

Monthly water situation report: Hertfordshire and North London Area

1 Summary - September 2026

September was another month of below average rainfall in the Hertfordshire and North London area (the area), receiving about 52% of the long term average (LTA). Soil moisture deficits (SMDs) increased further during September, ending the month at their highest levels on record for the time of year. On the whole, river baseflows declined in the area's chalk rivers, however, most indicator sites recorded monthly mean flows in the normal band. In the area's clay and urban catchments, most indicator sites recorded monthly mean flows in the notably low or exceptionally low bands, with the River Roding at Redbridge recording its lowest September flows on record. Groundwater levels declined at all indicator sites, with most remaining in the normal band at the end of the month.

1.1 Rainfall

Overall, September was another dry month in the Hertfordshire and North London area. All hydrological units ended the month in the below normal band, receiving an average of 27mm of rainfall (52% of the LTA). The highest rainfall totals of the month were recorded on 8 September in the Roding unit, at Nag's Head Lane (13mm) and Havering Bower (11.9mm). However, the day with the most widespread rainfall was 7 September, with 5.3mm recorded on average. Together, the 7 and 8 September accounted for about 40% of the area's monthly rainfall total. On the whole there were only seven "wet days" during the month (days with ≥ 1 mm of rain).

The end of September is significant as it marks the end of the hydrological summer period (which started in April) and of the whole water year. For this summer period, all hydrological units received their lowest ever rainfall totals (records starting in 1871), other than the Lee Chalk, which received its second lowest rainfall total (after 1921). Rainfall for the water year as a whole was helped by the fairly average winter, with the area receiving about 570mm of rainfall (85% of the LTA). For the water year, therefore, all hydrological units recorded rainfall in the below normal band.

1.2 Soil moisture deficit and recharge

Throughout the area, SMDs increased during September, ending the month at almost double their LTA levels – the highest on record. This meant that almost zero effective rainfall was received during September; consequently, there will be no aquifer recharge as a result of the month's rain.

1.3 River flows

During September, river baseflows generally declined in the area's chalk catchments, however, most indicator sites still recorded month average flows in the normal band. Exceptions to this were Croxley Green (River Gade) and Howe Green (River Lee), which both recorded monthly

mean flows for September in the below normal band. In the area's clay and urban catchments, most indicator sites recorded monthly average flows in the notably low or exceptionally low bands. Redbridge gauging station (River Roding) recorded its lowest ever mean flow for September (records start in 1950). Despite this, Upminster gauging station (River Ingrebourne) nearby recorded month average flows in the normal band – likely helped by the localised rainfall around 8 September.

1.4 Groundwater levels

Groundwater levels continued their seasonal decline throughout the area during September. In the Mid-Chilterns Chalk aquifer, all indicator sites recorded end of month levels in the normal band, apart from Ashley Green, which had just entered the below normal band. In the Lee Chalk aquifer, all indicator sites recorded end of month levels in the normal band.

1.5 Reservoir stocks

Reservoir levels in the Lee Valley group both started and ended September at 69% of live capacity, remaining below its average level throughout the month. Stocks in the Lower Thames group fell, however, from 59% to 53% of live capacity, well below its average level for the time of year.

1.6 Environmental impact

In the Colne catchment, during September, chalk river sources generally moved slightly downstream or experienced declining flows in their headwaters.

- The River Ver started flowing downstream of Markyate but ran dry around Redbourn Golf Club, before flowing again just downstream of Redbourn village.
- The source of the River Gade was still just above Great Gaddesden.
- The River Bulbourne's source remained in the same location, just downstream of Northchurch.
- The River Chess was still flowing at the tennis courts upstream of Chesham, albeit with lower flows at its headwaters.
- The source of the River Misbourne remained just downstream of The Chilterns Hospital, however, flows were weaker around the Chalfonts and the river dried up briefly around Gerrards Cross Golf Club.

In the Upper Lee catchment, most chalk river sources moved downstream compared to their locations the last time they were surveyed.

- The River Mimram started flowing upstream of Whitwell, just above Nine Wells Spring.
- The River Beane flowed just above Walkern before running dry around Aston. The river then gained a steadier flow at Frogmore Park.
- The source of the River Rib was located at Buntingford.
- The River Ash started flowing at Much Hadham.
- The River Stort flowed briefly downstream of Clavering, before gaining its permanent flow below Manuden.

To protect the environment, during September a number of abstraction licence flow constraints were in force. This ranged between 8 and 13 per week, out of a month maximum of 31.

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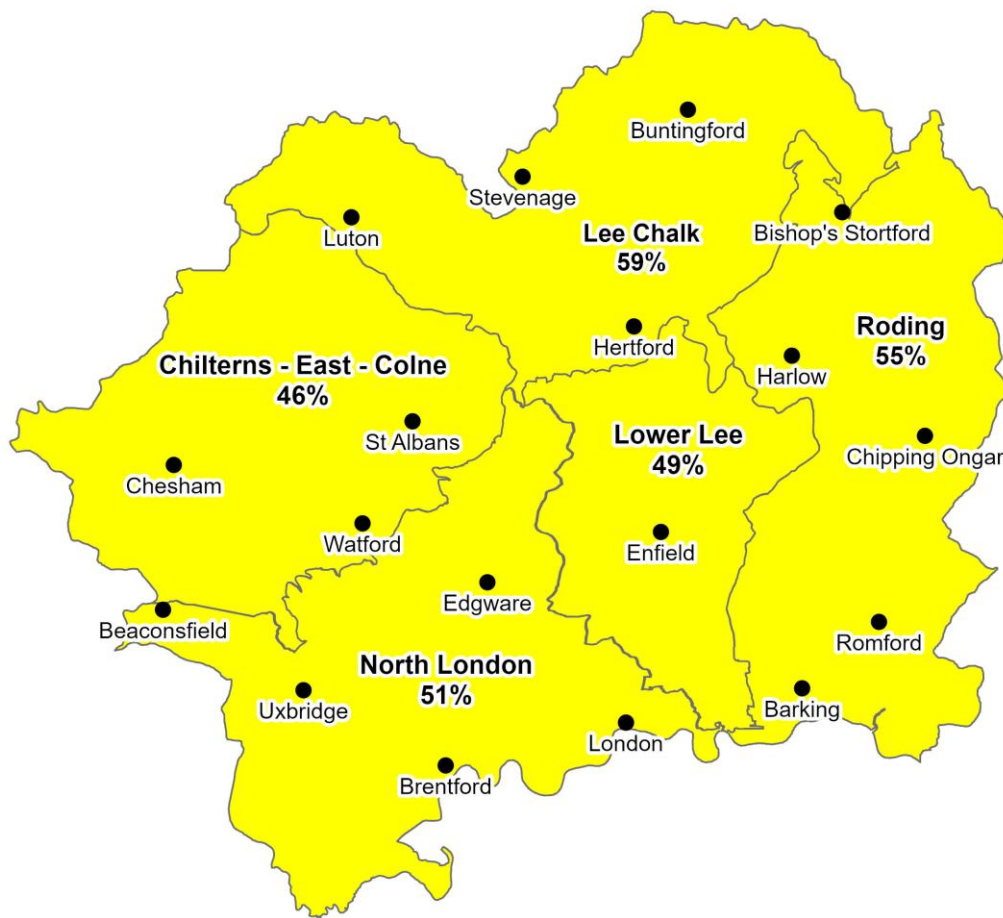
Contact Details: 03708 506 506

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2 Rainfall

2.1 Rainfall map

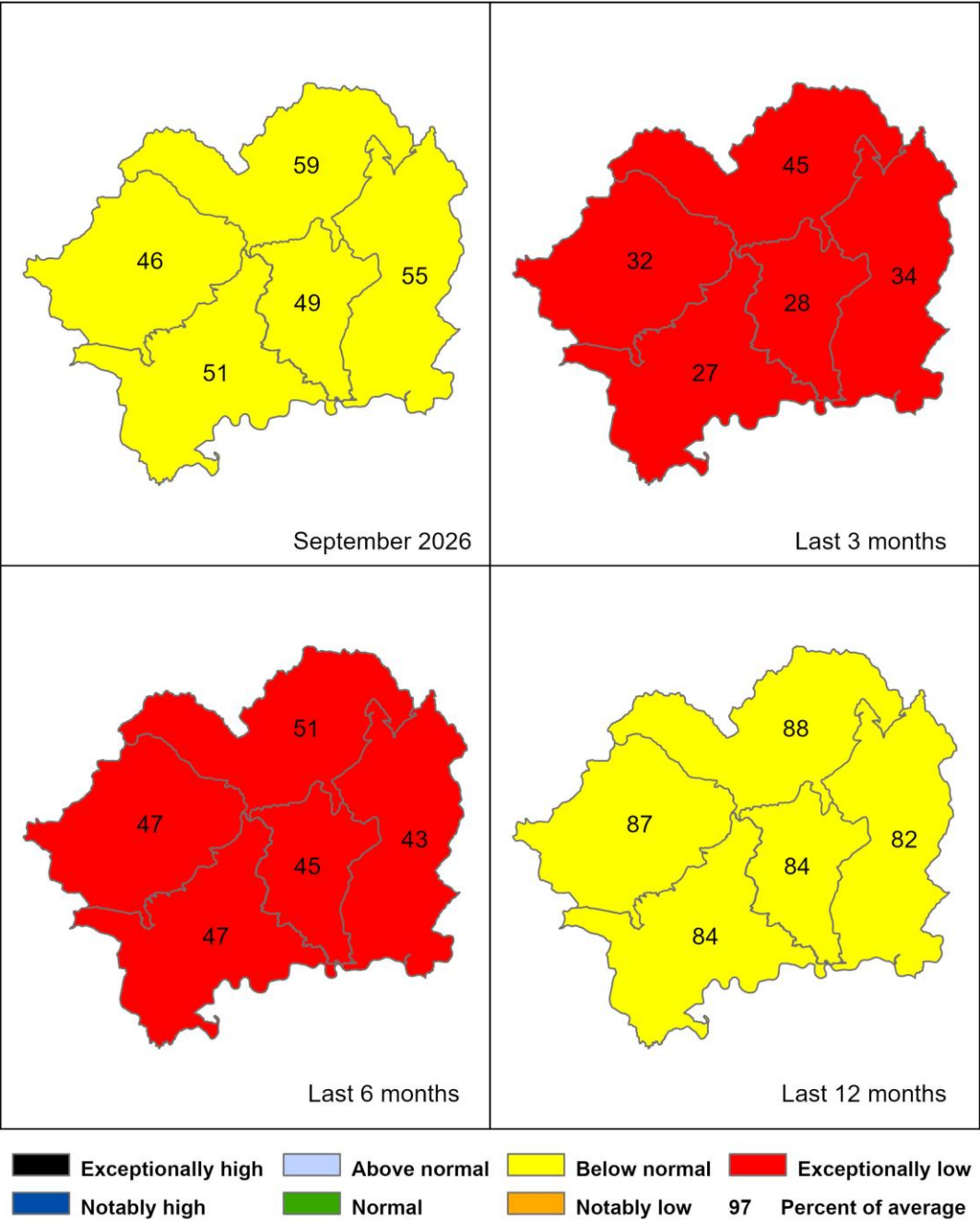
Figure 2.1: Total rainfall for hydrological areas for the current month (up to 30 September 2026), classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



Legend

Exceptionally high	Below normal	Town / City
Notably high	Notably low	97% Percent of average
Above normal	Exceptionally low	
Normal		

Figure 2.2: Total rainfall for hydrological areas for the current month (up to 30 September 2026), 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, 2026). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. © Ordnance Survey Crown Copyright and Database Rights 2026 AC0000807064.

