Monthly water situation report:

South-east England

1 Summary - April 2025

April was the second consecutive month with below average rainfall, with only 48% of the average long term average (LTA) rainfall. The anticyclonic conditions which built over the country during March continued for most of April. The month's rainfall fell on 6 days between 14 and 22 April during a brief unsettled period. The soil moisture deficits (SMD) rose steadily to end more than three times the LTA for April, with no significant recharge. The expected seasonal decline in the river flow hydrographs continued during April. The rainfall showed very little impact on the flows. Similarly, the steady decline of groundwater levels continued during the month. Three residual flood alerts remained during the month, 2 groundwater and 1 fluvial.

Rainfall

April was the second consecutive month with below average rainfall, with only 48% of the average LTA rainfall. On average there were 24 'dry' days where the daily rainfall total was less than 0.2mm. The anticyclonic conditions which built over the country during March continued for most of April. The month's rainfall fell on 6 days between 14 and 22 April during a brief unsettled period. The highest daily totals were recorded on April 22 for all 4 areas in the south-east. The highest daily total was 24mm, recorded at Chenies, Hertfordshire and North London (HNL). Kent and South London (KSL) also recorded significant rainfall totals on 14 April, with Lenham, Stour, recording 18.3mm on that date. On average, the rainfall totals for 22 and 14 April accounted for 77% of the monthly total across the south-east of England. March and April total rainfall was the lowest since 2011 for the south-east, Thames (THM), Solent and South Downs (SSD) and was the 4th driest 2 month period ending in April for a number of areal units, including:

- Cotswolds West (THM)
- Berkshire Downs (THM)
- Upper Thames (THM)
- Ock (THM)
- Test Chalk (SSD)

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1.1 Soil moisture deficit and recharge

The SMDs rose steadily to end more than three times the LTA for April. There were slight falls in the SMD after the rainfall on 14 and 22 April, but the general trend after the rainfall was a steady climb during the month. As there were significant SMDs, there was limited recharge during the rainfall events.

1.2 River flows

The expected seasonal decline in the river flow hydrographs continued during April. The rainfall showed very little impact on the flows for rivers draining both impermeable and permeable catchments. This is largely due to the high SMDs. More than half the key indicator flow sites were in either the normal or below normal category. The normal sites were largely draining permeable catchments and the below normal sites were in impermeable catchments. The legacy of exceptionally high rainfall remains evident in the chalk of northern HNL, with both the Mimram and Ver recording exceptionally high flows for April. One fluvial flood alert remains in force for the Mimram in HNL.

	HNL	THM	SSD	KSL	Total
Fluvial Alerts	1	0	0	0	1
GW Alerts	1	1	0	0	2
Total	2	1	0	0	3

1.3 Groundwater levels

The expected steady decline of groundwater levels for this time of year continued during the month for all the indicator sites in the south-east of England. Jackaments (THM) recorded levels in the exceptionally low category and demonstrates the rapid decline of groundwater in oolitic limestone to periods of dry weather. By contrast, Stonor (THM) recorded the 5th highest and Lilley Bottom (HNL) the 4th highest April levels on record, falling in the exceptionally high and notably high categories respectively. Ten of the 16 key groundwater sites recorded levels in the normal category for April. Two groundwater flood alerts remain in force in HNL and THM.

1.4 Reservoir stocks

The dry and warmer weather has resulted in slight declines in some of the reservoir stocks across the south-east of England. Ardingly and Arlington (both SSD) and Darwell (KSL) ended the month below the LTA for April. Lower Thames, Farmoor (both THM), and Bewl (KSL) remain close to the LTA storage. Lower Lee (HNL), Bough Beech, Powdermill and Weir Wood (all KSL) have above the LTA storage.

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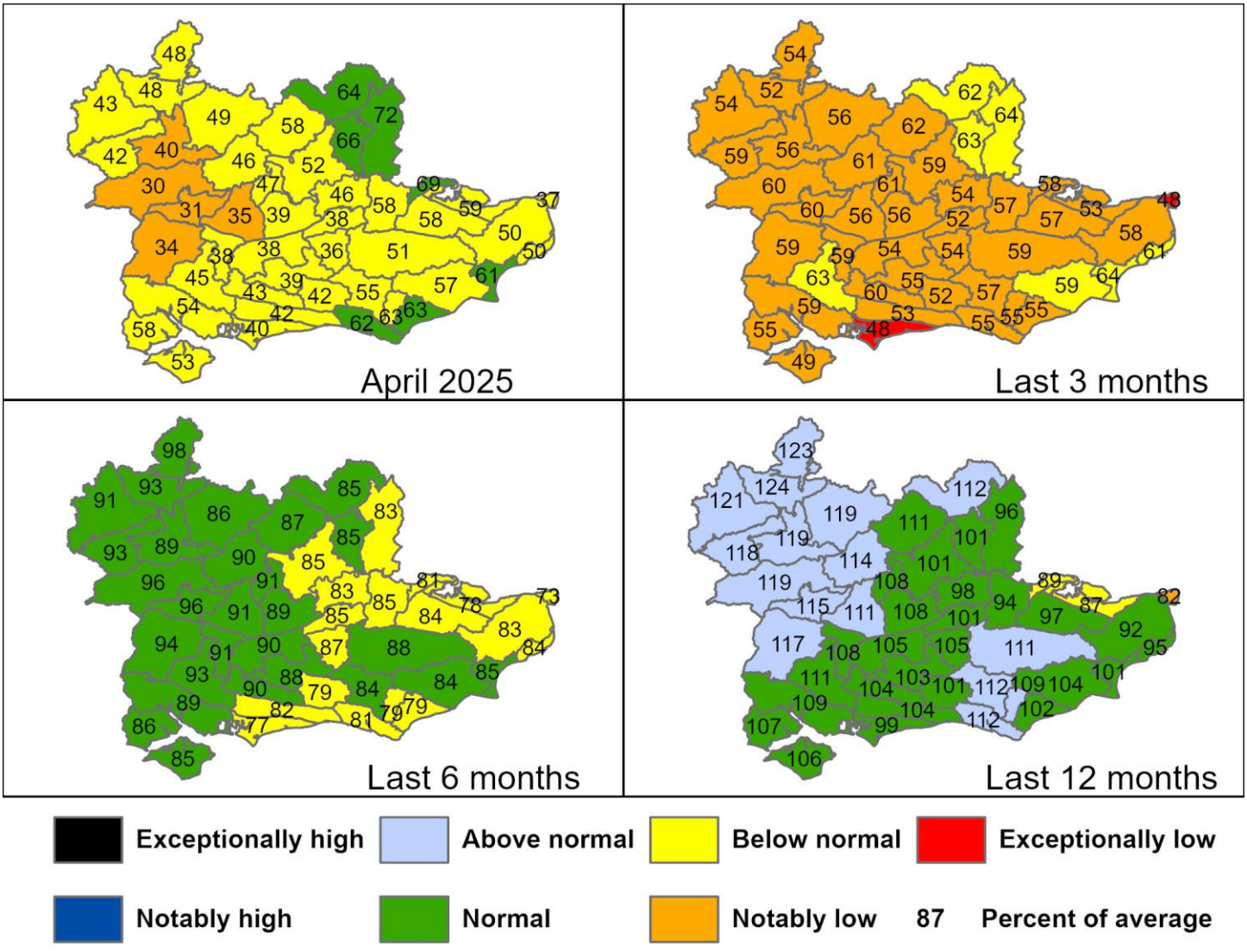
no liability for any loss or damage arising from the interpretation or use of the information, or reliance upon views contained in this report.

2 Maps

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 30 April 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.

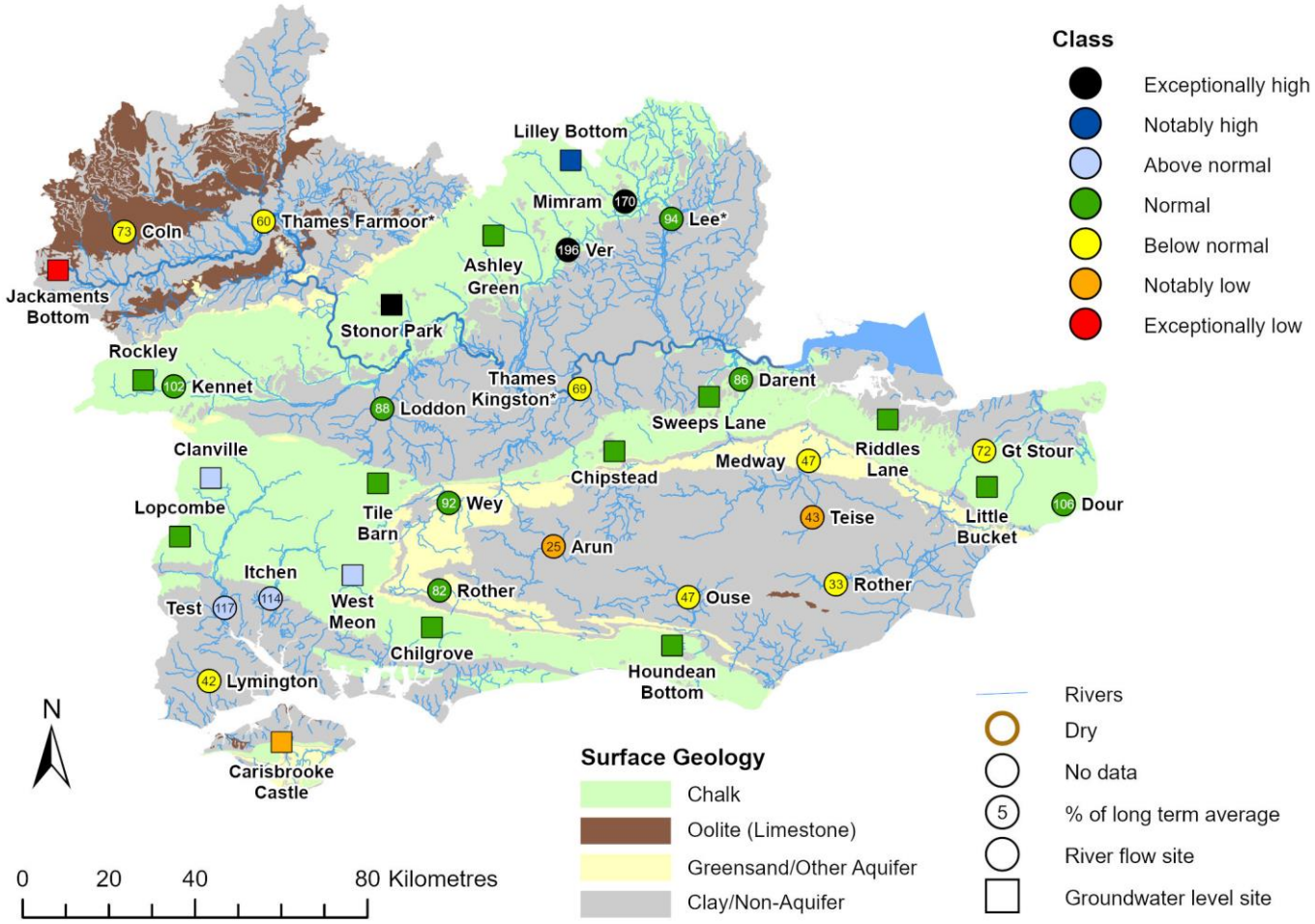


Rainfall data for 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to 2025, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges. (Source: Met Office. Crown copyright, 2025).

