14 dry days during October, when less than 0.2mm of rain was recorded.

1.2 Soil moisture deficit and recharge

Soil moisture deficits (SMD) across the Area remained above the end of month LTA for October, but significantly reduced thanks to the rainfall the Area received. The drop in SMDs meant that the chalk catchments of the Area received around half the monthly LTA effective rainfall. However, soils in the clay and urban catchments remained too dry to generate effective rainfall.

1.3 River flows

Most indicator sites in the Area recorded month mean flows in the normal band for October, with the Area's chalk rivers remaining at a consistent level, despite a drop in baseflows overall. In the clay and urban rivers, month mean flows were boosted by days with high rainfall totals, where the most notable flow peaks were recorded on 3 October, 20 October, 22 October and 31 October. Only a handful of indicator sites recorded monthly flows outside of the normal band, including:

- River Ver at Colney Street (notably high band)
- River Mimram at Panshanger (notably high band)
- River Misbourne at Denham Lodge (above normal band)
- River Roding at Redbridge (below normal band)

No flood alerts or warnings were issued during October.

1.4 Groundwater levels

During October, groundwater levels decreased at all indicator sites, ending the month with them ranging from the normal to above normal bands. In the Mid-Chilterns Chalk aquifer, all indicator sites recorded end of month groundwater levels in the normal band. Meanwhile, the majority of indicator sites in the Upper Lee Chalk aquifer were in the above normal band, with the exceptions of Cave Gate and Crescent Cottages, recording end of month levels in the normal band.

1.5 Reservoir stocks

Reservoir stocks in the Lee Valley group started October at 89% of live capacity and finished the month at 83%, remaining above its average level for the time of year. In the Lower Thames group, reservoir levels fell slightly from 63% to 62% during October, with levels lower than average, but similar to September.

1.6 Environmental impact

In the Colne catchment, the chalk river sources remained at similar locations to where they were in September.

- The River Ver started flowing just below Markyate.
- The source of the River Gade was still upstream of Great Gaddesden.
- The River Bulbourne started flowing downstream of Northchurch.
- The source of the River Chess was still just upstream of Chesham.
- The River Misbourne started flowing at Deep Mill Lane, above Little Missenden.

The locations of chalk river sources in the Upper Lee also stayed fairly similar to September.

- The River Mimram continued to flow upstream of Whitwell.
- The source of the River Beane remained just above Walkern.
- The River Rib flowed briefly downstream of Dane End before gaining a steadier flow in Buntingford.
- The River Ash (Herts) flowed intermittently from Brent Pelham, and gained a steadier flow at Much Hadham.
- The River Stort also flowed intermittently from Lower Green but did not gain meaningful flow until Stansted Springs.

To protect the environment, during October a number of abstraction licence flow constraints were in force. This ranged between 5 and 10 per week, out of a monthly maximum of 28.

Author: Groundwater and Hydrology, groundwaterhydrology@environment-agency.gov.uk

Contact Details: 03708 506 506

All data are provisional and may be subject to revision. The views expressed in this document are not necessarily those of the Environment Agency. Its officers, servants or agents accept no liability for any loss or damage arising from the interpretation or use of the information, or reliance upon views contained within.

2 Rainfall

2.1 Rainfall map

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

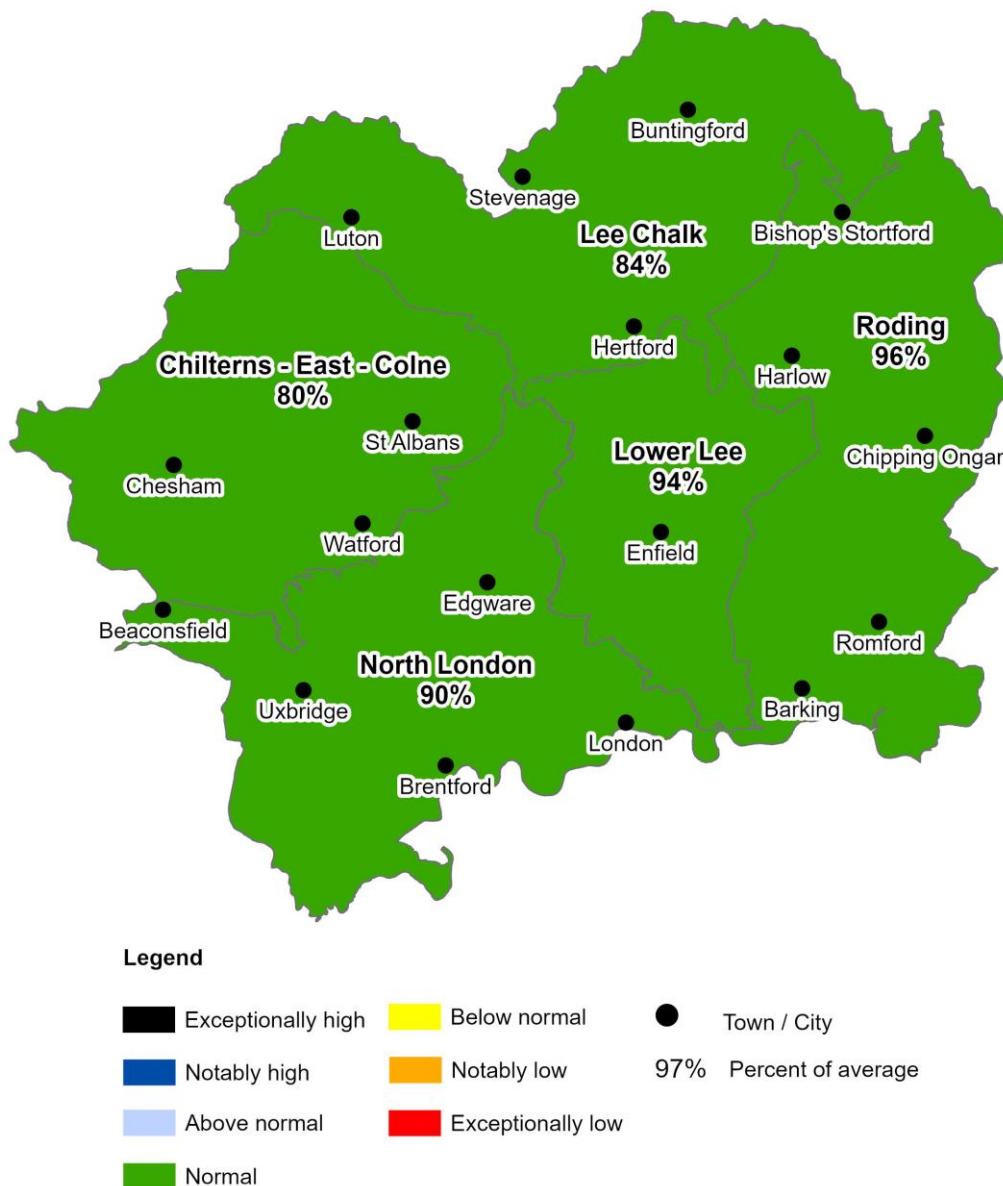
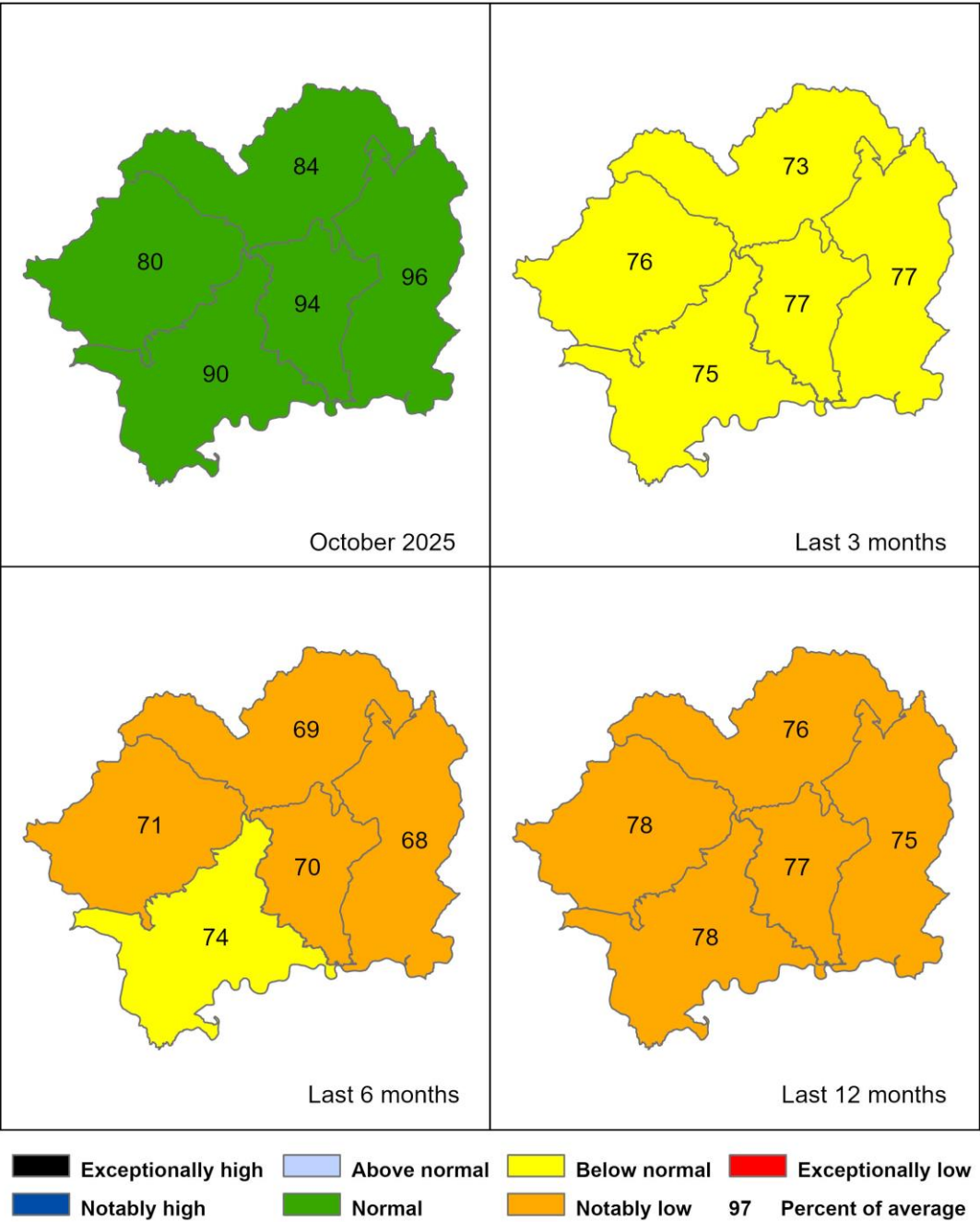


Figure 2.2: Total rainfall for hydrological areas for the current month (up to 31 October 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



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.

