Monthly water situation report: Hertfordshire and North London Area

1 Summary - February 2025

The Hertfordshire and North London area received 51mm of rain in February (125% of the long term average), with all areal rainfall units in the normal band. River base flows continued to increase during the month, with sites in chalk catchments remaining relatively high. Groundwater levels also increased in February with most indicator sites high for the time of year and three sites ending the month in the exceptionally high band.

1.1 Rainfall

The Hertfordshire and North London area (the Area) received above average rainfall during February, with 51mm of rainfall or 125% of the long term average (LTA) recorded, while all five areal rainfall units were at the top of the normal band. The wettest day of the month was 23 February, with 17.2mm recorded at Birch Green and 15.7mm recorded at Denham (both to the west of the North London unit). Over 14mm of rainfall was also recorded at:

- RAF Northolt (North London unit)
- Chenies (Chilterns East Colne unit)
- Moreton (Roding unit)

Despite the heavy rainfall, there were 14 dry days (days with less than 0.2mm of rain recorded).

1.2 Soil moisture deficit and recharge

During February, throughout the month soil moisture deficits (SMDs) increased slightly across the area, although, all areal rainfall units finished the month well below their LTAs. All rainfall units received effective rainfall above their LTAs, with the highest effective rainfall recorded in Chilterns East Colne. For the winter period overall, (October 2024 to February 2025), the Area has received well above the LTA for effective rainfall.

1.3 River flows

In chalk catchments, base flows continued increasing during February, with five sites recording month mean flows in the notably high band. The most significant flow peaks during the month were recorded around 10 and 24 February – most notably in runoff dominated catchments like North London and the Lower Lee.

During February, there was a total of five flood alerts, mostly to the west of the Area. These included:

- Lower River Colne and Frays River (10 February)
- Upper River Colne and Radlett Brook (23 February)
- Lower River Colne and Frays River (24 February)

- Colne Brook at Iver and Colnbrook (24 February)
- Tidal River Crane (27 February)

No flood warnings were issued in February.

1.4 Groundwater levels

Groundwater levels continued increasing across the Area in February, albeit at a slightly lower rate than the previous month. At the end of February, most indicator sites still had relatively high groundwater levels for the time of year. In the Upper Lee Chalk, Crescent Cottages, Lilley Bottom, and Therfield Rectory were in the exceptionally high band, with the latter achieving its highest level for the end of February since 1918 (records began in 1883). In the Mid-Chilterns Chalk, groundwater levels were slightly lower relative to their historic levels in February, with only one site (Ballingdon Farm) reaching an end of month level in the notably high band. Amersham Road and Wapseys Wood ended February in the above normal band, while Ashley Green was in the normal band.

1.5 Reservoir stocks

In the Lee Valley group, reservoir levels increased from 89% to 98% of live capacity, ending February well above average. Reservoir stocks in the Lower Thames group started February at 96% of live capacity and ended the month at 93%, which was slightly below the average level.

1.6 Environmental impact

In the Colne catchment, the locations of chalk river sources showed little to no change since January.

- The source of the River Ver remained above Markyate.
- The River Gade started flowing above Hudnall Corner.
- The River Bulbourne flowed upstream of Dudswell village.
- The source of the River Chess was upstream of Chesham.
- The River Misbourne was flowing continuously from Mobwell Pond to its confluence with the River Colne.

The chalk river sources in the Upper Lee catchment remained almost the same as in January.

- The source of the River Mimram was still above Whitwell Gas Compound.
- The River Beane started flowing above Cromer.
- The source of the River Rib remained upstream of Hay Green, but briefly ran dry downstream of Chipping.
- The River Ash (Herts) was flowing upstream of Brent Pelham but temporarily lost flow near Clapgate.
- The River Stort was still flowing from its source above Langley Lower Green.

To protect the environment, during October a number of abstraction licence flow constraints were in force. This ranged between 2 and 6 per week, out of a monthly maximum of 48.

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2 Rainfall

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 28 February 2025), classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

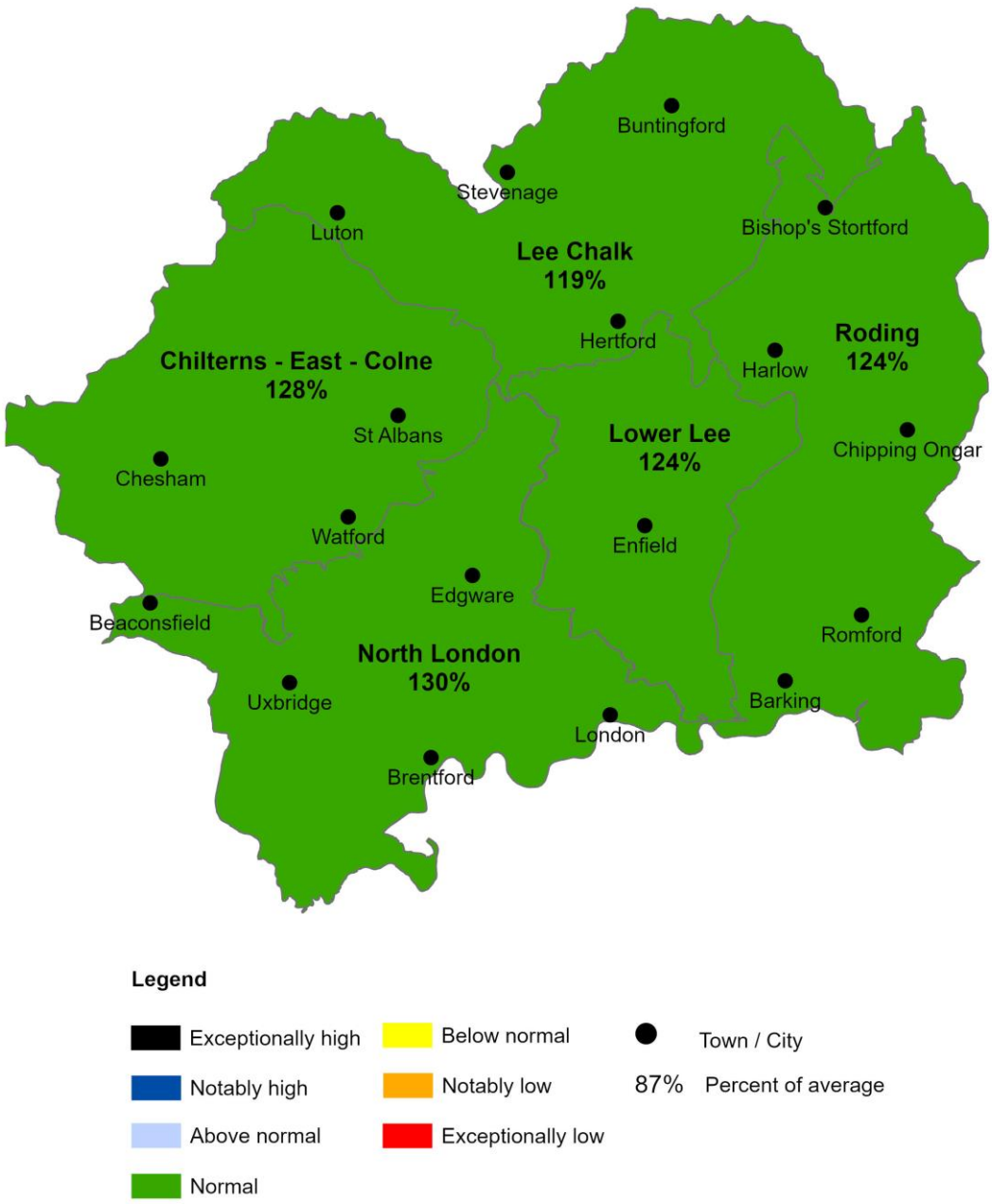
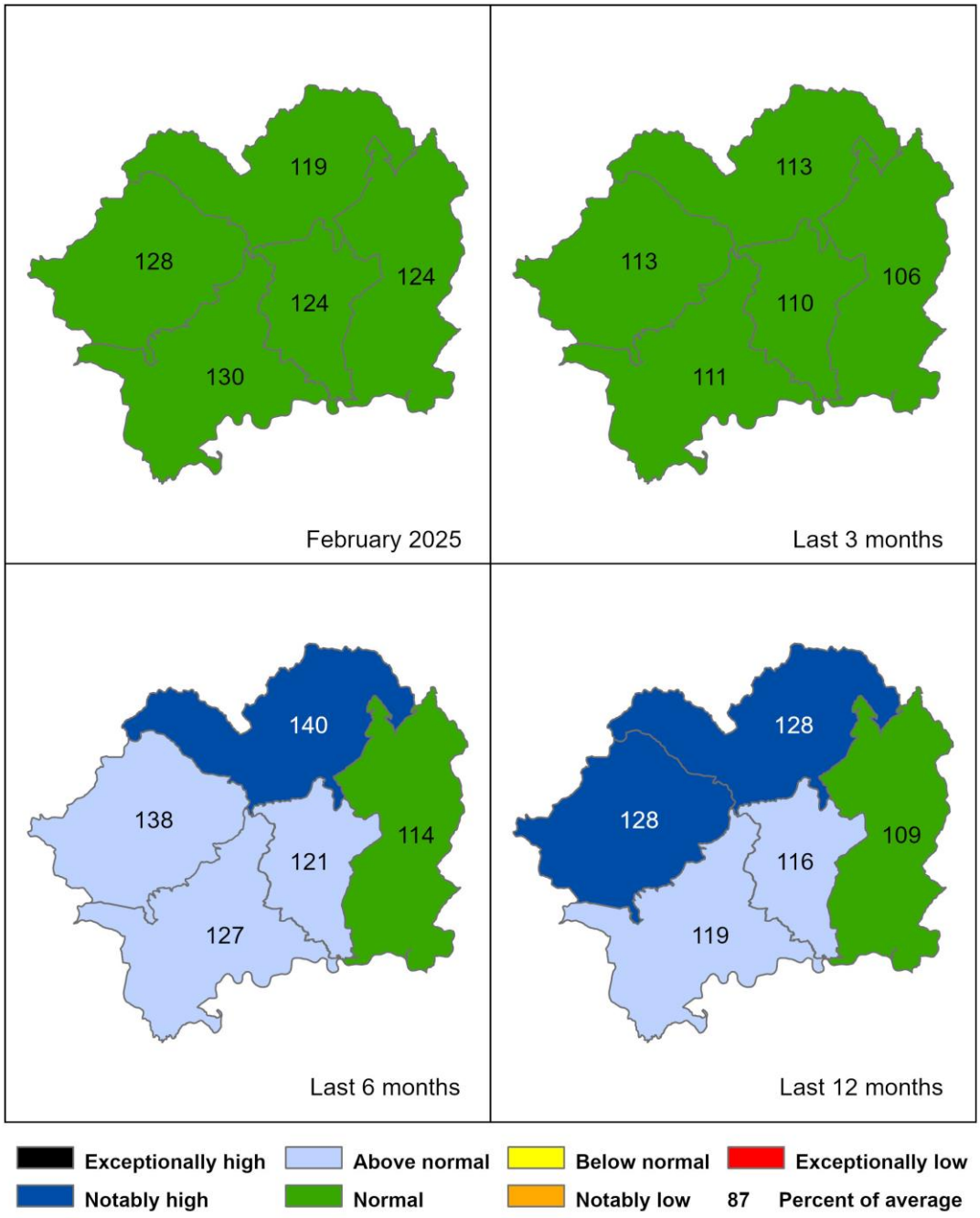


Figure 2.2: Total rainfall for hydrological areas for the current month (up to 28 February 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

