Monthly water situation report:

South-east England

1 Summary - February 2025

February was a wet month with 120% of the long-term average (LTA) rainfall recorded across the south-east of England. The second half of the month accounted for nearly 70% of the monthly total. The soil moisture deficits (SMDs) rose slightly at the beginning of the month, then fell on 21 February in response to the rainfall. Most of the monthly recharge occurred after 21 February. During February, the key indicator flow sites recorded flows ranging from normal to notably high. There were 59 fluvial flood alerts, 4 flood warnings and 1 groundwater flood alert issued during the month. Across the south-east of England, the groundwater levels varied from normal to exceptionally high. The expected steady rise of groundwater levels for this time of year continued during the month.

1.1 Rainfall

February was a wet month with 120% of the LTA rainfall recorded across the south-east of England. The second half of the month accounted for nearly 70% of the monthly total rainfall on average. There was an average of 14 dry days during February, where the total rainfall for any day was less than 0.2mm. Notably, there was heavy rainfall on 9 February, with further significant rainfall occurring on 21 February. The most intense rainfall was recorded on 23 February, where a concentrated period of heavy rain impacted the region. The total rainfall on 9, 21, and 23 February accounted for an average of 50% of the monthly total, with 23 February alone accounting for 24%.

The top 5 daily rainfall totals were recorded in Solent and South Downs (SSD), all on 23 February. The highest daily rainfall total was 32.8mm, recorded at Princes Marsh, Western Rother Greensand, (SSD) on 23 February.

The rainfall totals for the 12 months ending February were among the highest 10 recorded for a number of areal units in the south-east, including:

- Berkshire Downs, THM, fifth wettest since 2001
- Chilterns West, THM, eighth wettest since 1961
- Thames, THM, seventh wettest since 1883
- Enbourne, THM, seventh wettest since 1961
- Test Chalk, SSD, seventh wettest since 1925

These statistics are reflected in the exceptionally high rainfall displayed for most of the THM and the far west of SSD in the rainfall map below for the last 12 months.

1.2 Soil moisture deficit and recharge

The SMDs rose slightly at the beginning of the month, then fell on 21 February in response to the rainfall. They remained low for the rest of the month and were generally below the end of month LTA. Most of the monthly recharge occurred after the rainfall from 21 February onwards when the SMDs had returned to zero. The recharge was on average 25% higher than what would normally be expected for February

1.3 River flows

During February, the key indicator flow sites experienced flows ranging from normal to notably high. Flows were notably high at 4 sites, above normal at 8 sites, and normal at 9 sites across the south-east. The Ver at Colney Street and the Mimram at Panshanger (both HNL) recorded the 4th and 5th highest February flows respectively and continued to be supported by high groundwater levels during the month. Both sites were in the notably high category. Apart from these two key indicator sites, all other sites recorded flows lower than those measured in February 2024. Rivers draining impermeable catchments were largely in the normal range for February, including the Lymingon River at Lymington (SSD) and the Teise at Stonebridge, Kent and South London (KSL).

There were 59 fluvial flood alerts, 4 flood warnings and 1 groundwater flood alert issued during the month.

	HNL	THM	SSD	KSL	Total
Fluvial Alerts	5	34	11	9	59
Warnings	0	2	2	0	4
GW alerts	0	0	1	0	1
Total	5	36	14	9	64

1.4 Groundwater levels

Across the south-east of England, groundwater levels varied from normal to exceptionally high. Half of the indicator sites recorded above normal or higher levels.

The expected steady rise in groundwater levels for this time of year continued during the month. Lilley Bottom (HNL) recorded the 2nd highest February levels on record after 1991. In THM, Ampney Crucis (Cotswolds West) recorded the 2nd highest February levels after 2020 and Stonor Estate (Chilterns West) recorded the 3rd highest February levels after 2001 and 2014.

1.5 Reservoir stocks

Reservoir storage for February was above the LTA at all reservoirs across the south-east with the exception of Lower Thames (THM), Farmoor (THM) and Darwell (KSL) which is just below the LTA.

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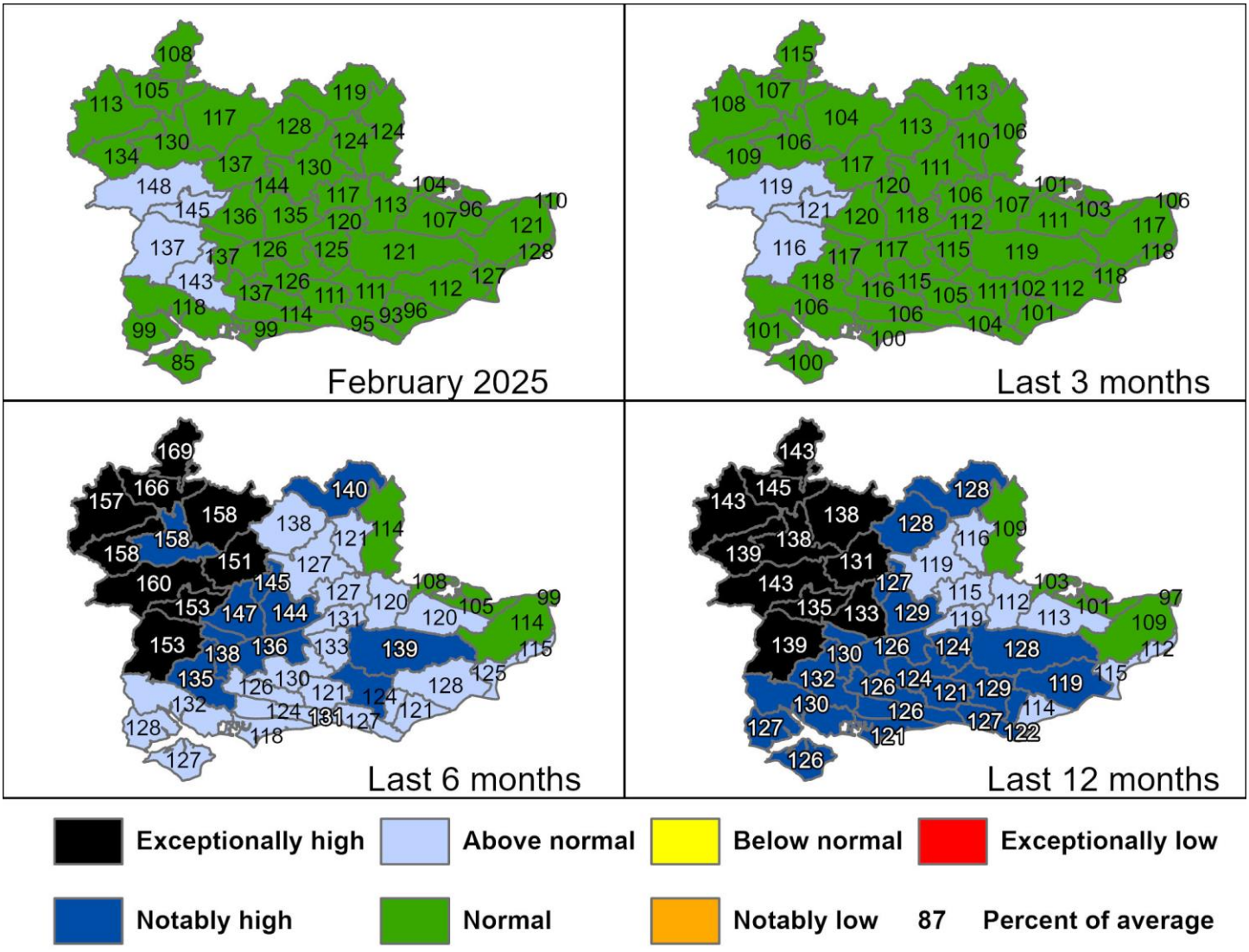
2 Maps

2.1 Rainfall map

Figure 2.1: 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.

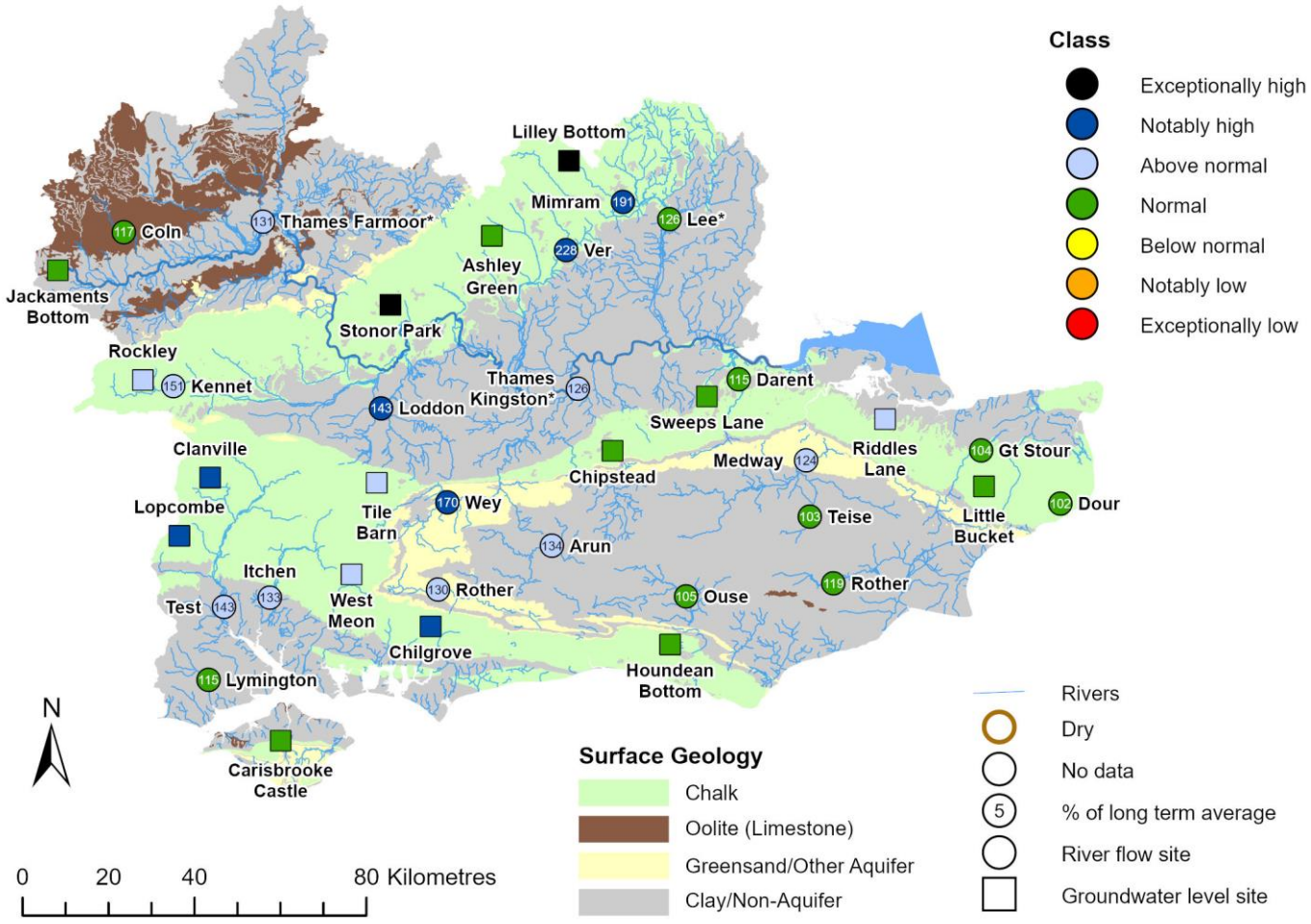


Rainfall data for 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to 2025, extracted from Met Office HadUK 1km gridded rainfall dataset derived 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 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. Groundwater levels for indicator sites at the end of February 2025, classed relative to an analysis of respective historic February 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.