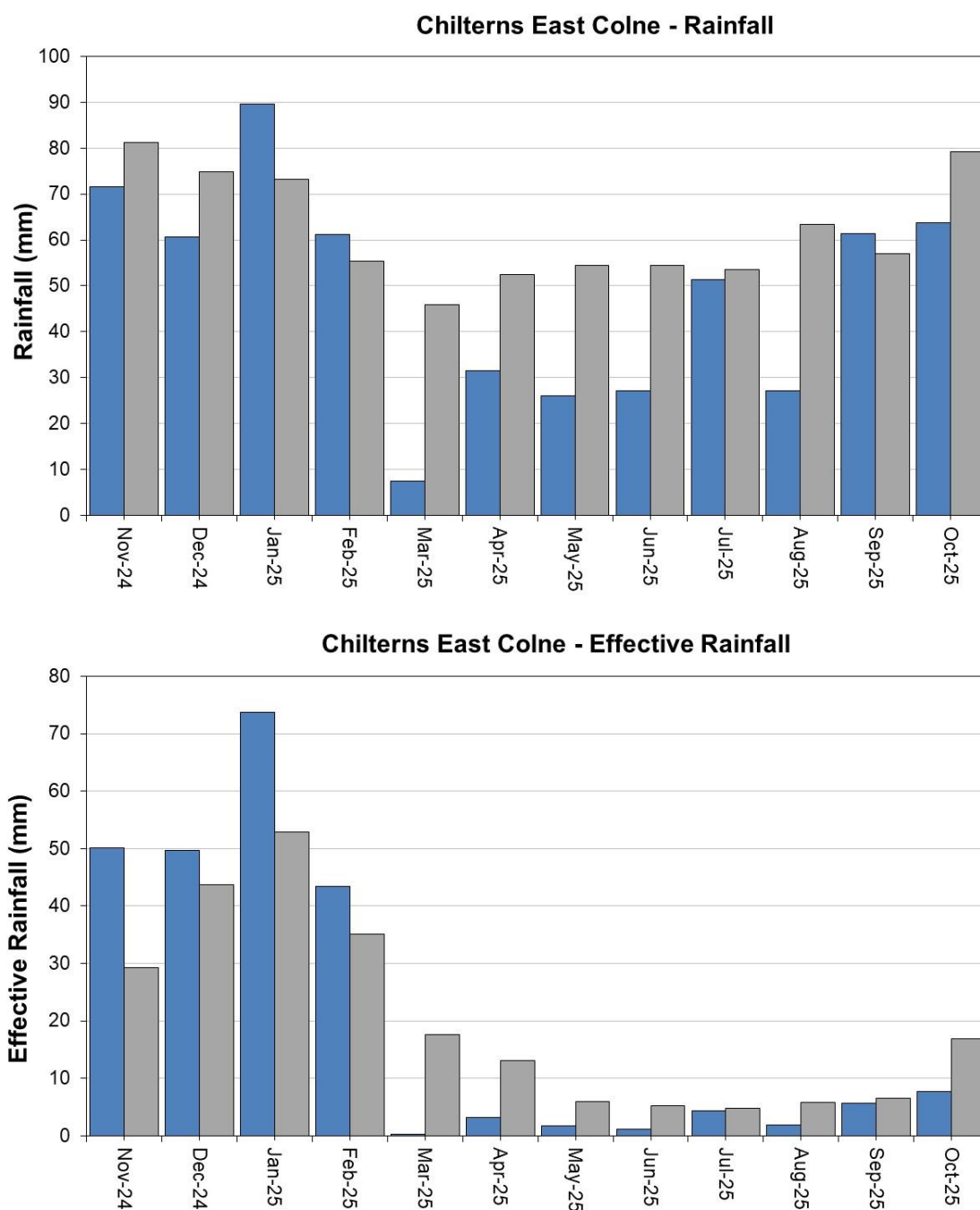
(Source: Environment Agency). © Ordnance Survey Crown Copyright and Database Rights 2025 AC0000807064. Geological map reproduced with the permission of the British Geological Survey © UKRI 2025.

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.

Monthly total rainfall (mm) Long term average rainfall (mm)

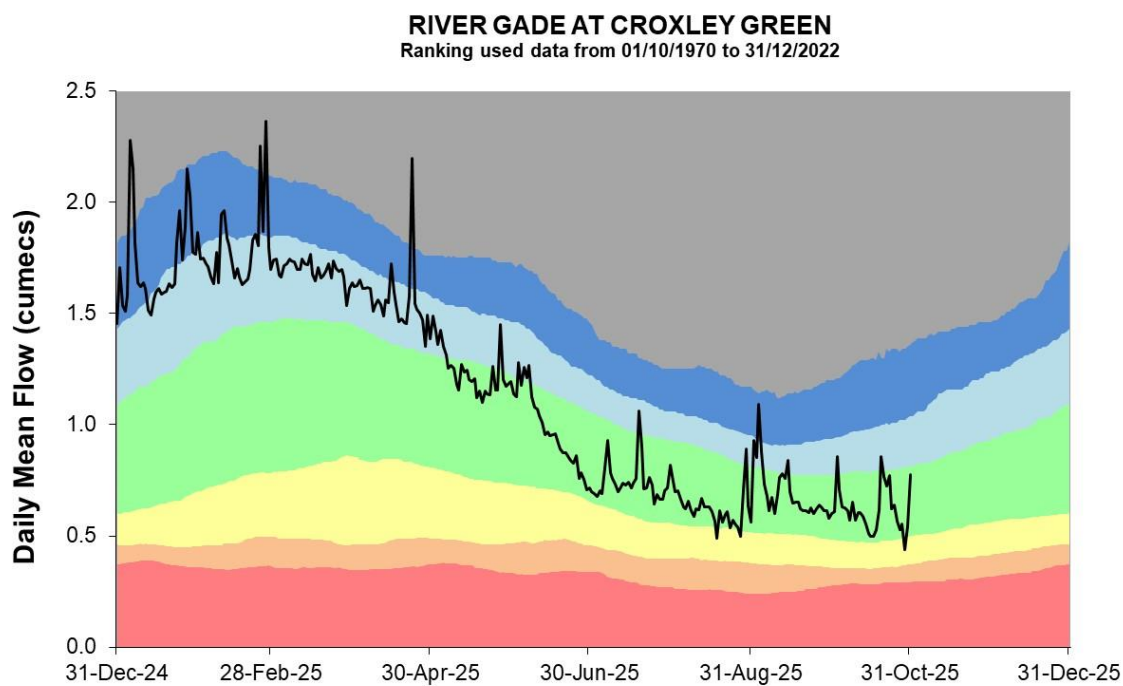
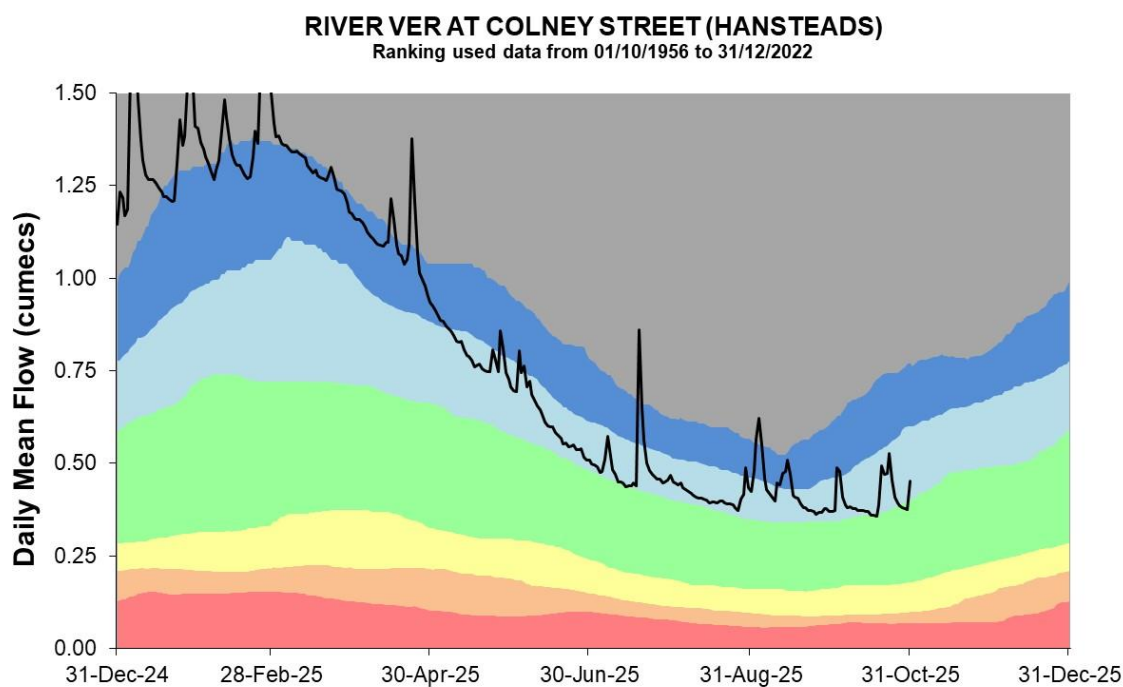


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

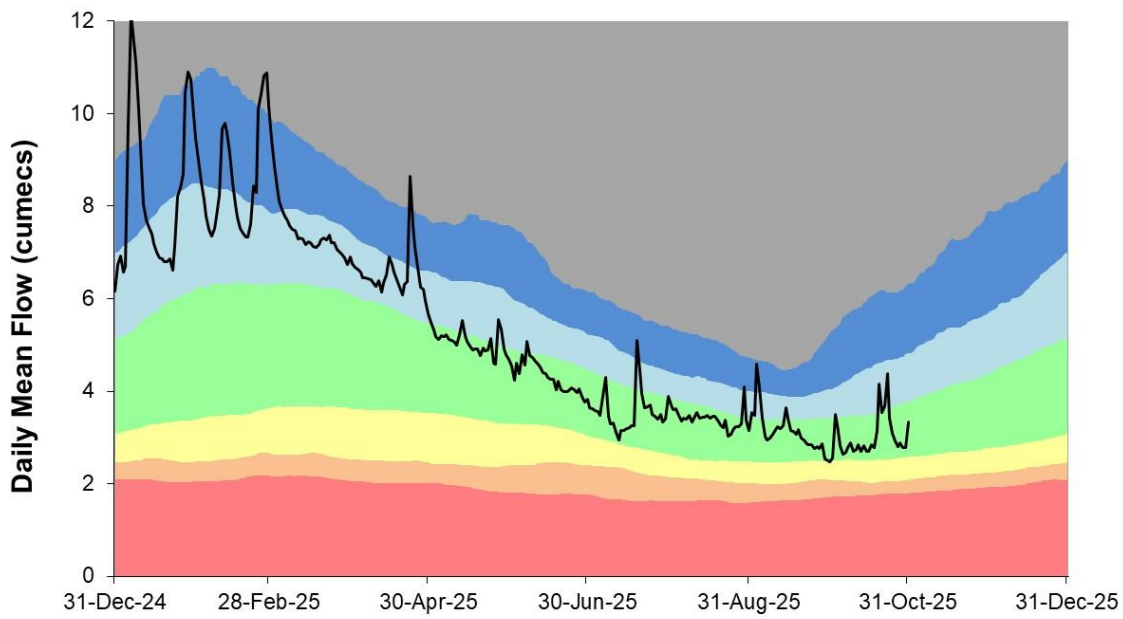
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

4.2 Colne River flow charts

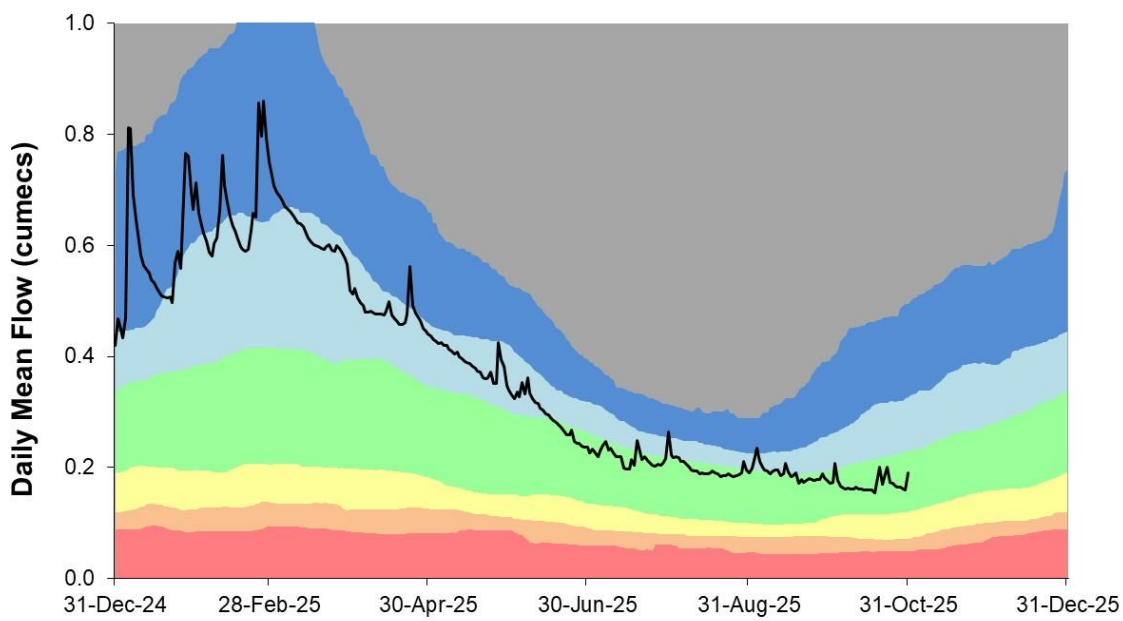
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