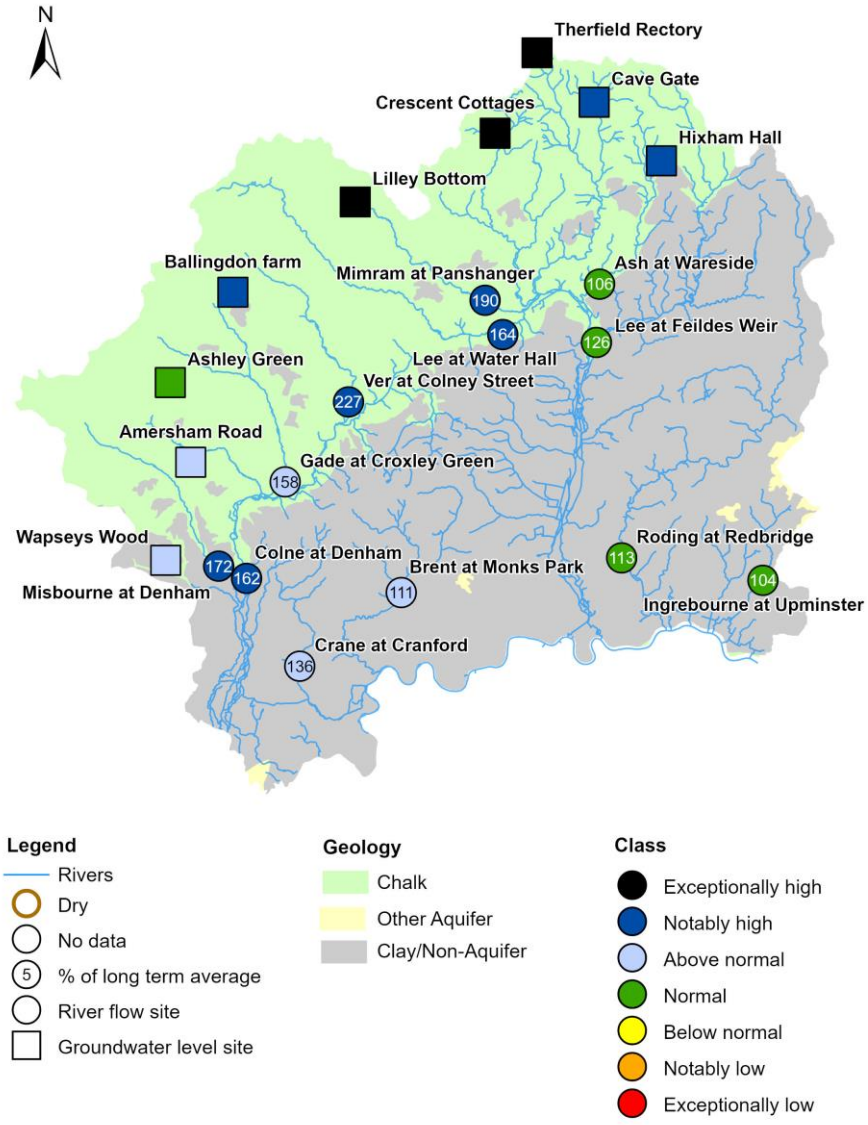


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved.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

3 River flows and Groundwater levels

3.1 River flows and Groundwater level map

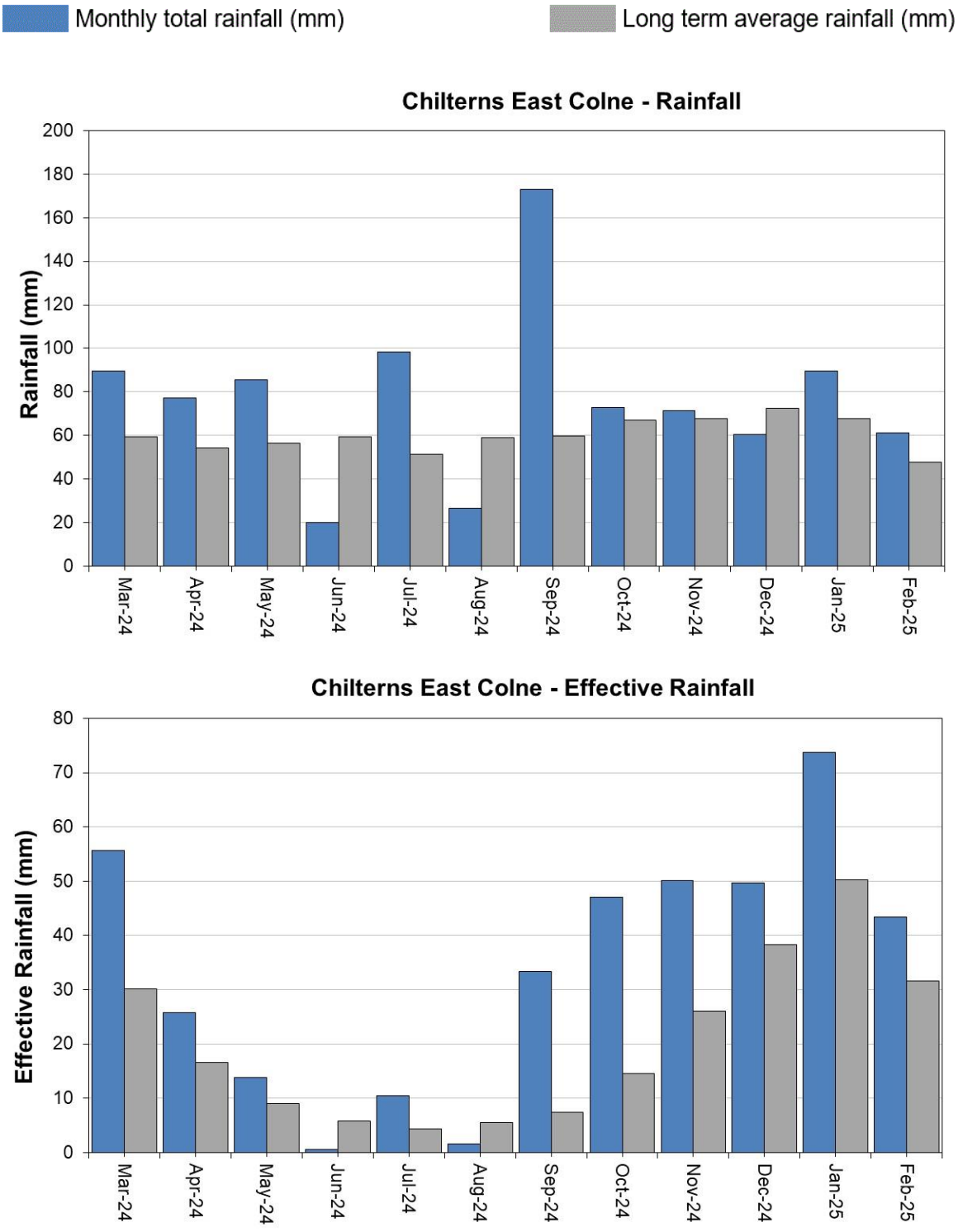
Figure 3.1: Monthly mean river flow and groundwater levels at our indicator sites for February 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic February monthly means. Table available in the appendices with detailed information.



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 1961 to 1990 long term average for the Colne.

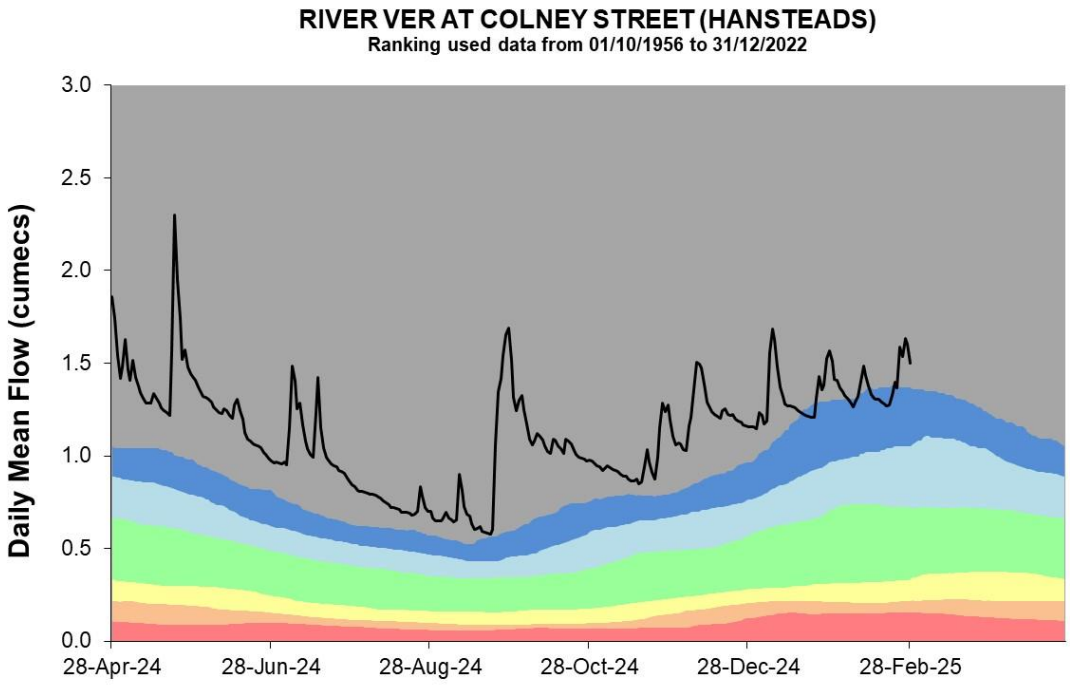


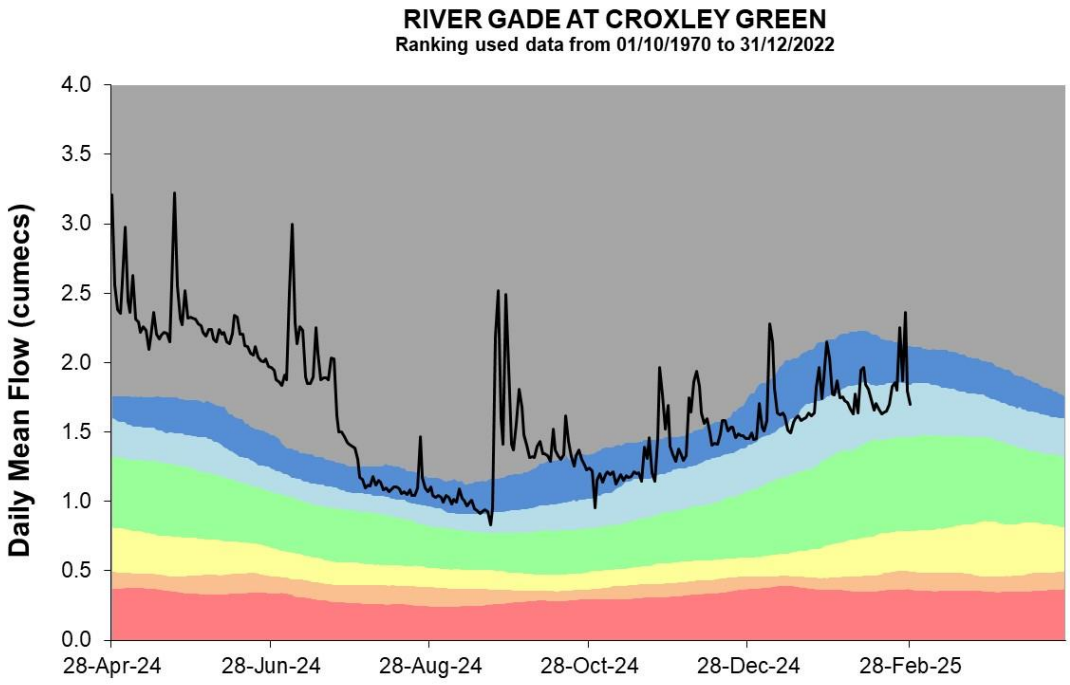
HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