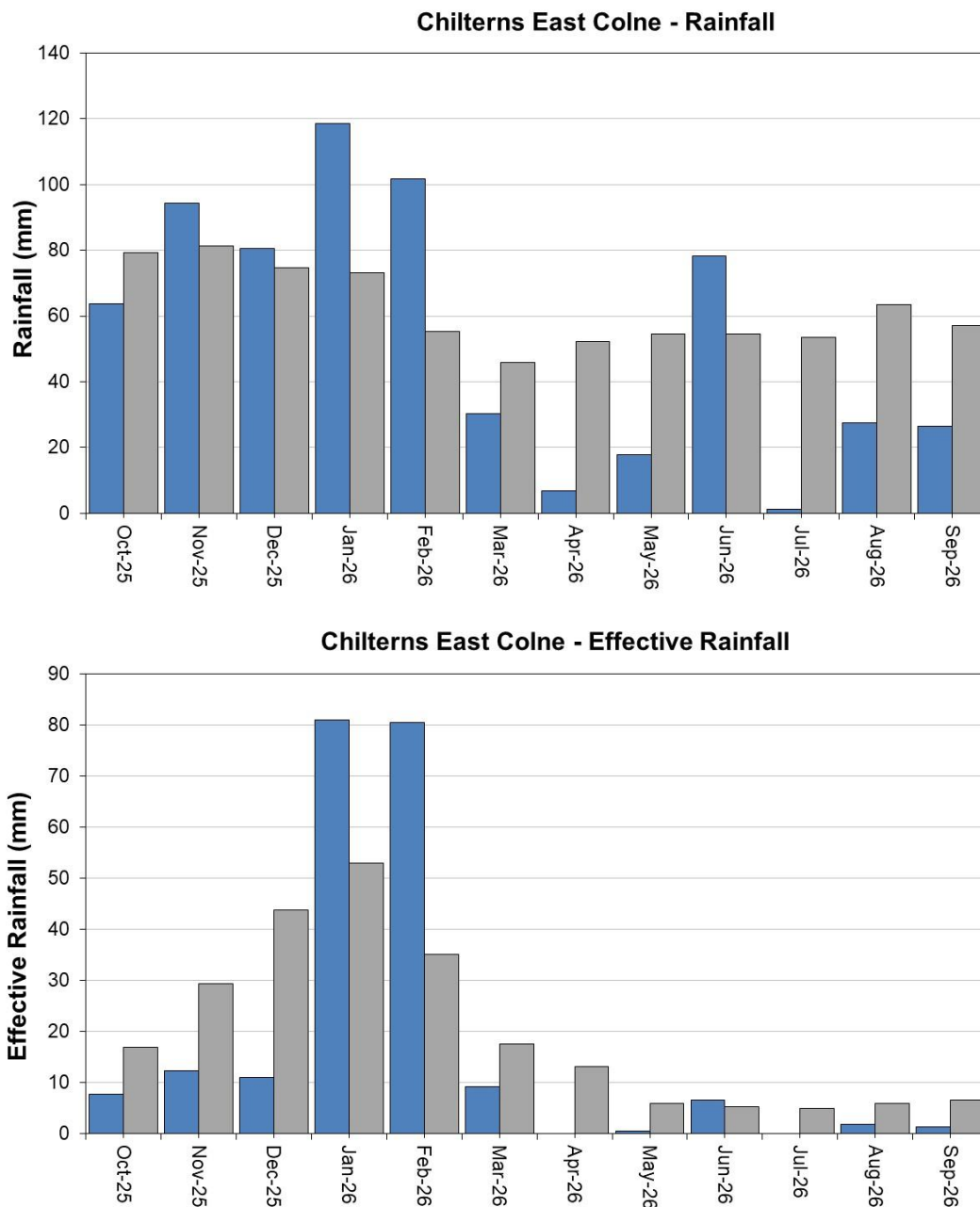
(Source: Environment Agency). © Ordnance Survey Crown Copyright and Database Rights 2026 AC0000807064. Geological map reproduced with the permission of the British Geological Survey © UKRI 2026.

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.

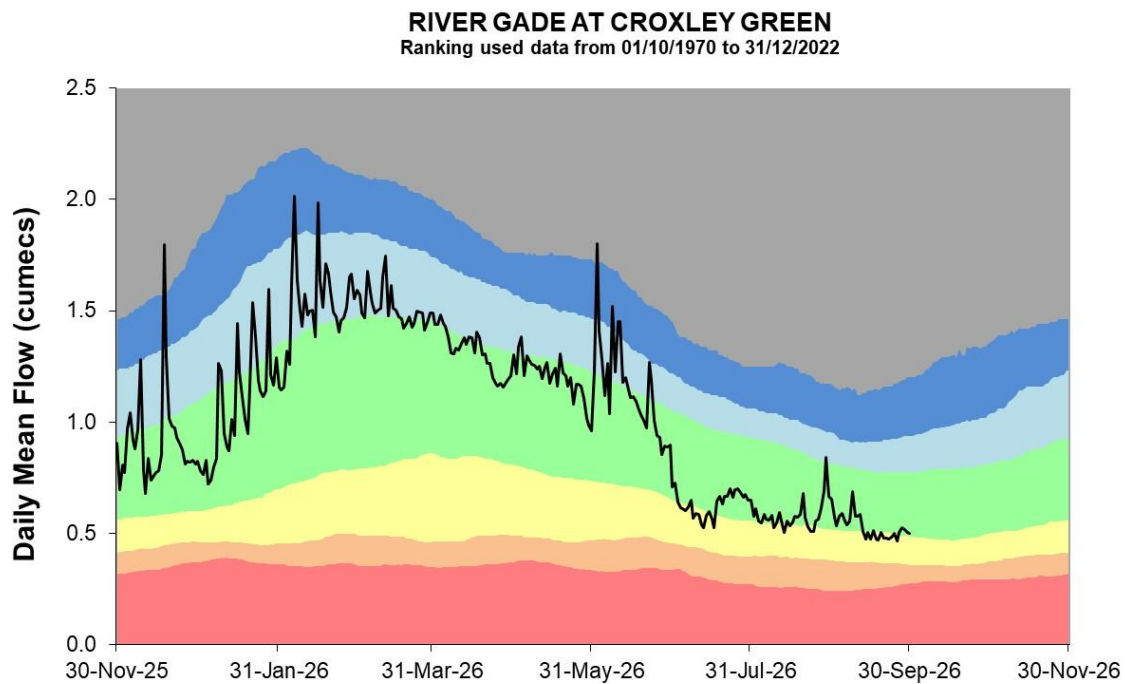
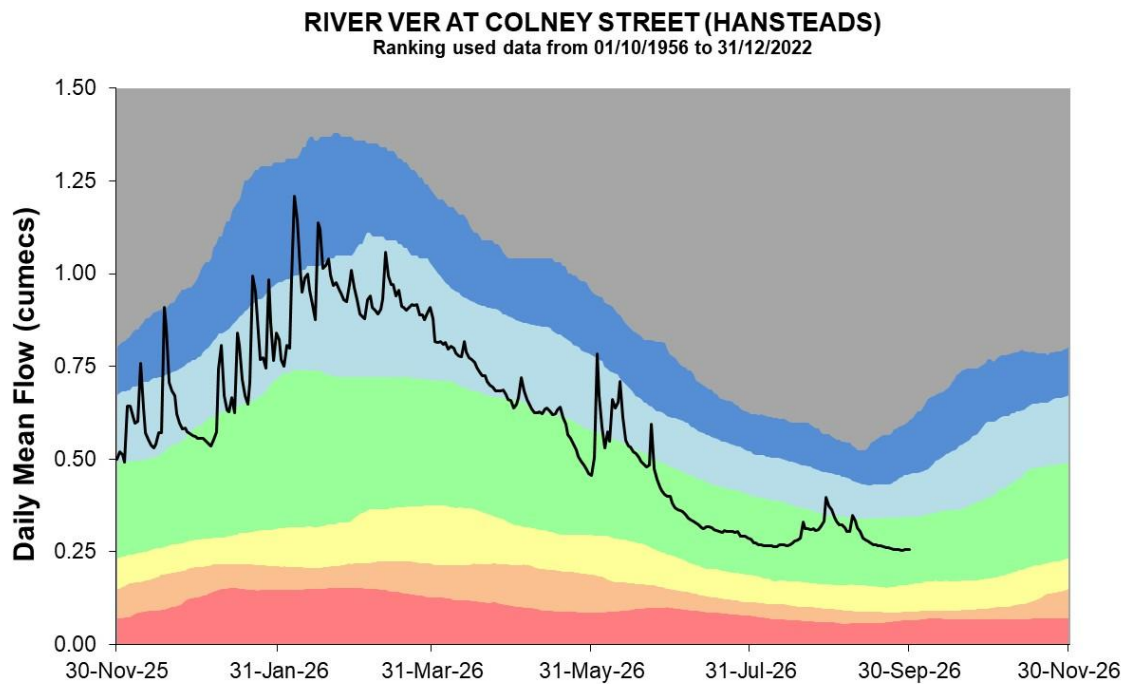
Monthly total rainfall (mm) Long term average rainfall (mm)

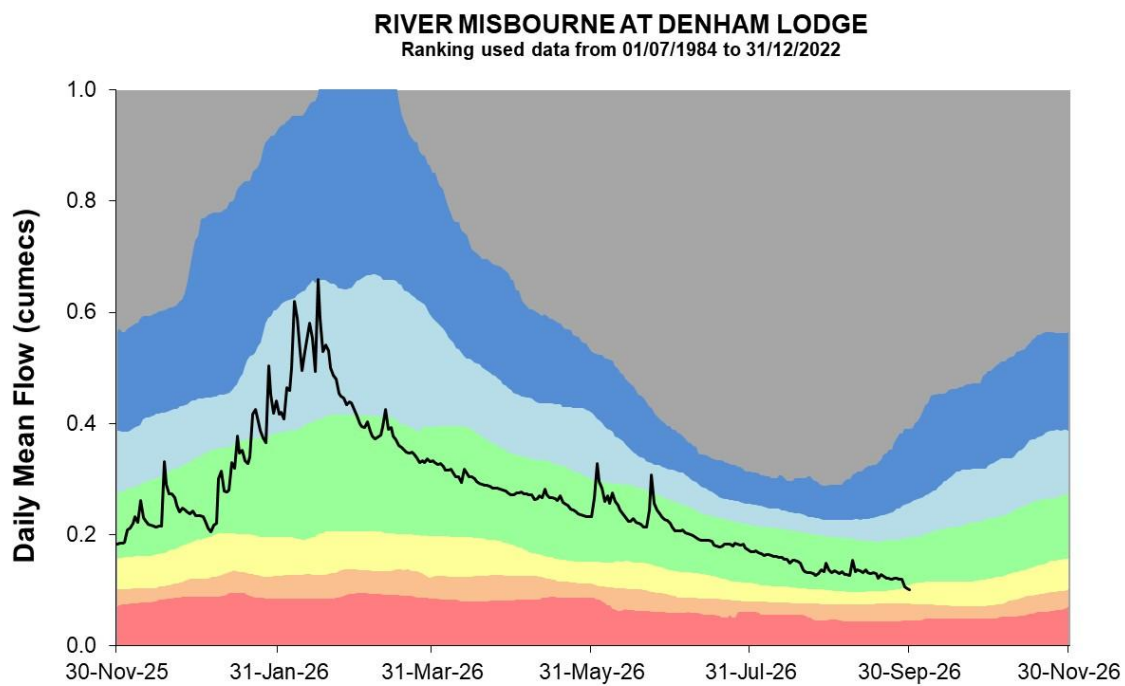
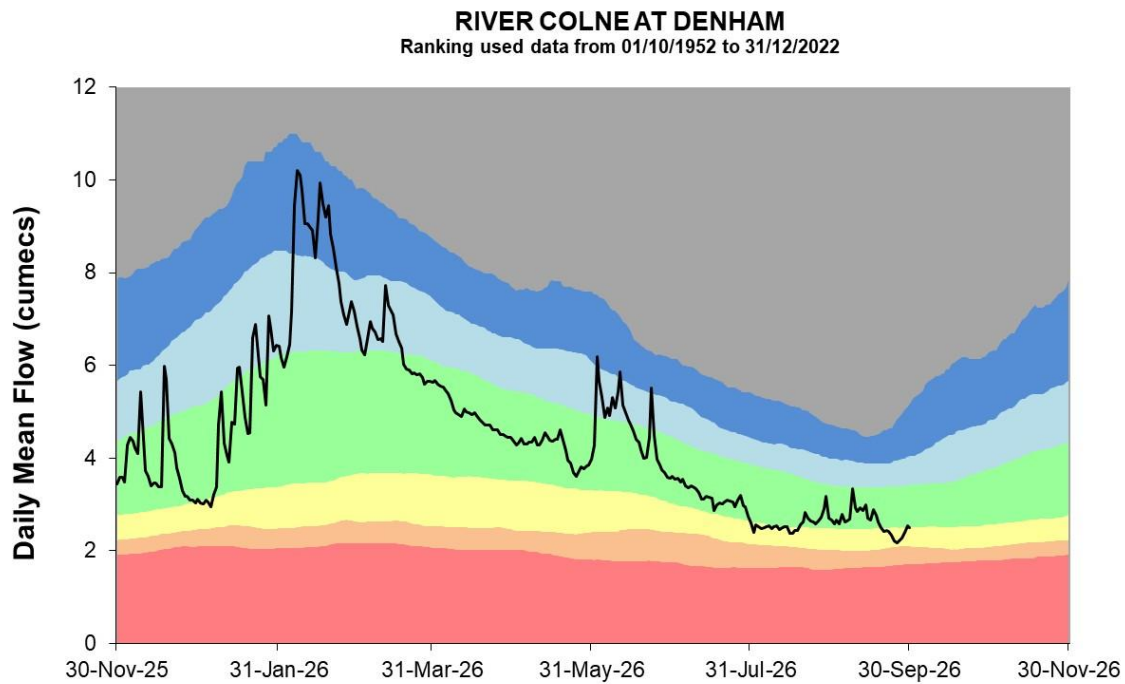


Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges (Source: Environment Agency, 2026). Long term average rainfall data (Source: Met Office. Crown copyright, 2026). Effective rainfall data (Source: Environment Agency, South East Soil Moisture Model, 2026).