(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, 100024198, 2025. Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

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) 31 day Total	February % LTA	Effective Rainfall (mm) 31 day total	February % LTA	SMD (mm) Day 31	End Feb LTA
6010TH	Cotswolds - West (A)	65	113%	46	111%	2	3
6070TH	Berkshire Downs (G)	78	149%	60	161%	2	3
6130TH	Chilterns - West (M)	65	137%	47	151%	2	4
6162TH	North Downs - Hampshire (P)	81	137%	63	147%	1	3
6190TH	Wey - Greensand (S)	71	126%	53	135%	2	3
Thames Average		62	130%	44	139%	2	4
Thames Catchment Average		62	129%	44	138%	2	4
6140TH	Chilterns - East - Colne (N)	61	128%	43	137%	1	4
6600TH	Lee Chalk	49	119%	31	138%	2	9
6507TH	North London	50	130%	31	160%	1	6
6509TH	Roding	46	124%	28	146%	1	7
Herts and North London		51	125%	33	143%	1	6
6230TH	North Downs - South London (W)	60	120%	43	127%	1	3
6706So	Darent	49	113%	31	121%	1	4

6707So	North Kent Chalk	49	107%	32	112%	1	4
6708So	Stour	56	120%	38	134%	2	3
6809So	Medway	61	121%	44	130%	1	2
Kent & South London Average		52	116%	33	126%	2	8
6701So	Test Chalk	79	136%	61	144%	1	3
6702So	East Hampshire Chalk	89	143%	71	151%	1	2
6703So	West Sussex Chalk	71	114%	54	115%	1	2
6804So	Arun	70	127%	53	136%	2	2
6805So	Adur	61	110%	44	112%	2	2
Solent & South Downs Average		65	112%	47	113%	1	3
South East Average		59	120%	41	126%	2	5

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.

Winter period 01/10/2024 to 28/02/2025

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)	438	122%	347	150%
6070TH	Berkshire Downs (G)	444	128%	354	187%
6130TH	Chilterns - West (M)	380	119%	291	181%
6162TH	North Downs - Hampshire (P)	480	118%	386	156%
6190TH	Wey - Greensand (S)	460	118%	355	151%
	Thames Average	388	121%	294	181%
	Thames Catchment Average	388	119%	294	175%
6140TH	Chilterns - East - Colne (N)	355	110%	264	164%
6600TH	Lee Chalk	296	108%	188	187%
6507TH	North London	297	106%	167	162%

6509TH	Roding	256	99%	104	117%
	Herts and North London	299	106%	175	156%
6230TH	North Downs - South London (W)	391	110%	282	140%
6706So	Darent	319	104%	165	115%
6707So	North Kent Chalk	358	110%	201	122%
6708So	Stour	375	108%	194	111%
6809So	Medway	411	113%	325	149%
	Kent & South London Average	350	107%	201	128%
6701So	Test Chalk	489	126%	400	176%
6702So	East Hampshire Chalk	513	120%	419	151%
6703So	West Sussex Chalk	473	107%	378	128%
6804So	Arun	450	115%	354	145%
6805So	Adur	413	103%	327	127%
	Solent & South Downs Average	446	109%	349	137%

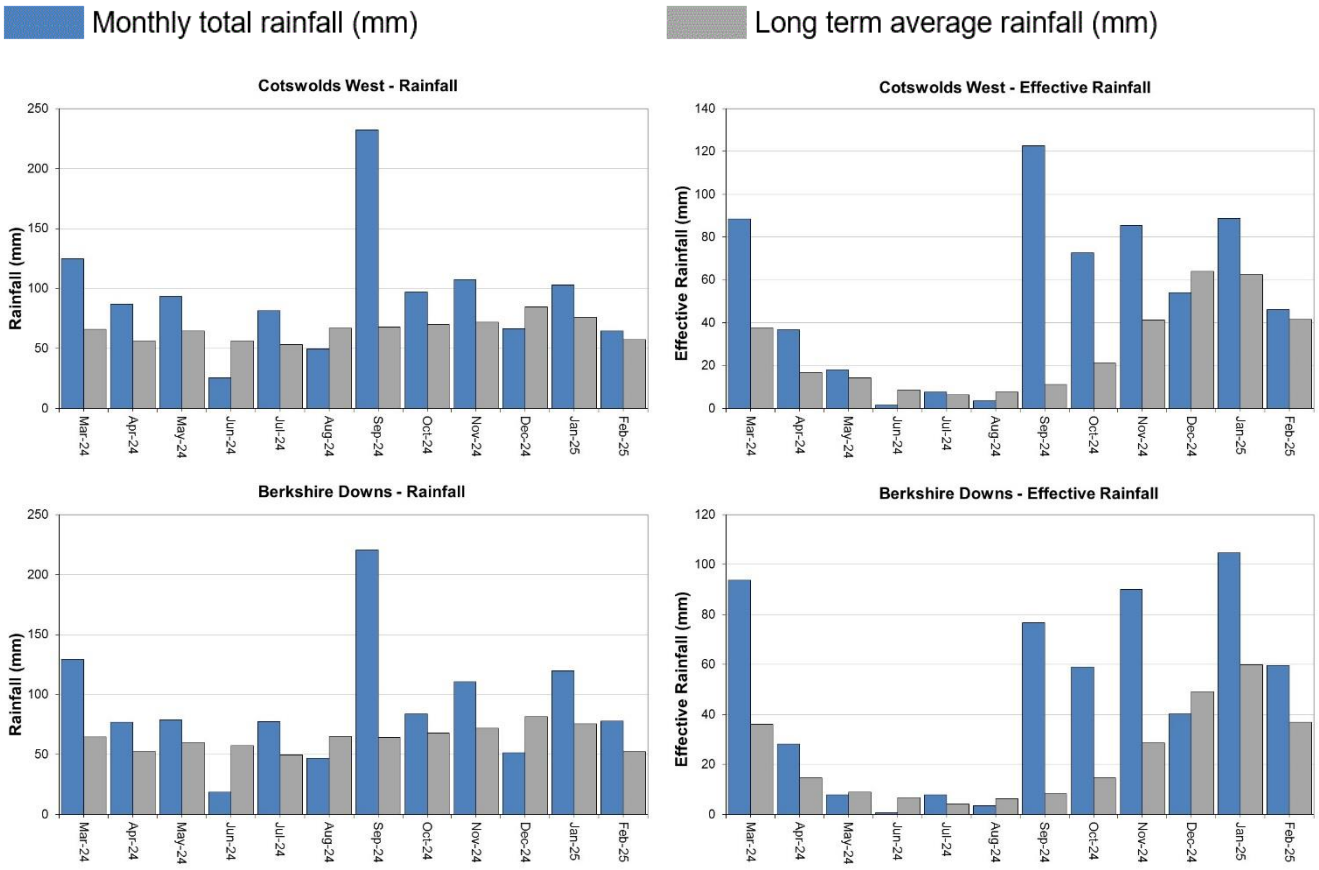
HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

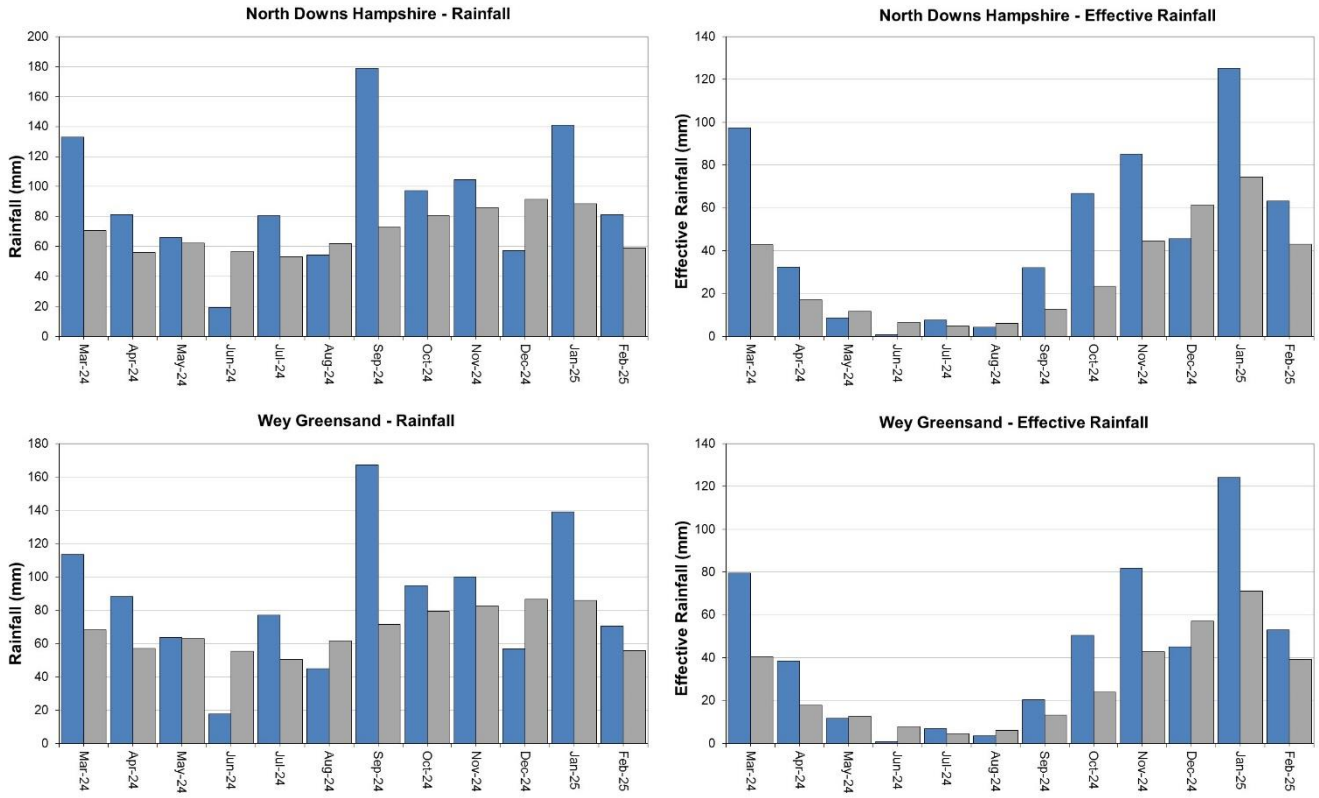
EA effective rainfall data (Source EA Soil Moisture Model 2025.)