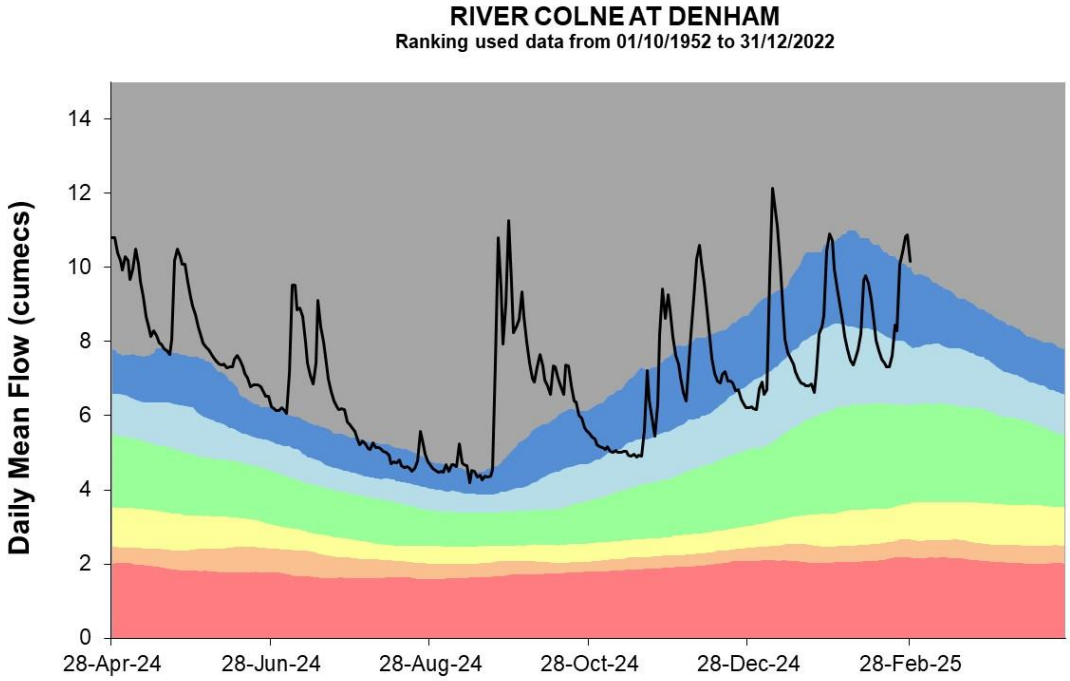
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

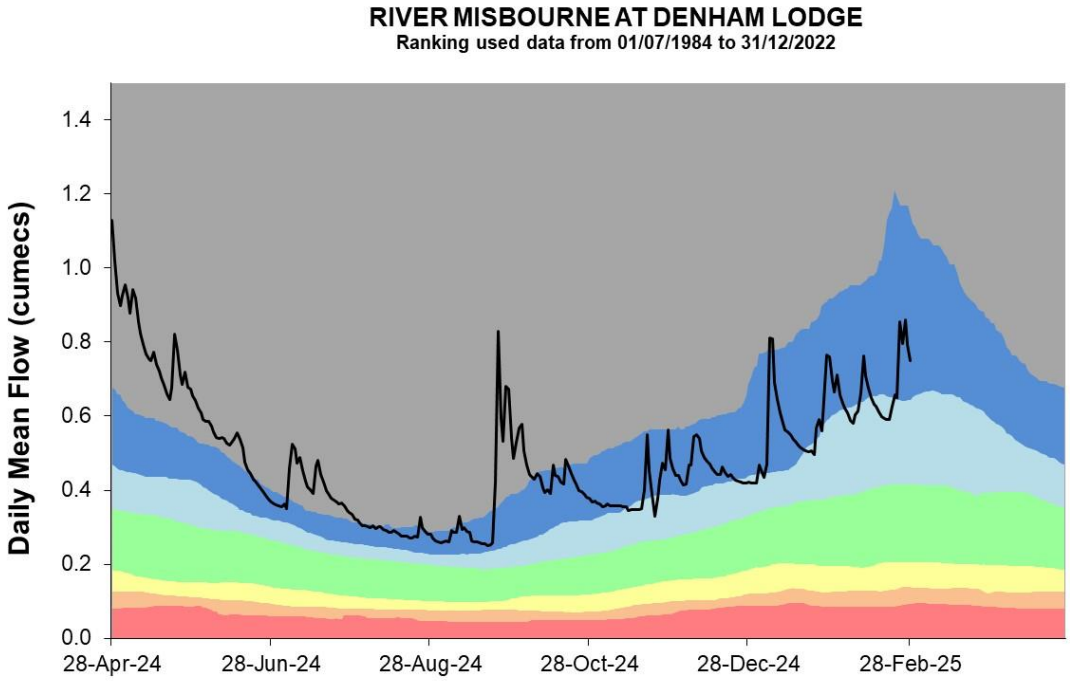
4.2 Colne River flow charts

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.





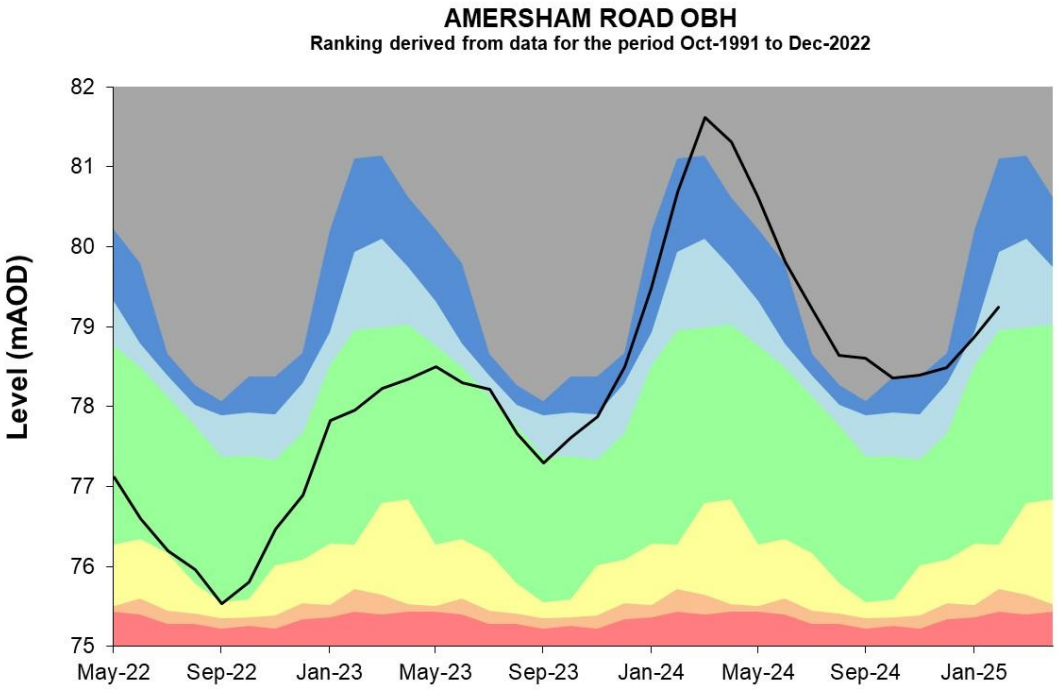


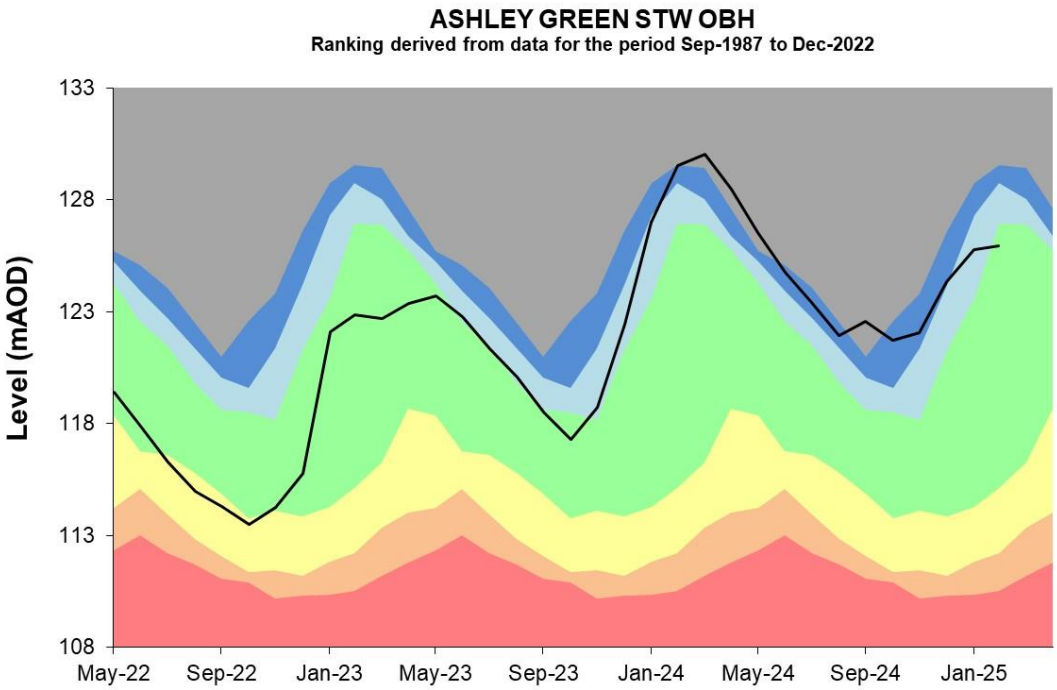


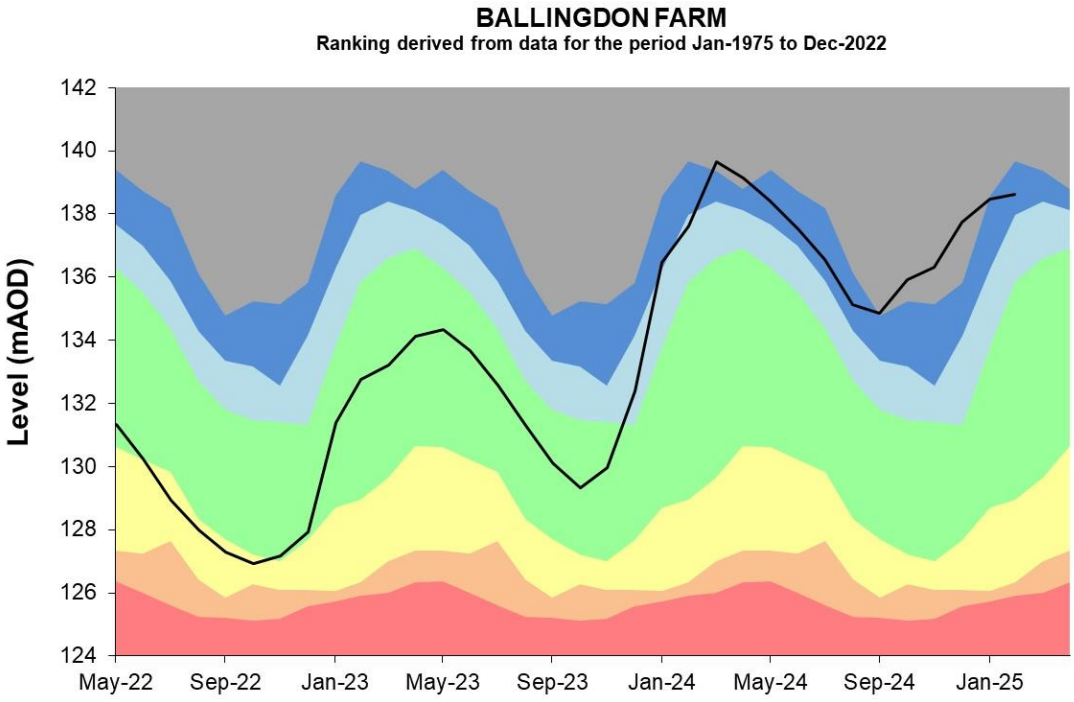
Source: Environment Agency, 2025

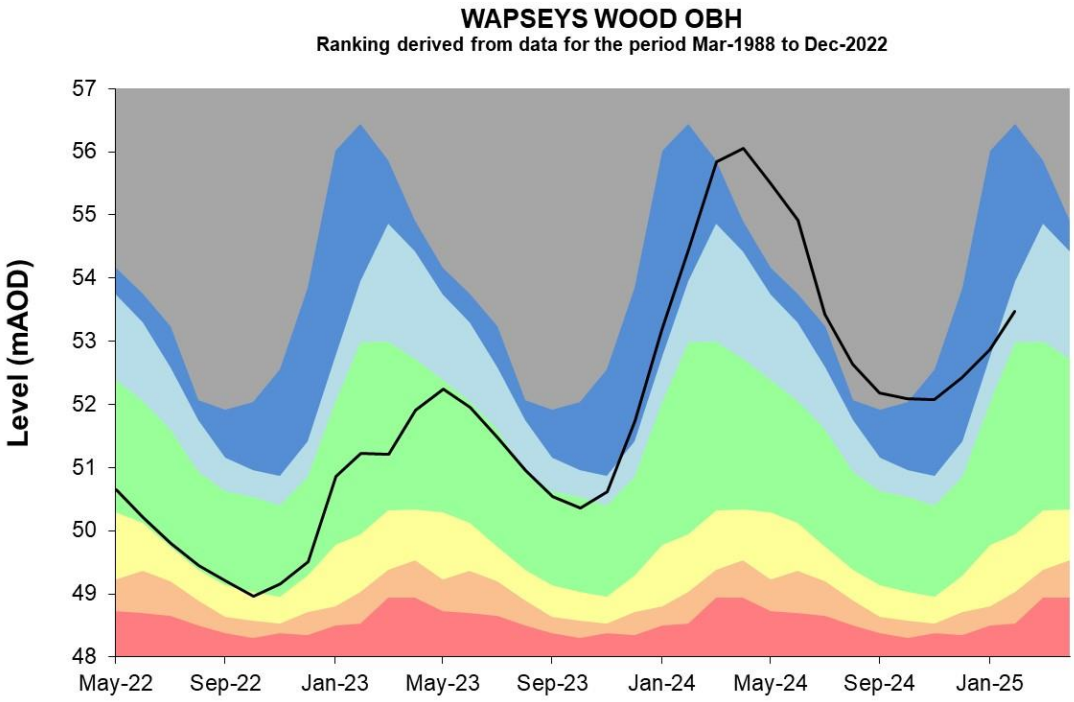
4.3 Colne Groundwater level charts

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.