2.2 River flows and groundwater levels map

Figure 2.2: Monthly mean river flow for indicator sites for April 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic April monthly means Table available in the appendices with detailed information. Groundwater levels for indicator sites at the end of April 2025, classed relative to an analysis of respective historic April levels. Table available in the appendices with detailed information.

Flows at gauging stations in the Medway catchment (KSL) might be affected by upstream reservoir releases.



3 Rainfall, effective rainfall and soil moisture deficit tables

3.1 Rainfall, effective rainfall and soil moisture deficit table

Figure 3.1: This is a second estimate of areal rainfall, effective rainfall (percolation or runoff) and SMDs for a selection of the hydrological areas across the South-east of England. There may be significant variation within each area which must be considered when interpreting these data. When additional meteorological data is available estimates are revised which will affect the period totals in Figure 3.2.

Number	Hydrological Area	Rainfall (mm) 30 day Total	April % LTA	Effective Rainfall (mm) 30 day total	April % LTA	SMD (mm) Day 30	End April LTA
6010TH	Cotswolds - West (A)	24	43%	2	14%	43	15
6070TH	Berkshire Downs (G)	16	30%	1	10%	77	19
6130TH	Chilterns - West (M)	24	46%	2	15%	70	19
6162TH	North Downs - Hampshire (P)	21	38%	2	10%	75	17
6190TH	Wey - Greensand (S)	22	38%	2	10%	75	17
	Thames Average	21	41%	1	7%	70	20
	Thames Catchment Average	21	41%	1	8%	70	19
6140TH	Chilterns - East - Colne (N)	31	57%	3	19%	66	19
6600TH	Lee Chalk	32	64%	3	26%	68	24
6507TH	North London	25	51%	0	0%	74	23
6509TH	Roding	33	71%	0	0%	65	22
	Herts and North London	31	62%	1	12%	68	22
6230TH	North Downs - South London (W)	21	37%	2	11%	75	17
6706So	Darent	30	58%	3	22%	69	19

6707So	North Kent Chalk	30	58%	4	23%	66	18
6708So	Stour	25	49%	3	21%	72	18
6809So	Medway	27	51%	0	0%	63	16
	Kent & South London Average	25	51%	1	10%	73	22
6701So	Test Chalk	18	34%	1	9%	76	19
6702So	East Hampshire Chalk	25	45%	2	13%	72	18
6703So	West Sussex Chalk	25	42%	3	12%	69	16
6804So	Arun	22	39%	0	0%	73	16
6805So	Adur	23	42%	0	0%	69	16
	Solent & South Downs Average	26	49%	1	7%	69	18
	South East Average	25	48%	1	8%	70	20

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

EA effective rainfall and soil moisture deficit data (Source EA Soil Moisture Model 2025.)

3.2 Seasonal summary table of rainfall and effective rainfall

Figure 3.2 This is a seasonal estimate of areal rainfall and effective rainfall (percolation or runoff) for a selection of the hydrological areas across the South-east of England, expressed as totals and as a percentage of the LTA. There may be significant variation within each area which must be considered when interpreting these data. When additional meteorological data is available estimates are revised which will affect the period totals.

Summer period 01/04/2025 to 30/04/2025

Number	Hydrological Area	Seasonal Rainfall (mm) Total	Seasonal Rainfall as % LTA	Seasonal Effective Rainfall (mm) Total	Seasonal Effective Rainfall as % LTA
6010TH	Cotswolds - West (A)	24	43%	2	14%
6070TH	Berkshire Downs (G)	16	30%	1	10%
6130TH	Chilterns - West (M)	24	46%	2	15%
6162TH	North Downs - Hampshire (P)	21	38%	2	10%
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6703So	West Sussex Chalk	25	42%	3	12%
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6805So	Adur	23	42%	0	0%
	Solent & South Downs Average	26	49%	1	7%
	South East Average	25	48%	1	8%

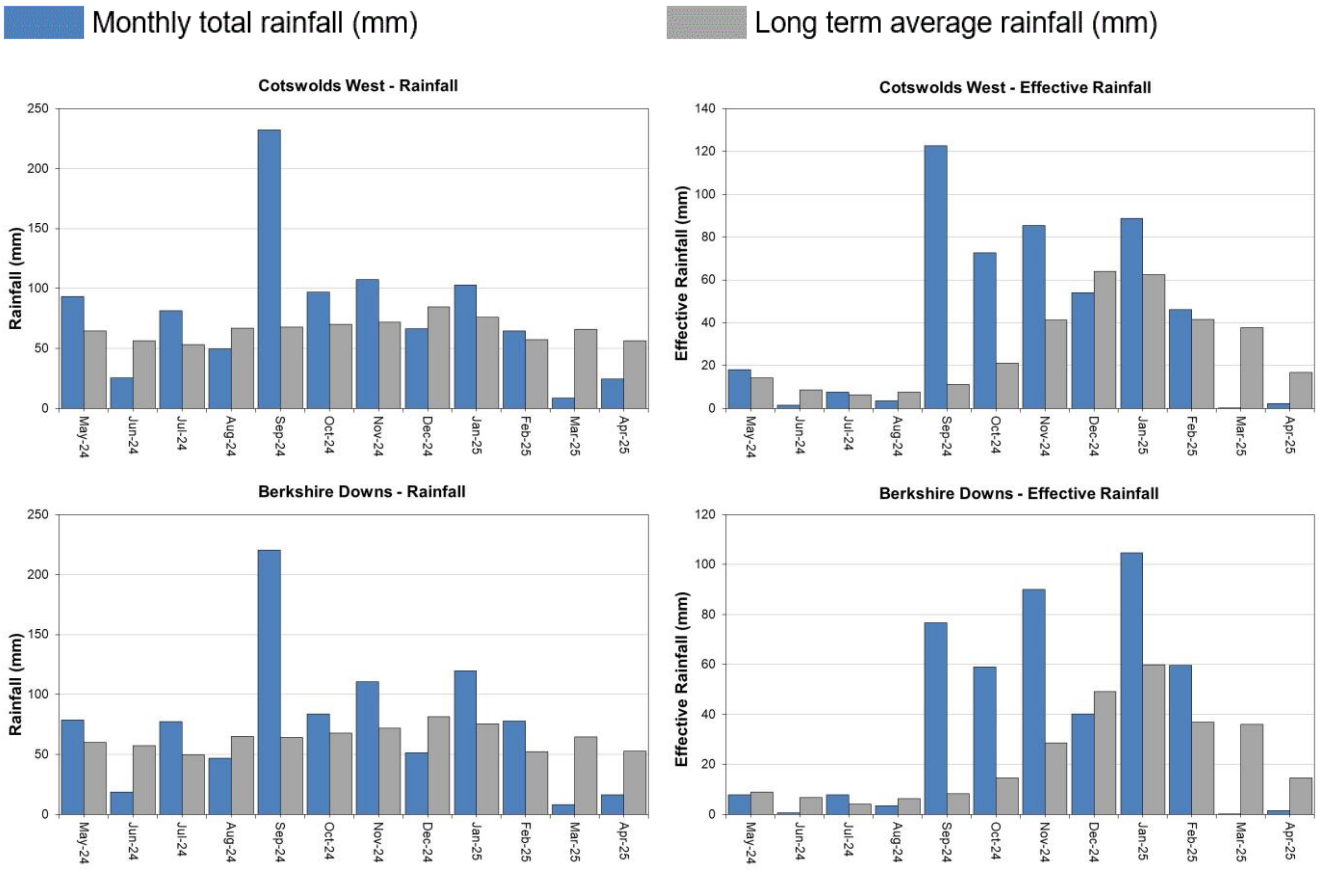
HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

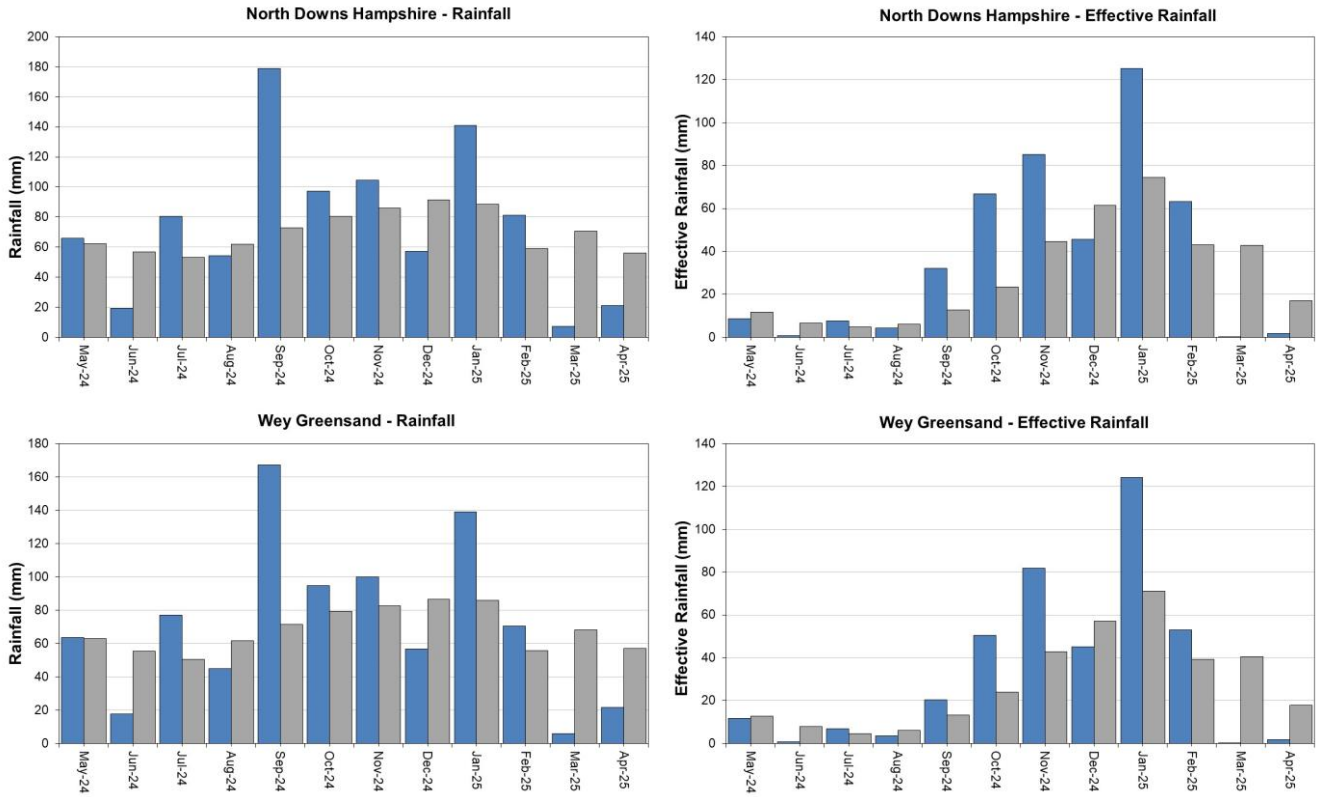
EA effective rainfall data (Source EA Soil Moisture Model 2025.)