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.



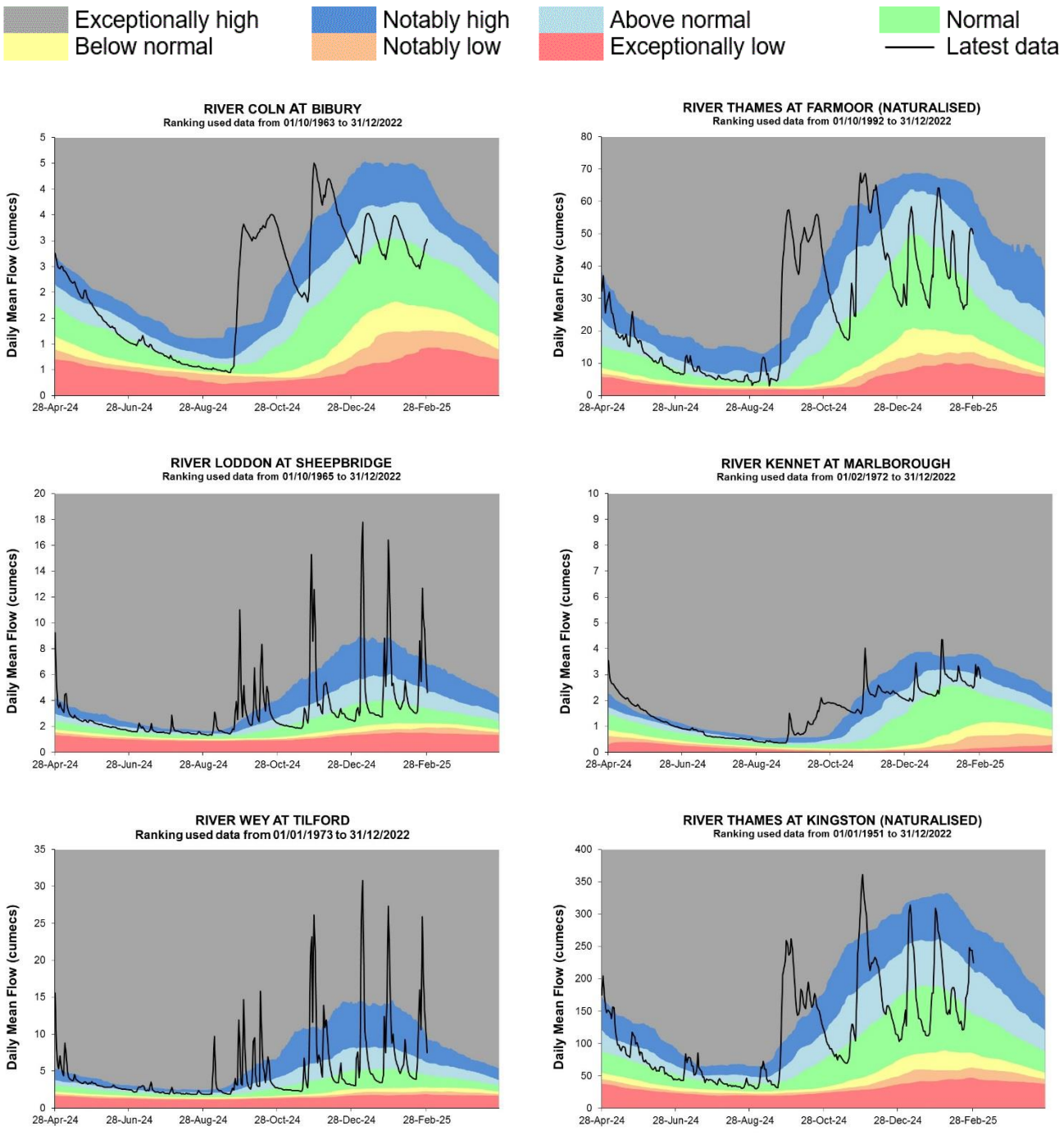


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

4.2 Thames River flow charts

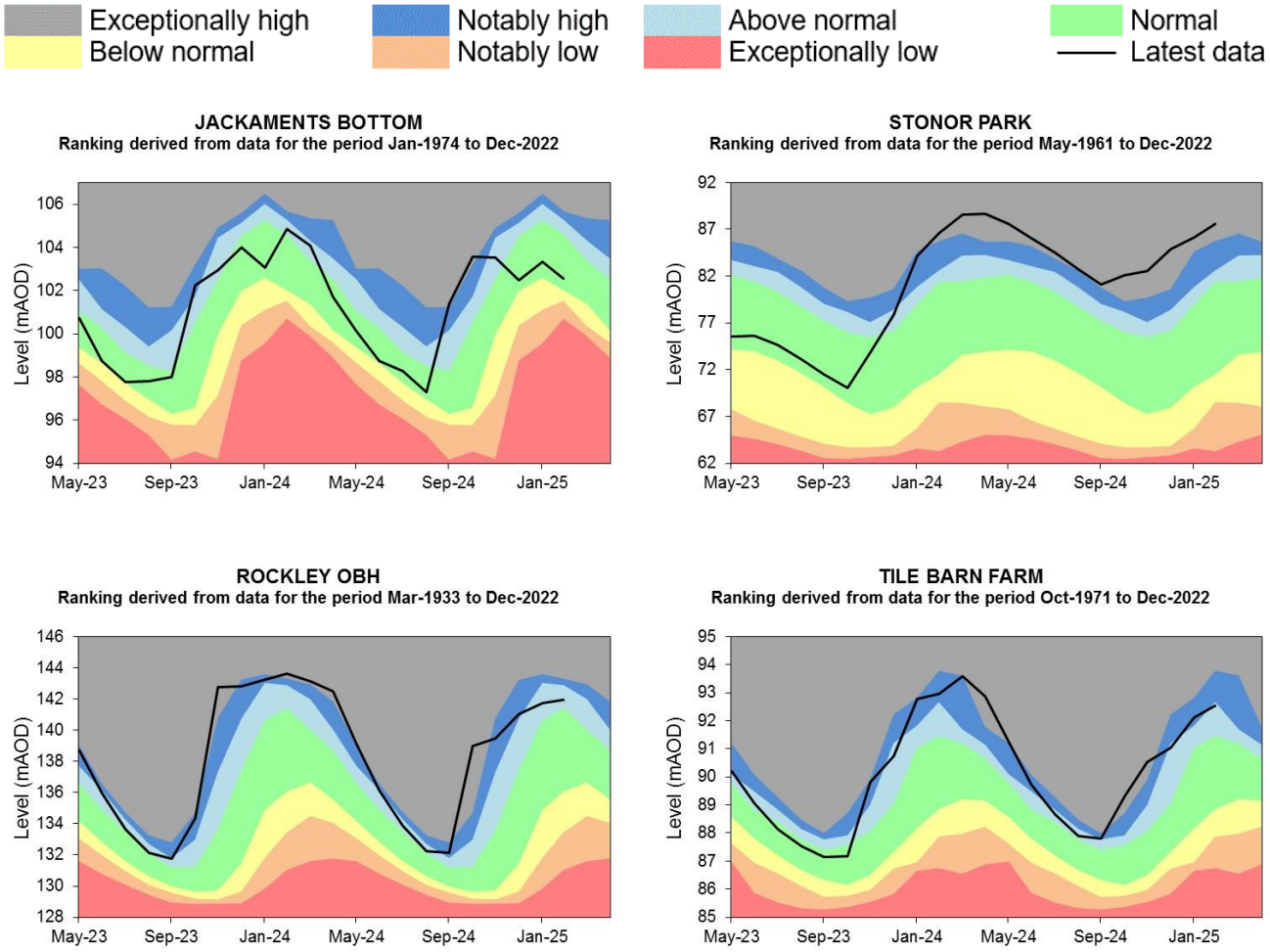
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

4.3 Thames Groundwater level charts

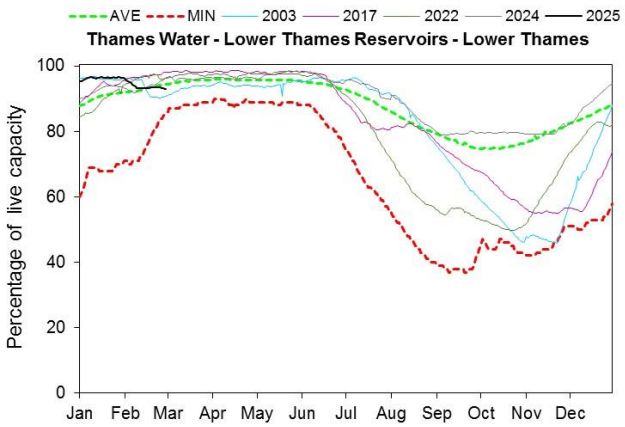
Figure 4.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels. Tile Barn Farm data has been estimated from 2 local sites since April 2022. A replacement is planned.