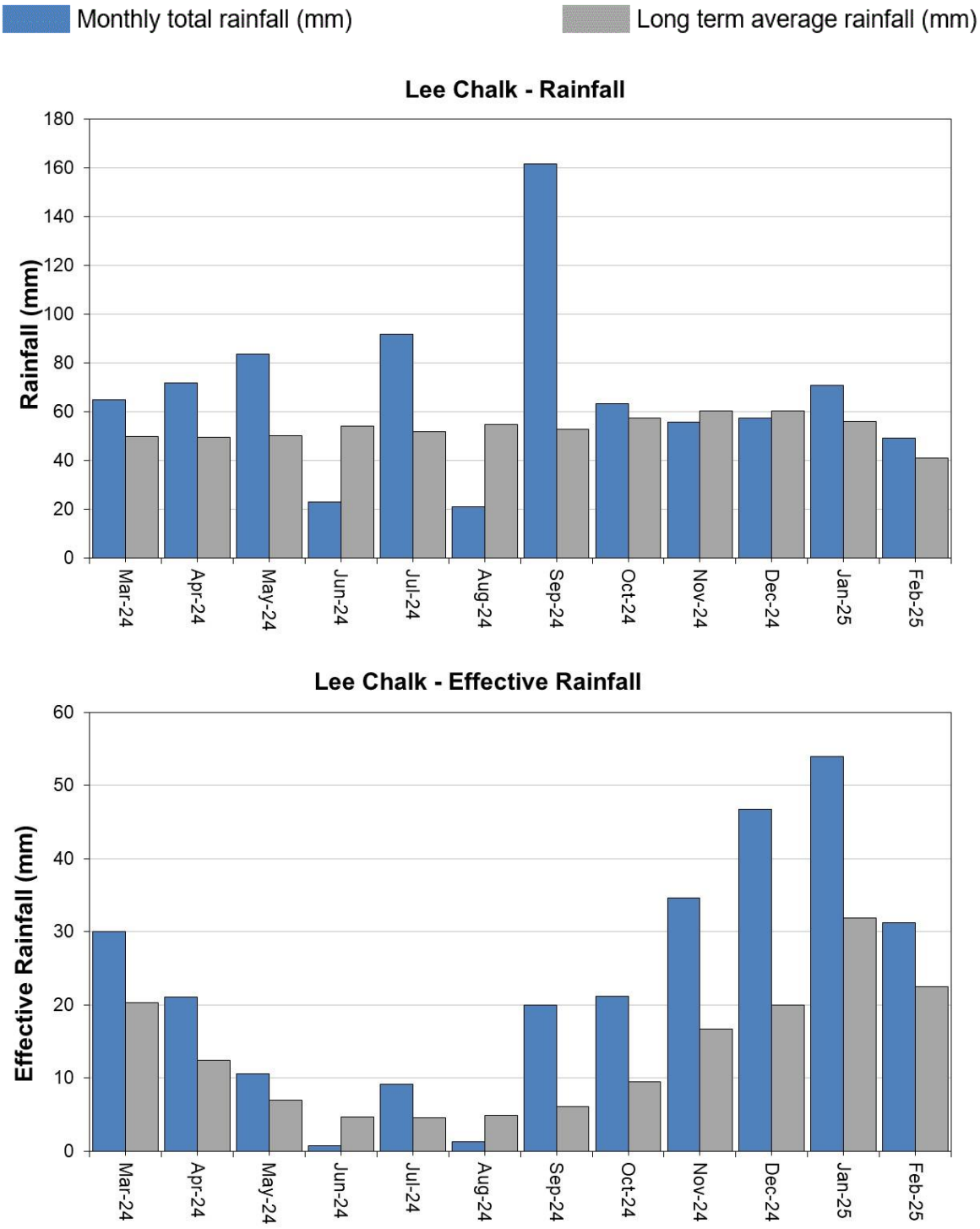


Source: Environment Agency, 2025

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 1961 to 1990 long term average for each region and for England.

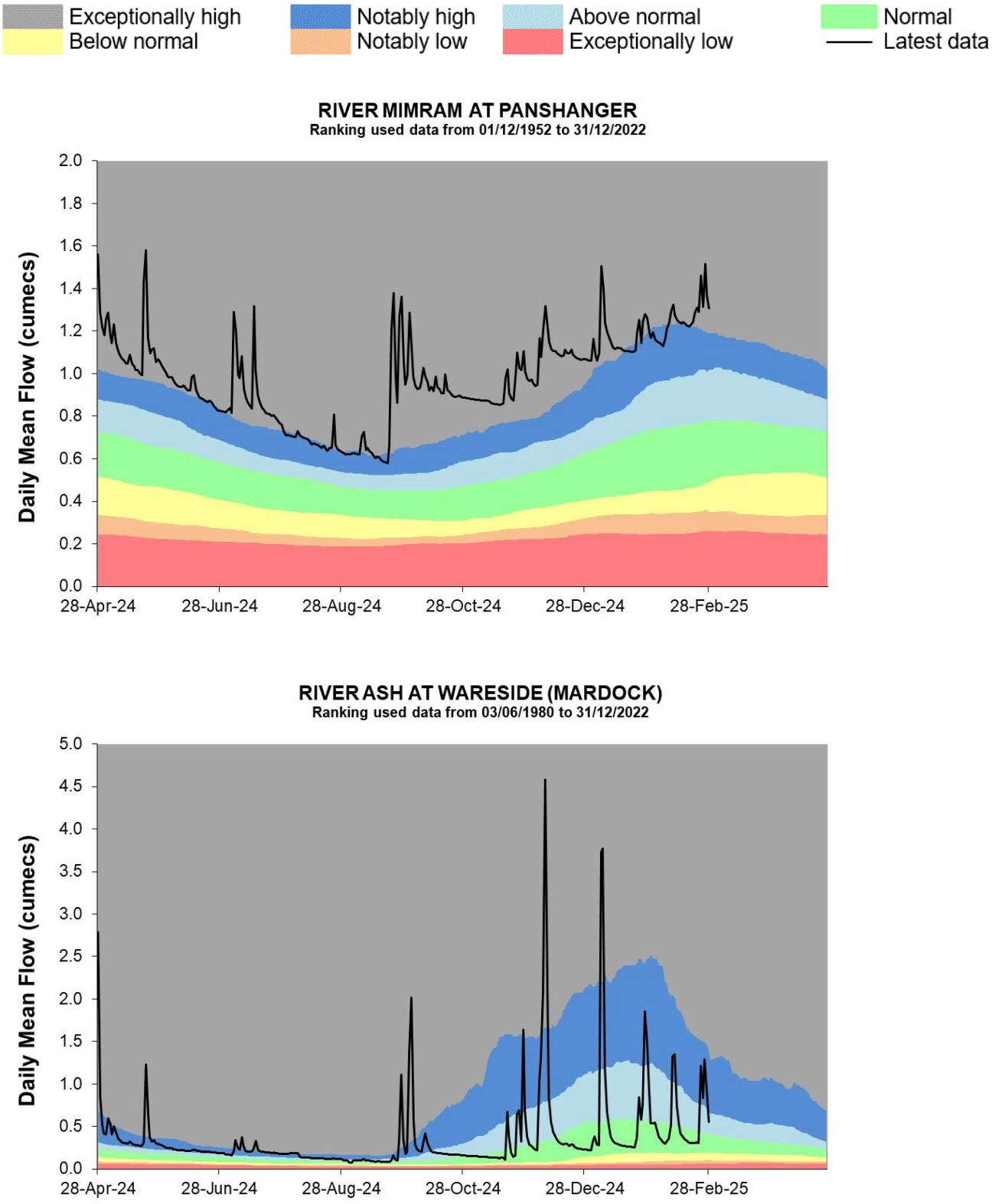


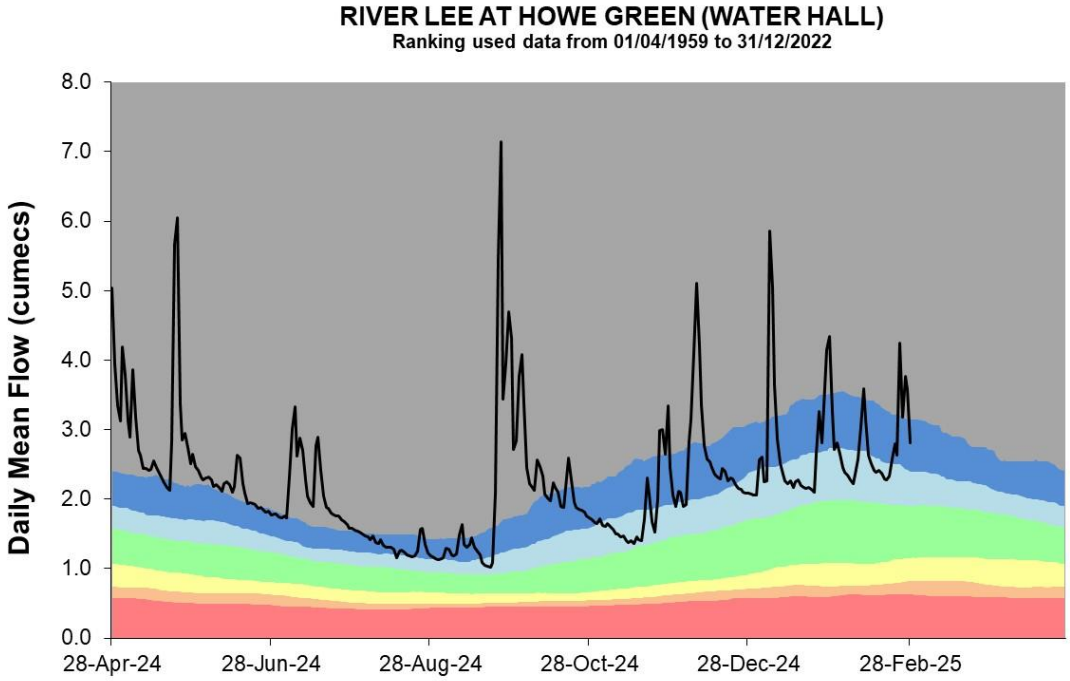
HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