4.2 Colne River flow charts

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

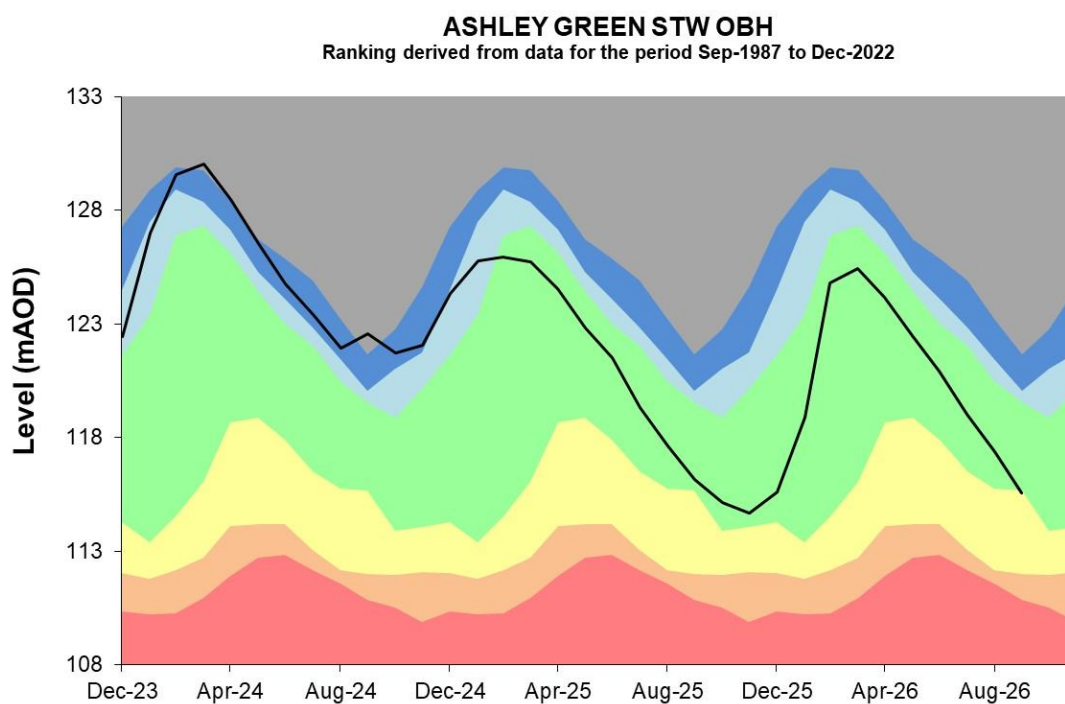
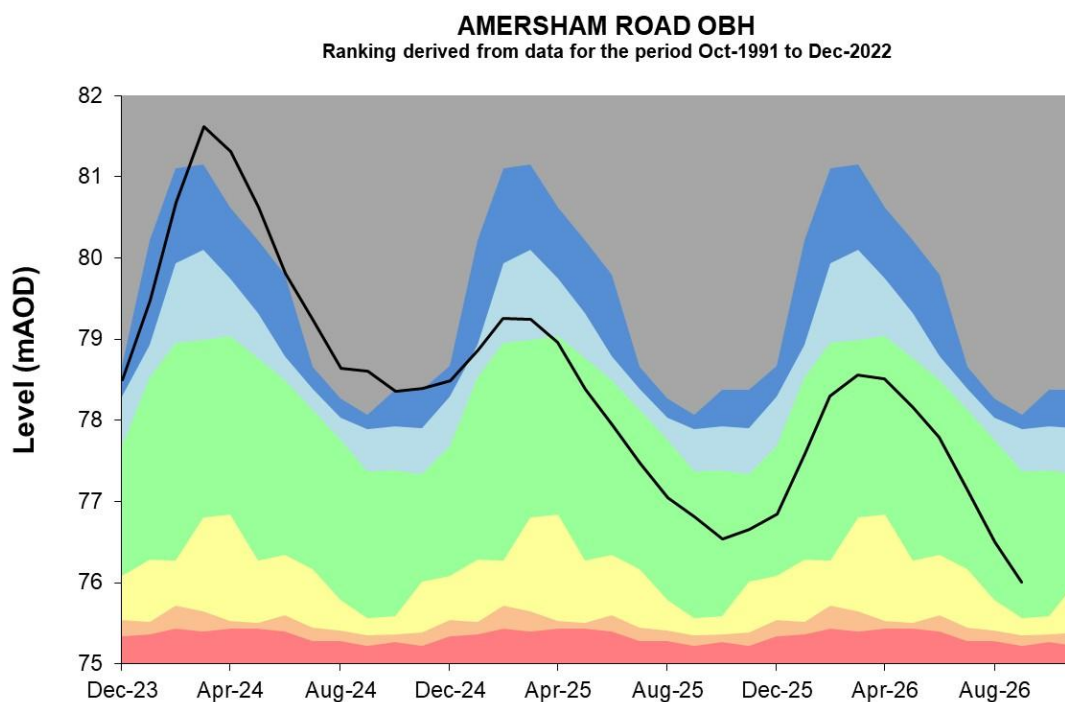


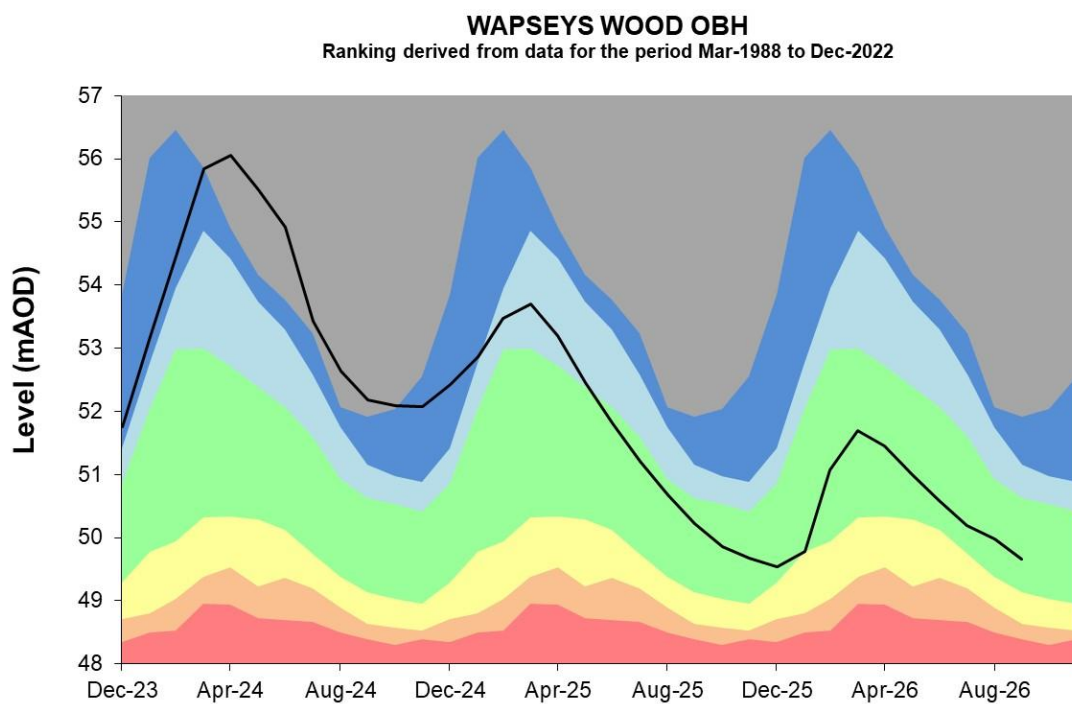
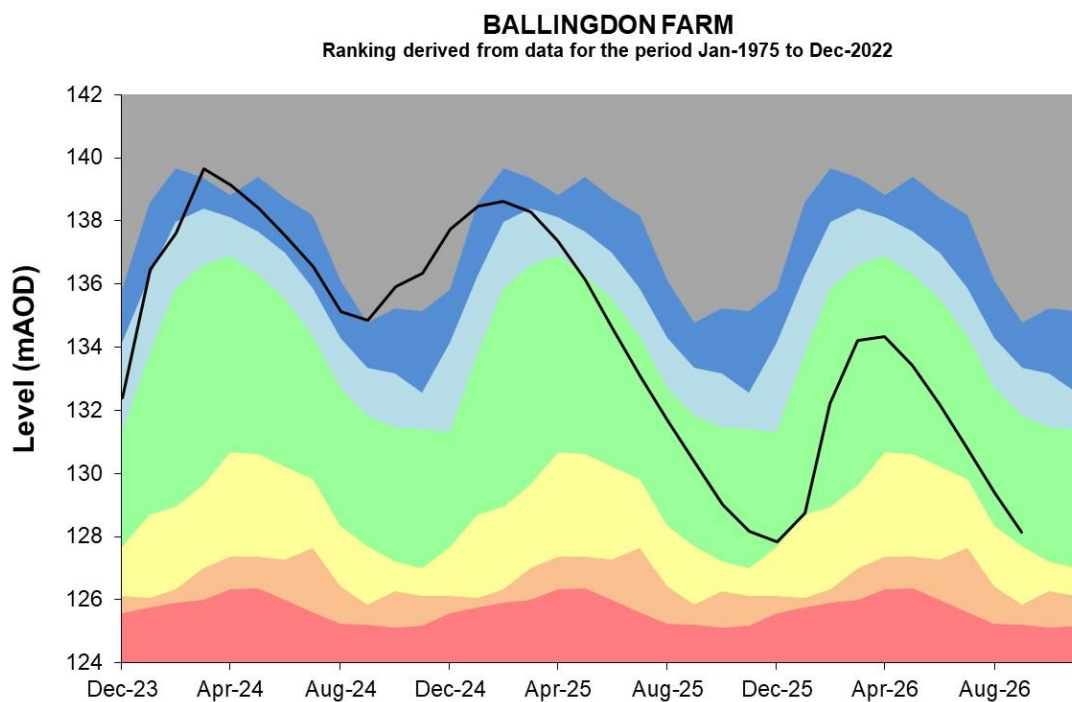


River flow monitoring data (Source: Environment Agency, 2026).

4.3 Colne Groundwater level charts

Figure 4.3: End of month groundwater levels at indicator sites, with the past 34 months compared to an analysis of historic end of month levels.





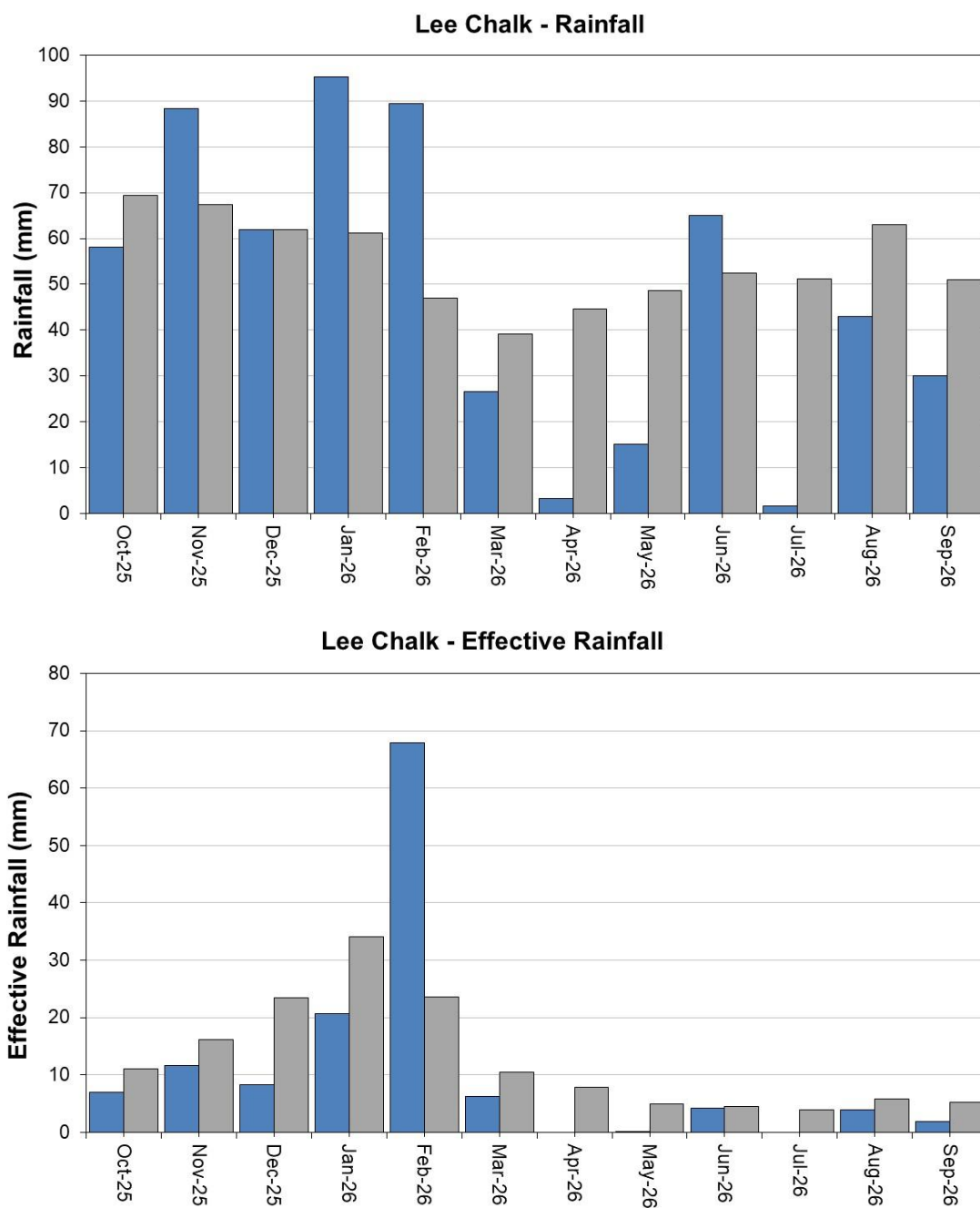
Groundwater level monitoring data (Source: Environment Agency, 2026).