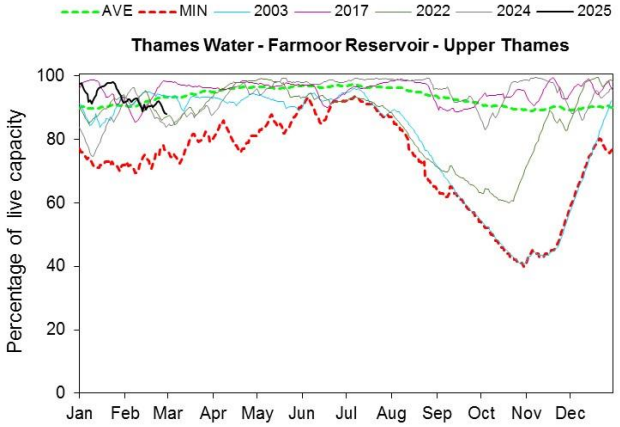


Source: Environment Agency, 2025.

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.



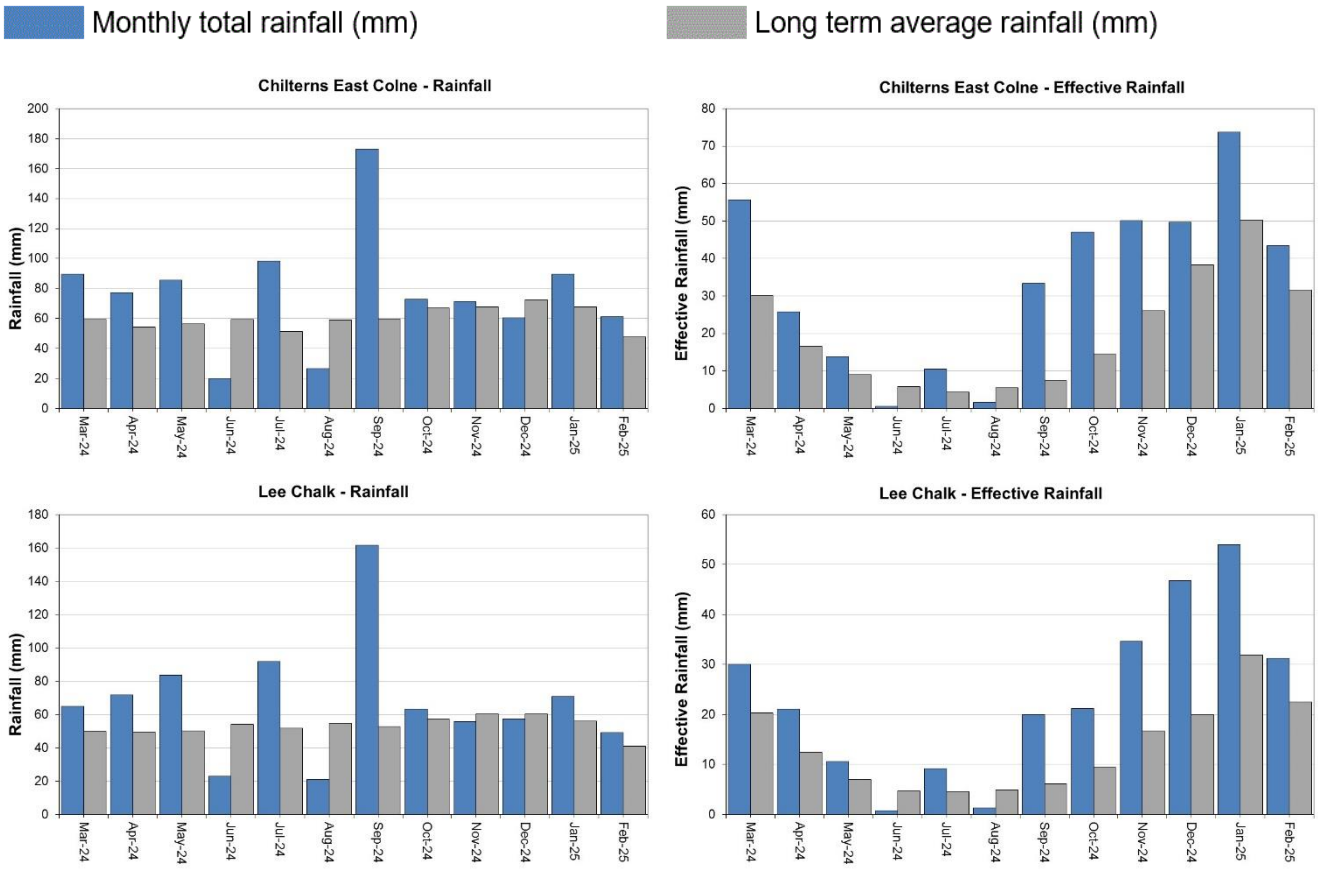


(Source: water companies).

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.

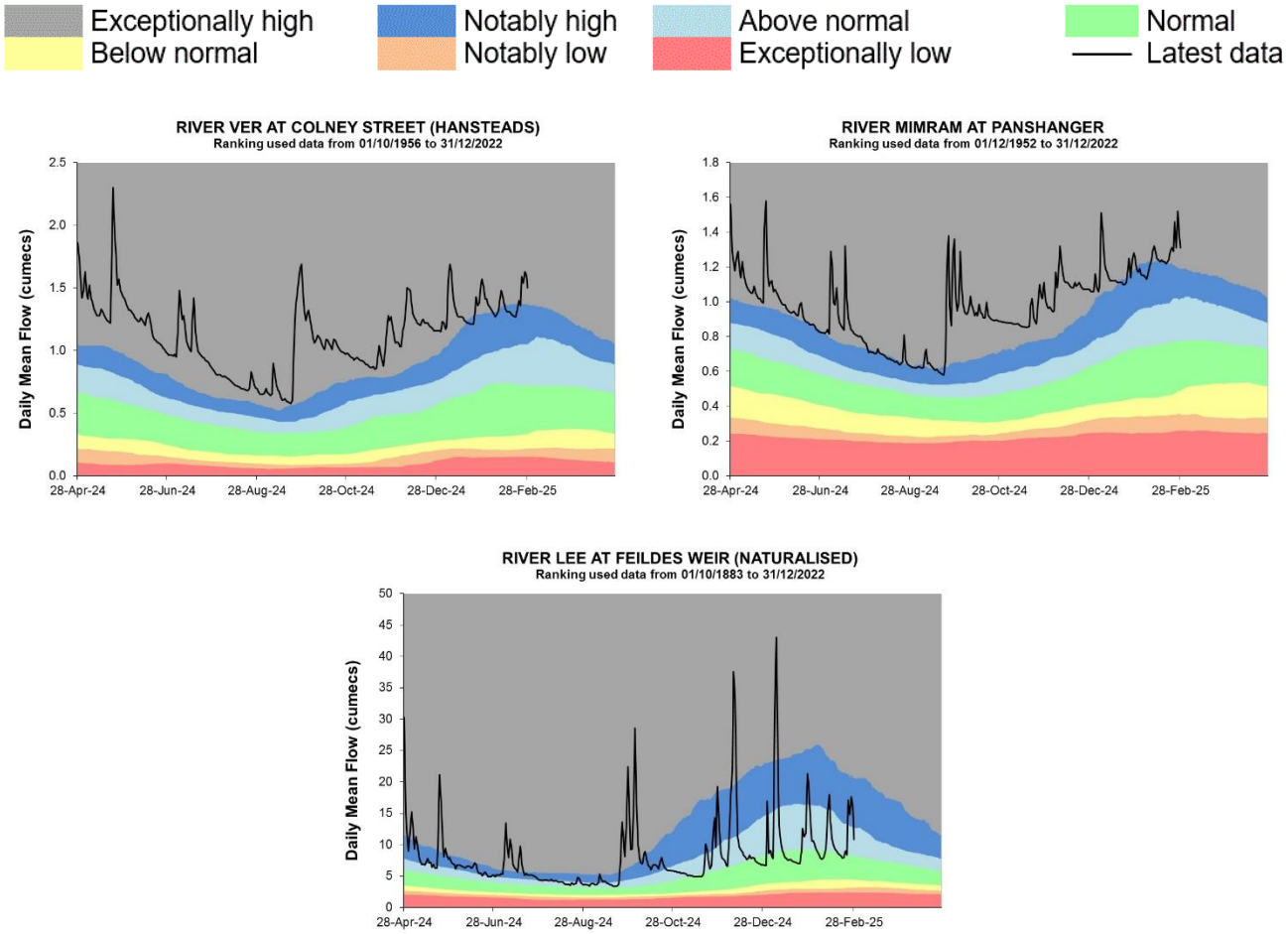


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

5.2 HNL River flow charts

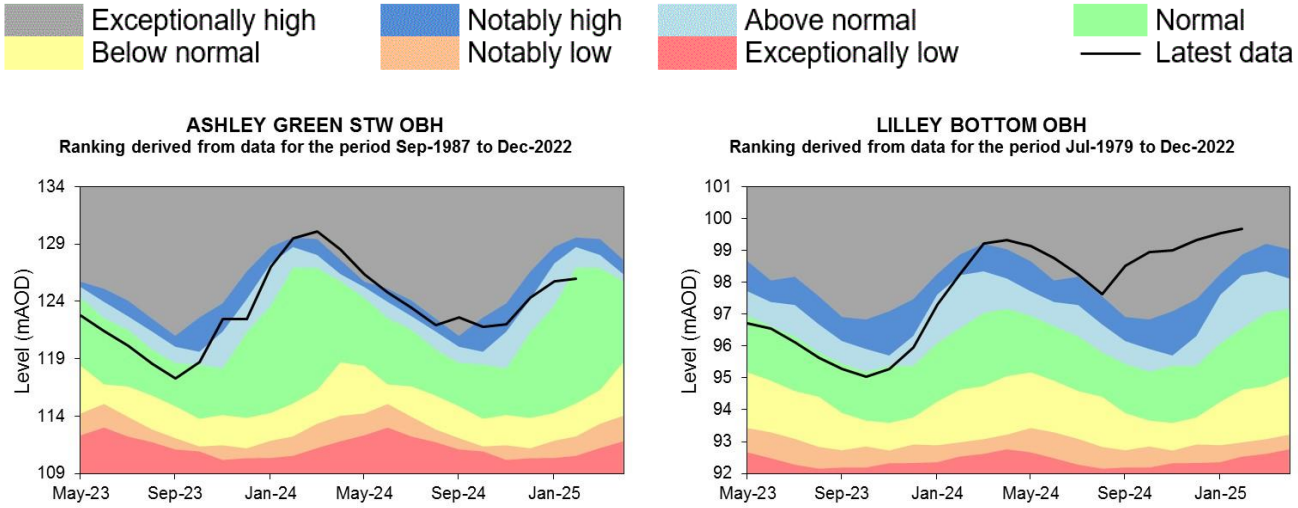
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

5.3 HNL Groundwater level charts

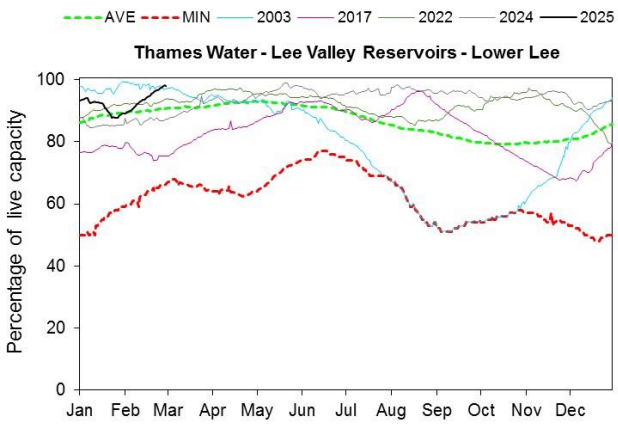
Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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.