4 Thames

4.1 Thames Rainfall and effective rainfall charts

Figure 4.1: Monthly rainfall and effective rainfall totals for the past 24 months compared to the 1961 to 1990 long term average for a selection of areal units.



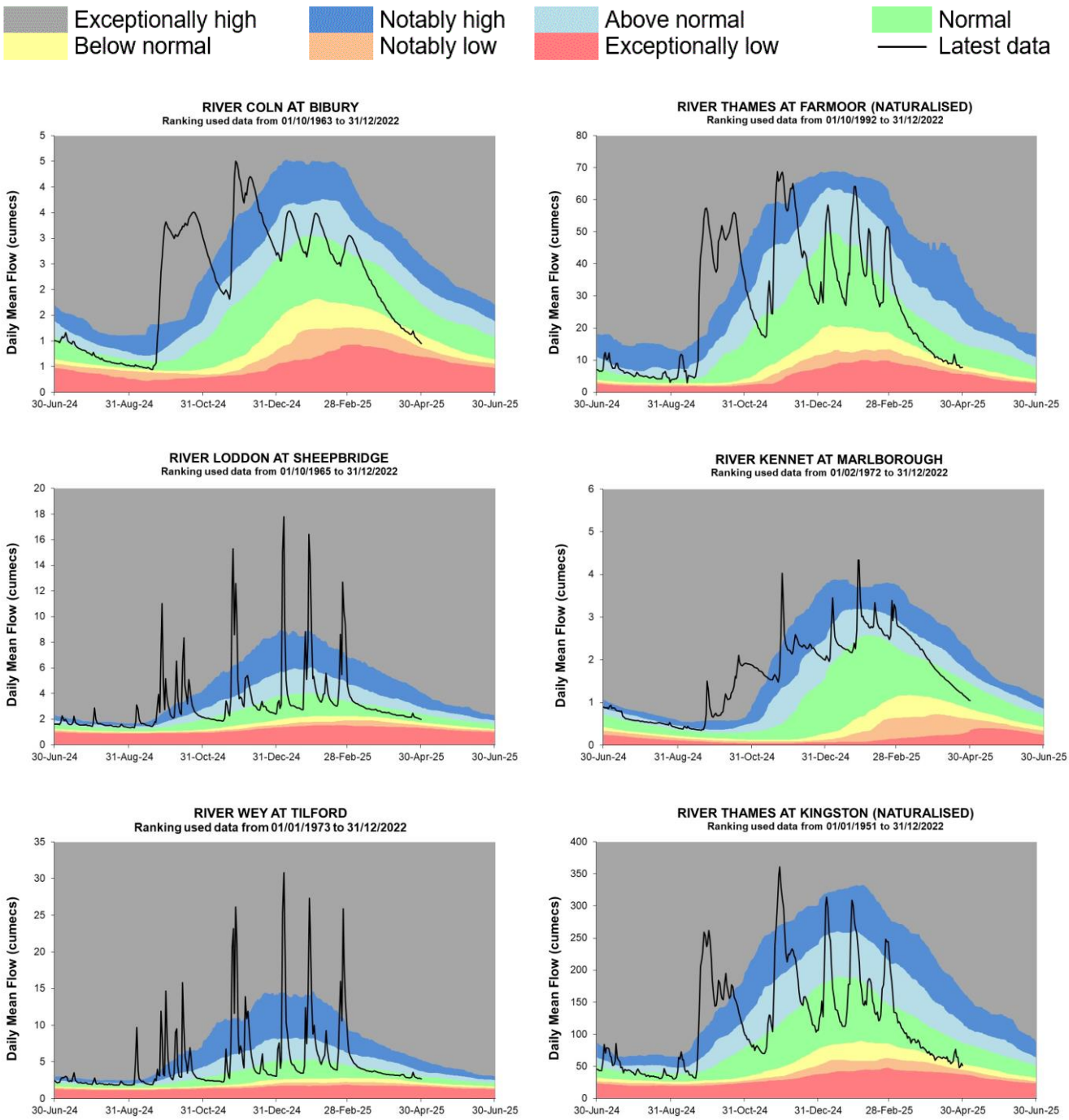


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

EA effective rainfall data (Source EA Soil Moisture Model, 2025).

4.2 Thames River flow charts

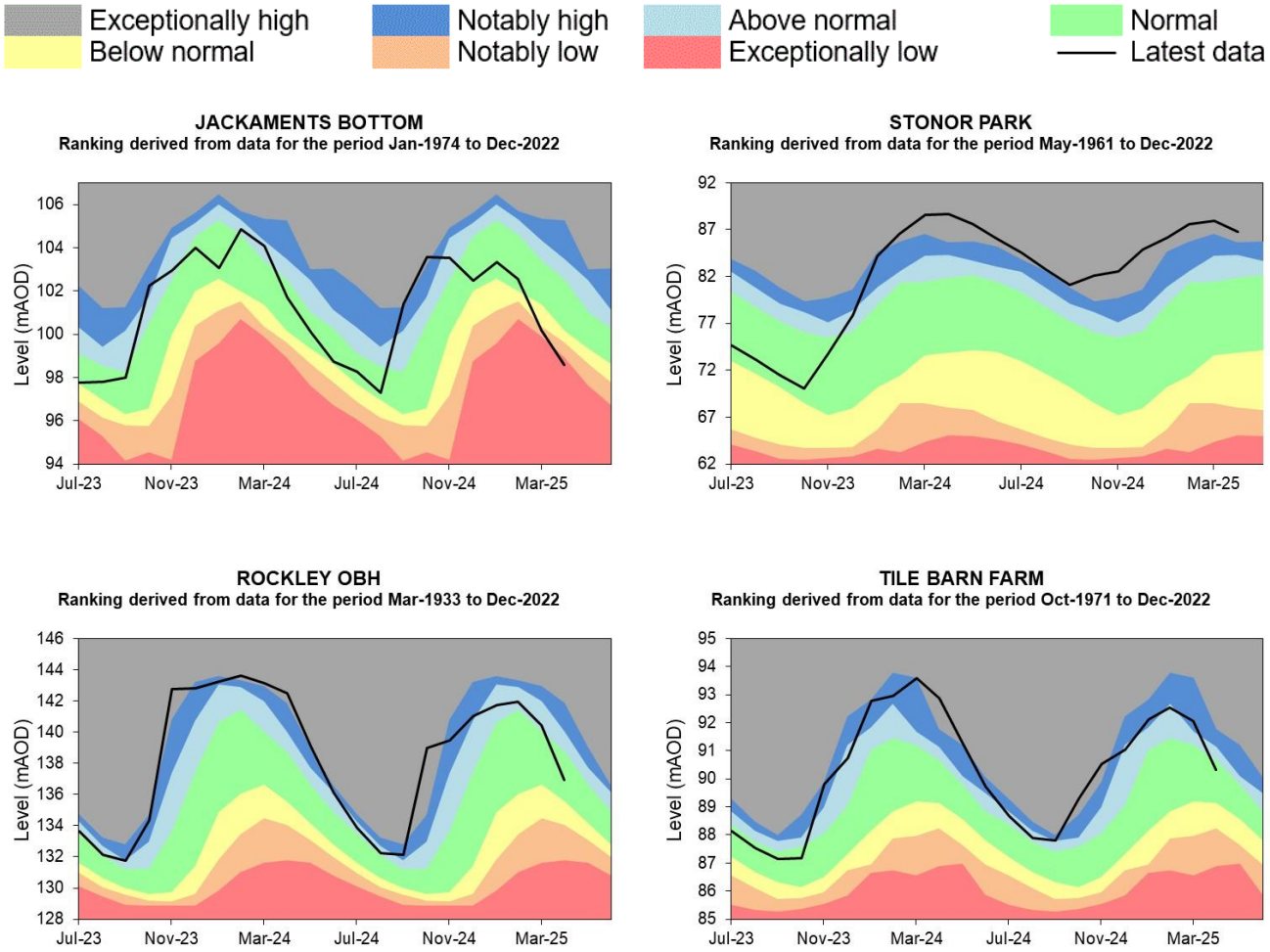
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

4.3 Thames Groundwater level charts

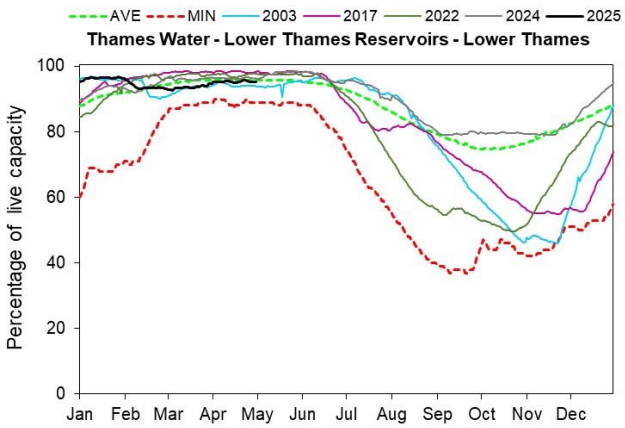
Figure 4.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels. Tile Barn Farm data has been estimated from 2 local sites since April 2022. A replacement is planned.

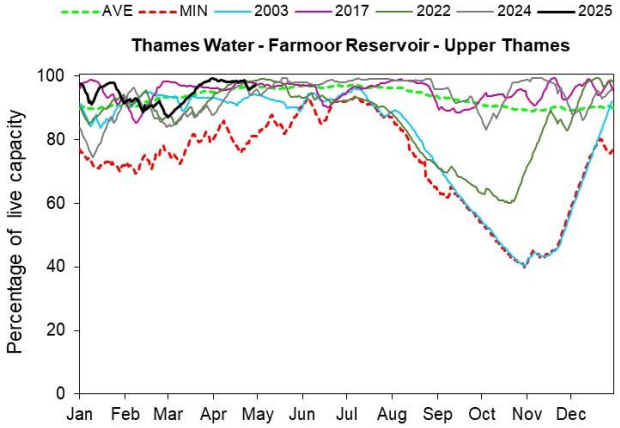


Source: Environment Agency, 2025.

4.4 Thames Reservoir stocks

Figure 4.4: End of month regional reservoir stocks 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.