RIVER COLNE AT DENHAM
Ranking used data from 01/10/1952 to 31/12/2022



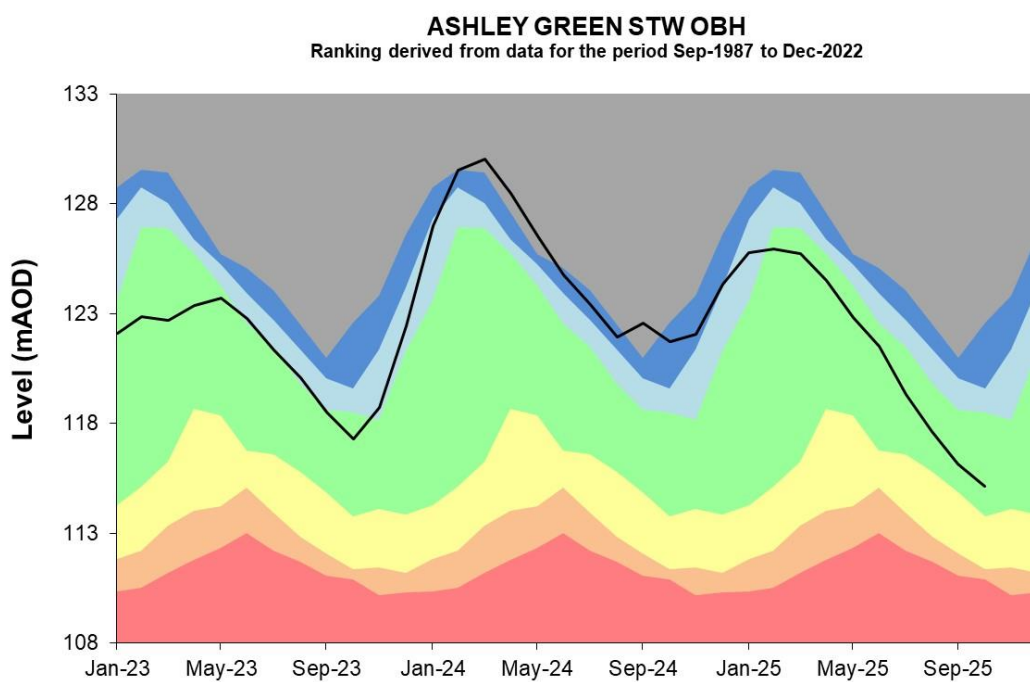
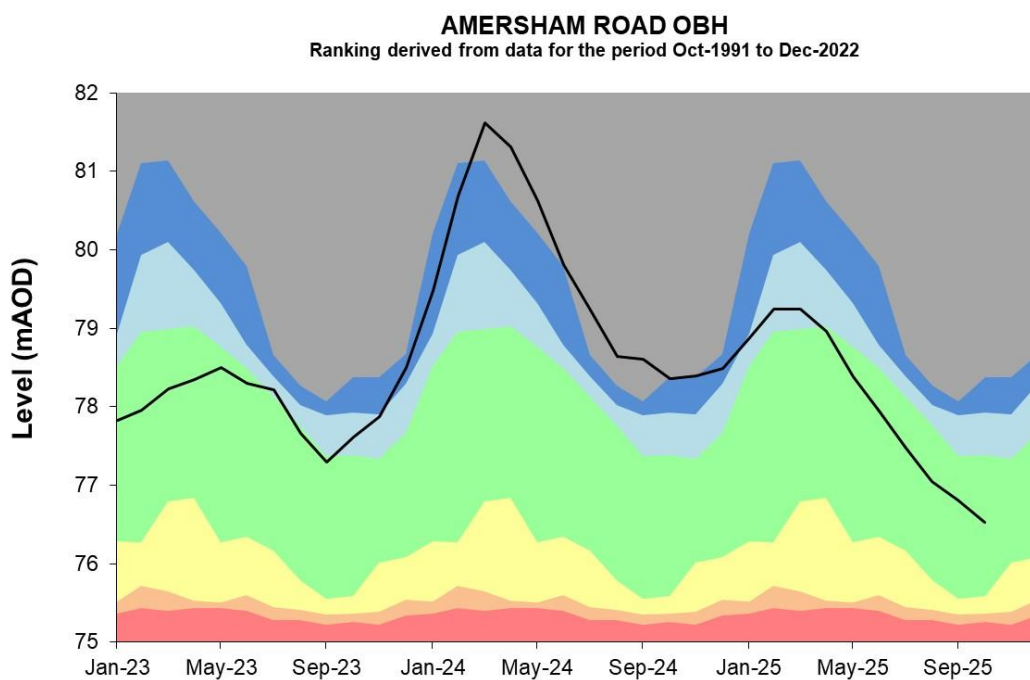
RIVER MISBOURNE AT DENHAM LODGE
Ranking used data from 01/07/1984 to 31/12/2022

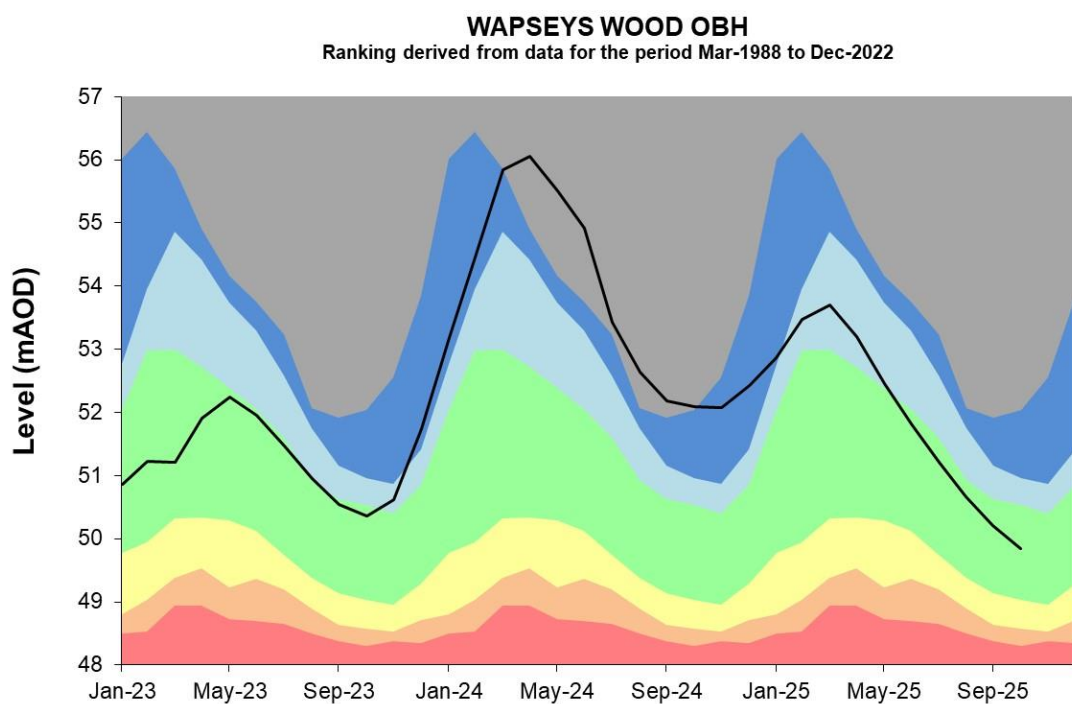
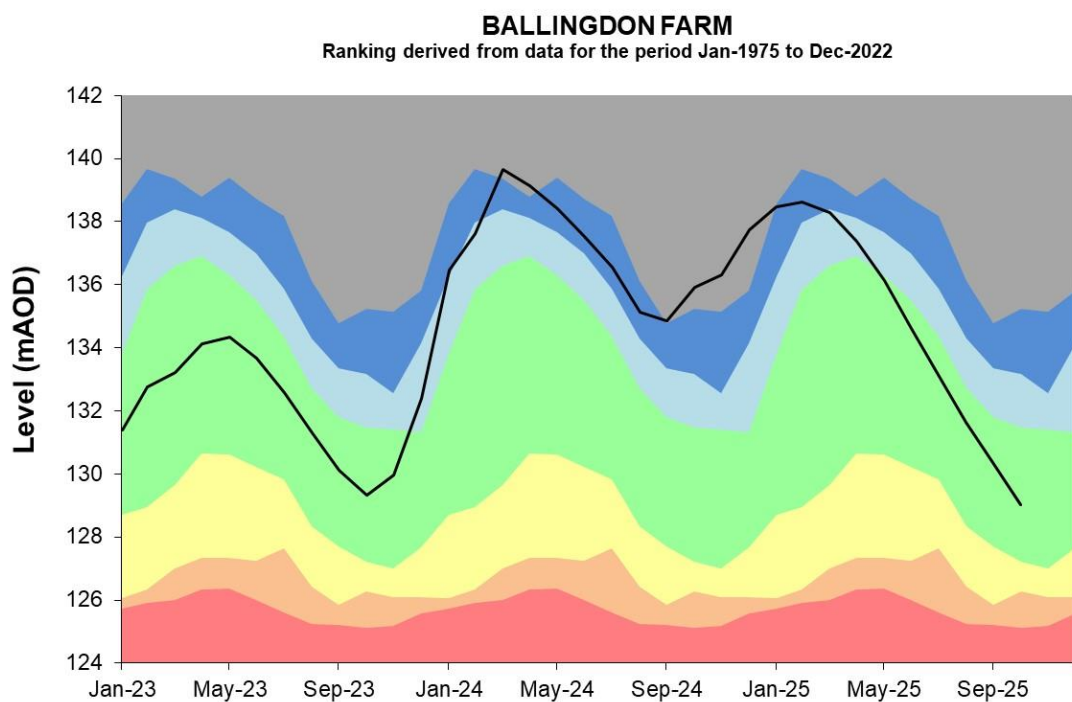


Source: Environment Agency, 2025

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.





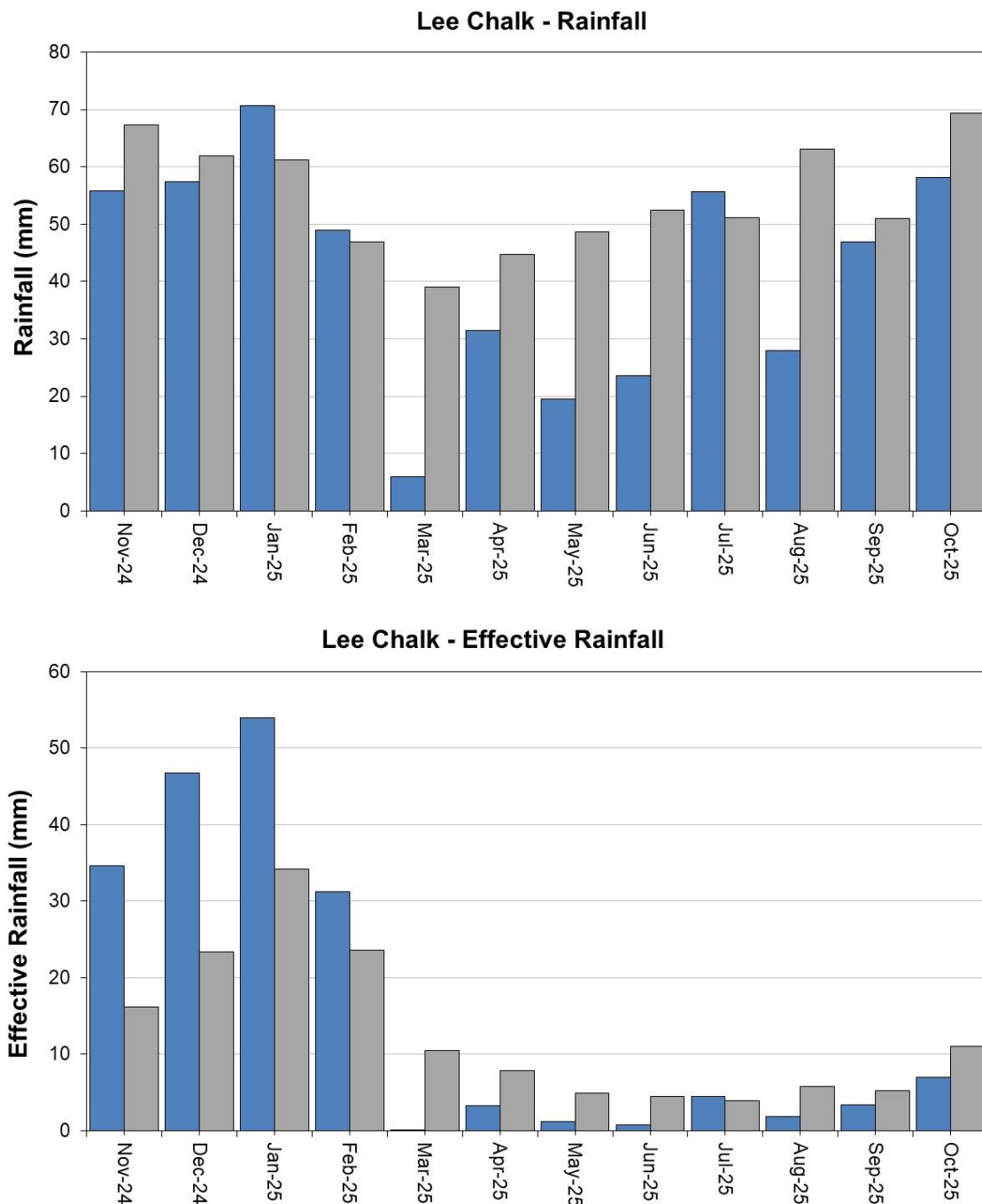
Source: Environment Agency, 2025

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.