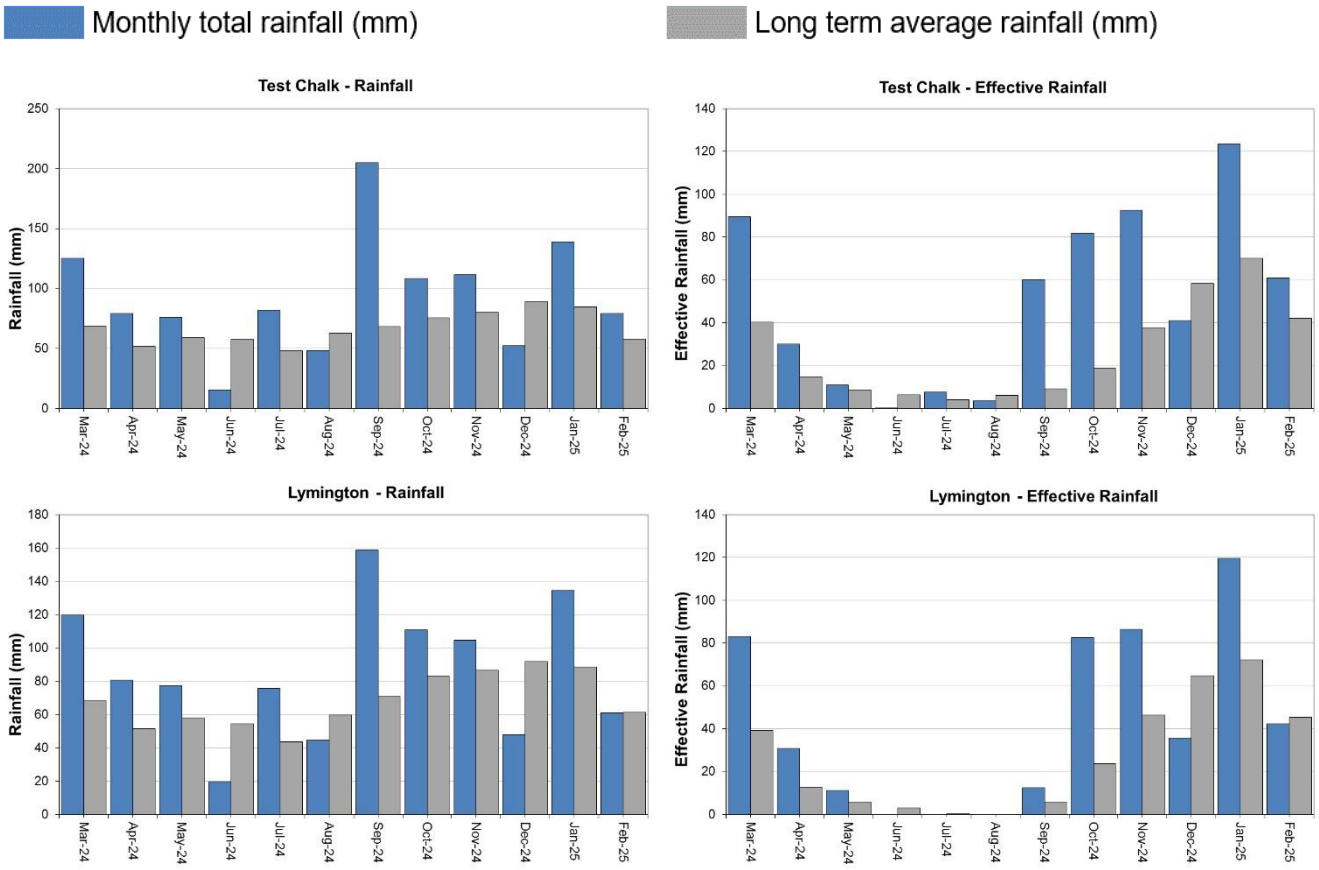


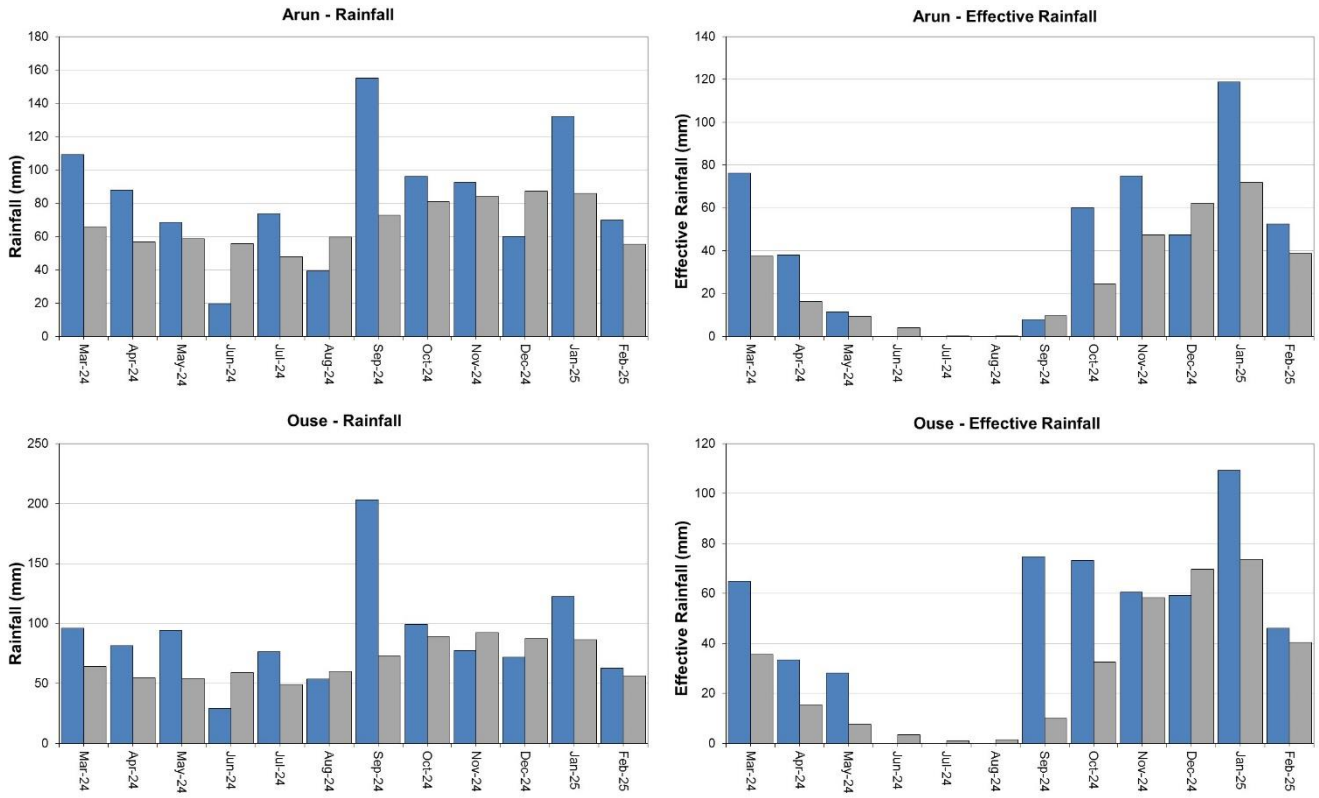
(Source: water companies).

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.