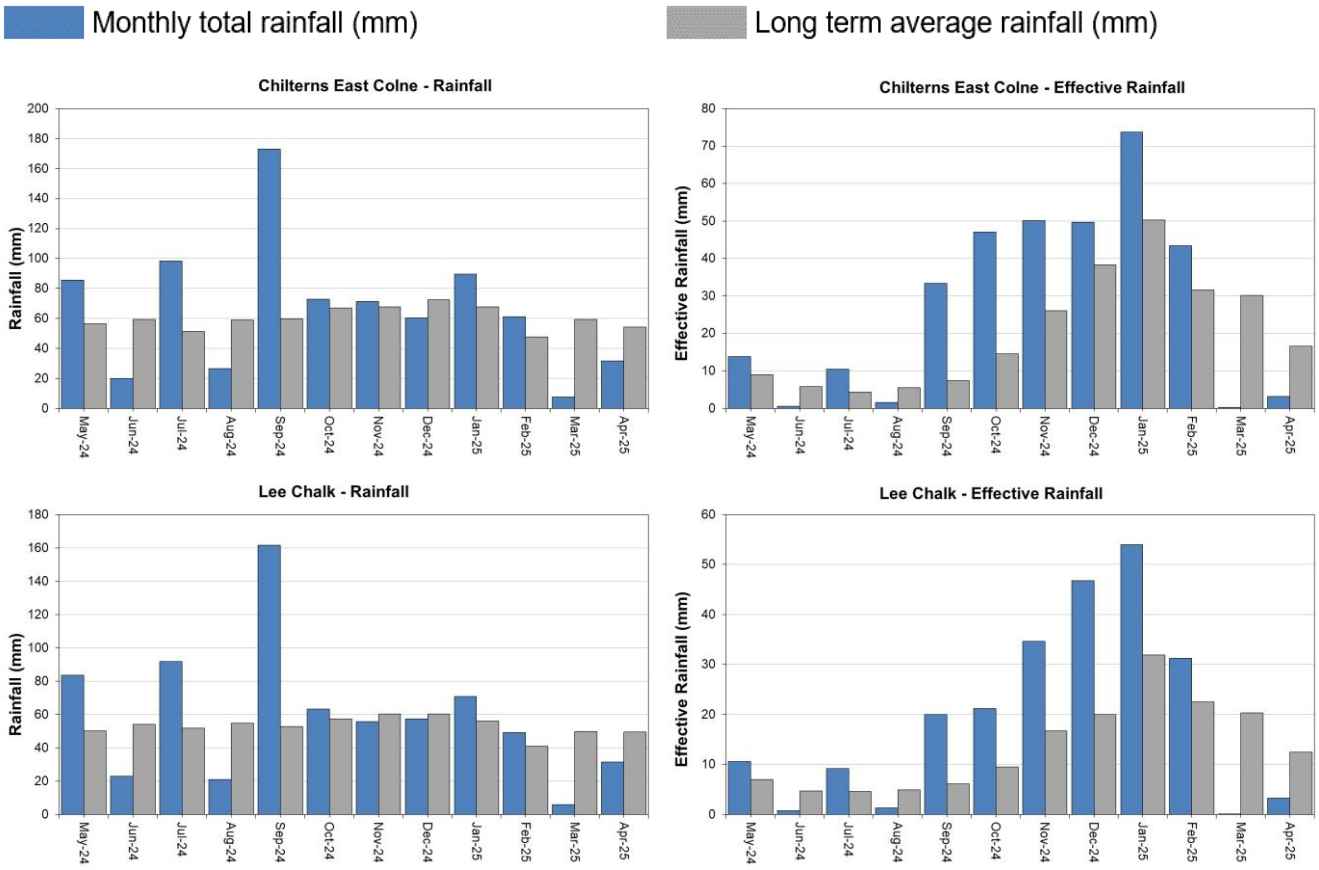


(Source: water companies).

5 Hertfordshire and North London (HNL)

5.1 HNL Rainfall and Effective rainfall charts

Figure 5.1: Monthly rainfall and effective rainfall totals for the past 24 months compared to the 1961 to 1990 long term average for a selection of areal units.

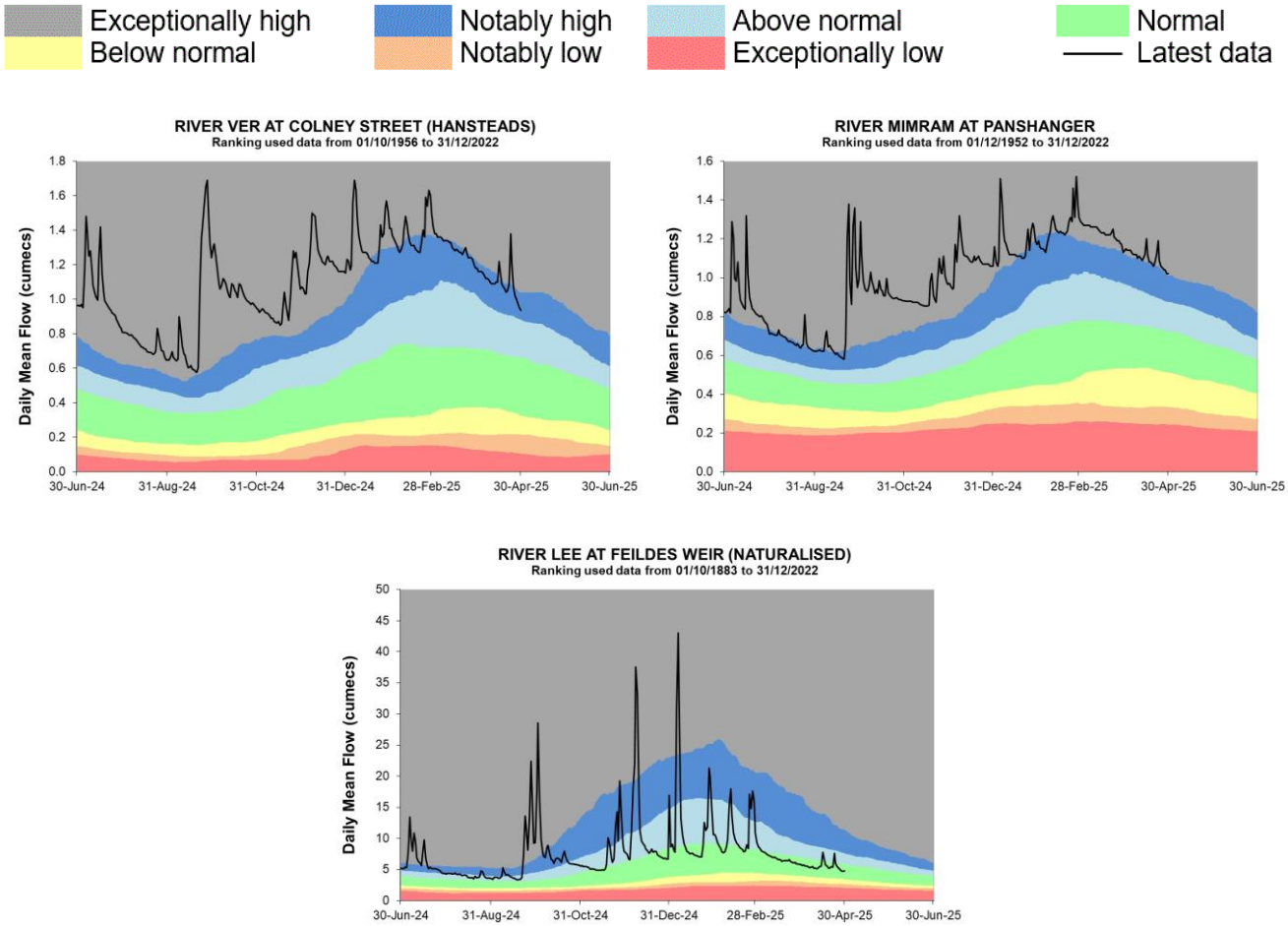


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

EA effective rainfall data (Source EA Soil Moisture Model, 2025).

5.2 HNL River flow charts

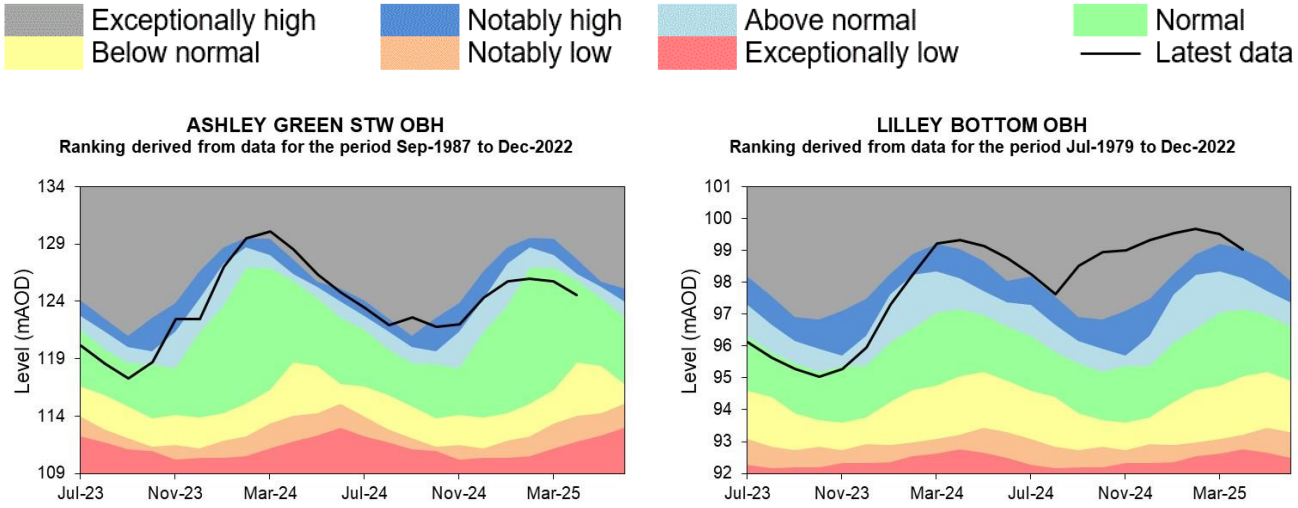
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

5.3 HNL Groundwater level charts

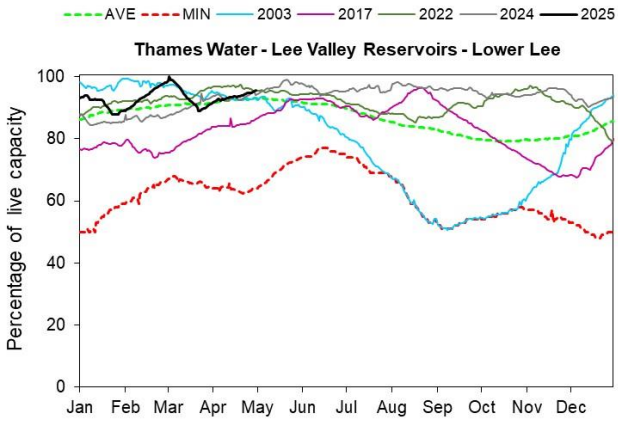
Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



Source: Environment Agency, 2025.