Monthly total rainfall (mm) Long term average rainfall (mm)

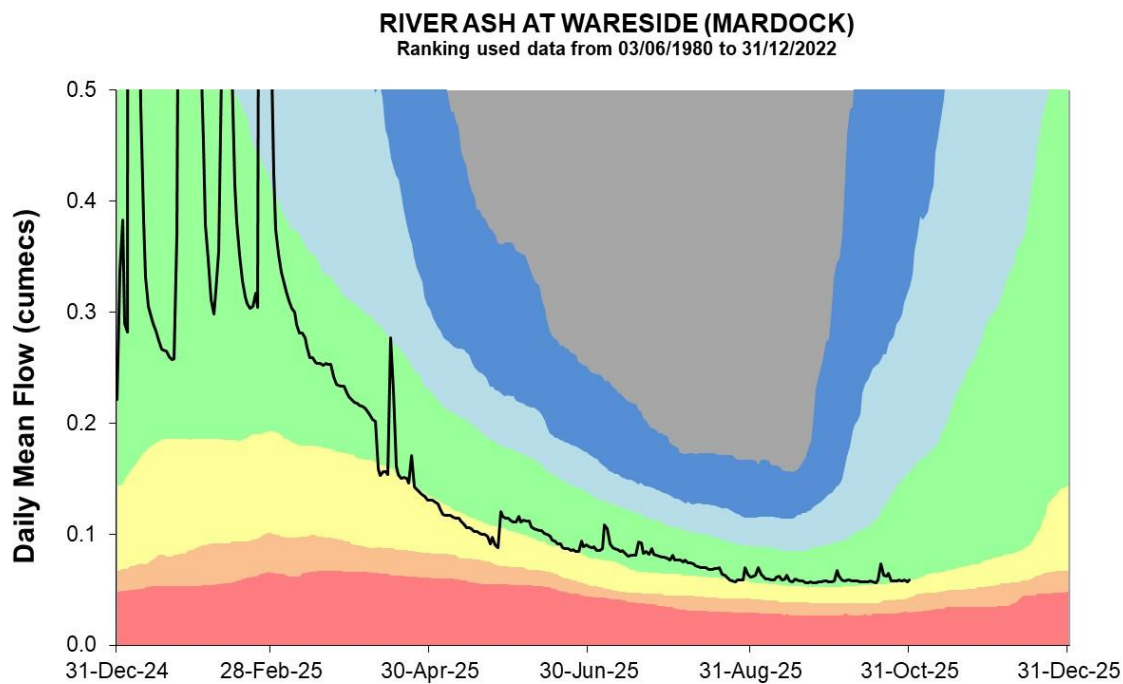
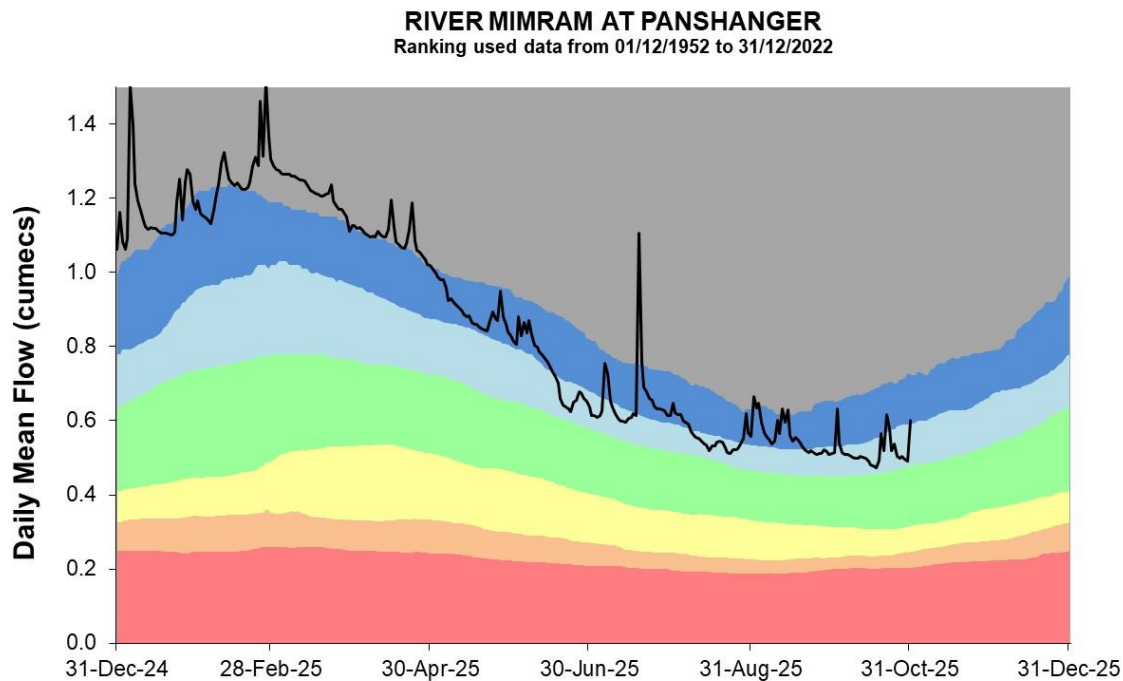


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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

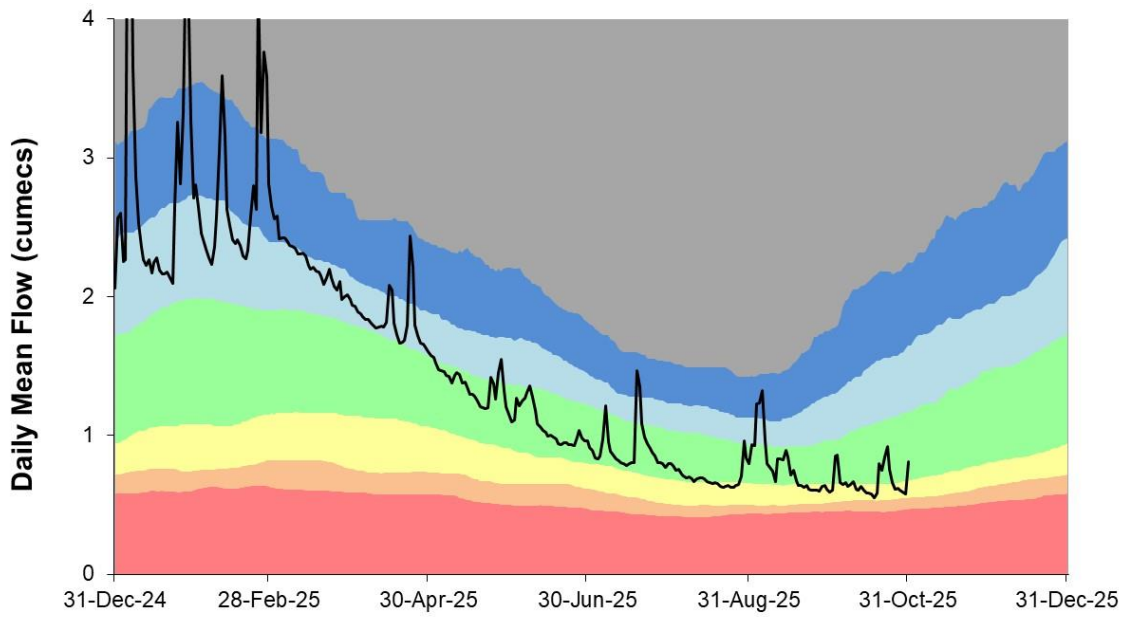
5.2 Upper Lee River flow charts

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.



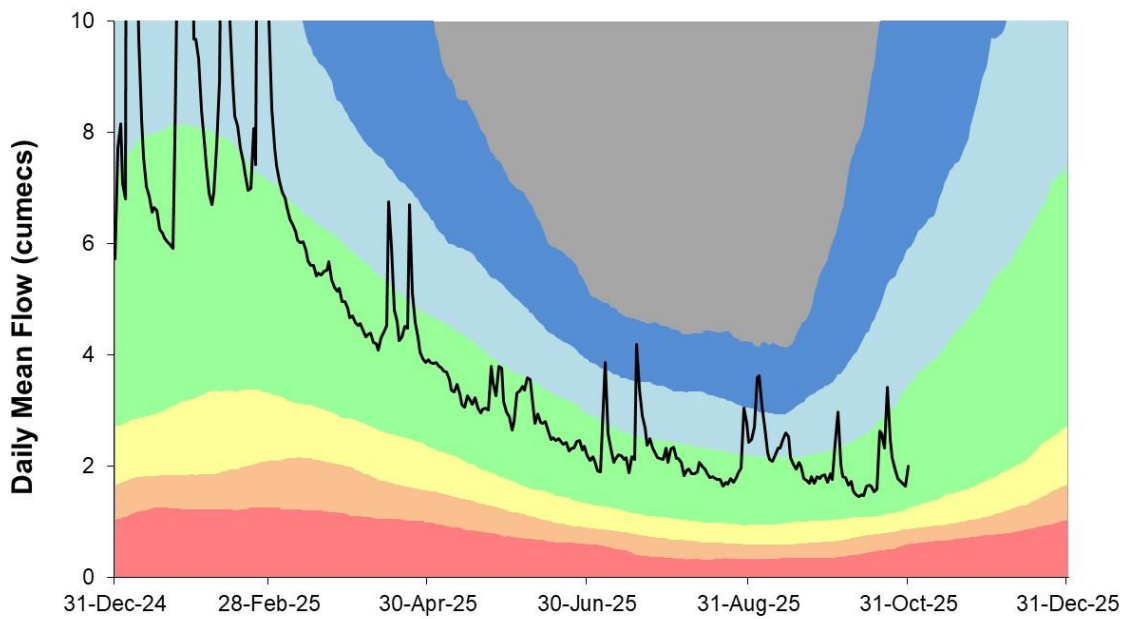
RIVER LEE AT HOWE GREEN (WATER HALL)