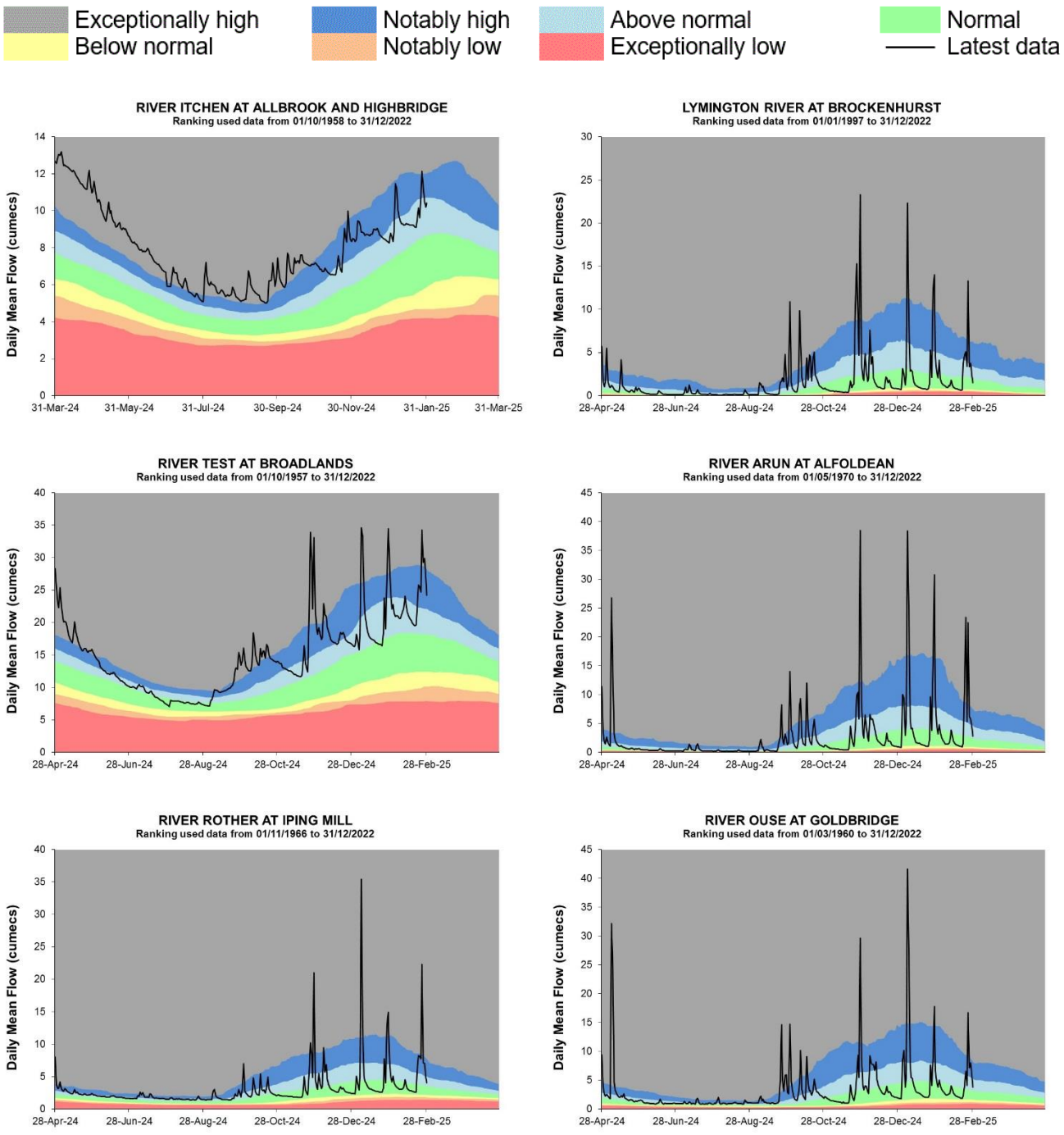


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

6.2 SSD River flow charts

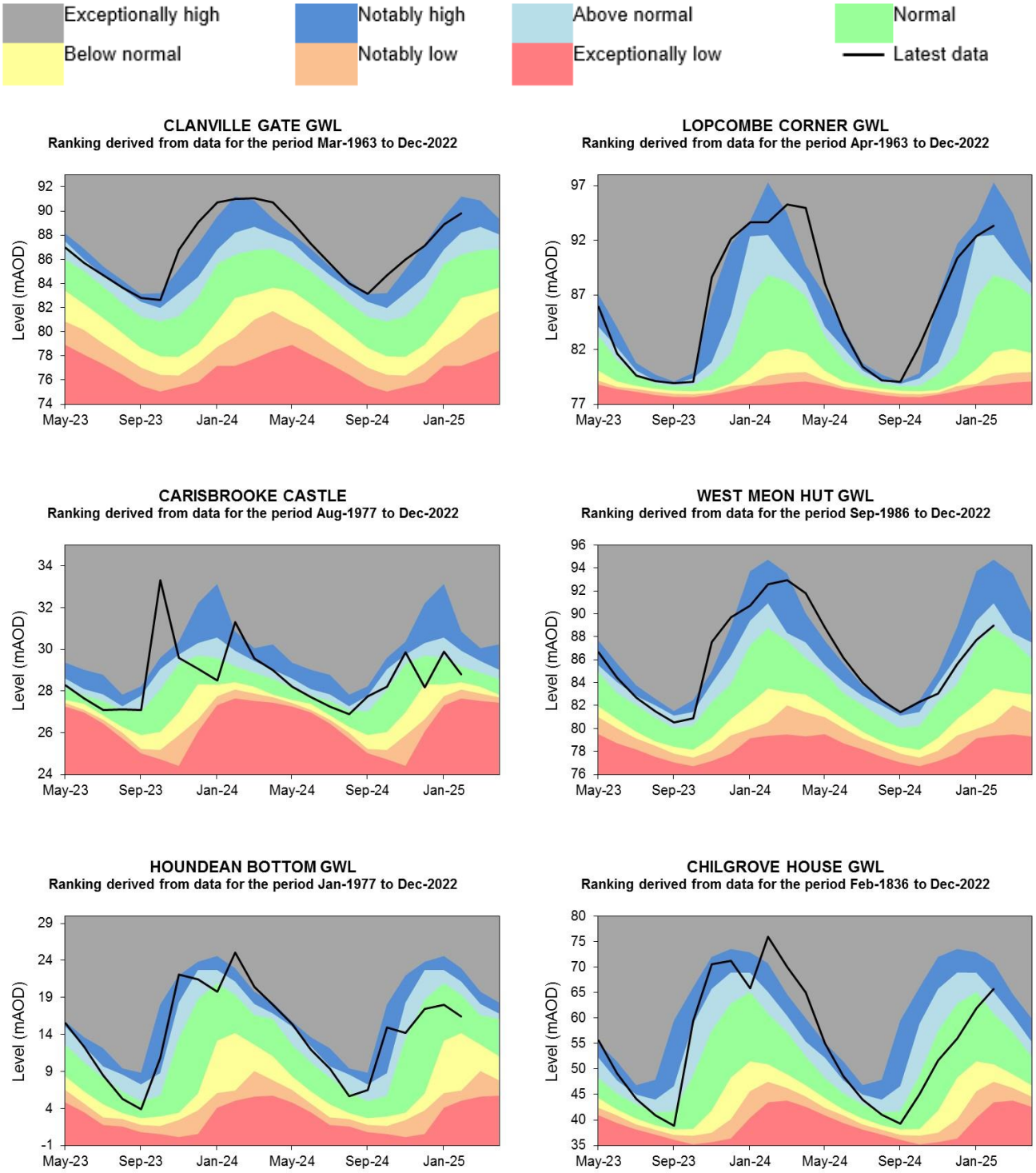
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

6.3 SSD Groundwater levels

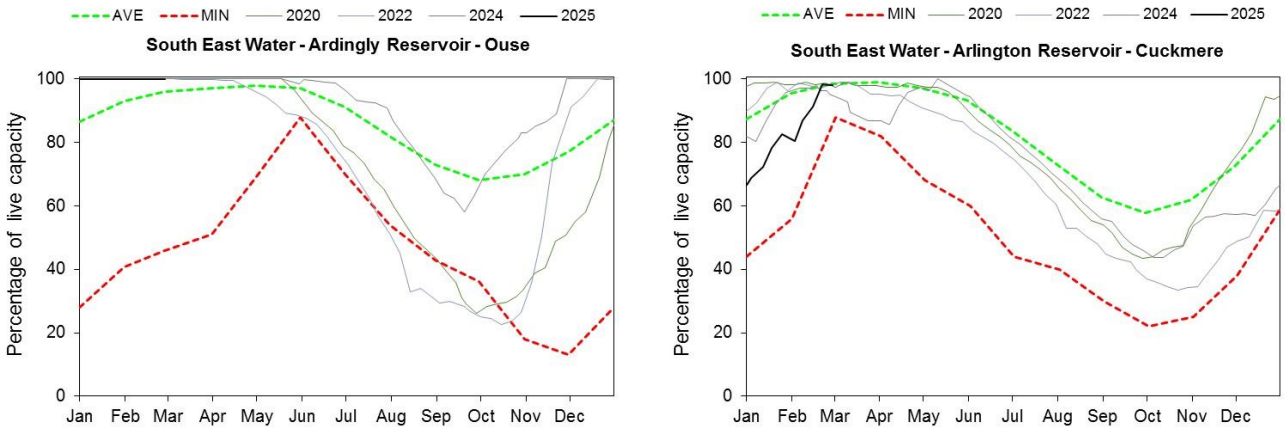
Figure 6.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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.