5.4 HNL Reservoir stocks

Figure 5.4: End of month regional reservoir stocks 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.

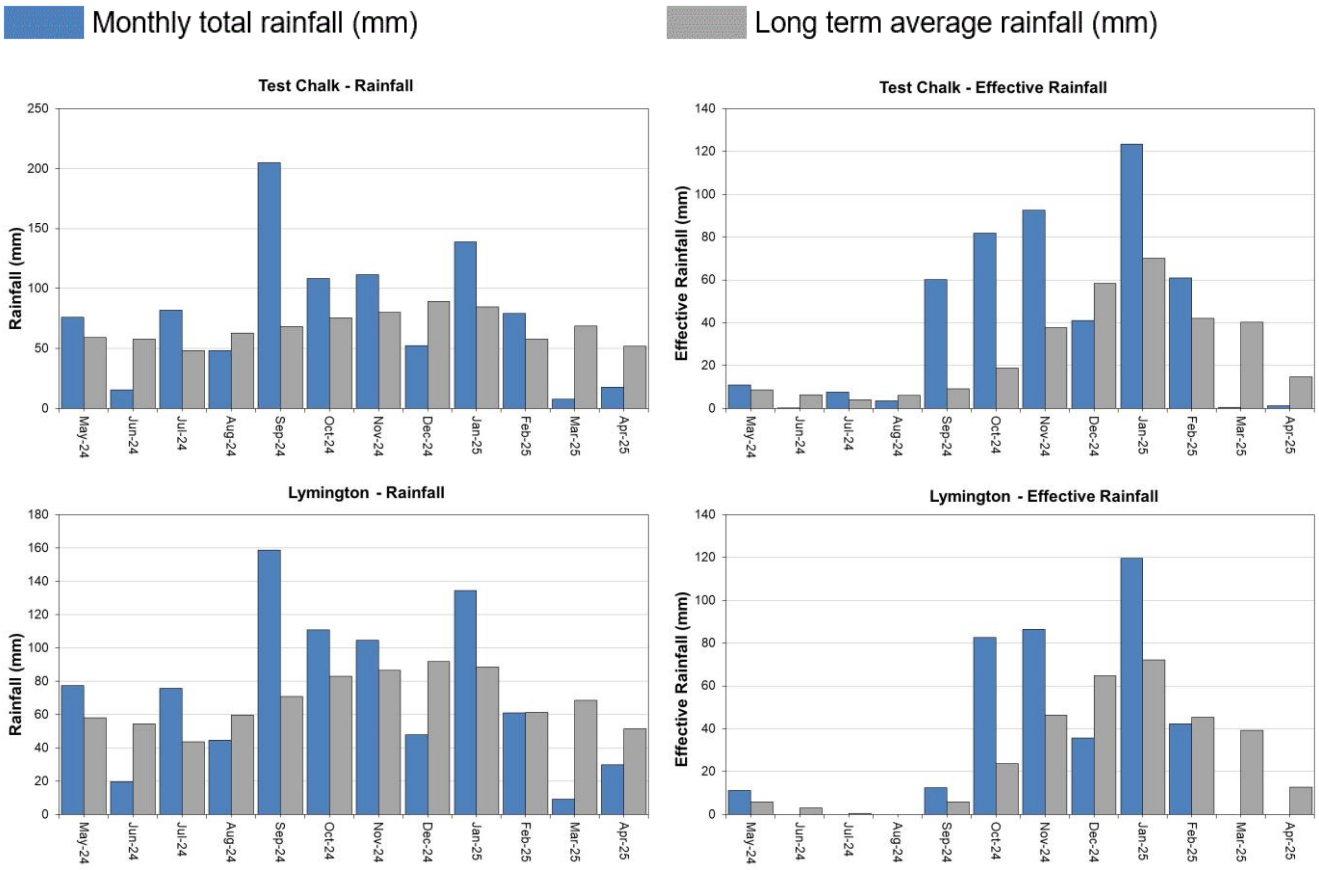


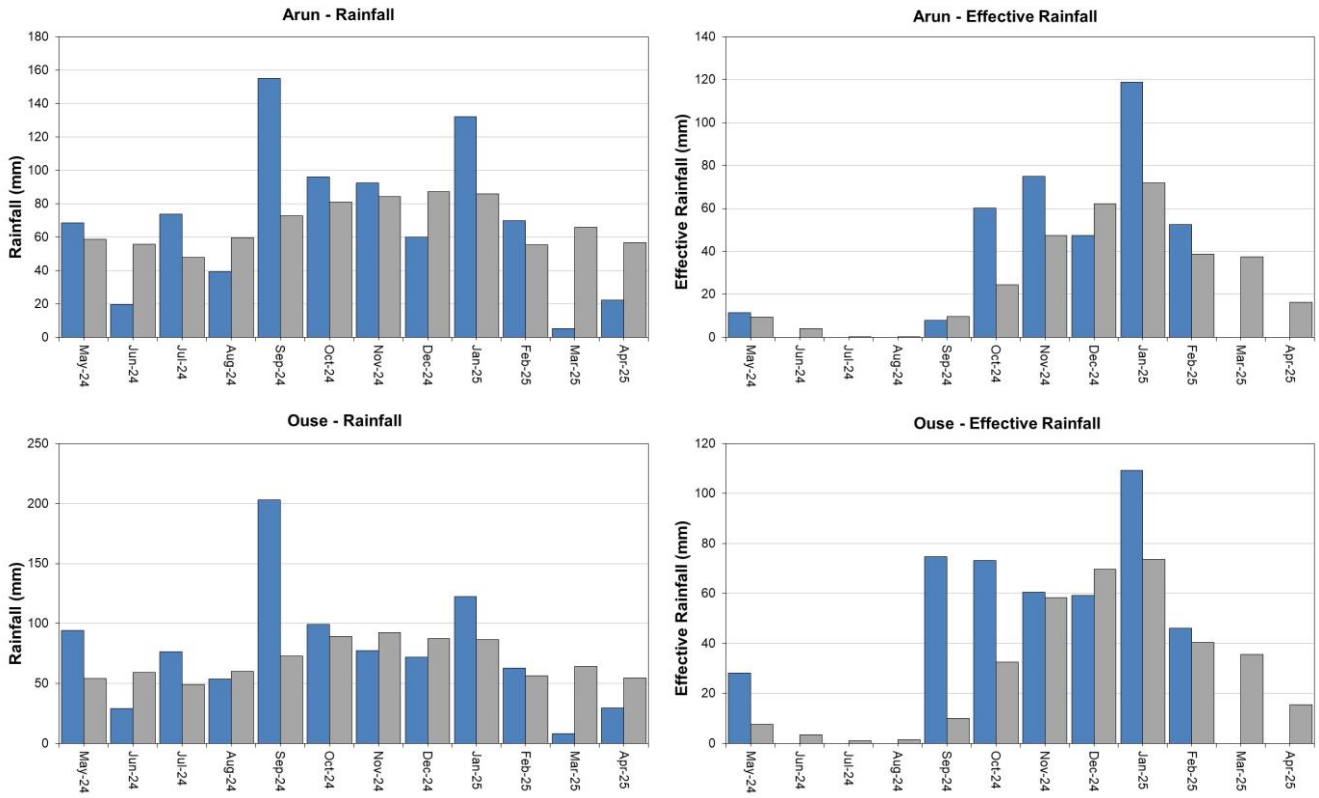
(Source: water companies).

6 Solent and South Downs (SSD)

6.1 SSD Rainfall and Effective Rainfall charts

Figure 6.1: Monthly rainfall and effective rainfall totals for the past 24 months as a percentage of the 1961 to 1990 long term average for a selection of areal units.



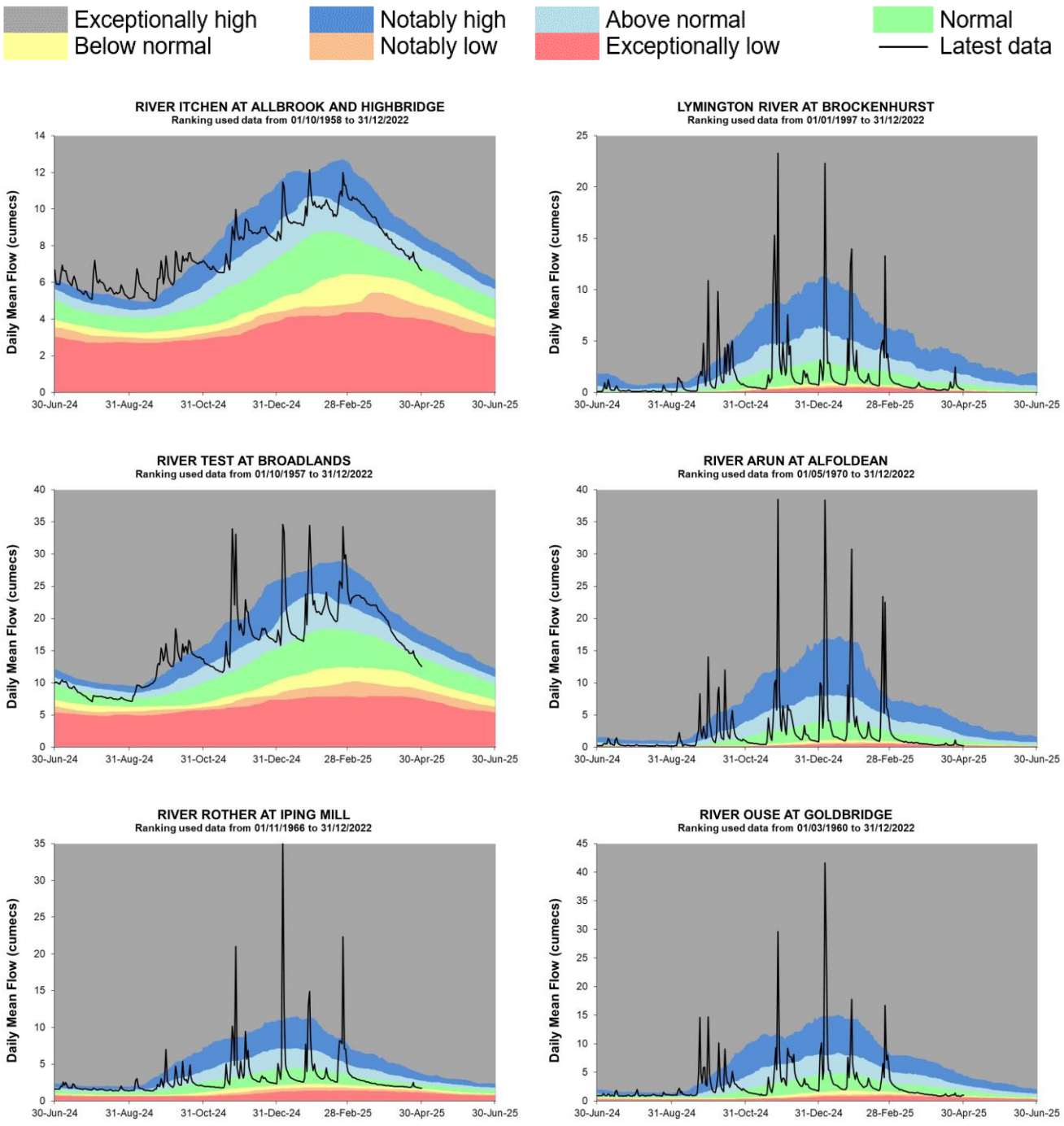


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

EA effective rainfall data (Source EA Soil Moisture Model, 2025).