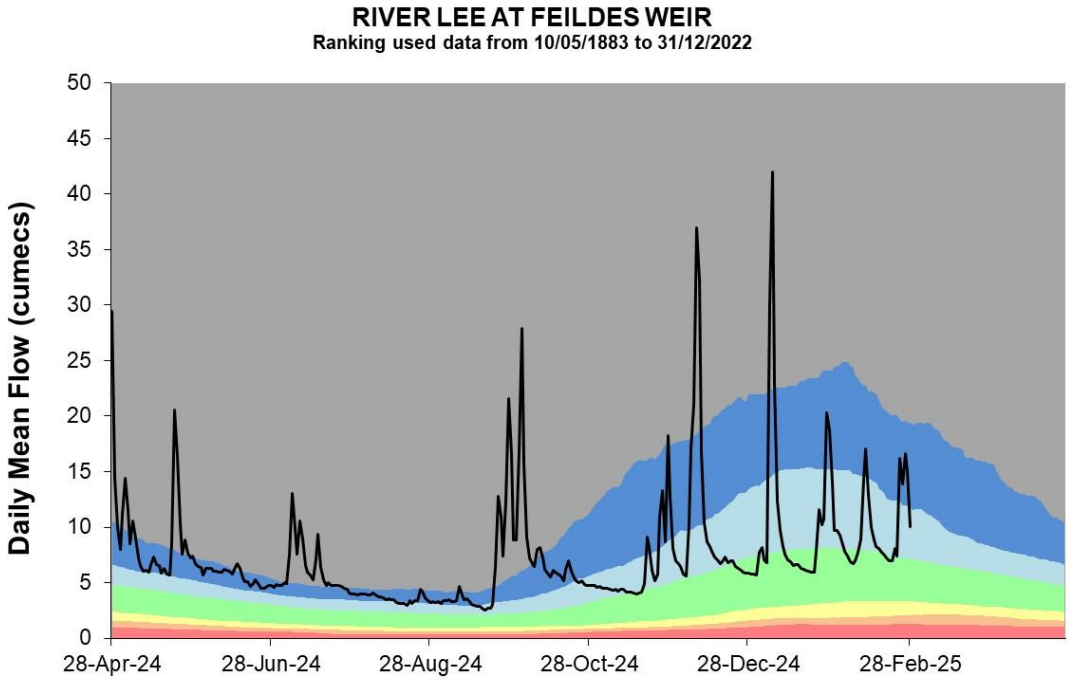
EA Soil Moisture Model effective rainfall data (Source: Environment Agency, 2025)

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.



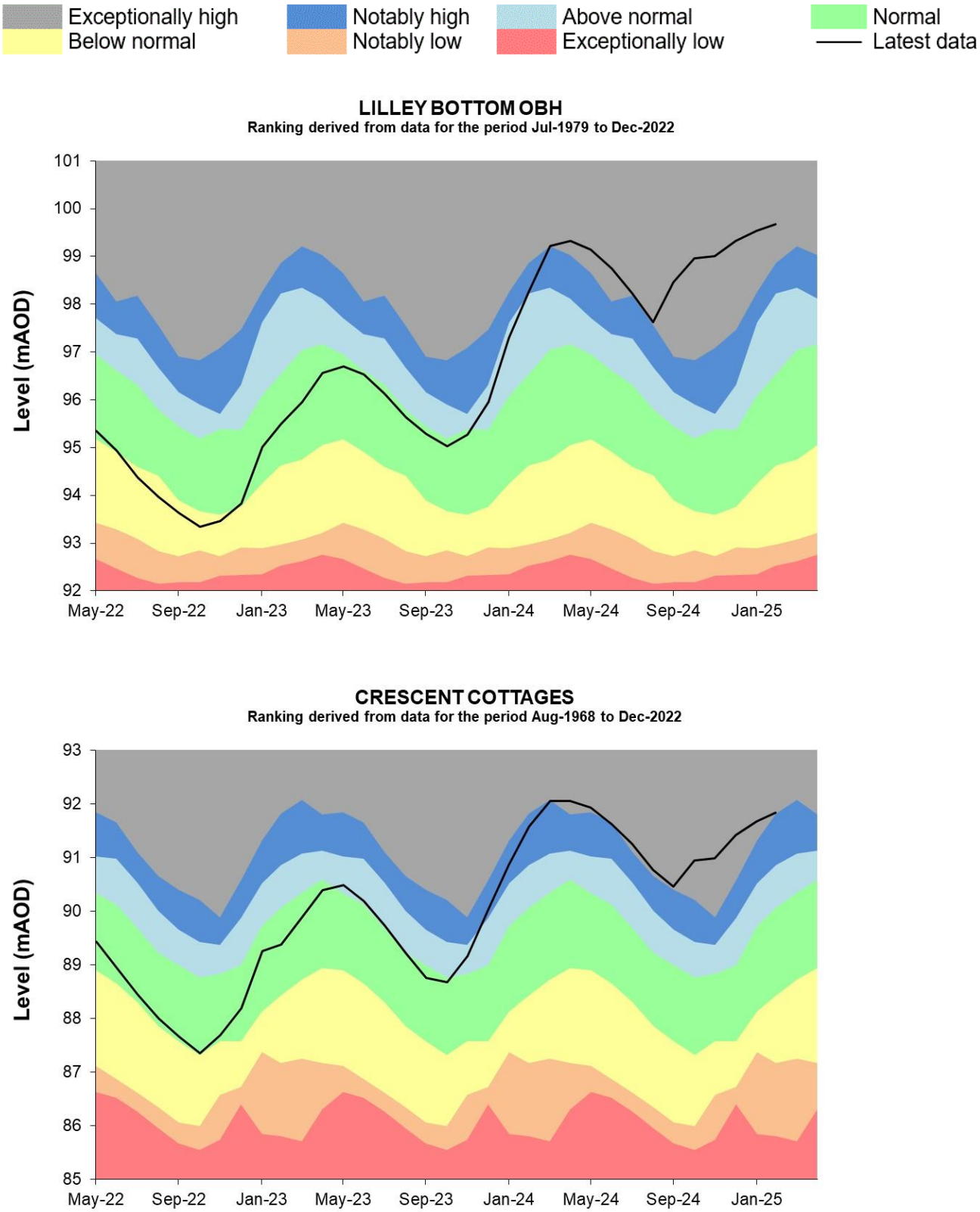




Source: Environment Agency, 2025

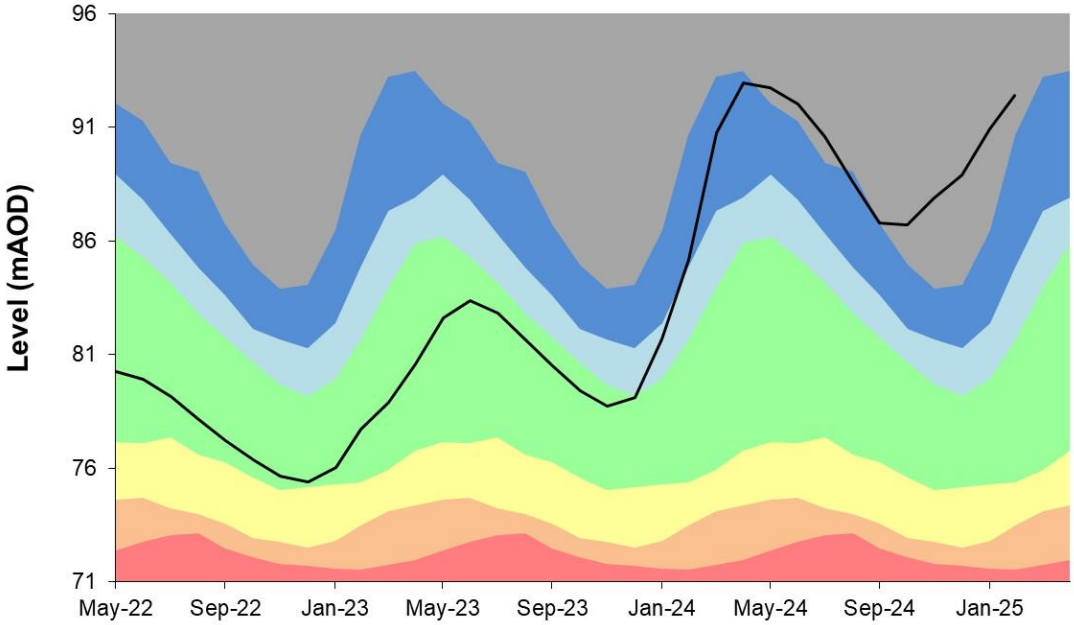
5.3 Upper Lee Groundwater level charts

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.



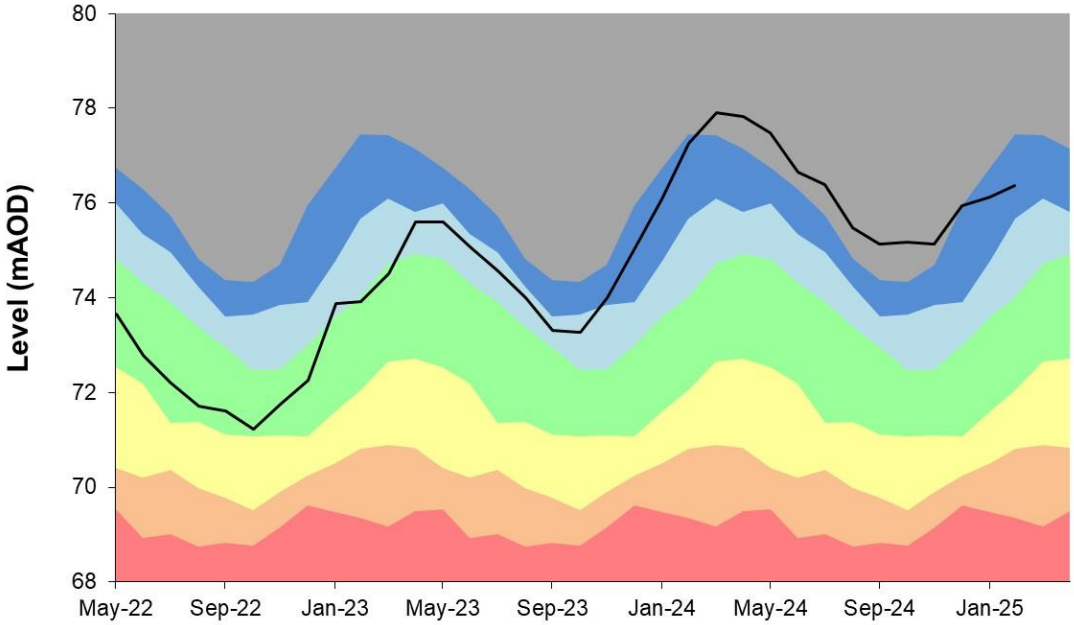
THERFIELD RECTORY

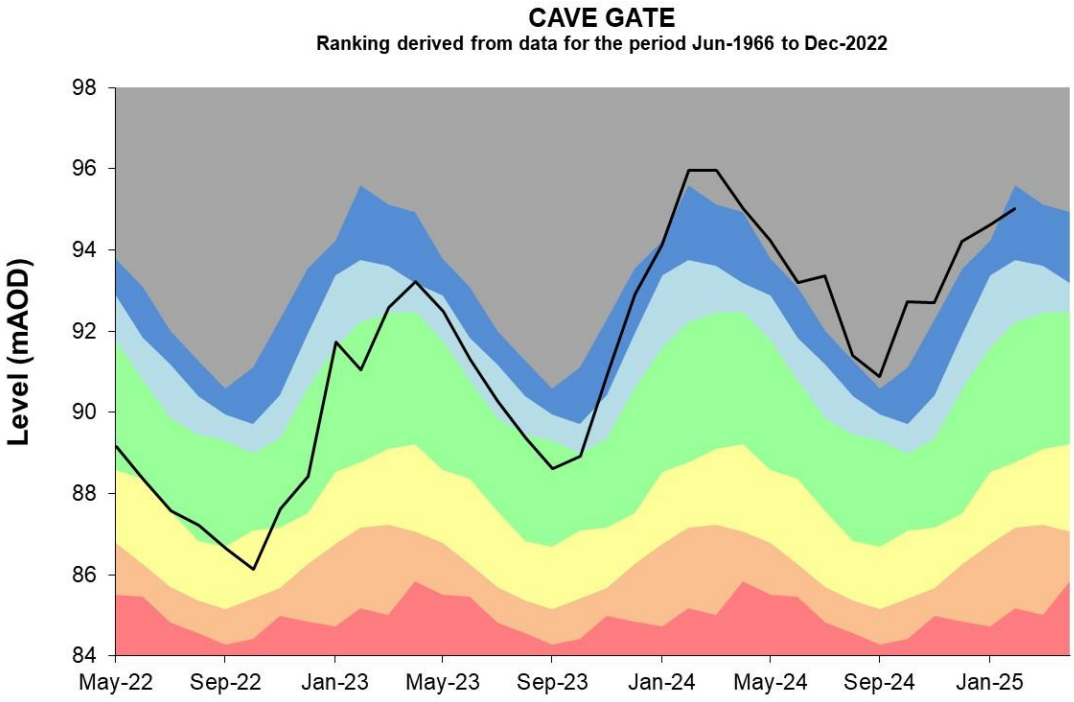
Ranking derived from data for the period Jan-1883 to Dec-2022