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 the Upper Lee hydrological area.

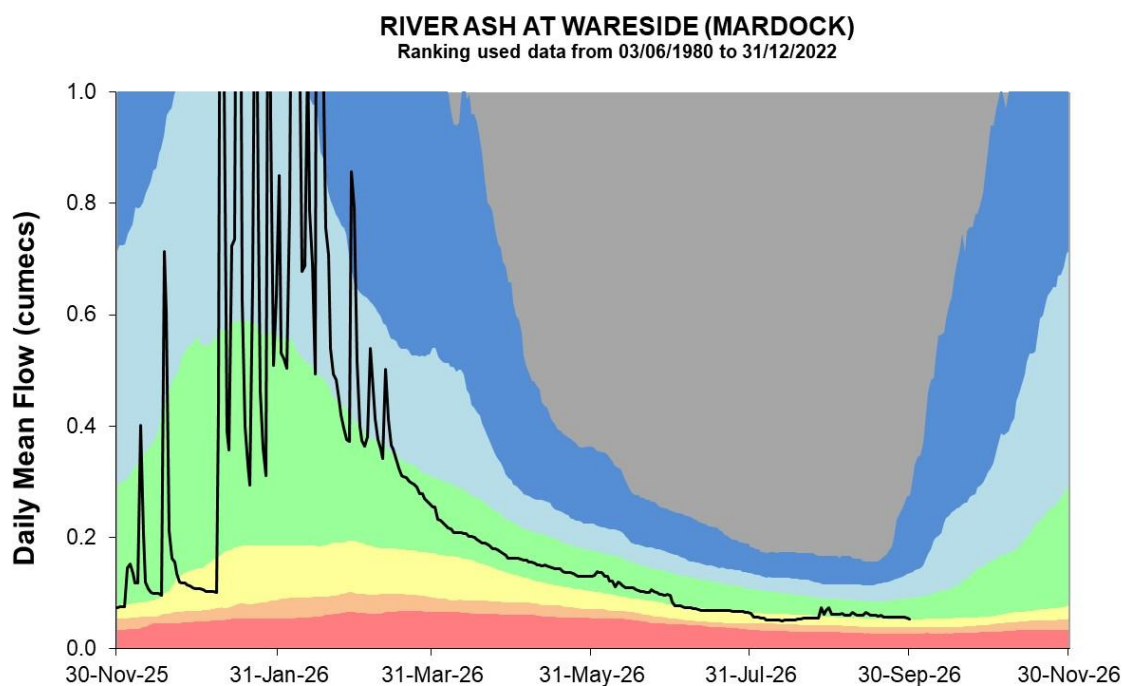
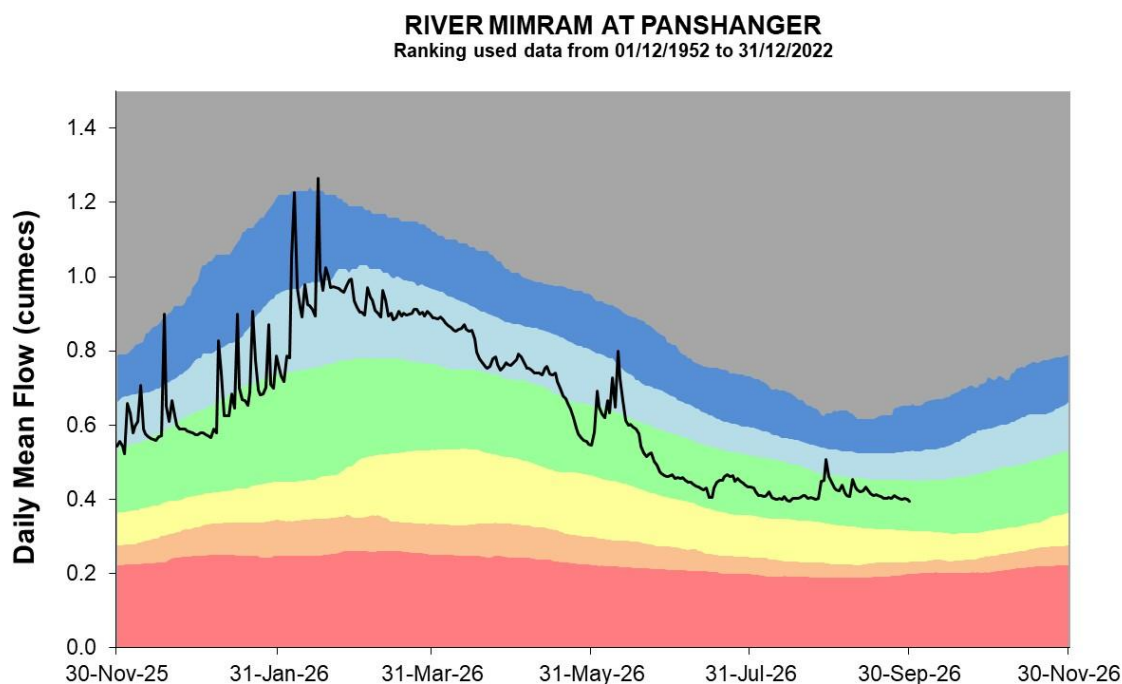
Monthly total rainfall (mm) Long term average rainfall (mm)

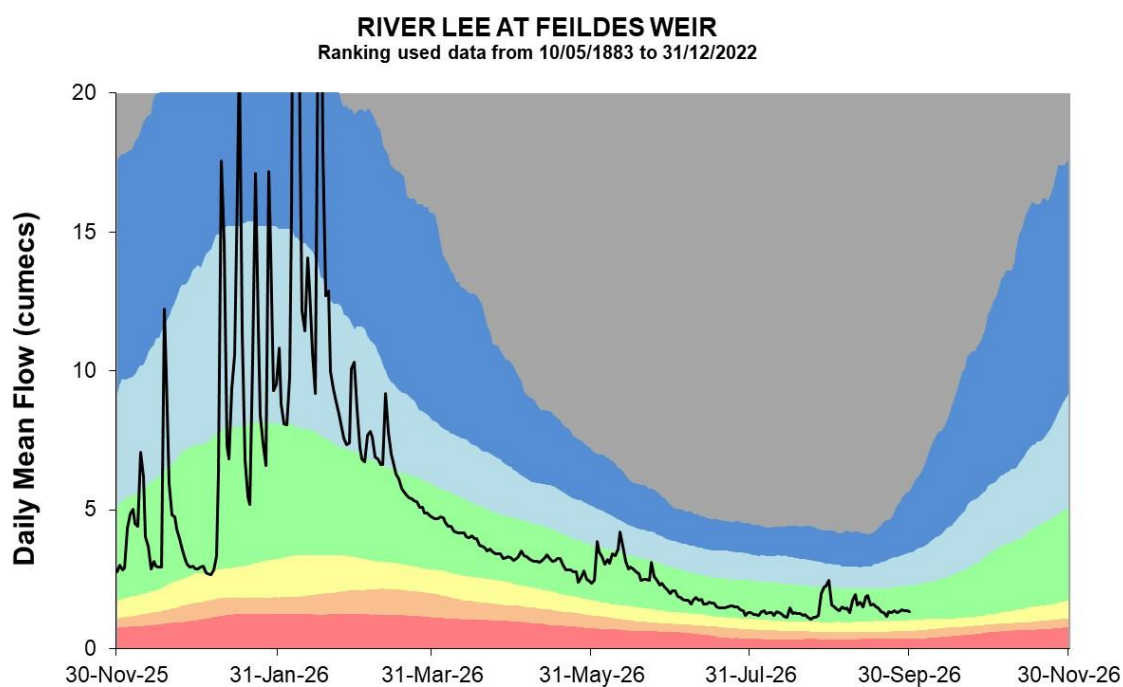
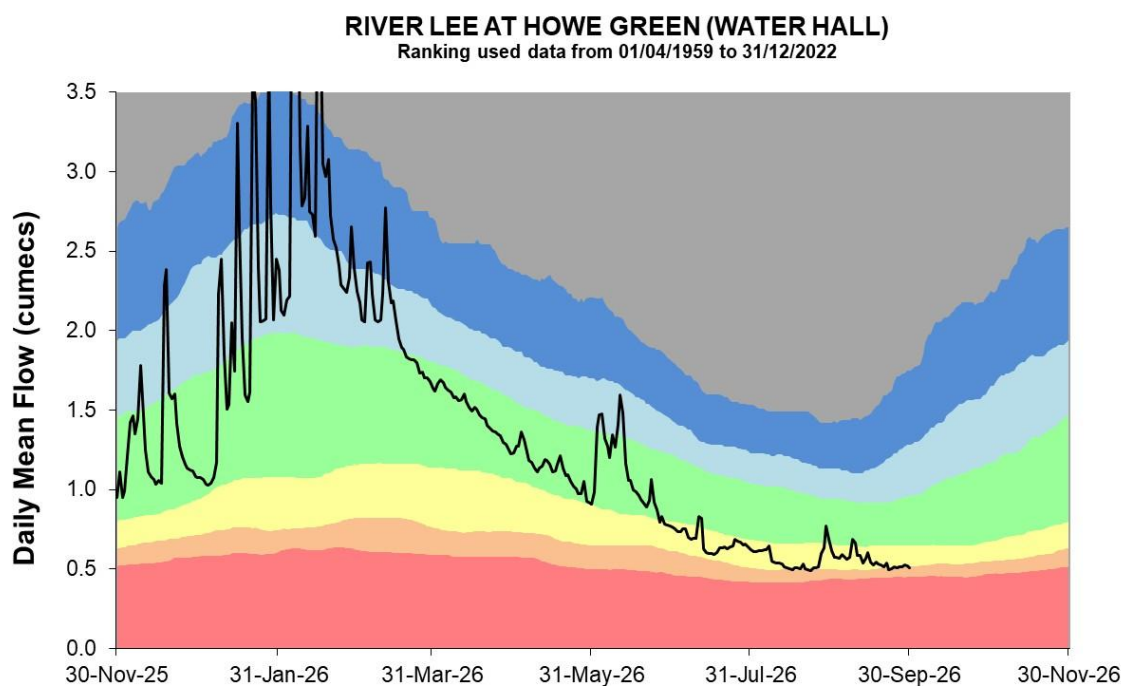


Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges (Source: Environment Agency, 2026). Long term average rainfall data (Source: Met Office. Crown copyright, 2026). Effective rainfall data (Source: Environment Agency, South East Soil Moisture Model, 2026).

5.2 Upper Lee River flow charts

Figure 5.2 Daily mean river flow for indicator sites over the past year, compared to an analysis of historic daily mean flows.