6.2 SSD River flow charts

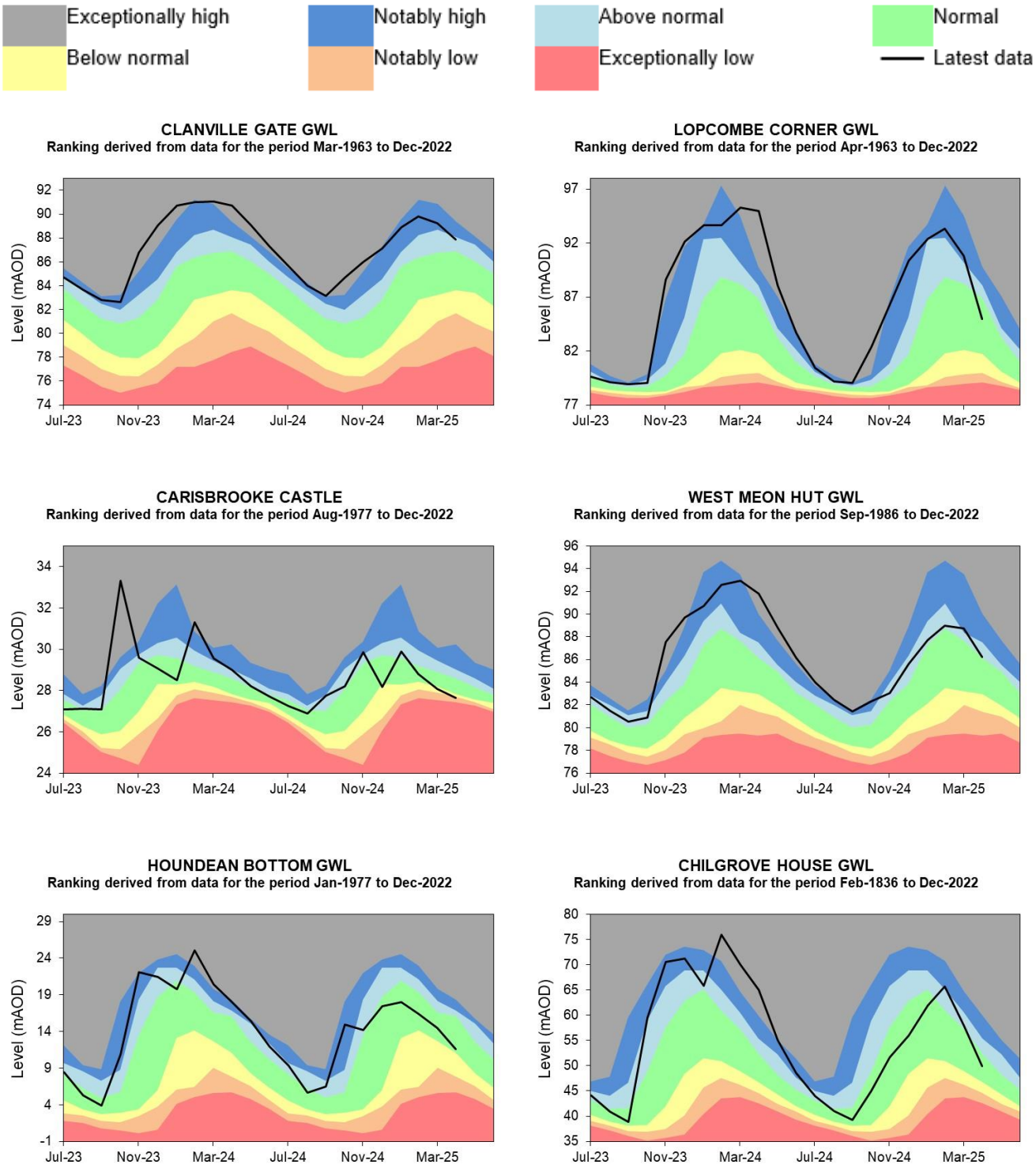
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

6.3 SSD Groundwater levels

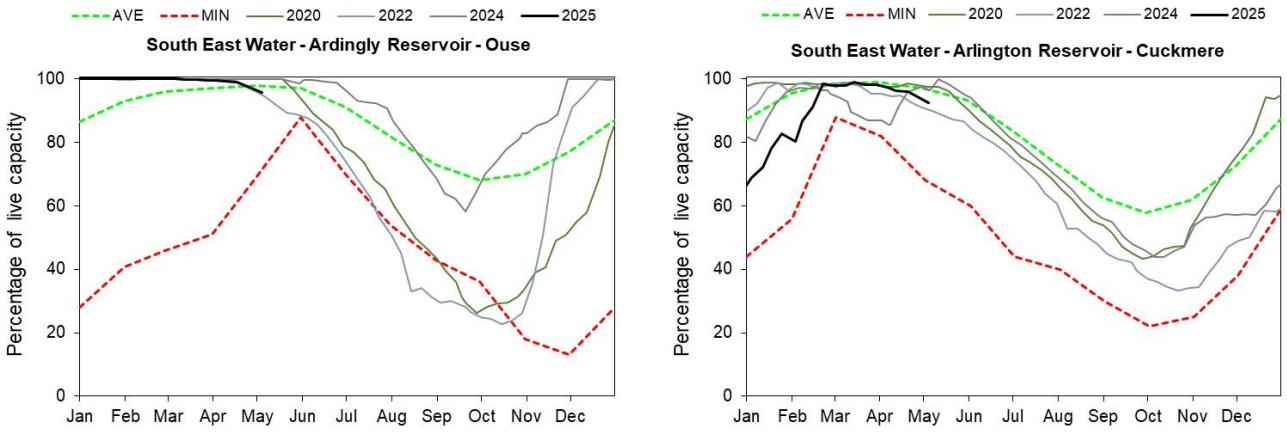
Figure 6.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



Source: Environment Agency, 2025.

6.4 SSD Reservoir stocks

Figure 6.4: End of month regional reservoir stocks 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.