HIXHAM HALL

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



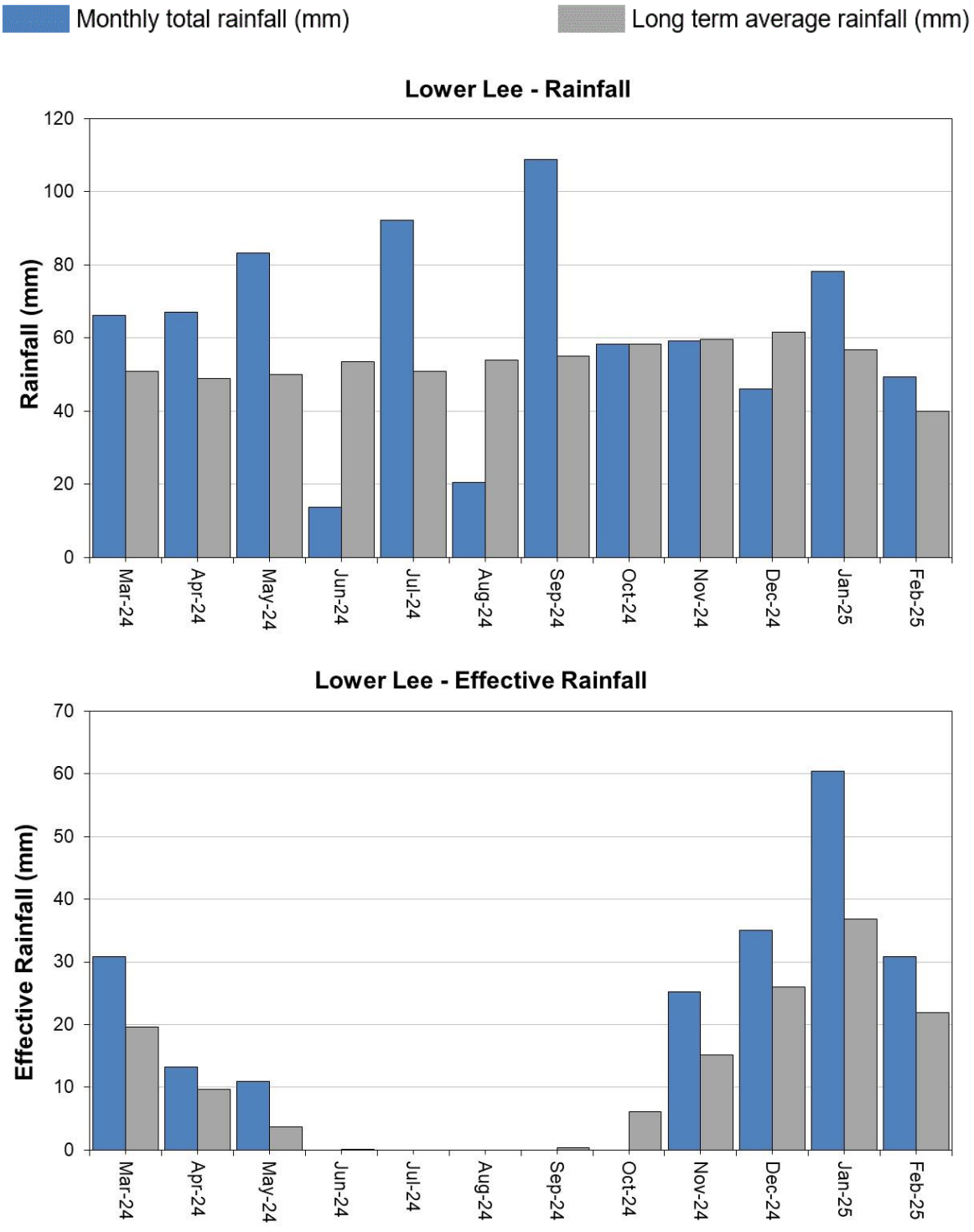


Source: Environment Agency, 2025

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 1961 to 1990 long term average for the Lower Lee.

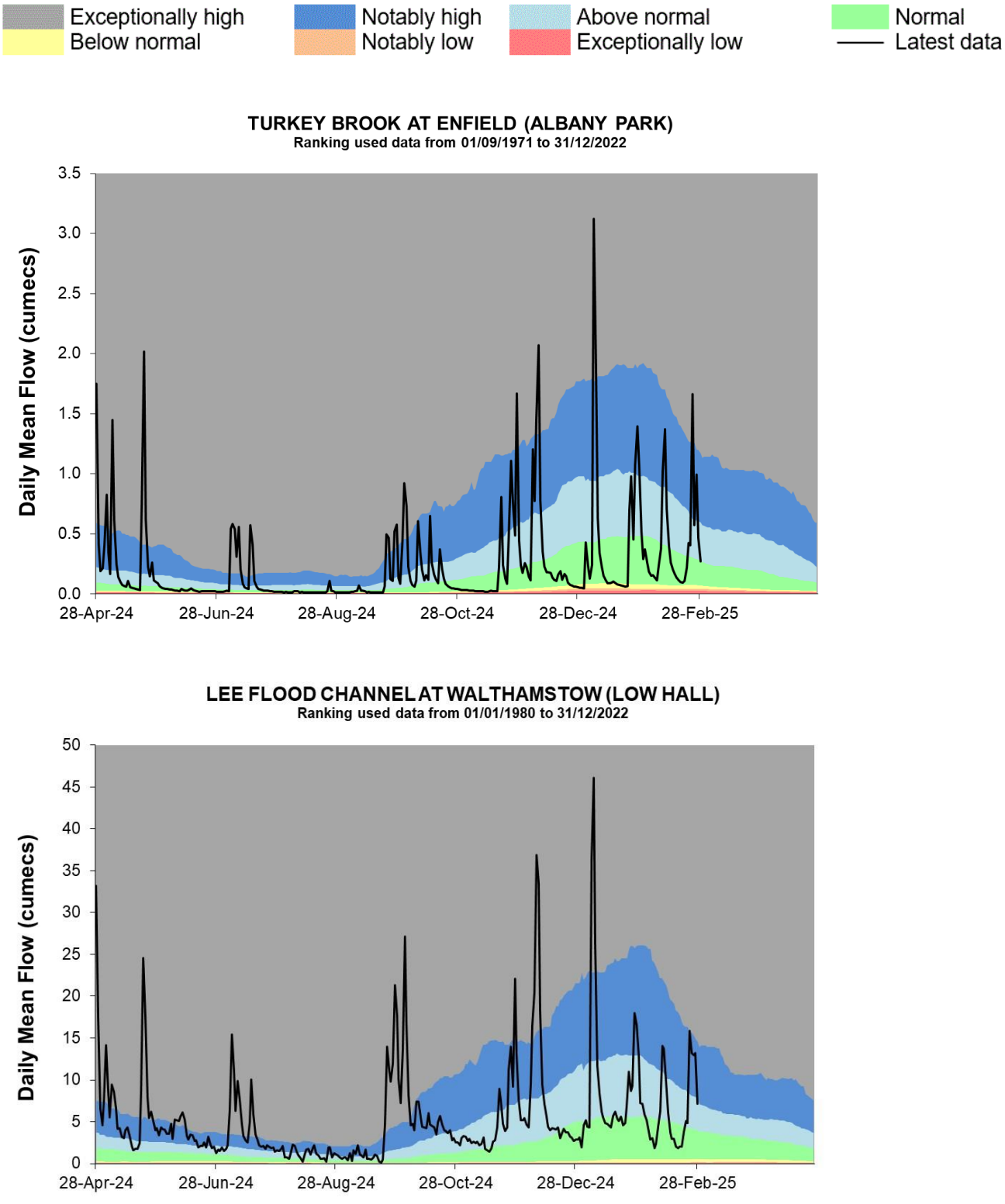


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.

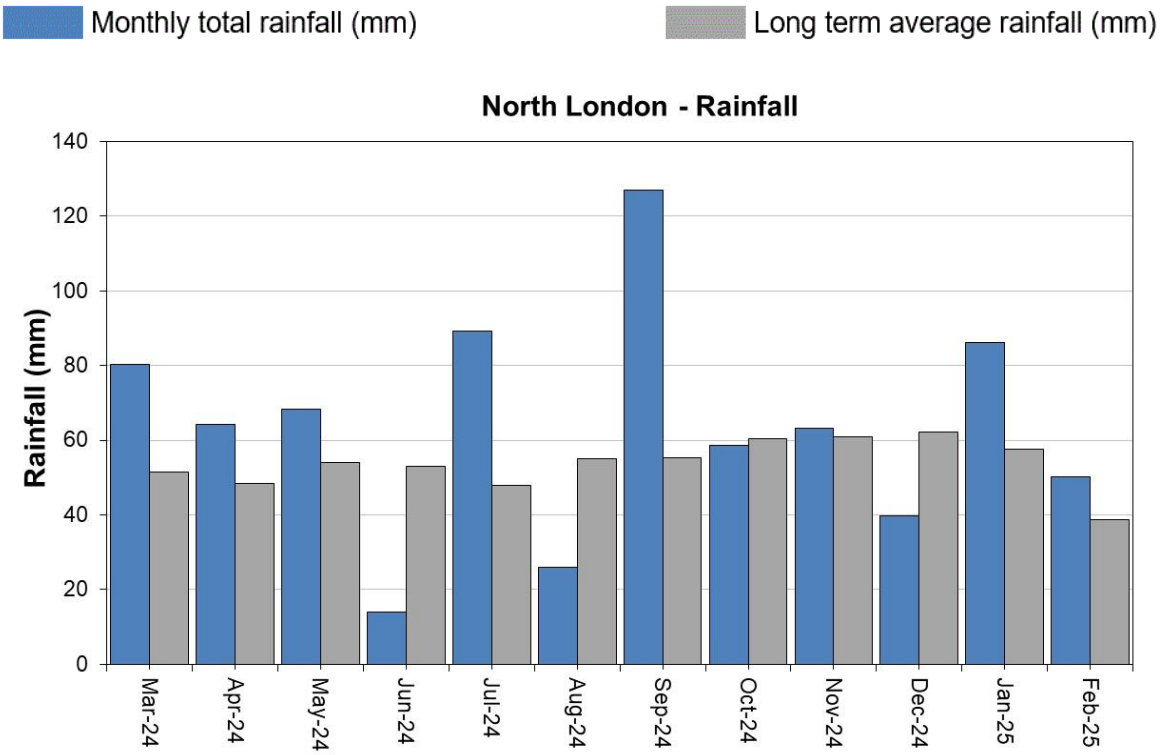


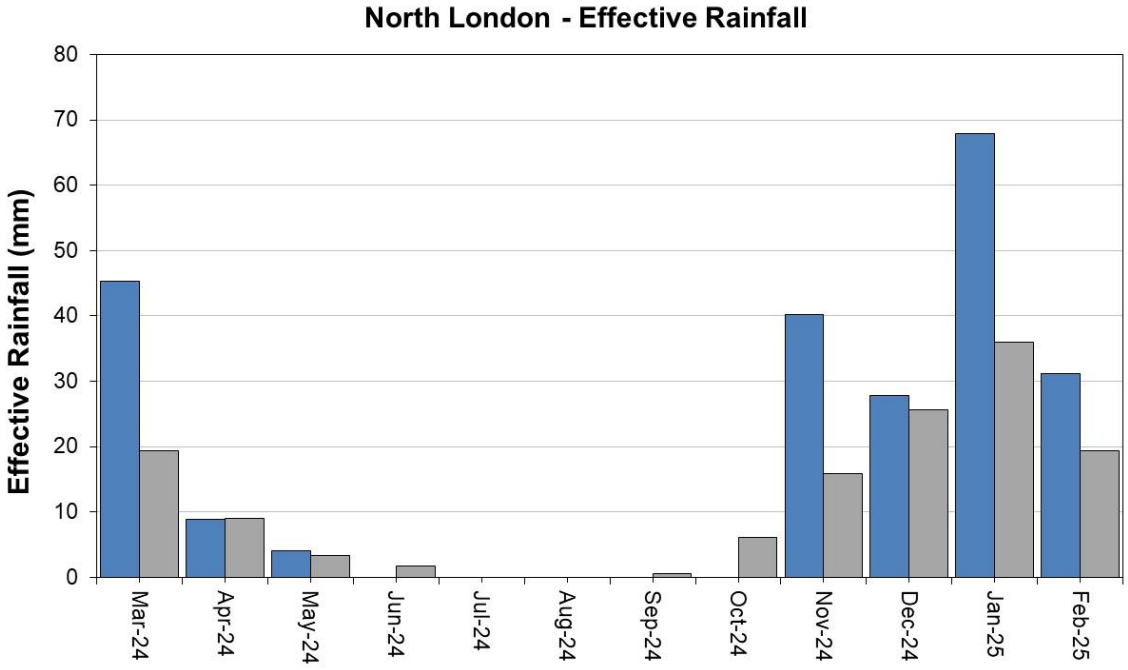
Source: Environment Agency, 2025

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 1961 to 1990 long term average for each region and for England.