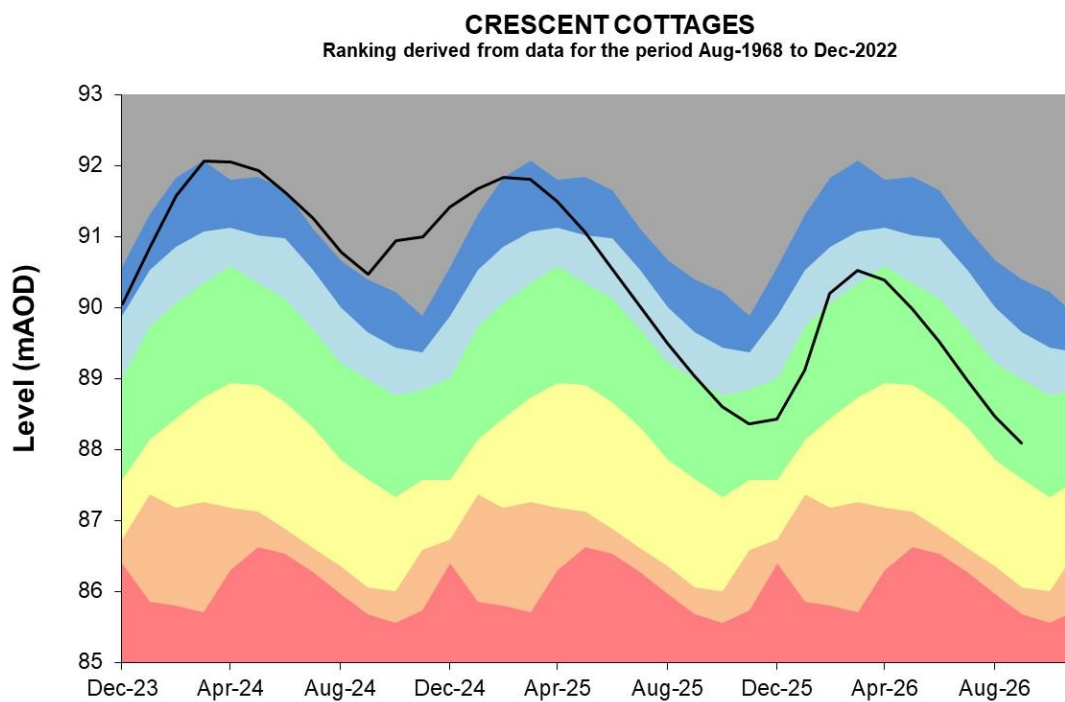
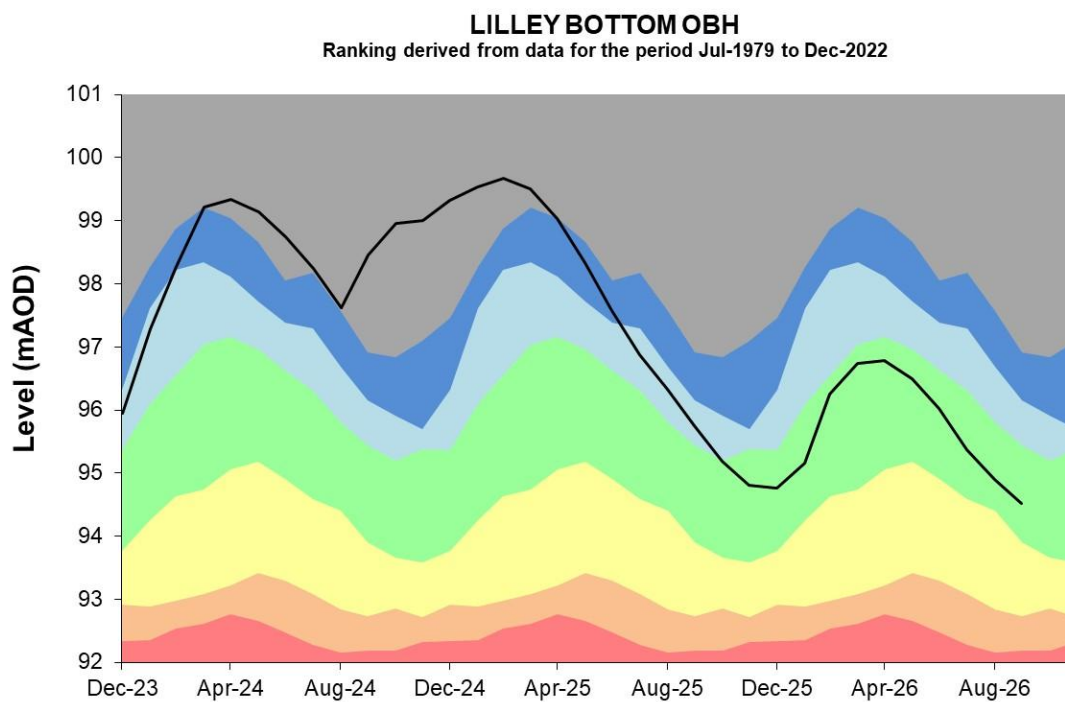




River flow monitoring data (Source: Environment Agency, 2026).

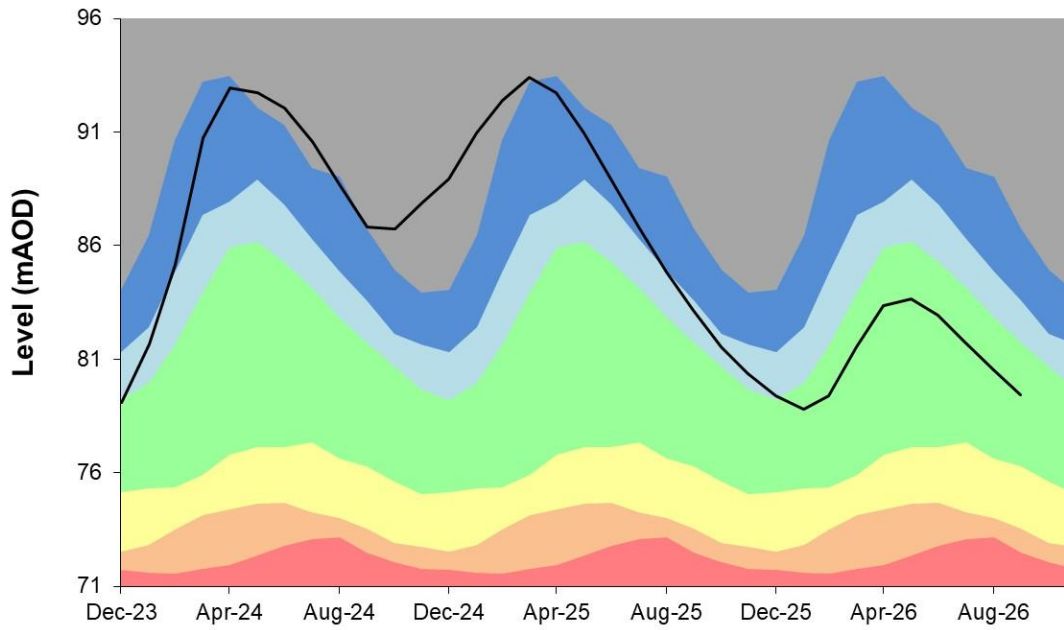
5.3 Upper Lee Groundwater level charts

Figure 5.3: End of month groundwater levels at indicator sites, with past the 34 months compared to an analysis of historic end.



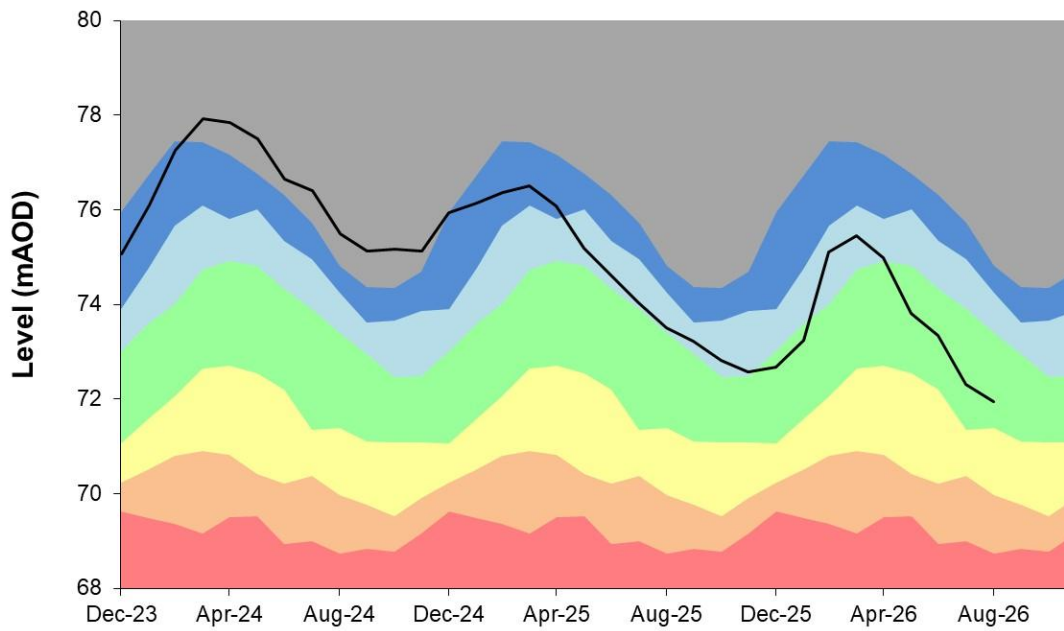
THERFIELD RECTORY

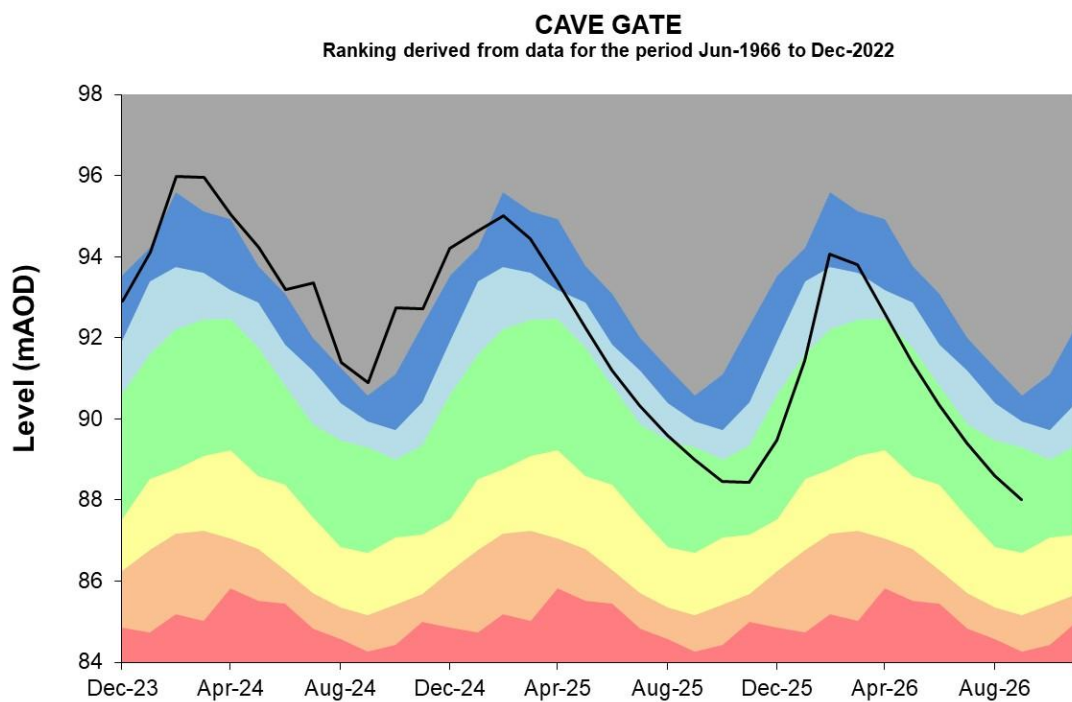
Ranking derived from data for the period Jan-1883 to Dec-2022



HIXHAM HALL

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





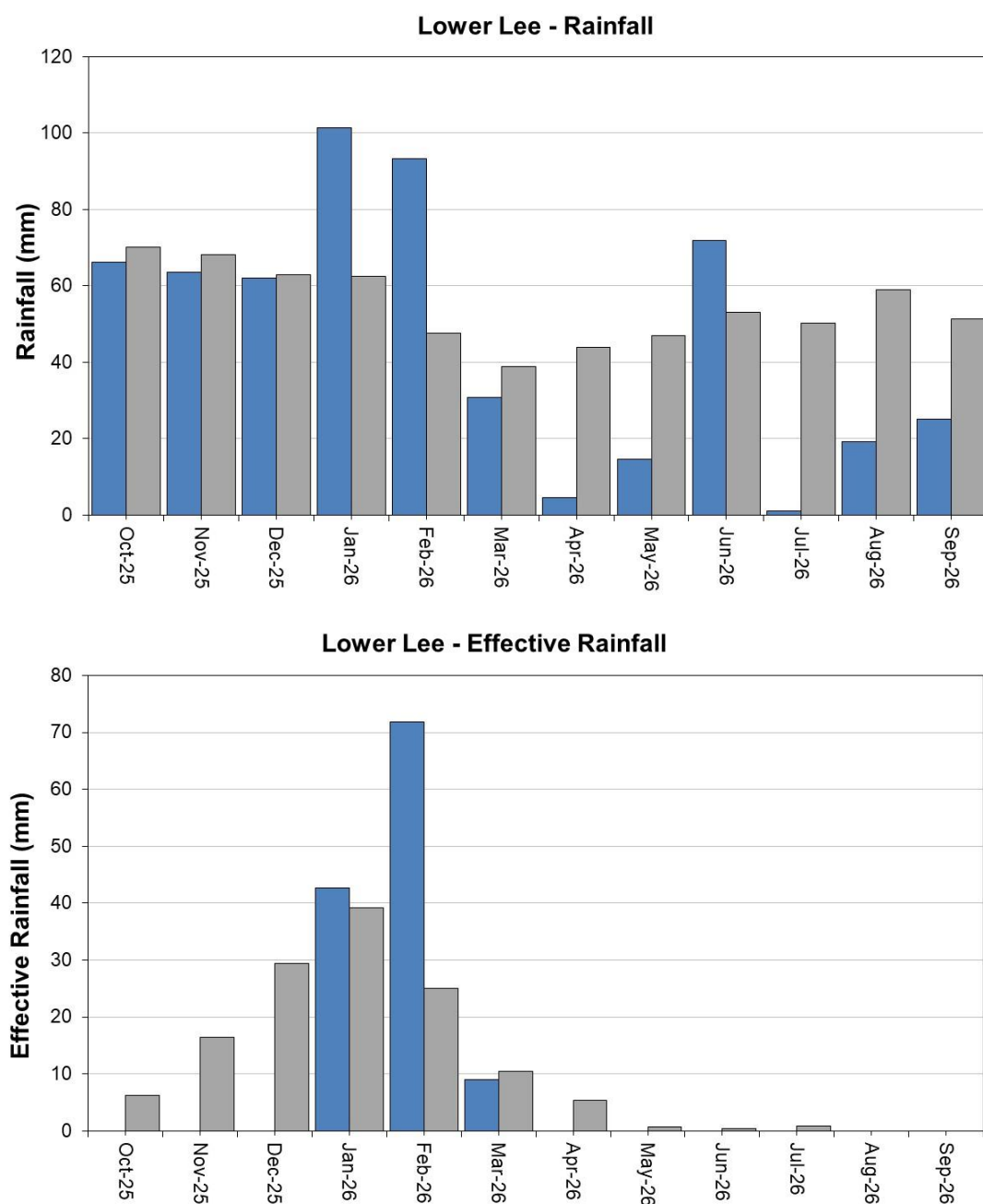
Groundwater level monitoring data (Source: Environment Agency, 2026).