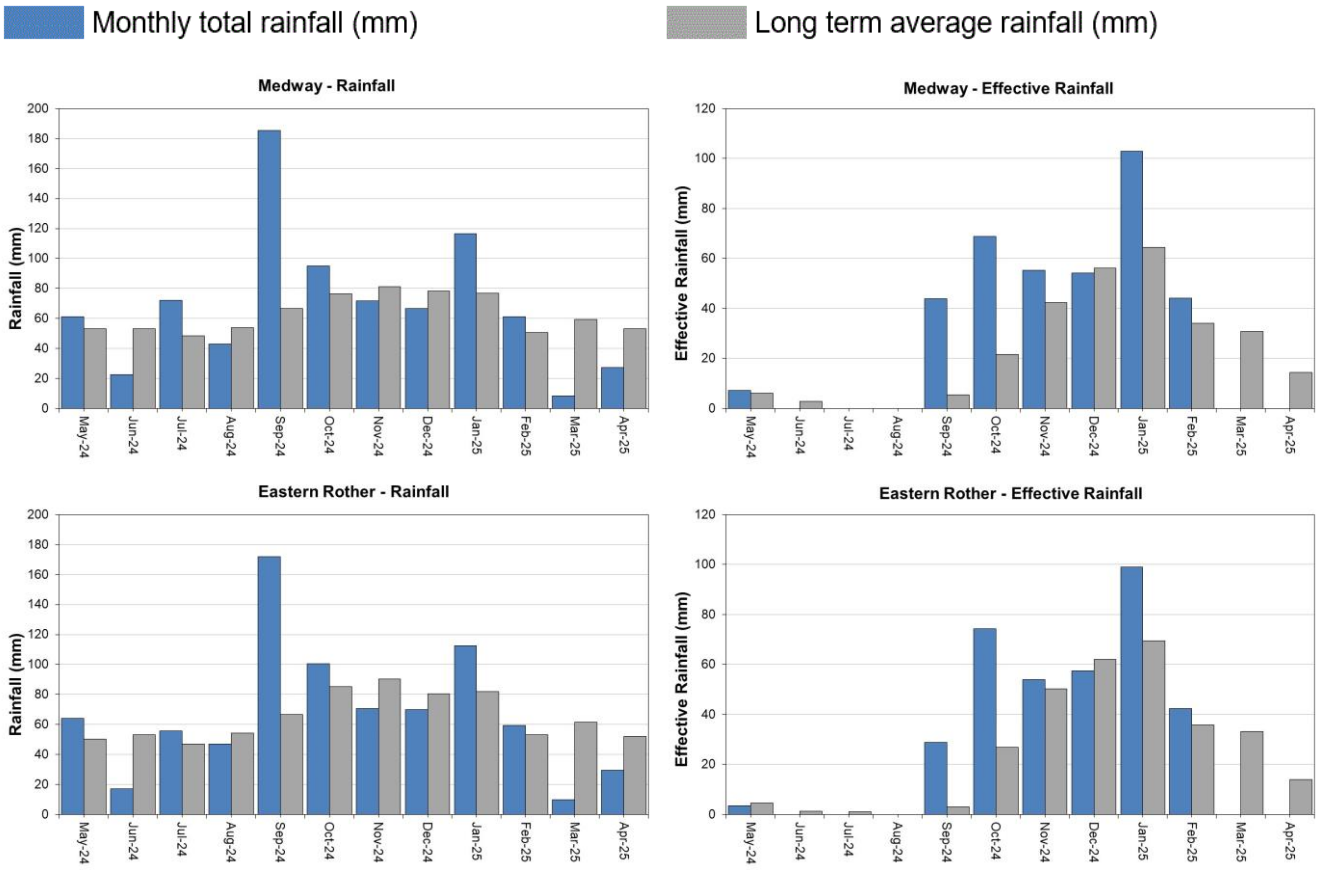


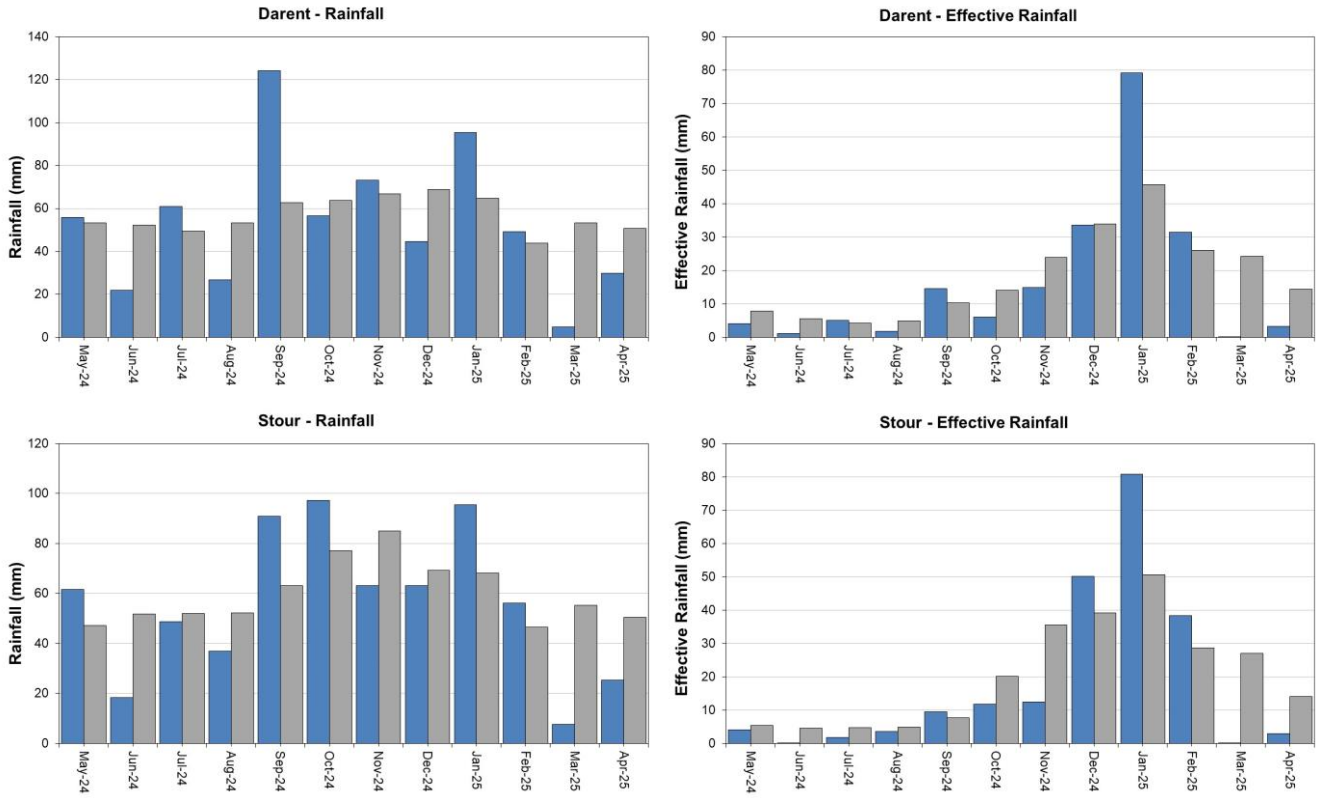
(Source: water companies).

7 Kent and South London (KSL)

7.1 KSL Rainfall and Effective Rainfall charts

Figure 7.1: Monthly rainfall and effective rainfall totals for the past 24 months compared to the 1961 to 1990 long term average for a selection of areal units.



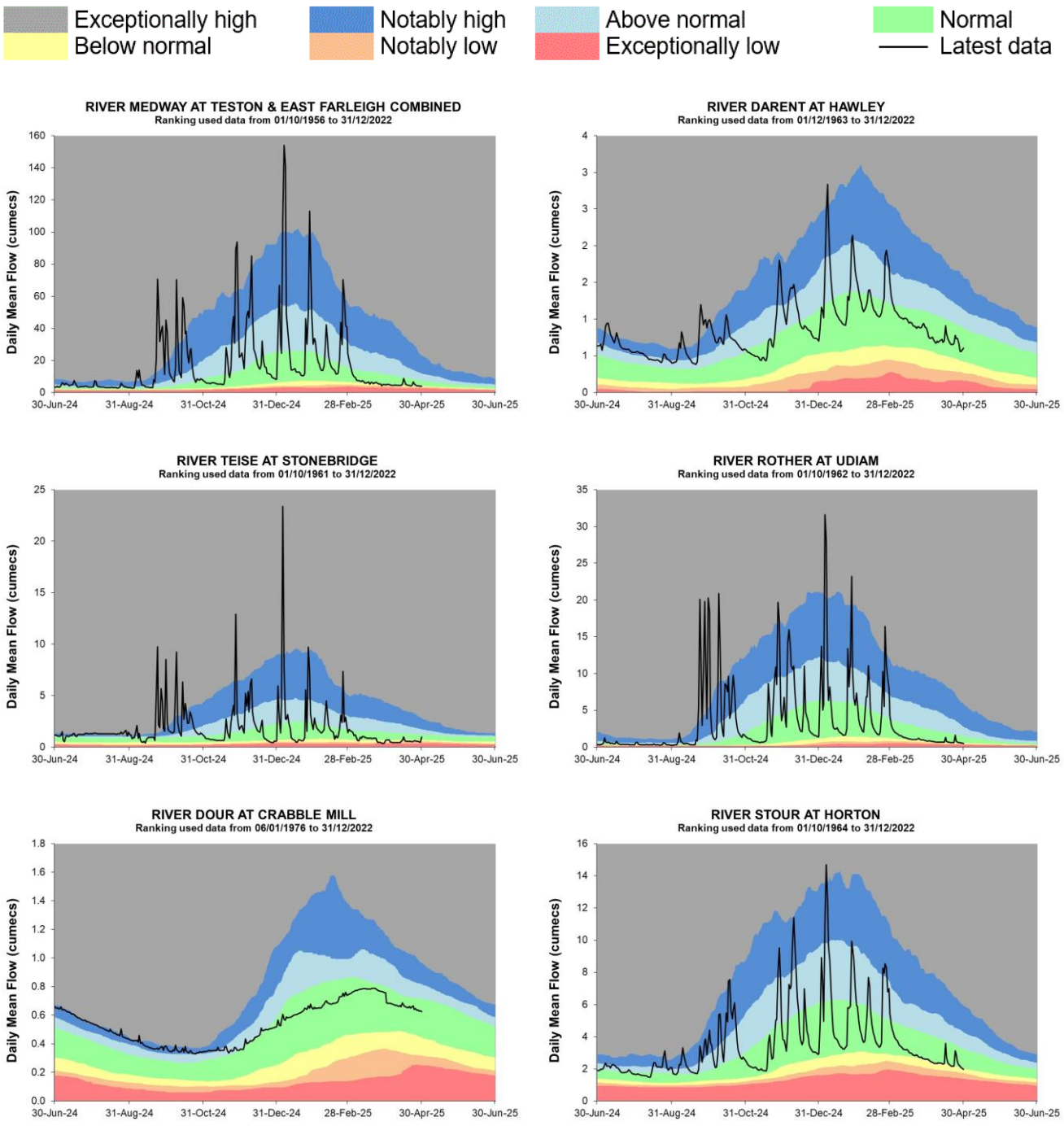


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

EA effective rainfall data (Source EA Soil Moisture Model, 2025).

7.2 KSL River flow charts

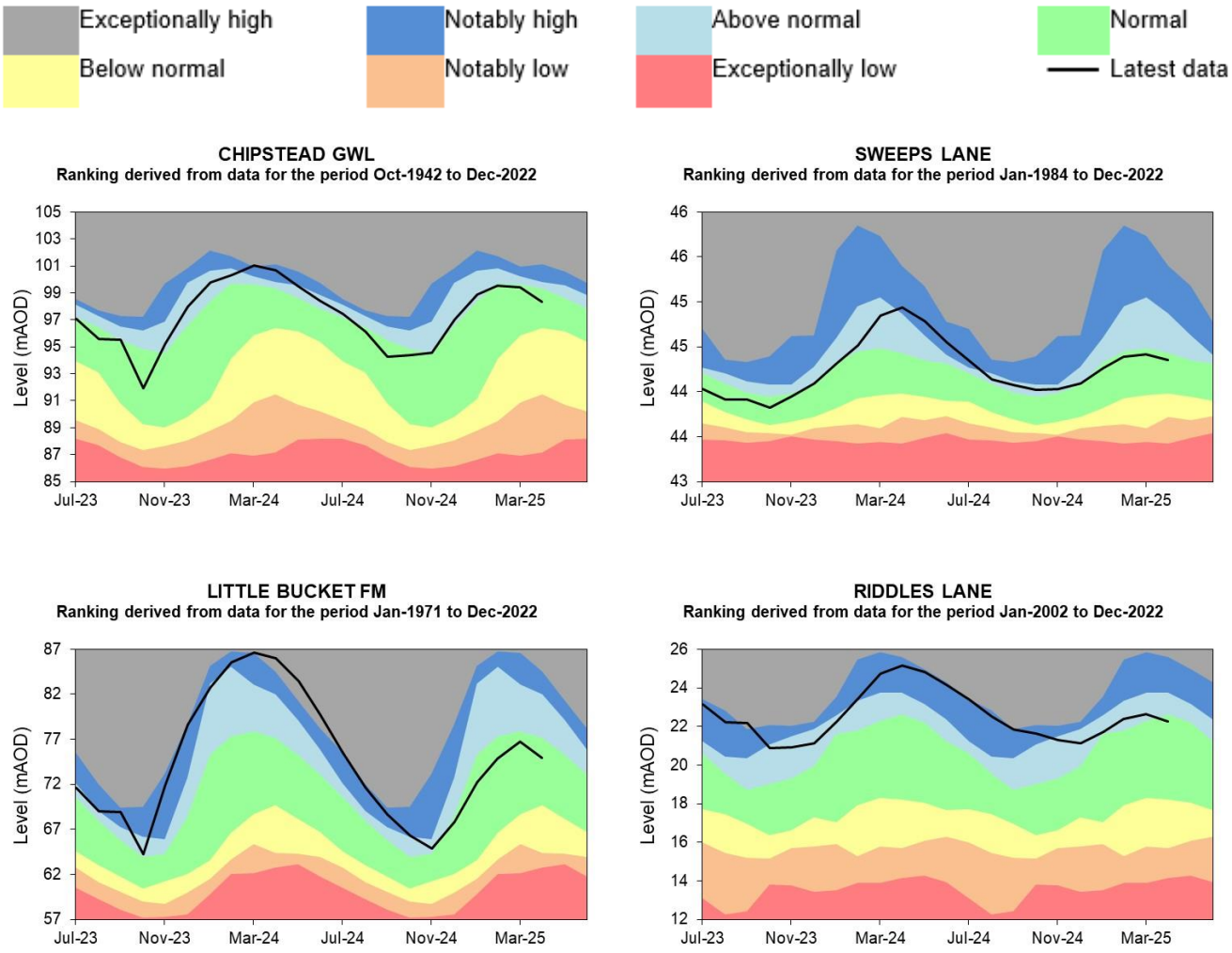
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025 .