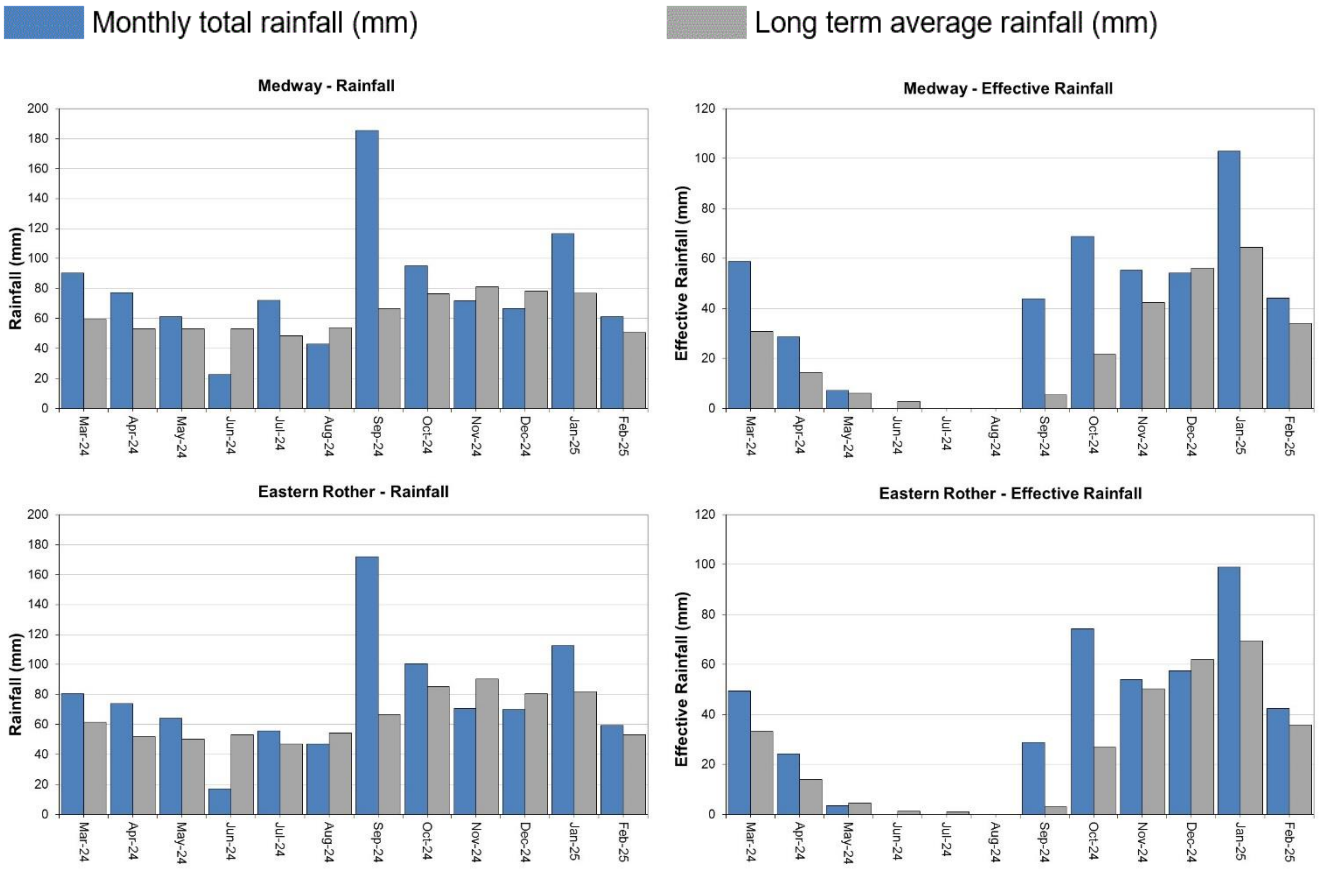


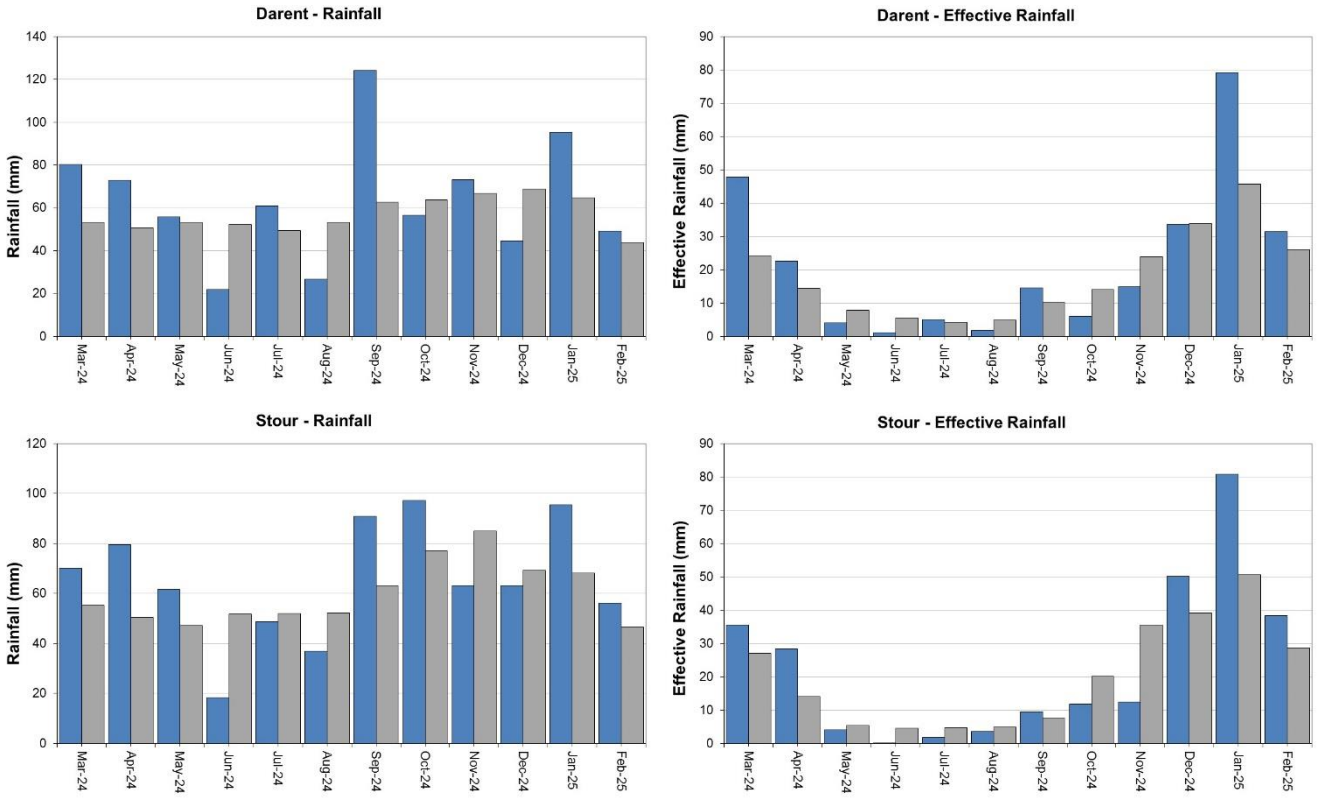
(Source: water companies).

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.