Ranking used data from 01/04/1959 to 31/12/2022



RIVER LEE AT FEILDES WEIR

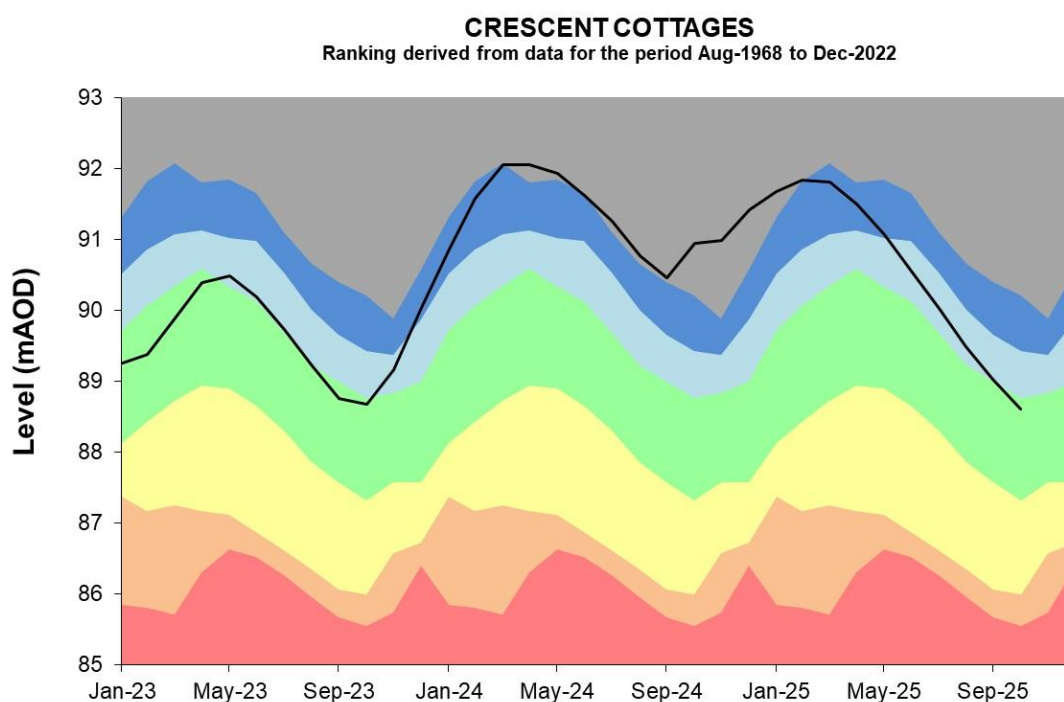
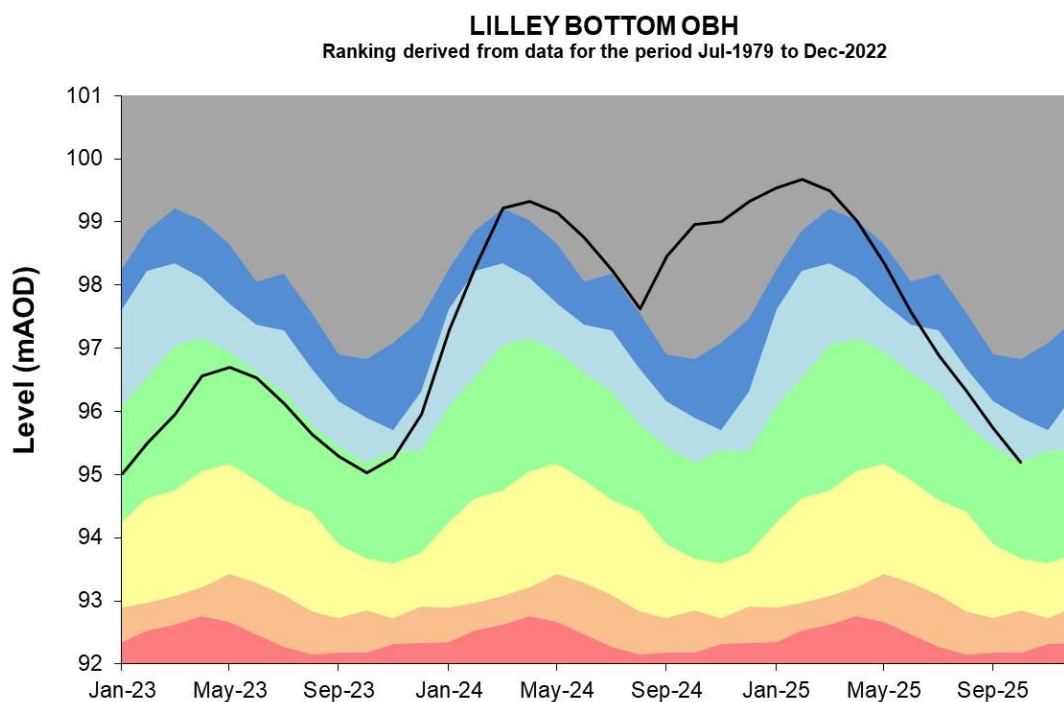
Ranking used data from 10/05/1883 to 31/12/2022



Source: Environment Agency, 2025

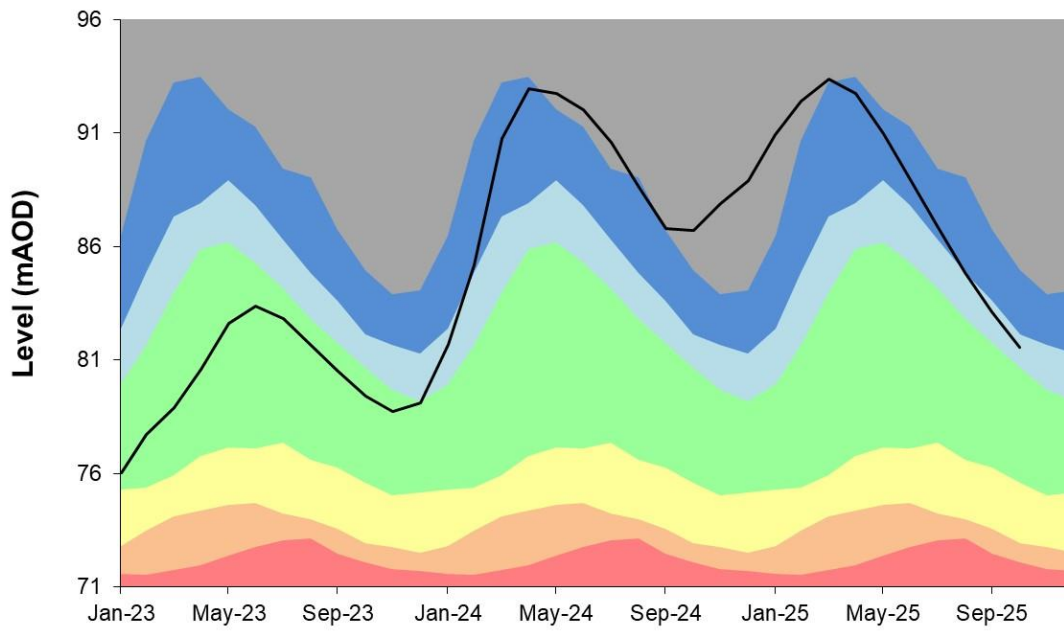
5.3 Upper Lee Groundwater level charts

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.



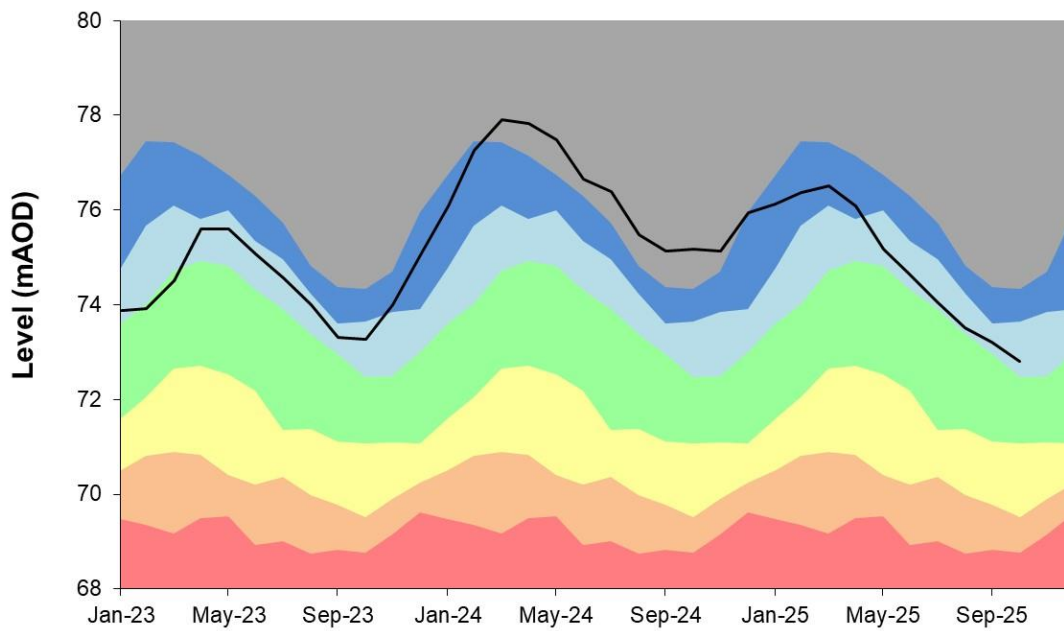
THERFIELD RECTORY

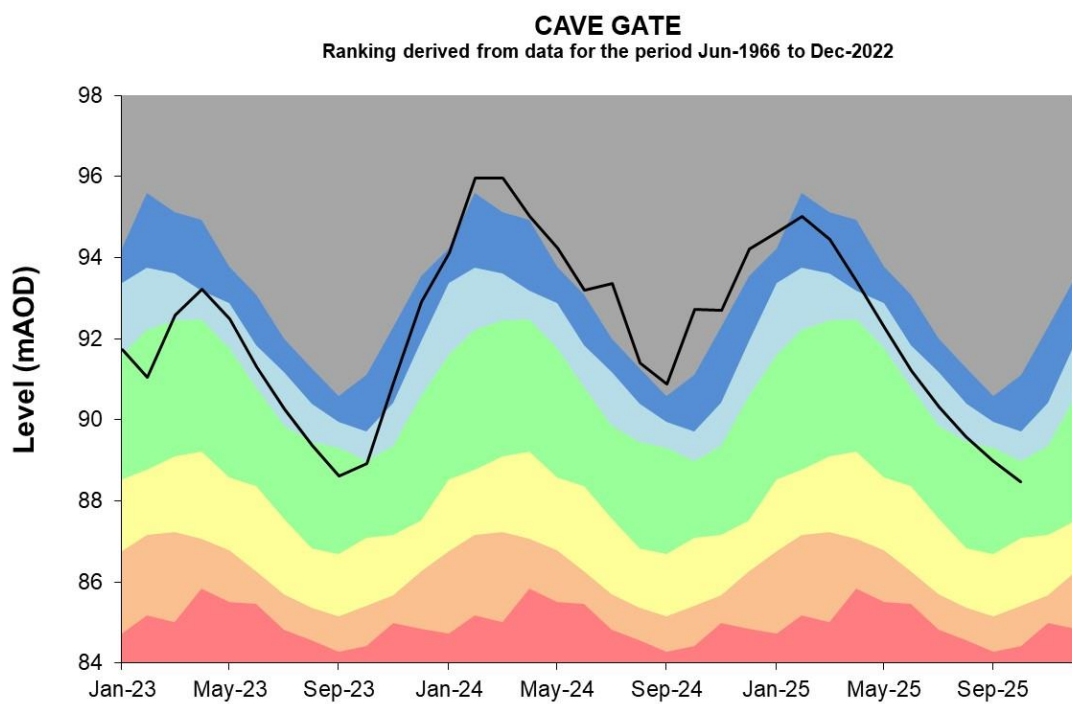
Ranking derived from data for the period Jan-1883 to Dec-2022