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 hydrological area.

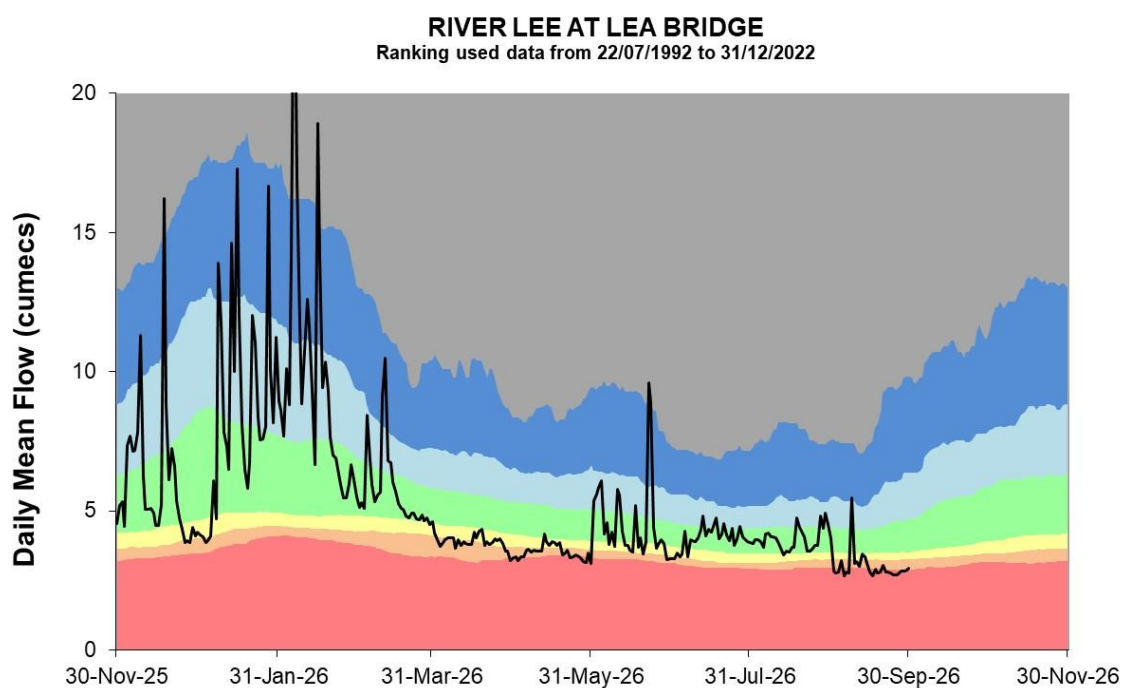
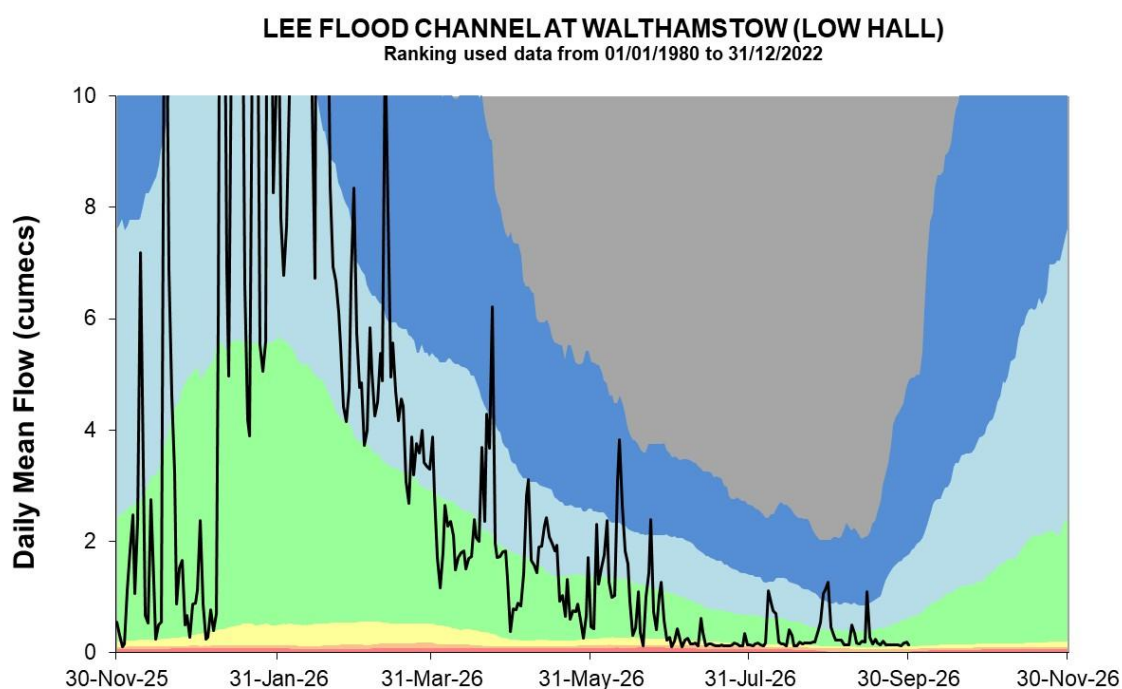
Monthly total rainfall (mm) Long term average rainfall (mm)



Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges (Source: Environment Agency, 2026). Long term average rainfall data (Source: Met Office. Crown copyright, 2026). Effective rainfall data (Source: Environment Agency, South East Soil Moisture Model, 2026).

6.2 Lower Lee River flow charts

Figure 6.2: Daily mean river flow for indicator sites over the past year, compared to an analysis of historic daily mean flows.

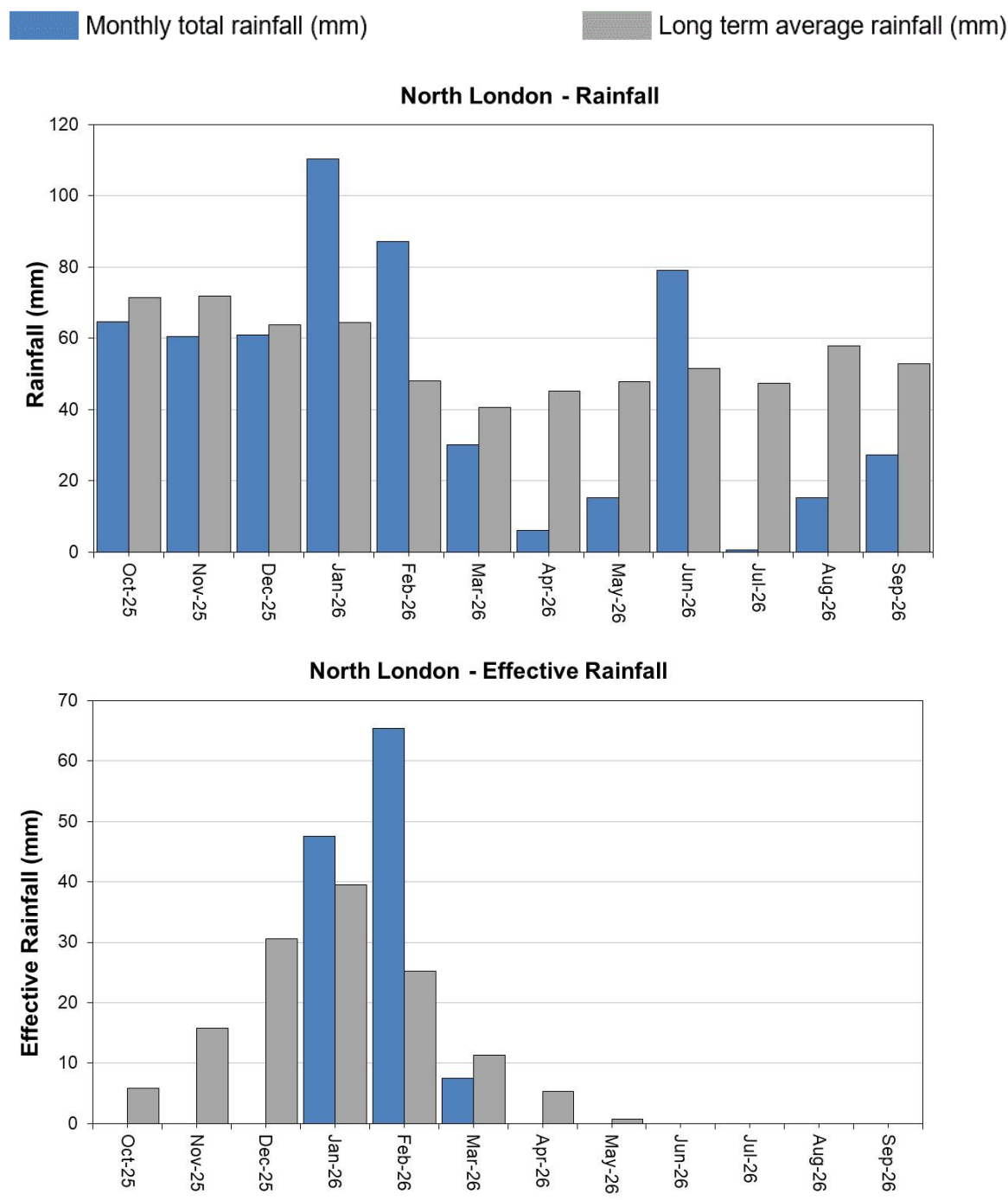


River flow monitoring data (Source: Environment Agency, 2026).