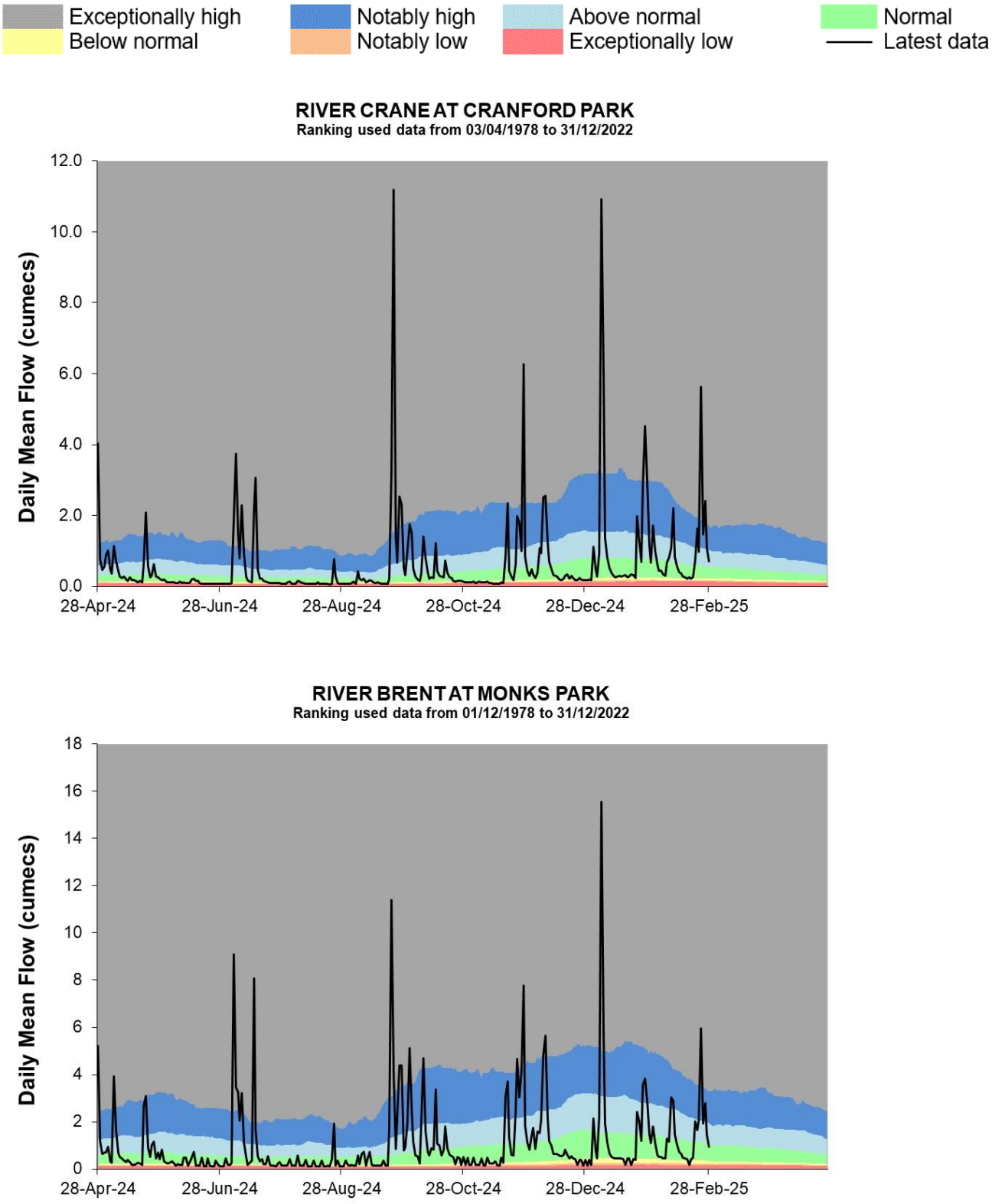


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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.

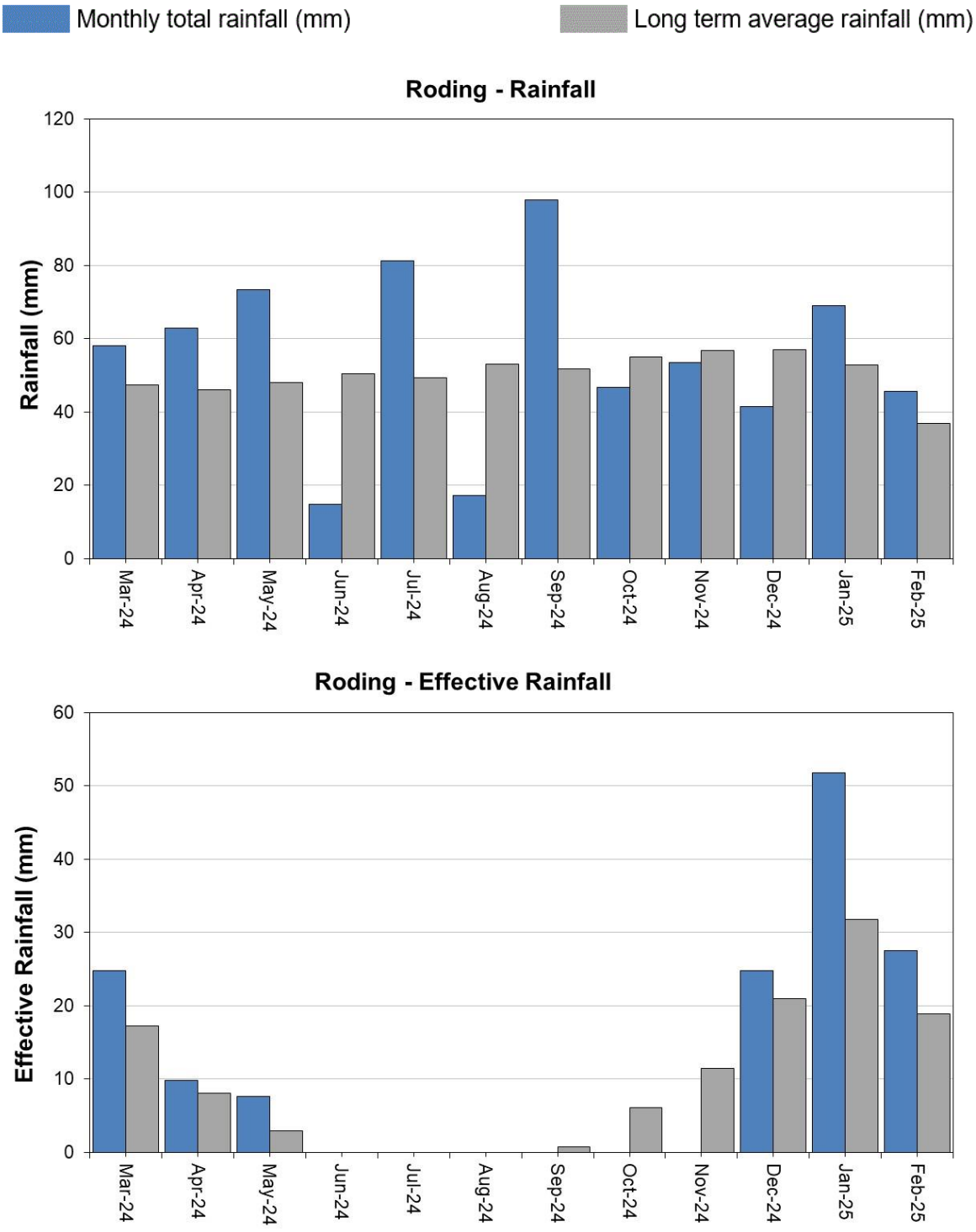


Source: Environment Agency, 2025

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 1961 to 1990 long term average for each region and for England.

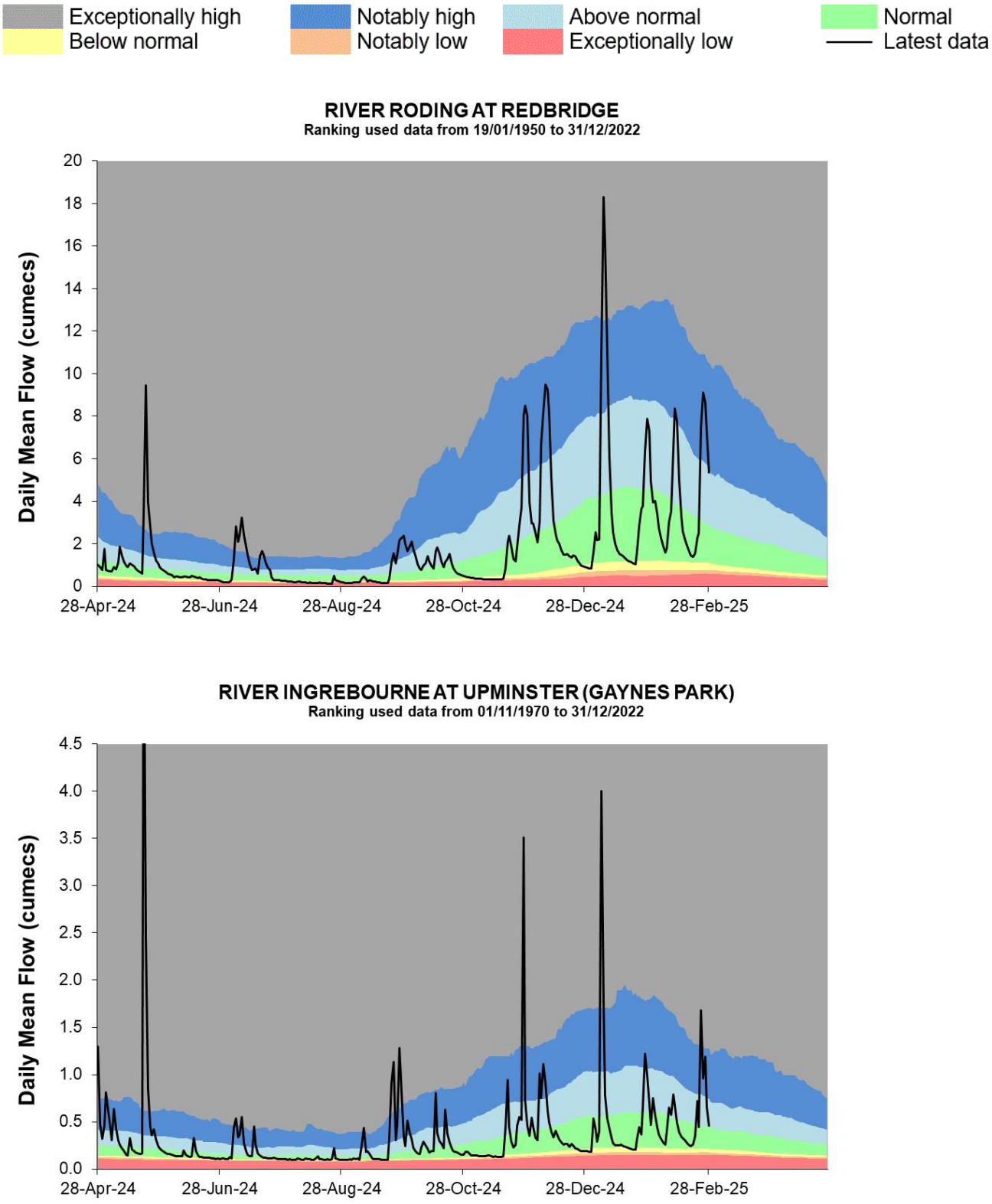


HadUK rainfall data (Source: Met Office. Crown copyright, 2025)