HIXHAM HALL

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



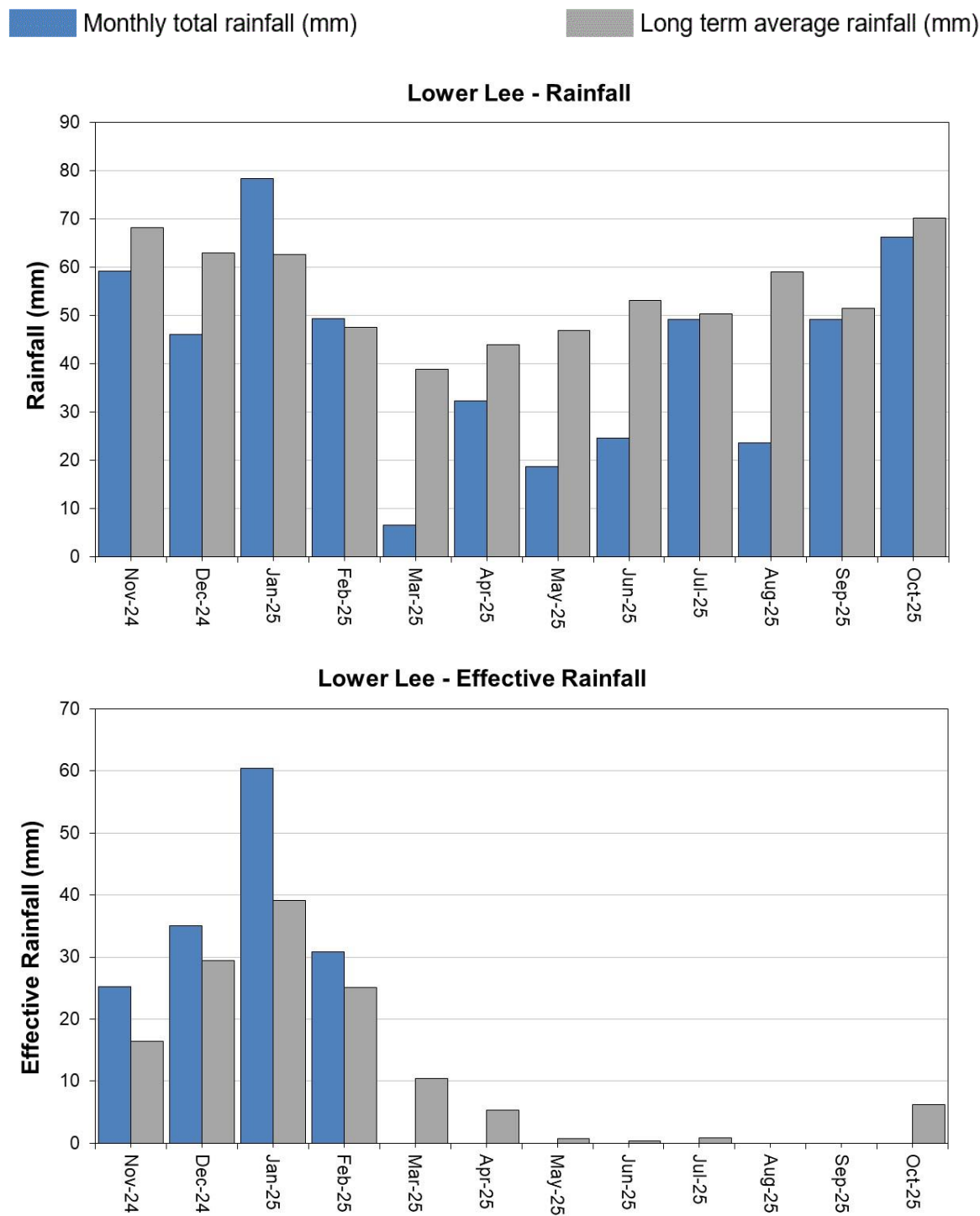


Source: Environment Agency, 2025

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.

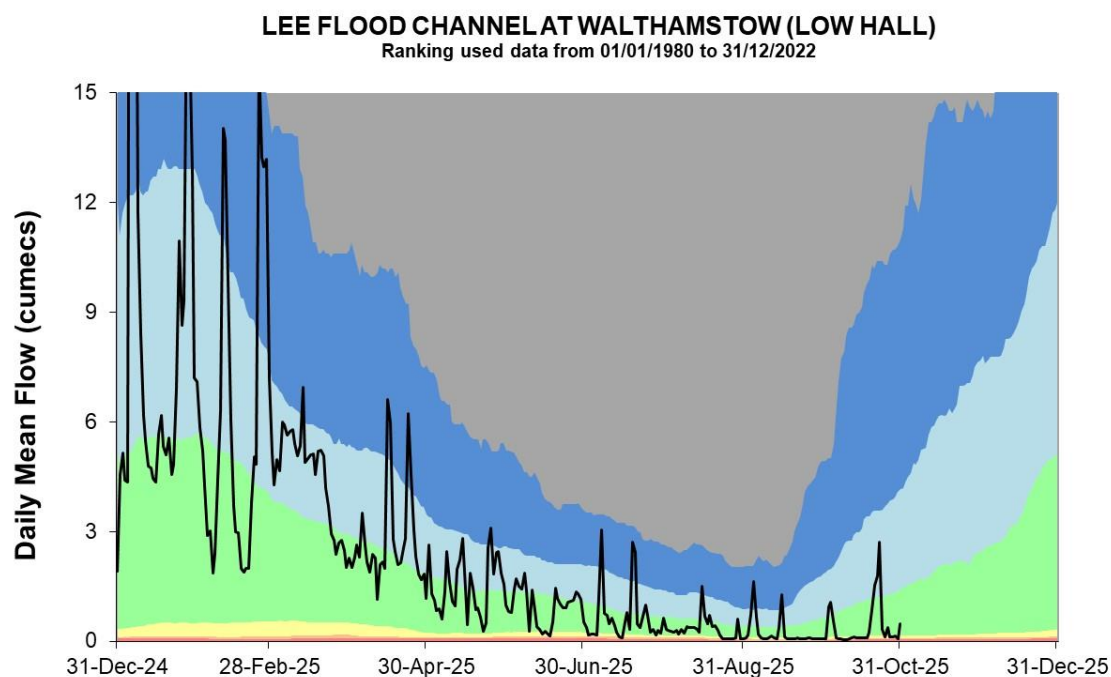
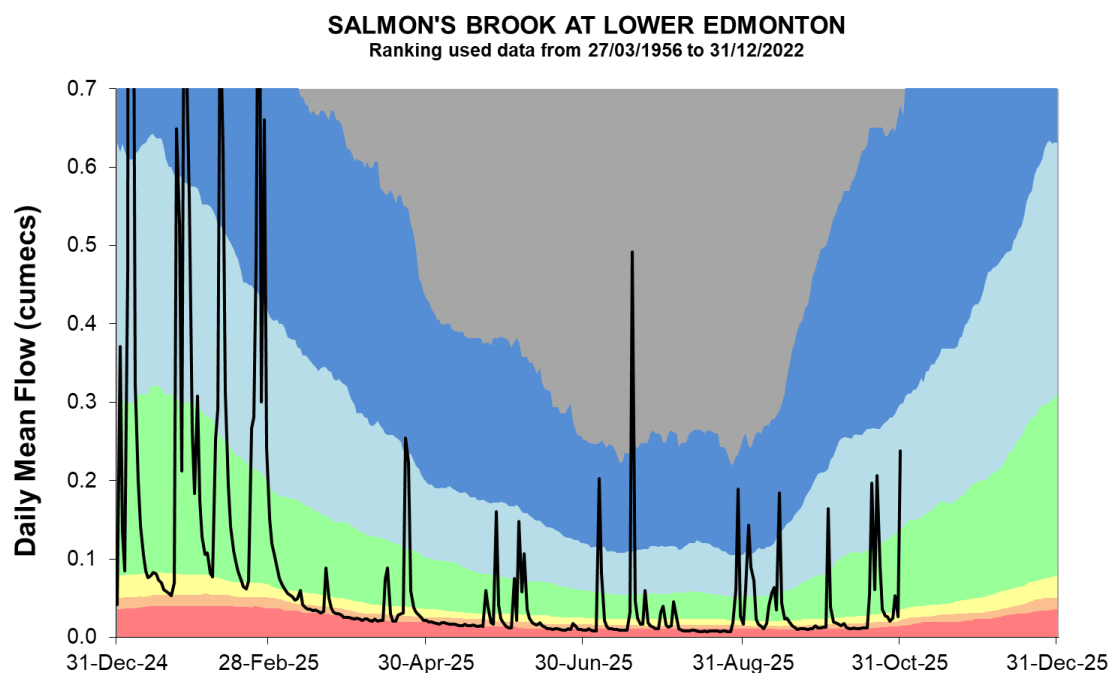


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.



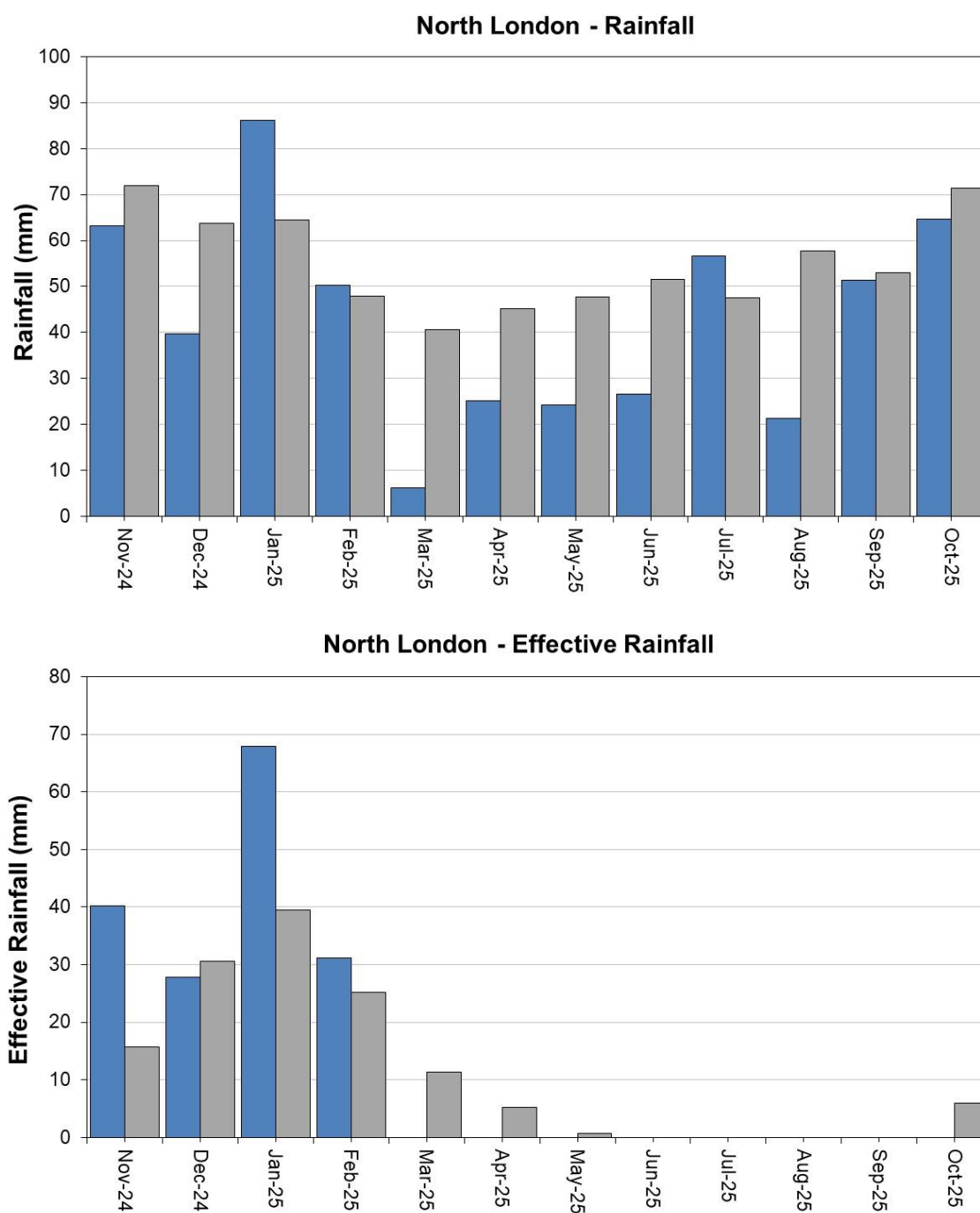
Source: Environment Agency, 2025

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.