7 North London Catchment

7.1 North London Rainfall and Effective Rainfall charts

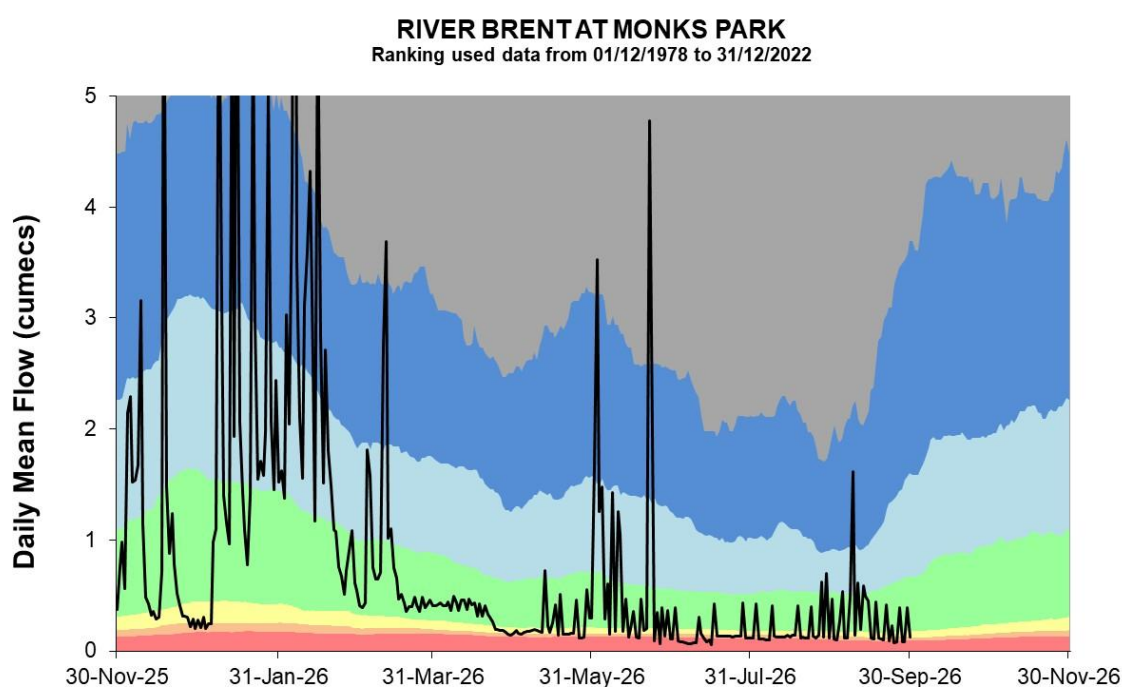
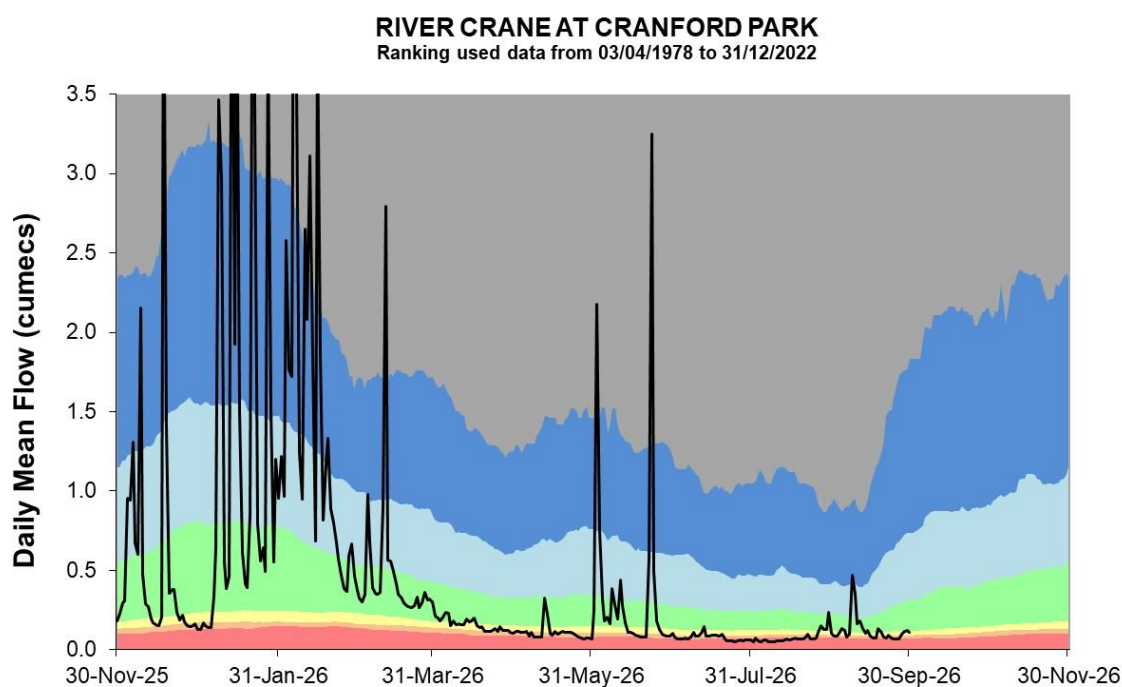
Figure 7.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average for the North London hydrological area.



Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges (Source: Environment Agency, 2026). Long term average rainfall data (Source: Met Office. Crown copyright, 2026). Effective rainfall data (Source: Environment Agency, South East Soil Moisture Model, 2026).

7.2 North London River flow charts

Figure 7.2: Daily mean river flow for indicator sites over the past year, compared to an analysis of historic daily mean flows.



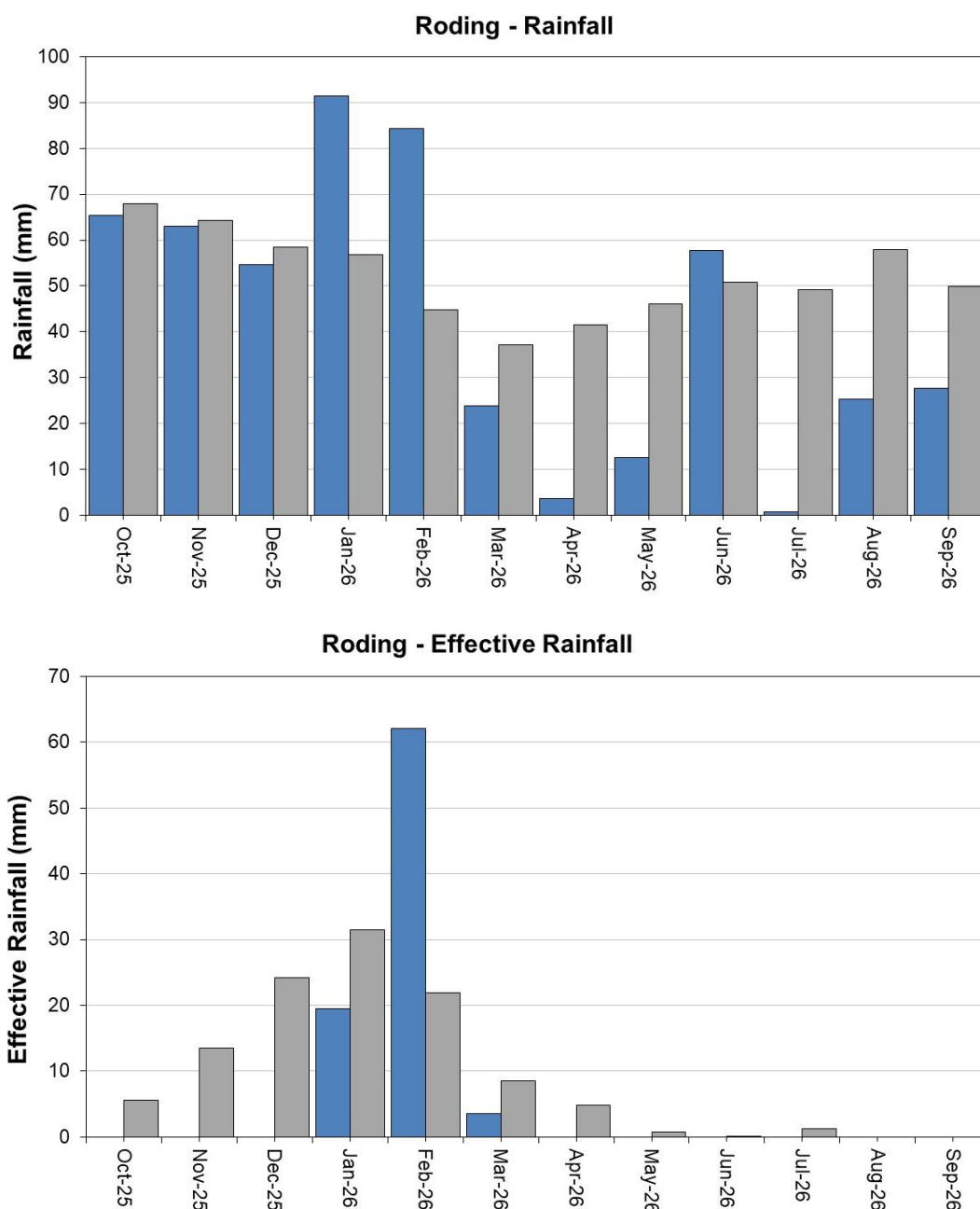
River flow monitoring data (Source: Environment Agency, 2026).

8 Roding Catchment

8.1 Roding Rainfall and Effective Rainfall charts

Figure 8.1: Monthly rainfall and recharge totals for the past 12 months compared to the 1991 to 2020 long term average for the Roding hydrological area.

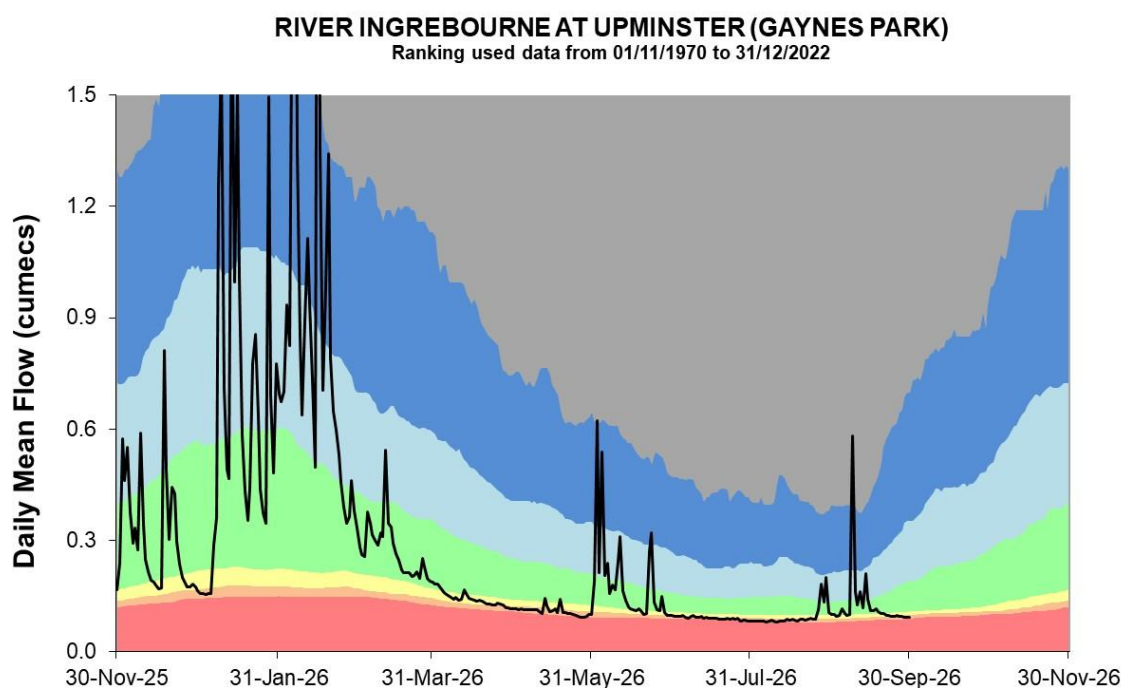
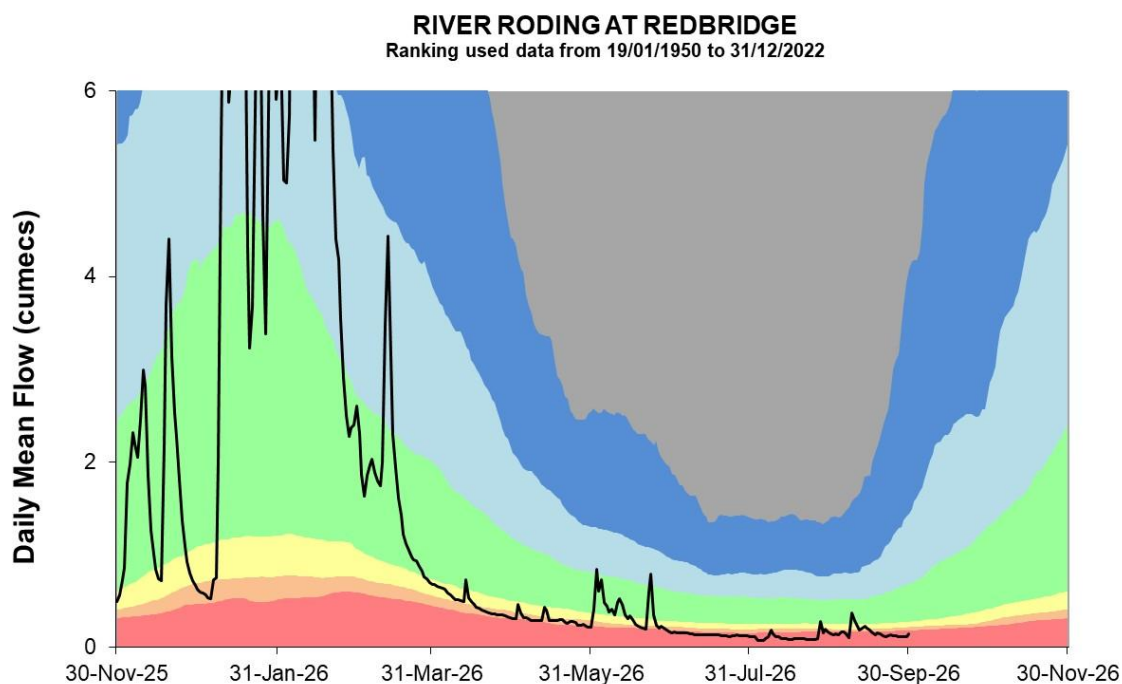
Monthly total rainfall (mm) Long term average rainfall (mm)



Rainfall data extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges (Source: Environment Agency, 2026). Long term average rainfall data (Source: Met Office. Crown copyright, 2026). Effective rainfall data (Source: Environment Agency, South East Soil Moisture Model, 2026).

8.2 Roding River flow charts

Figure 8.2: Daily mean river flow for indicator sites over the past year, compared to an analysis of historic daily mean flows.