7.3 KSL Groundwater levels

Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



Source: Environment Agency. 2025

7.4 KSL Reservoir stocks

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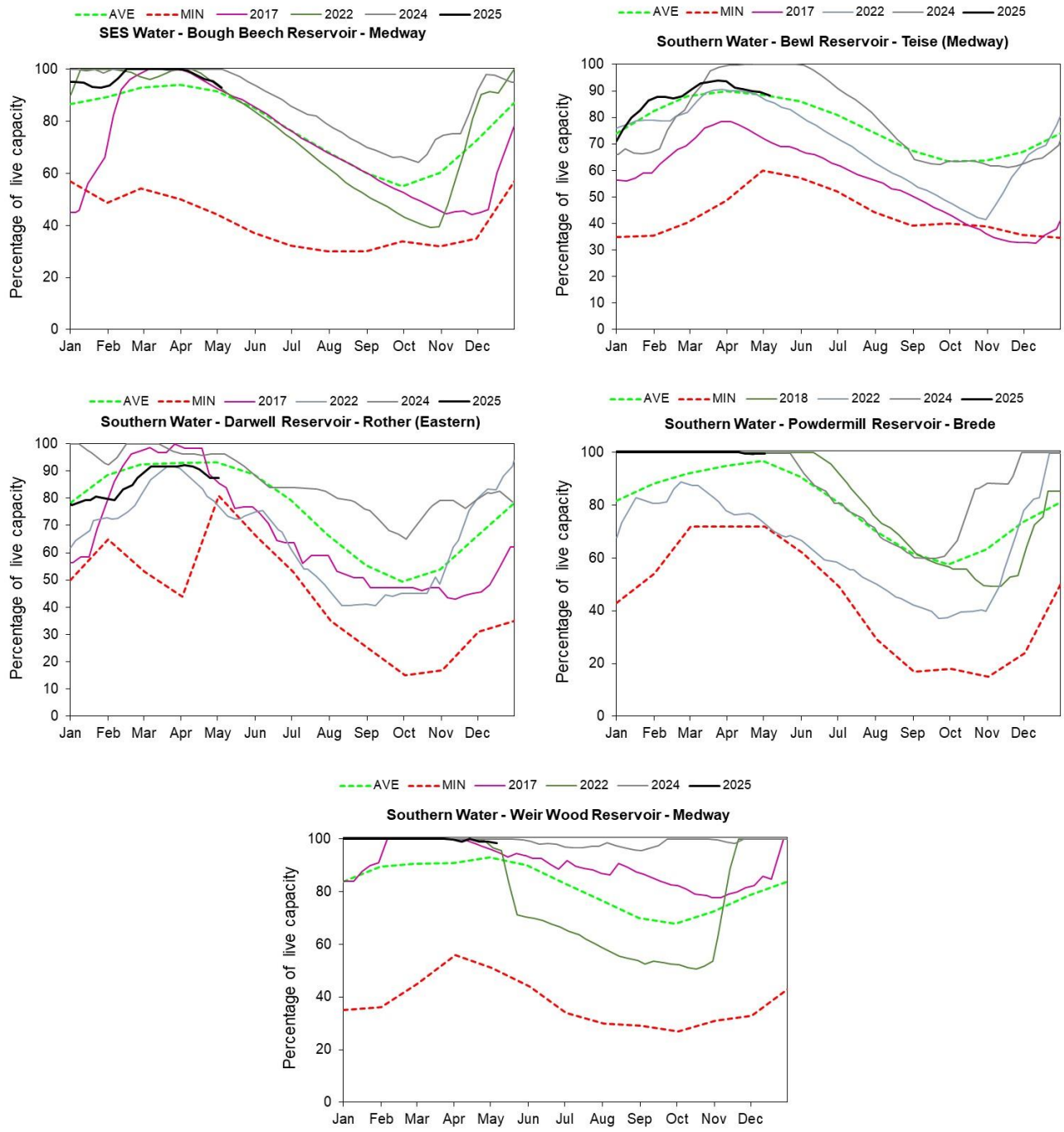

(Source: water companies).

8 Glossary

8.1 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).

8.2 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.

9 Appendices

9.1 Rainfall table

Hydrological area	Apr 2025 rainfall % of long term average 1961 to 1990	Apr 2025 band	Feb 2025 to April cumulative band	Nov 2024 to April cumulative band	May 2024 to April cumulative band
Cotswold West	43	Below Normal	Notably low	Normal	Above normal
Cotswold East	48	Below Normal	Notably low	Normal	Above normal
Berkshire Downs	30	Notably Low	Notably low	Normal	Above normal
Chilterns West	46	Below Normal	Notably low	Normal	Above normal
Chilterns East Colne	58	Below Normal	Notably low	Normal	Normal
North Downs - Hampshire	38	Below Normal	Notably low	Normal	Normal
North Downs - South London	38	Below Normal	Notably low	Below normal	Normal
Upper Thames	42	Below Normal	Notably low	Normal	Above normal
Upper Cherwell	48	Below Normal	Notably low	Normal	Above normal
Thame	49	Below Normal	Notably low	Normal	Above normal
Loddon	35	Notably Low	Notably low	Normal	Above normal
Lower Wey	39	Below Normal	Notably low	Normal	Normal
Upper Mole	36	Below Normal	Notably low	Below normal	Normal
Lower Lee	66	Normal	Below normal	Normal	Normal
North London	52	Below Normal	Notably low	Below normal	Normal
South London	46	Below Normal	Notably low	Below normal	Normal
Roding	72	Normal	Below normal	Below normal	Normal
Ock	40	Notably Low	Notably low	Normal	Above normal
Enborne	31	Notably Low	Notably low	Normal	Above normal

Cut	47	Below Normal	Notably low	Normal	Normal
Lee Chalk	64	Normal	Below normal	Normal	Above normal
River Test	34	Notably Low	Notably low	Normal	Above normal
East Hampshire Chalk	45	Below Normal	Below normal	Normal	Normal
West Sussex Chalk	42	Below Normal	Notably low	Below normal	Normal
East Sussex Chalk	62	Normal	Notably low	Below normal	Above normal
Sw Isle Of Wight	53	Below Normal	Notably low	Normal	Normal
River Darent	58	Below Normal	Notably low	Below normal	Normal
North Kent Chalk	58	Below Normal	Notably low	Below normal	Normal
Stour	50	Below Normal	Notably low	Below normal	Normal
Dover Chalk	50	Below Normal	Below normal	Below normal	Normal
Thanet Chalk	37	Below Normal	Exceptionally low	Below normal	Notably low
Western Rother Greensand	43	Below Normal	Notably low	Normal	Normal
Hampshire Tertiaries	54	Below Normal	Notably low	Normal	Normal
Lymington River Avon Water And O	58	Below Normal	Notably low	Normal	Normal
Sussex Coast	40	Below Normal	Exceptionally low	Below normal	Normal
River Arun	39	Below Normal	Notably low	Normal	Normal
River Adur	42	Below Normal	Notably low	Below normal	Normal
River Ouse	55	Below Normal	Notably low	Normal	Above normal
Cuckmere River	63	Below Normal	Notably low	Below normal	Above normal
Pevensey Levels	63	Normal	Notably low	Below normal	Normal
River Medway	51	Below Normal	Notably low	Normal	Above normal

Eastern Rother	57	Below Normal	Below normal	Normal	Normal
Romney Marsh	61	Normal	Below normal	Normal	Normal
North West Grain	69	Normal	Notably low	Below normal	Below normal
Sheppy	59	Below Normal	Notably low	Below normal	Below normal

9.2 River flows table

Site name	River	Catchment	Apr 2025 band	Mar 2025 band
Colney Street_hansteads		Colne	Exceptionally high	Exceptionally high
Feildes Weir (nat)	Lee (middle)	Lee	Normal	Normal
Panshanger	Mimram	Lee	Exceptionally high	Exceptionally high
Crabble Mill Gs	Dour	Little Stour	Normal	Normal
Hawley Gs	Darent	Darent and Cray	Normal	Normal
Horton Gs	Great Stour	Stour Kent	Below normal	Below normal
Stonebridge Gs	Teise	Teise	Notably low	Below normal
Teston Farleigh Combined	Medway100	Medway Estuary	Below normal	Below normal
Udiam Gs	Rother	Rother Kent Lower	Below normal	Below normal
Alfoldean Gs	Arun	Arun	Notably low	Notably low
Allbrook Gs And Highbridge	Itchen (so)	Itchen	Above normal	Notably high
Broadlands	Test	Test Lower	Above normal	Notably high
Brockenhurst Gs	Lymington	New Forest	Below normal	Notably low
Goldbridge Gs	Ouse (so)	Ouse Sussex	Below normal	Below normal
Iping Mill Gs	Rother	West Rother	Normal	Normal
Farmoor (naturalised)	River Thames	Thames	Below normal	Normal
Kingston (naturalised)	River Thames	Thames North Bank	Below normal	Normal
Marlborough	River Kennet	Kennet	Normal	Above normal
Sheepbridge	River Loddon	Loddon	Normal	Normal
Tilford	River Wey	Wey Addleston Bourne	Normal	Normal

9.3 Groundwater table

Site name	Aquifer	End of Apr 2025 band	End of Mar 2025 band
Ashley Green Stw	Mid-chilterns Chalk	Normal	Normal
Lilley Bottom	Upper Lee Chalk	Notably high	Exceptionally high
Little Bucket Fm	East Kent Chalk - Stour	Normal	Normal
Chipstead Gwl	Epsom North Downs Chalk	Normal	Normal
Riddles Lane	North Kent Swale Chalk	Normal	Above normal
Sweeps Lane Gwl	West Kent Chalk	Normal	Normal
Houndean Bottom Gwl	Brighton Chalk Block	Normal	Normal
Chilgrove House Gwl	Chichester-worthing-portsdown Chalk	Normal	Above normal
Carisbrooke Castle	Isle Of Wight Central Downs Chalk	Notably low	Below normal
West Meon Hut Gwl	River Itchen Chalk	Above normal	Notably high
Clanville Gate Gwl	River Test Chalk	Above normal	Notably high
Lopcombe Corner Gwl	River Test Chalk	Normal	Notably high
Tile Barn Farm	Basingstoke Chalk	Normal	Notably high
Rockley Obh	Berkshire Downs Chalk	Normal	Above normal
Jackaments Bottom Obh	Burford Oolitic Limestone (inferior)	Exceptionally low	Notably low
Stonor Estate	South-west Chilterns Chalk	Exceptionally high	Exceptionally high

9.4 South-east England areal units for reference