Monthly total rainfall (mm) Long term average rainfall (mm)

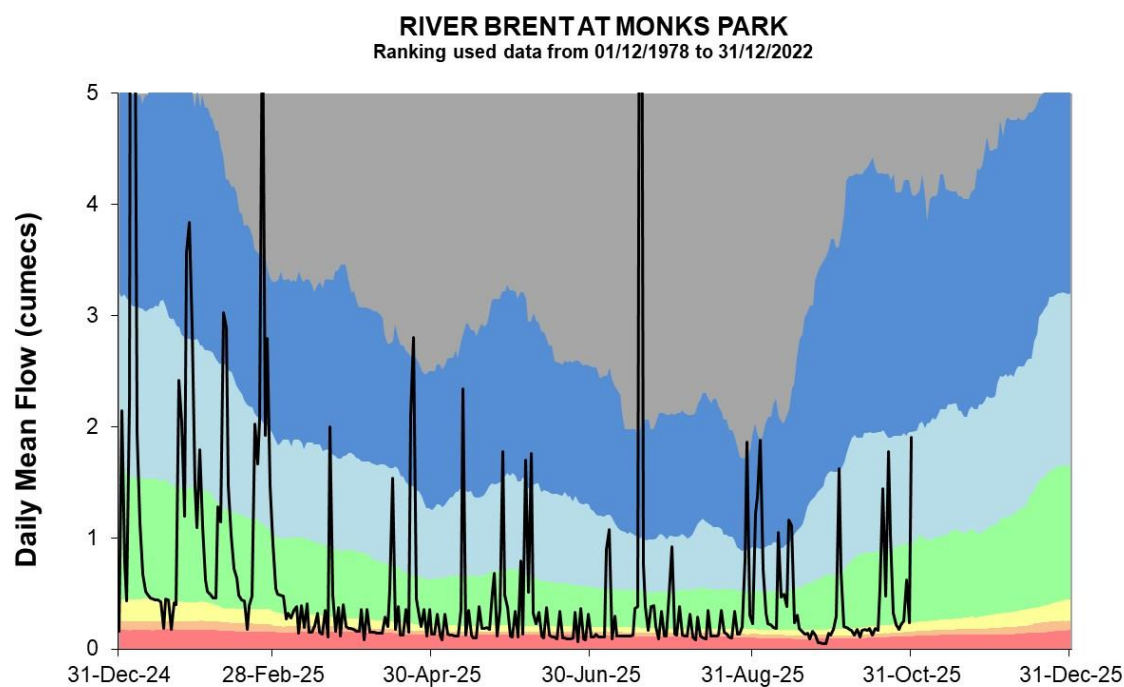
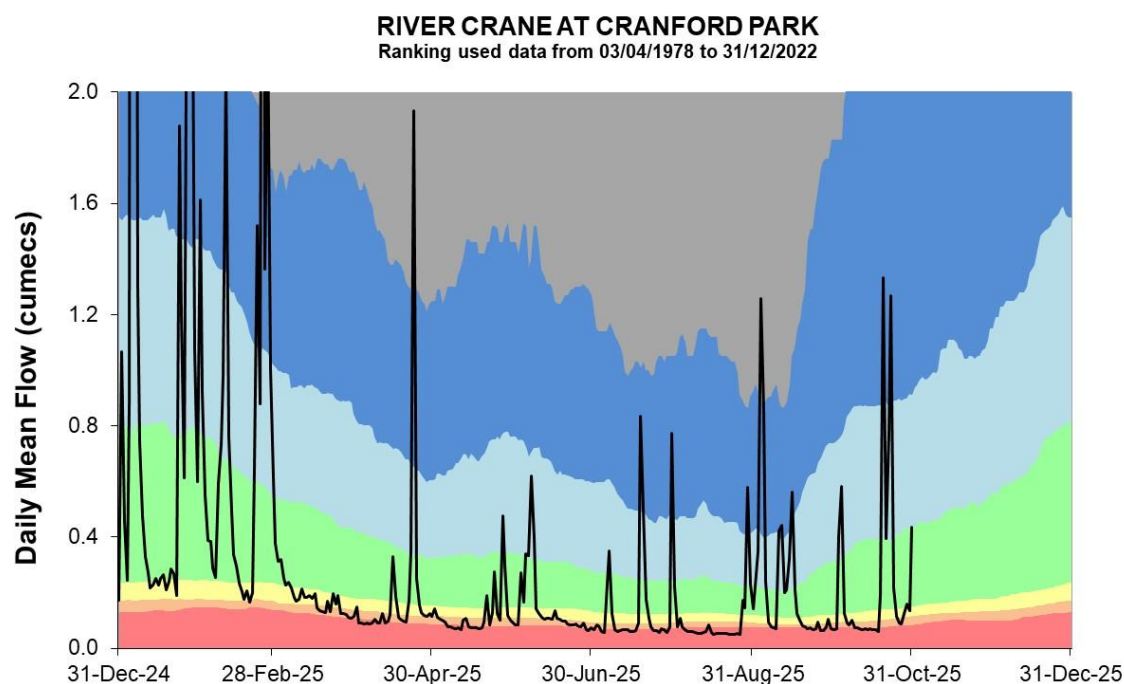


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.

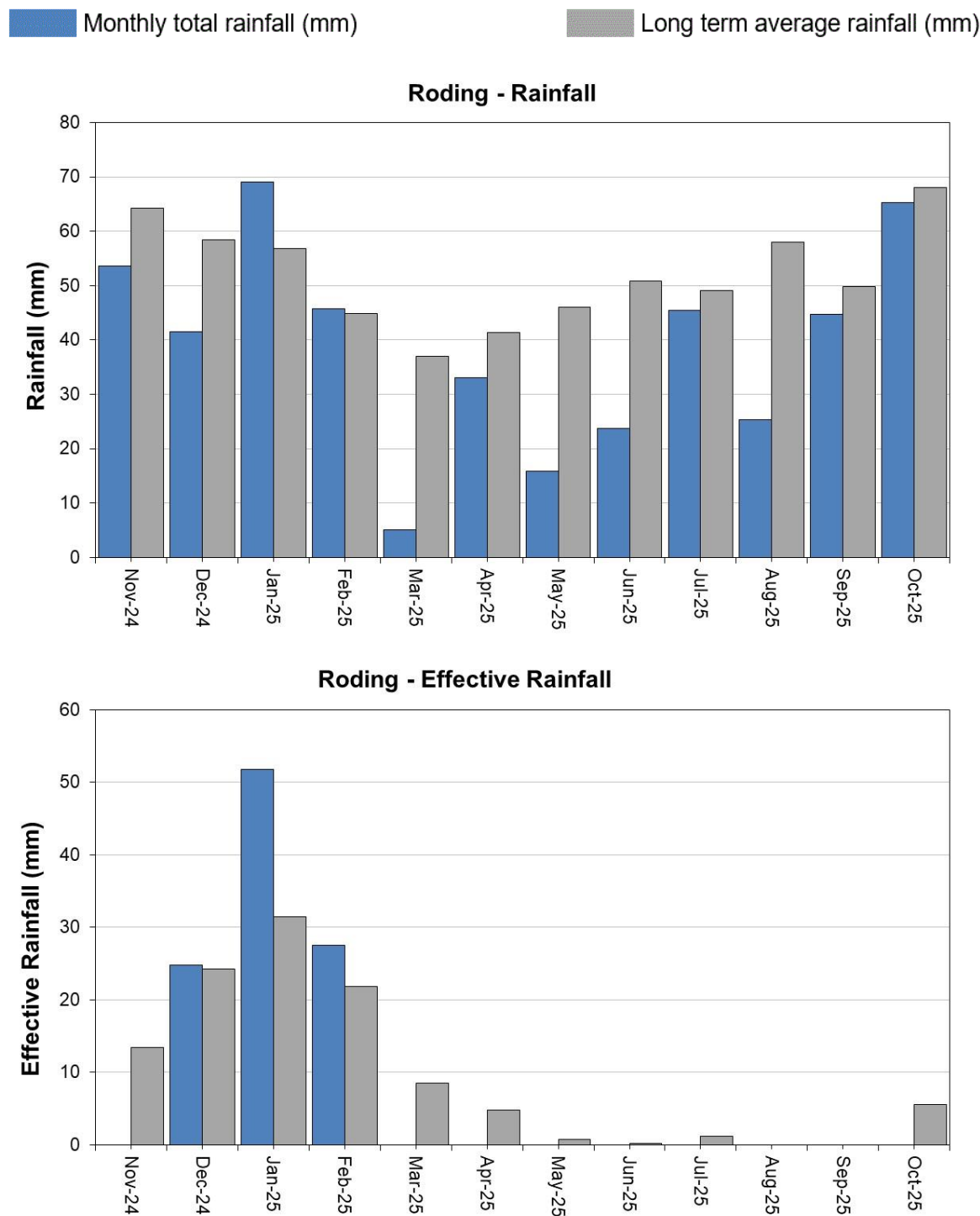


Source: Environment Agency, 2025

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.

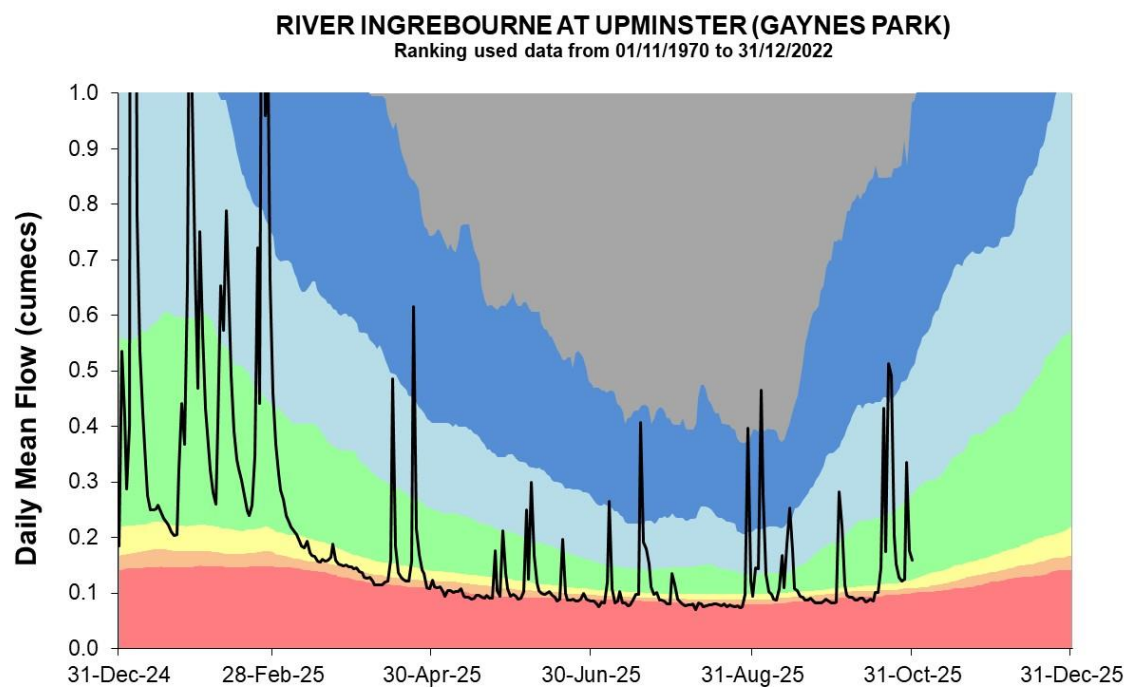
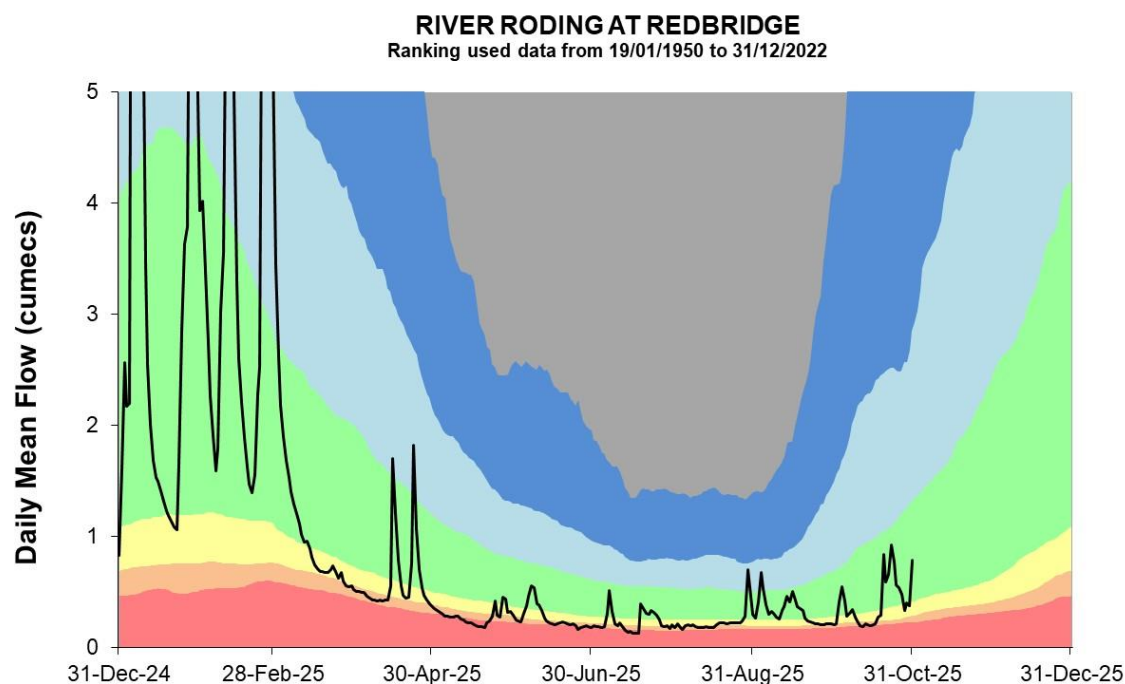


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.