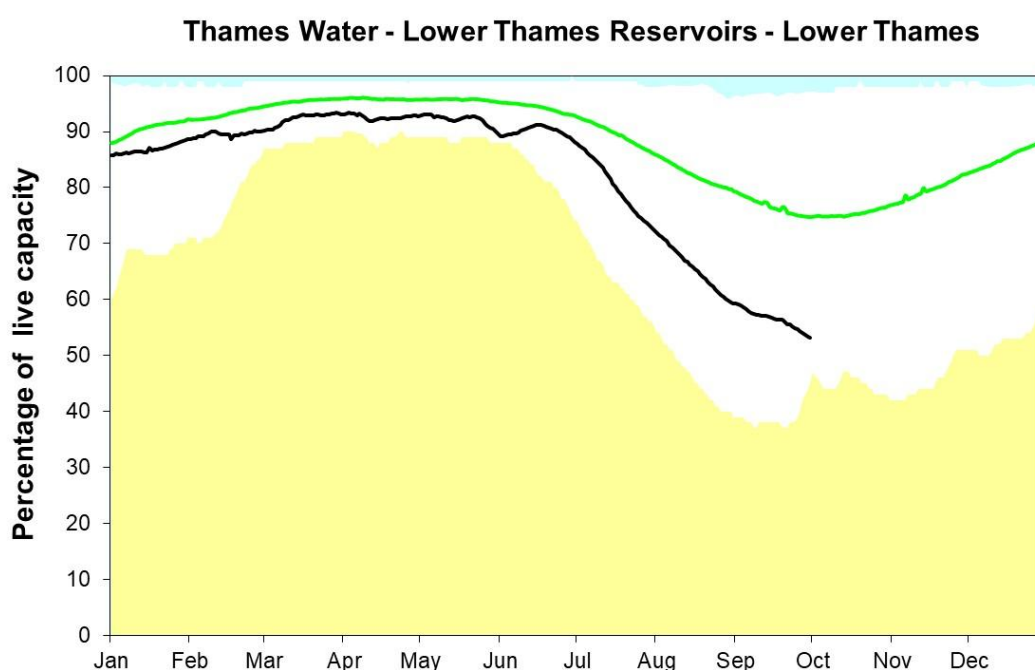
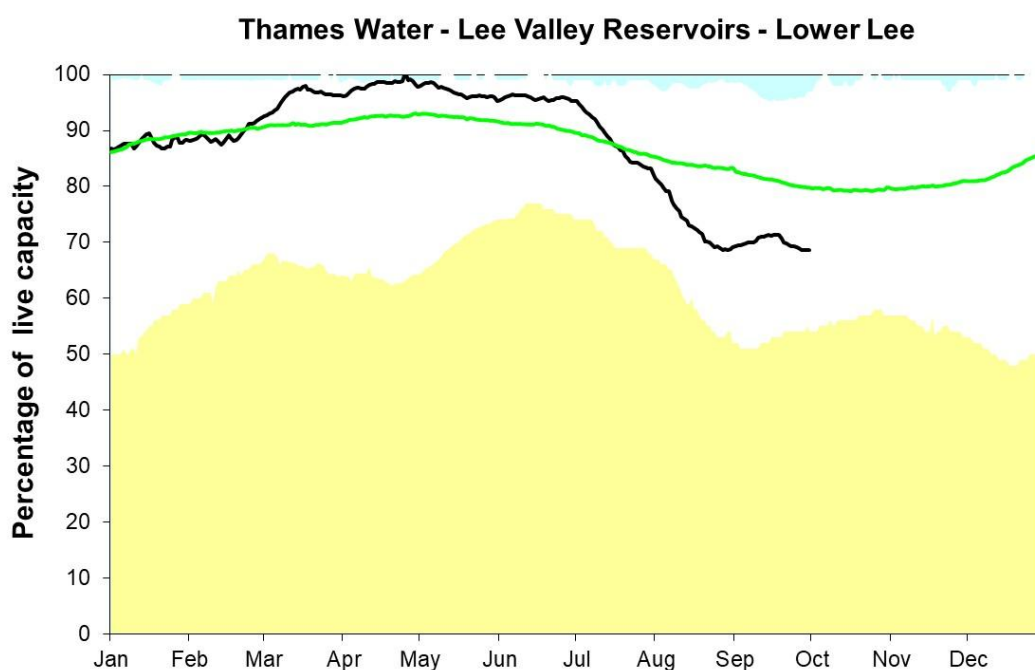


River flow monitoring data (Source: Environment Agency, 2026).

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 making up the group values vary in length.

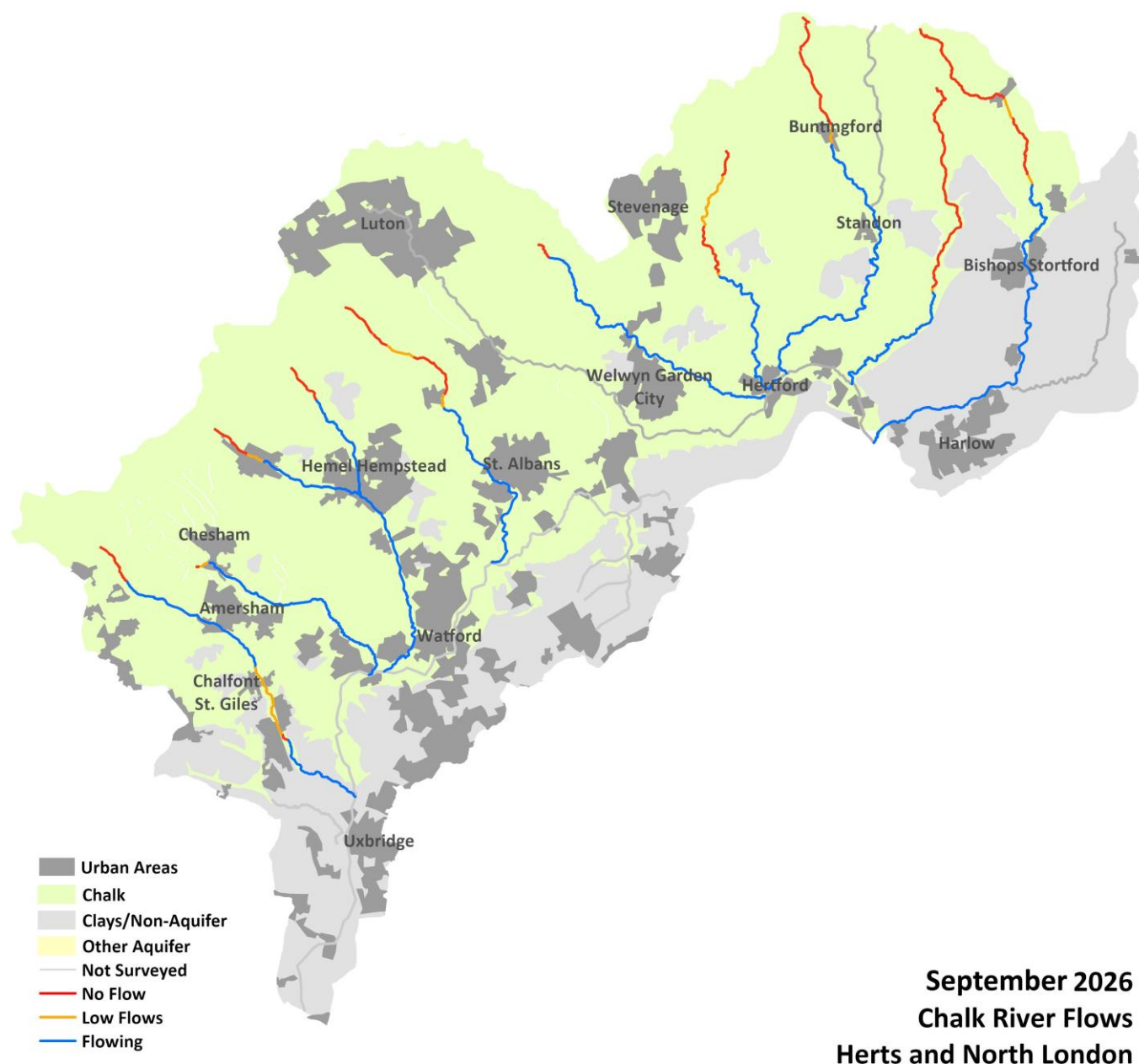
Below minimum Above maximum Average Latest data



Reservoir level data (Source: Thames Water, 2026).

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.



Chalk river flow monitoring data (Source: Environment Agency, 2026). Map contains Ordnance Survey data (© Crown copyright, 2026, AC0000807064). Geological map reproduced with the permission of the British Geological Survey (© UKRI 2026).

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} or m^3/s).

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 1km gridded dataset, which uses rain gauge observations.

Recharge

The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).

Reservoir gross capacity

The total capacity of a reservoir.

Reservoir live capacity

The capacity of the reservoir that is normally usable for storage to meet established reservoir operating requirements. This excludes any capacity not available for use (for example, storage held back for emergency services, operating agreements or physical restrictions). May also be referred to as 'net' or 'deployable' capacity.

Soil moisture deficit (SMD)

The difference between the amount of water actually in the soil and the amount of water the soil can hold. Expressed in depth of water (mm).

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 2026 total rainfall in mm	Sep 2026 rainfall long term average 1991 to 2020	Sep 2026 rainfall % of long term average 1991 to 2020	Summer Apr 2026 to Sep 2026 total rainfall in mm	Summer Apr 2026 to Sep 2026 rainfall % of long term average 1991 to 2020
Chilterns East Colne	26	57	46	158	47
Lee Chalk	30	51	59	157	50
Lower Lee	25	51	49	136	45
North London	27	53	51	143	47
Roding	28	50	55	127	43
Herts and North London total	27	52	52	144	46

12.2 Rainfall banding table

Hydrological area	Sep 2026 band	Jul 2026 to Sep 2026 cumulative band	Apr 2026 to Sep 2026 cumulative band	Oct 2025 to Sep 2026 cumulative band
Chilterns East Colne	Below normal	Exceptionally low	Exceptionally low	Below normal
Lee Chalk	Below normal	Exceptionally low	Exceptionally low	Below normal
Lower Lee	Below normal	Exceptionally low	Exceptionally low	Below normal
North London	Below normal	Exceptionally low	Exceptionally low	Below normal
Roding	Below normal	Exceptionally low	Exceptionally low	Below normal

12.3 Effective Rainfall table

Hydrological area	Sep 2026 total effective rainfall in mm	Sep 2026 effective rainfall long term average 1991 to 2020 in mm	Sep 2026 effective rainfall % of long term average 1991 to 2020	Summer Apr 2026 to Sep 2026 total effective rainfall in mm	Summer Apr 2026 to Sep 2026 effective rainfall % of long term average 1991 to 2020
Chilterns East Colne	1	7	18	10	24
Lee Chalk	2	5	34	10	31
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	25	4	21

12.4 Soil Moisture Deficit table

Hydrological area	Sep 2026 end of month Soil Moisture Deficit in mm	Sep 2026 end of month Soil Moisture Deficit long term average 1991 to 2020 in mm	Aug 2026 end of month Soil Moisture Deficit in mm	Aug 2026 end of month Soil Moisture Deficit long term average 1991 to 2020 in mm
Chilterns East Colne	207	107	182	105
Lee Chalk	209	124	177	118
Lower Lee	211	114	193	110
North London	211	118	193	114
Roding	214	117	191	112
Herts and North London total	210	116	187	112

Source: Environment Agency, South East Soil Moisture Model, 2026

12.5 River flows table

Site name	River	Catchment	Sep 2026 band	Aug 2026 band
Colney Street (Hansteads)	Ver	Colne	Normal	Normal
Croxley Green	Gade	Colne	Below normal	Normal
Denham Lodge	Misbourne	Colne	Normal	Normal
Denham Colne	Colne	Colne	Normal	Below normal
Howe Green (Water Hall)	Lee	Upper Lee	Below normal	Below normal
Panshanger	Mimram	Upper Lee	Normal	Normal
Wareside (Mardock)	Ash	Upper Lee	Normal	Below normal
Feildes Weir (naturalised)	Lee	Upper Lee	Normal	Normal
Brent (Monks Park)	Brent	North London	Notably low	Exceptionally low
Cranford (Cranford Park)	Crane	North London	Notably low	Exceptionally low
Redbridge	Roding	Roding, Beam and Ingrebourne	Exceptionally low	Exceptionally low
Upminster (Gaynes Park)	Ingrebourne	Roding, Beam and Ingrebourne	Normal	Exceptionally low

12.6 Groundwater table

Site name	Aquifer	Sep 2026 band	Aug 2026 band
Ashley Green	Mid-Chilterns Chalk	Below 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	Normal	Normal
Crescent Cottages	Upper Lee Chalk	Normal	Normal
Cave Gate	Upper Lee Chalk	Normal	Normal
Hixham Hall	Upper Lee Chalk		Normal
Therfield Rectory	Upper Lee Chalk	Normal	Normal

12.7 Abstraction licence flow constraints

Number of flow constraints in force between 1 and 6 September 2026	Number of flow constraints in force between 7 and 13 September 2026	Number of flow constraints in force between 14 and 20 September 2026	Number of flow constraints in force between 21 and 27 September 2026
8	12	6	13