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

8.2 Roding River flow charts

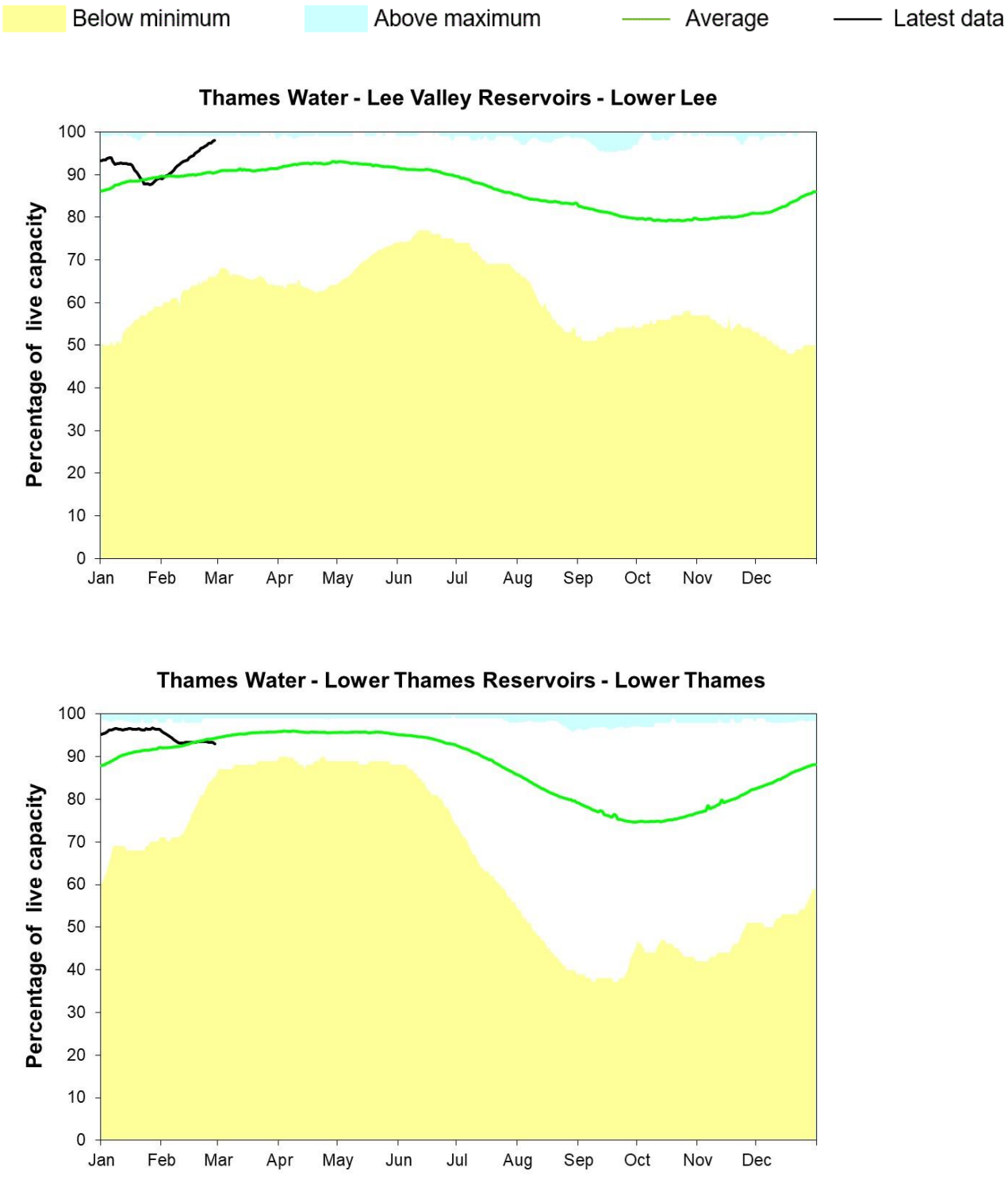
Figure 8.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025

9 Reservoir stocks

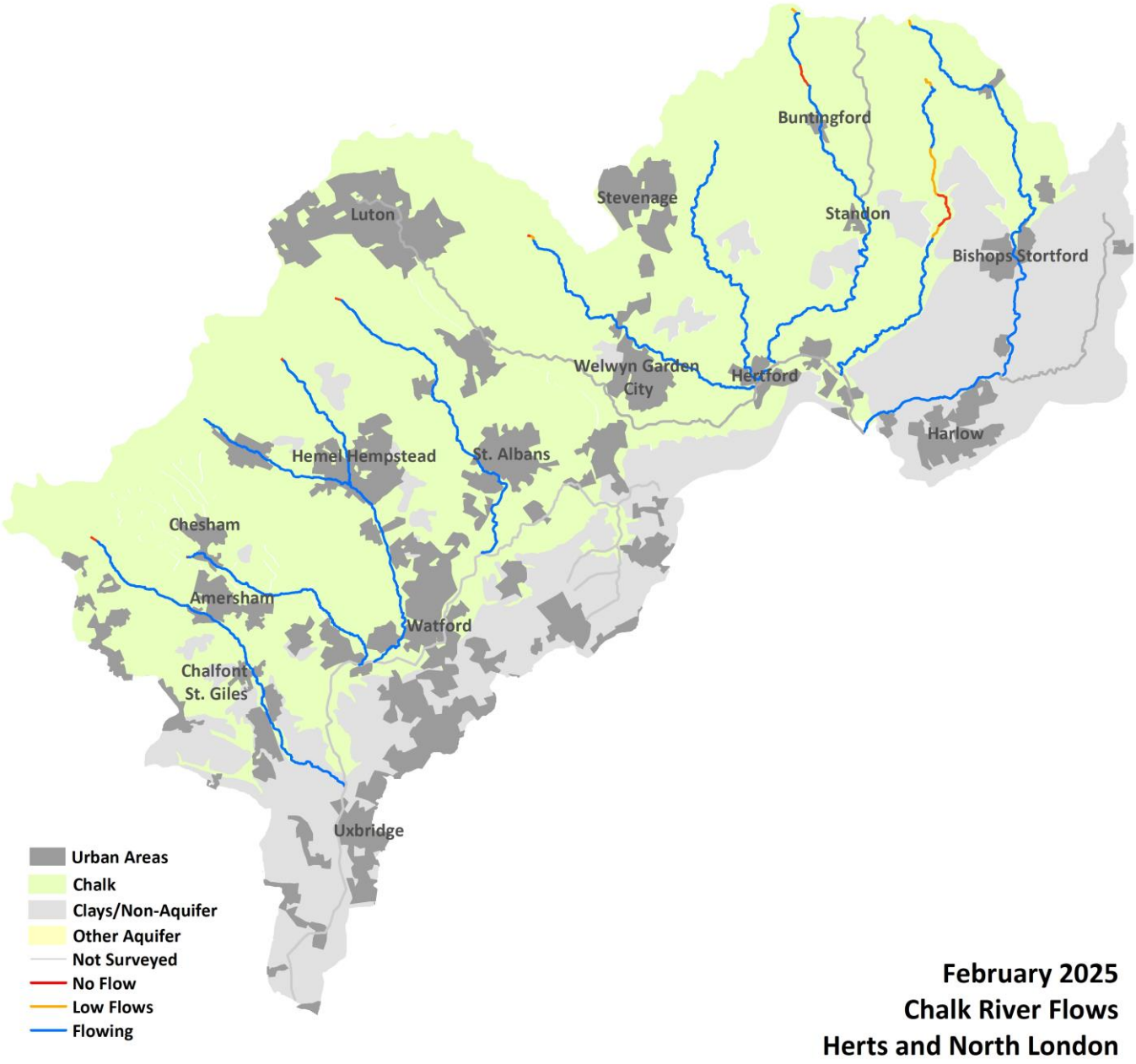
Figure 9.1: End of month reservoir stocks for the Lower Thames reservoir group and the Lee Valley reservoir group compared to long term maximum, minimum and average stocks. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.



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 1961 to 1990. However, the period used may vary by parameter being reported on (see figure captions for details).

mAOD

Metres above ordnance datum (mean sea level at Newlyn Cornwall).

MORECS

Met Office Rainfall and Evaporation Calculation System. Met Office service providing real time calculation of evapotranspiration, soil moisture deficit and effective rainfall on a 40 by 40 km grid.

Naturalised flow

River flow with the impacts of artificial influences removed. Artificial influences may include abstractions, discharges, transfers, augmentation and impoundments.

NCIC

National Climate Information Centre. NCIC area monthly rainfall totals are derived using the Met Office 5 km gridded dataset, which uses rain gauge observations.

Recharge

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

Reservoir gross capacity

The total capacity of a reservoir.

Reservoir live capacity

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

Soil moisture deficit (SMD)

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

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	Feb 2025 total rainfall in mm	Feb 2025 rainfall long term average 1961 to 1990	Feb 2025 rainfall % of long term average 1961 to 1990	Winter Oct 2024 to Feb 2025 total rainfall in mm	Winter Oct 2024 to Feb 2025 rainfall % of long term average 1961 to 1990
Chilterns East Colne	61	48	128	355	110
Lee Chalk	49	41	119	296	108
Lower Lee	49	40	124	291	105
North London	50	39	130	297	106
Roding	46	37	124	256	99
Herts and North London total	51	41	125	299	106

12.2 Rainfall banding table

Hydrological area	Feb 2025 band	Dec 2024 to Feb 2025 cumulative band	Sep 2024 to Feb 2025 cumulative band	Mar 2024 to Feb 2025 cumulative band
Chilterns East Colne	Normal	Normal	Above normal	Notably high
Lee Chalk	Normal	Normal	Notably high	Notably high
Lower Lee	Normal	Normal	Above normal	Above normal
North London	Normal	Normal	Above normal	Above normal
Roding	Normal	Normal	Normal	Normal

12.3 Effective Rainfall table

Hydrological area	Feb 2025 total effective rainfall in mm	Feb 2025 effective rainfall long term average 1961 to 1990 in mm	Feb 2025 effective rainfall % of long term average 1961 to 1990	Winter Oct 2024 to Feb 2025 total effective rainfall in mm	Winter Oct 2024 to Feb 2025 effective rainfall % of long term average 1961 to 1990
Chilterns East Colne	43	32	137	264	164
Lee Chalk	31	23	138	188	187
Lower Lee	31	22	141	152	143
North London	31	19	160	167	162
Roding	28	19	146	104	117
Herts and North London total	33	23	143	175	156

12.4 Soil Moisture Deficit table

Hydrological area	Feb 2025 end of month Soil Moisture Deficit in mm	Feb 2025 end of month Soil Moisture Deficit long term average 1961 to 1990 in mm	Jan 2025 end of month Soil Moisture Deficit in mm	Jan 2025 end of month Soil Moisture Deficit long term average 1961 to 1990 in mm
Chilterns East Colne	1	4	0	4
Lee Chalk	2	9	0	13
Lower Lee	2	5	0	6
North London	1	6	0	7
Roding	1	7	0	8
Herts and North London total	1	6	0	8

12.5 River flows table

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

12.6 Groundwater table

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

12.7 Abstraction licence flow constraints

Number of flow constraints in force between 3 and 9 February 2025	Number of flow constraints in force between 10 and 16 February 2025	Number of flow constraints in force between 17 and 23 February 2025	Number of flow constraints in force between 24 February and 2 March 2025
3	2	5	6