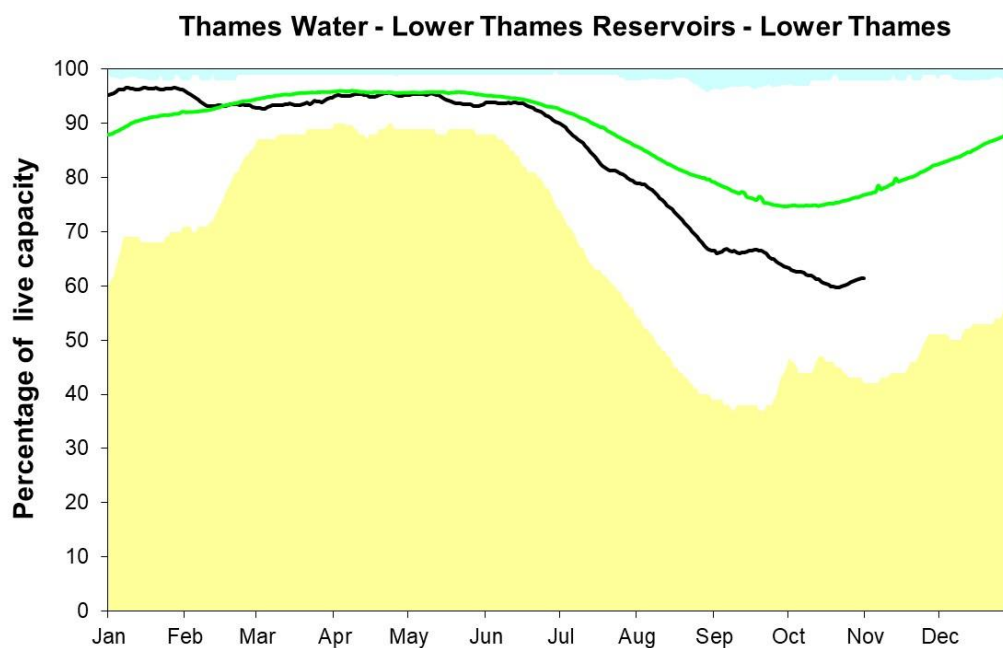
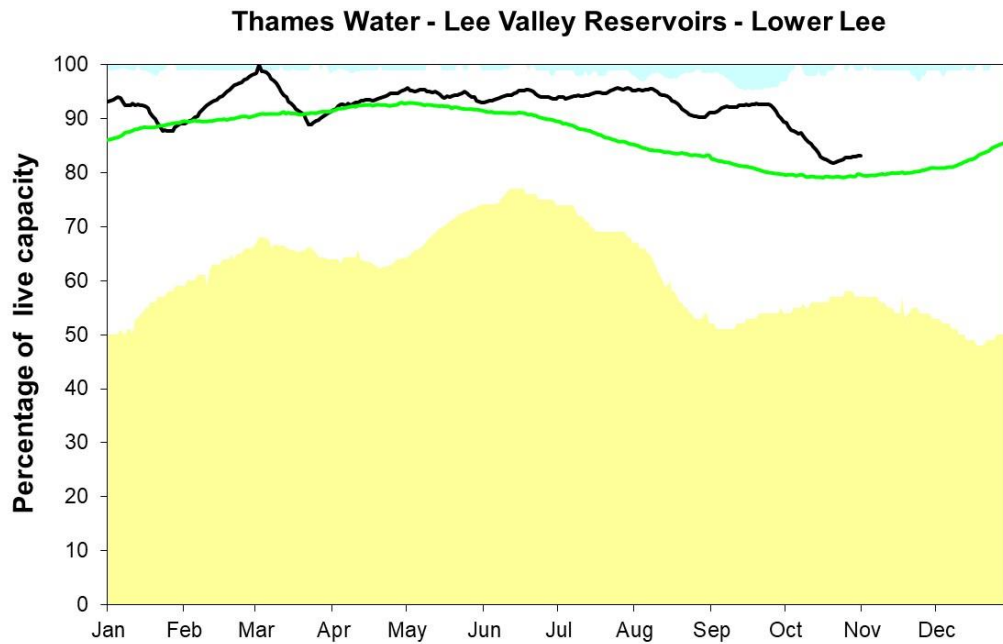


Source: Environment Agency, 2025

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.

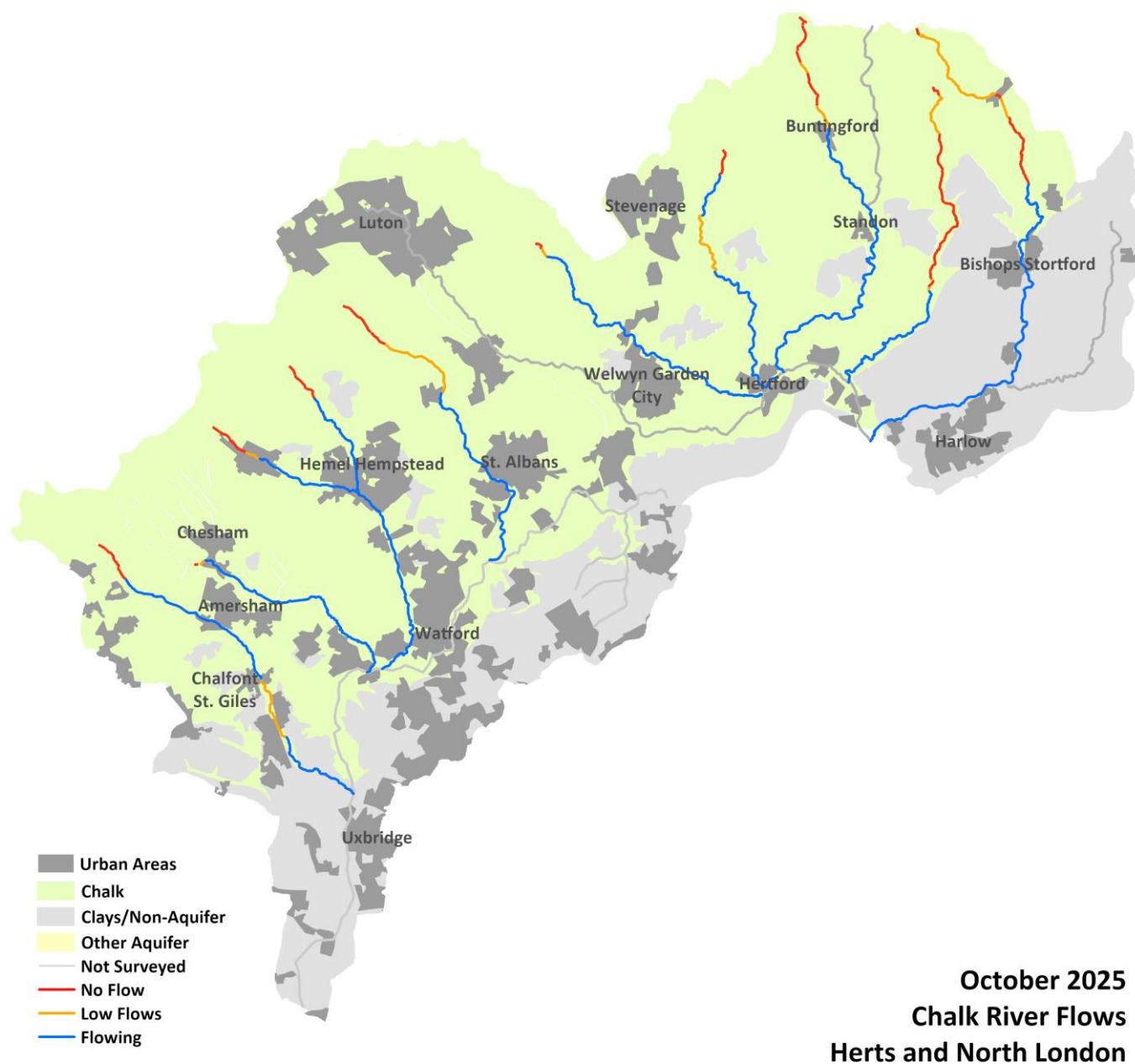
Below minimum Above maximum Average Latest data



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 © Ordnance Survey Crown Copyright and Database Rights 2025 AC0000807064

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	Oct 2025 total rainfall in mm	Oct 2025 rainfall long term average 1991 to 2020	Oct 2025 rainfall % of long term average 1991 to 2020	Winter Oct 2025 to Oct 2025 total rainfall in mm	Winter Oct 2025 to Oct 2025 rainfall % of long term average 1991 to 2020
Chilterns East Colne	64	79	80	64	80
Lee Chalk	58	69	84	58	84
Lower Lee	66	70	94	66	94
North London	65	71	90	65	90
Roding	65	68	96	65	96
Herts and North London total	64	72	89	64	89

12.2 Rainfall banding table

Hydrological area	Oct 2025 band	Aug 2025 to Oct 2025 cumulative band	May 2025 to Oct 2025 cumulative band	Nov 2024 to Oct 2025 cumulative band
Chilterns East Colne	Normal	Below normal	Notably low	Notably low
Lee Chalk	Normal	Below normal	Notably low	Notably low
Lower Lee	Normal	Below normal	Notably low	Notably low
North London	Normal	Below normal	Below normal	Notably low
Roding	Normal	Below normal	Notably low	Notably low

12.3 Effective Rainfall table

Hydrological area	Oct 2025 total effective rainfall in mm	Oct 2025 effective rainfall long term average 1991 to 2020 in mm	Oct 2025 effective rainfall % of long term average 1991 to 2020	Winter Oct 2025 to Oct 2025 total effective rainfall in mm	Winter Oct 2025 to Oct 2025 effective rainfall % of long term average 1991 to 2020
Chilterns East Colne	8	17	45	8	45
Lee Chalk	7	11	63	7	63
Lower Lee	0	6	0	0	0
North London	0	6	0	0	0
Roding	0	6	0	0	0
Herts and North London total	3	9	32	3	32

12.4 Soil Moisture Deficit table

Hydrological area	Oct 2025 end of month Soil Moisture Deficit in mm	Oct 2025 end of month Soil Moisture Deficit long term average 1991 to 2020 in mm	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
Chilterns East Colne	150	81	172	107
Lee Chalk	163	103	186	124
Lower Lee	145	88	181	114
North London	145	90	181	118
Roding	149	91	186	117
Herts and North London total	151	91	181	116

12.5 River flows table

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

12.6 Groundwater table

Site name	Aquifer	Oct 2025 band	Sep 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	Normal	Above normal
Cave Gate	Upper Lee Chalk	Normal	Normal
Hixham Hall	Upper Lee Chalk	Above normal	Above normal
Therfield Rectory	Upper Lee Chalk	Above normal	Above normal

12.7 Abstraction licence flow constraints

Number of flow constraints in force between 29 September to 5 October 2025	Number of flow constraints in force between 6 and 12 October 2025	Number of flow constraints in force between 13 and 19 October 2025	Number of flow constraints in force between 20 and 26 October 2025
10	5	8	9