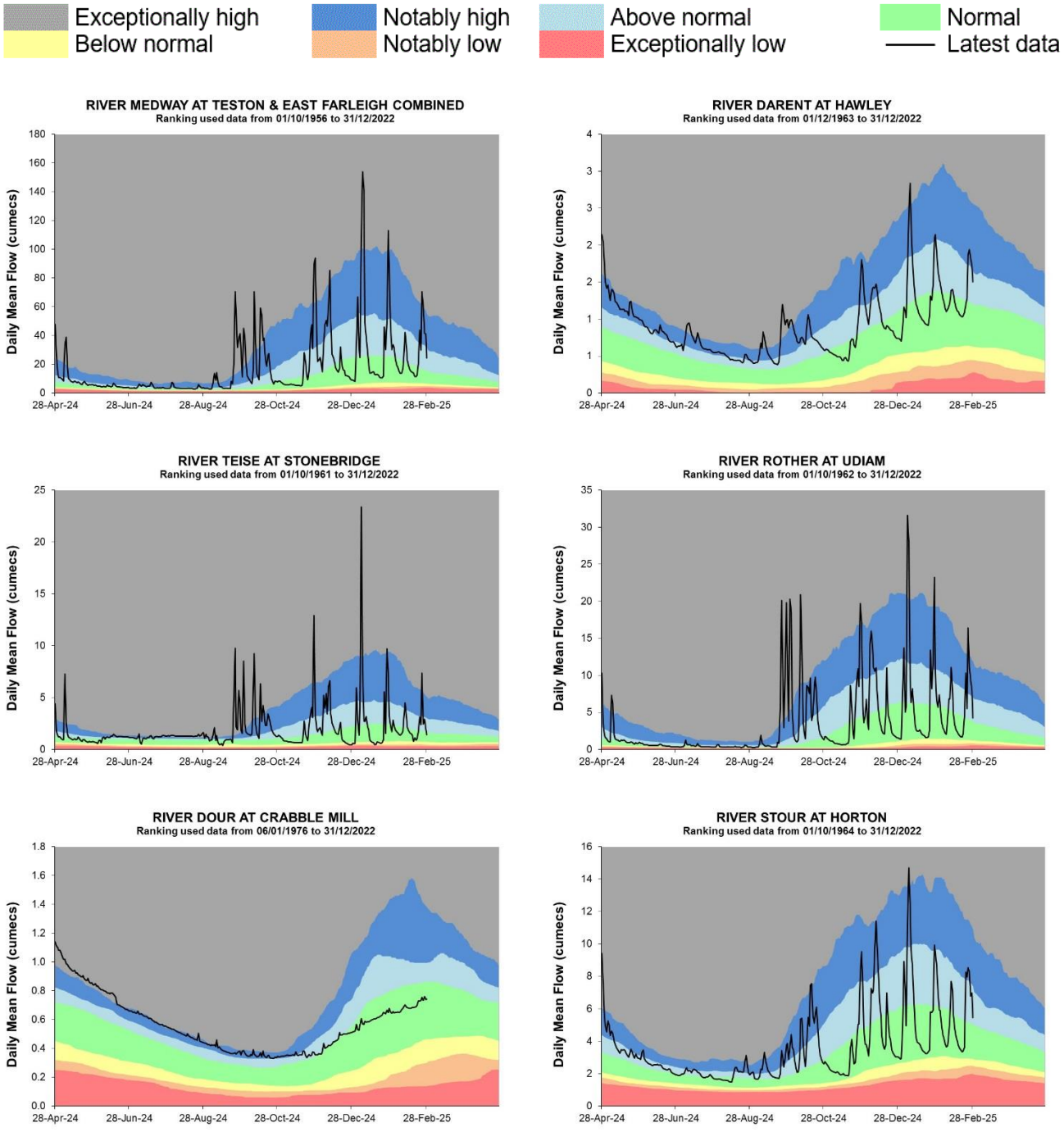


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

7.2 KSL River flow charts

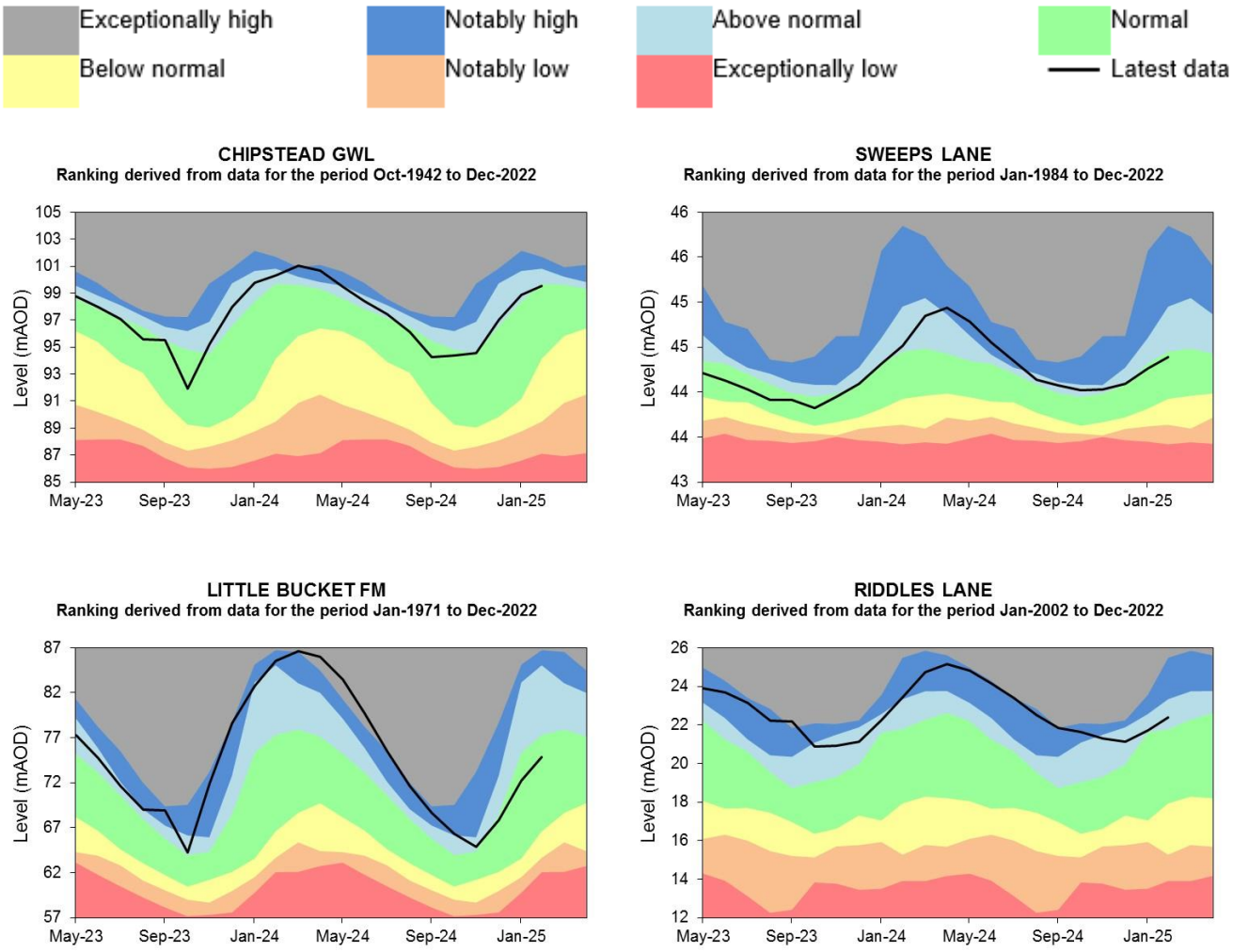
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025 .

7.3 KSL Groundwater levels

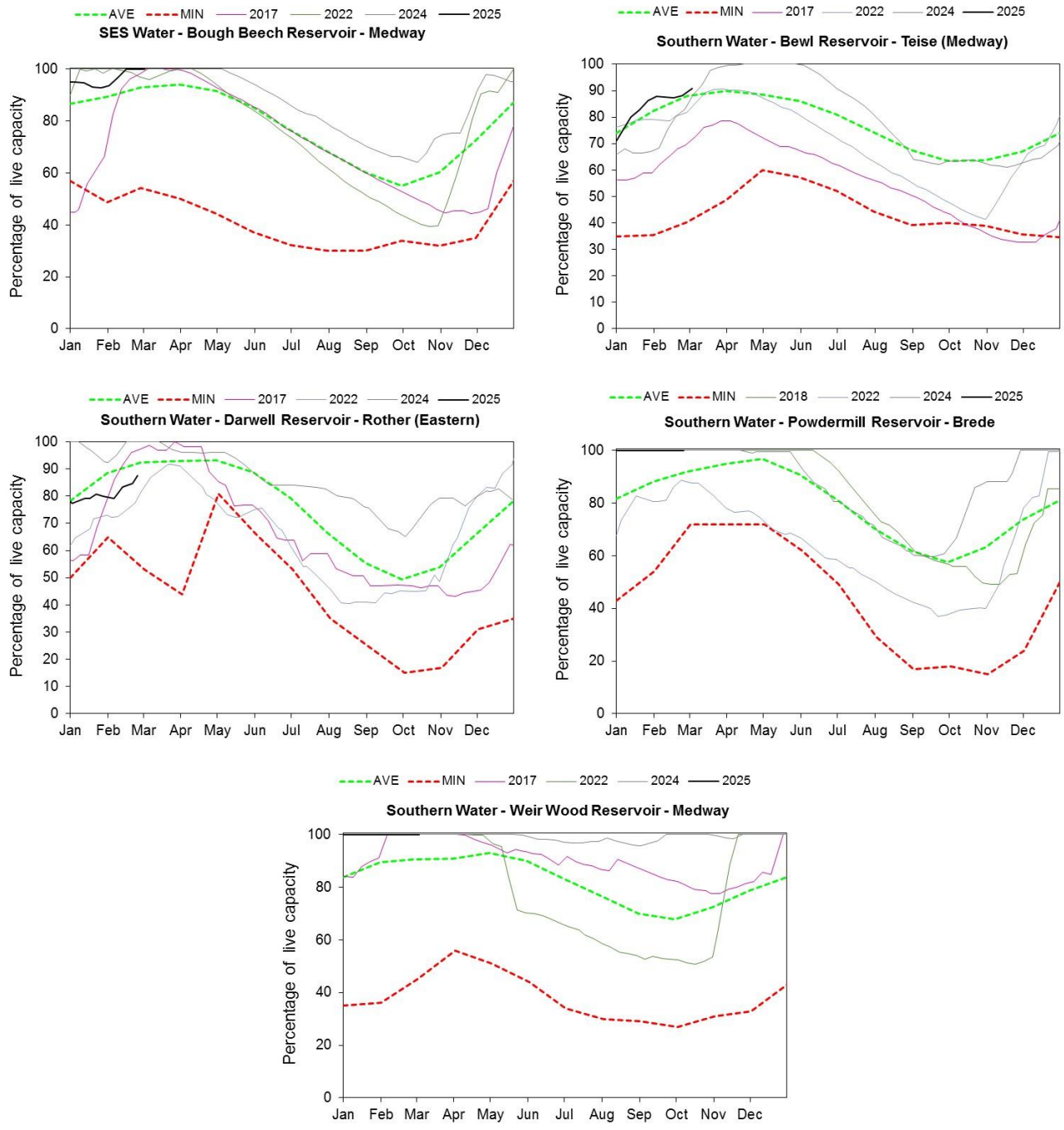
Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



Source: Environment Agency. 2025

7.4 KSL Reservoir stocks

Figure 7.4: 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).

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	Feb 2025 rainfall % of long term average 1961 to 1990	Feb 2025 band	Dec 2024 to February cumulative band	Sep 2024 to February cumulative band	Mar 2024 to February cumulative band
Cotswold West	113	Normal	Normal	Exceptionally high	Exceptionally high
Cotswold East	105	Normal	Normal	Exceptionally high	Exceptionally high
Berkshire Downs	148	Above Normal	Above normal	Exceptionally high	Exceptionally high
Chilterns West	137	Normal	Normal	Exceptionally high	Exceptionally high
Chilterns East Colne	128	Normal	Normal	Above normal	Notably high
North Downs - Hampshire	138	Normal	Normal	Notably high	Notably high
North Downs - South London	120	Normal	Normal	Above normal	Above normal
Upper Thames	134	Normal	Normal	Exceptionally high	Exceptionally high
Upper Cherwell	108	Normal	Normal	Exceptionally high	Exceptionally high

Thame	117	Normal	Normal	Exceptionally high	Exceptionally high
Loddon	136	Normal	Normal	Notably high	Exceptionally high
Lower Wey	135	Normal	Normal	Notably high	Notably high
Upper Mole	126	Normal	Normal	Above normal	Notably high
Lower Lee	124	Normal	Normal	Above normal	Above normal
North London	130	Normal	Normal	Above normal	Above normal
South London	117	Normal	Normal	Above normal	Above normal
Roding	124	Normal	Normal	Normal	Normal
Ock	130	Normal	Normal	Notably high	Exceptionally high
Enborne	145	Above Normal	Above normal	Exceptionally high	Exceptionally high
Cut	144	Normal	Normal	Notably high	Notably high
Lee Chalk	119	Normal	Normal	Notably high	Notably high
River Test	137	Above Normal	Above normal	Exceptionally high	Exceptionally high
East Hampshire Chalk	143	Above Normal	Normal	Notably high	Notably high
West Sussex Chalk	114	Normal	Normal	Above normal	Notably high

East Sussex Chalk	95	Normal	Normal	Above normal	Notably high
Sw Isle Of Wight	85	Normal	Normal	Above normal	Notably high
River Darent	113	Normal	Normal	Above normal	Above normal
North Kent Chalk	107	Normal	Normal	Above normal	Above normal
Stour	121	Normal	Normal	Normal	Normal
Dover Chalk	128	Normal	Normal	Above normal	Above normal
Thanet Chalk	110	Normal	Normal	Normal	Normal
Western Rother Greensand	137	Normal	Normal	Above normal	Notably high
Hampshire Tertiaries	118	Normal	Normal	Above normal	Notably high
Lymington River Avon Water And O	99	Normal	Normal	Above normal	Notably high
Sussex Coast	99	Normal	Normal	Above normal	Notably high
River Arun	126	Normal	Normal	Above normal	Notably high
River Adur	111	Normal	Normal	Above normal	Notably high
River Ouse	111	Normal	Normal	Notably high	Notably high

Cuckmere River	93	Normal	Normal	Above normal	Notably high
Pevensey Levels	96	Normal	Normal	Above normal	Above normal
River Medway	121	Normal	Normal	Notably high	Notably high
Eastern Rother	112	Normal	Normal	Above normal	Notably high
Romney Marsh	127	Normal	Normal	Above normal	Above normal
North West Grain	104	Normal	Normal	Normal	Normal
Sheppy	96	Normal	Normal	Normal	Normal

9.2 River flows table

Site name	River	Catchment	Feb 2025 band	Jan 2025 band
Colney Street_hansteads		Colne	Notably high	Exceptionally high
Feildes Weir (nat)	Lee (middle)	Lee	Normal	Above normal
Panshanger	Mimram	Lee	Notably high	Exceptionally high
Crabble Mill Gs	Dour	Little Stour	Normal	Normal
Hawley Gs	Darent	Darent and Cray	Normal	Above normal
Horton Gs	Great Stour	Stour Kent	Normal	Normal
Stonebridge Gs	Teise	Teise	Normal	Above normal
Teston Farleigh Combined	Medway100	Medway Estuary	Above normal	Above normal
Udiam Gs	Rother	Rother Kent Lower	Normal	Above normal
Alfoldean Gs	Arun	Arun	Above normal	Notably high
Allbrook Gs And Highbridge	Itchen (so)	Itchen	Above normal	Above normal
Broadlands	Test	Test Lower	Above normal	Above normal
Brockenhurst Gs	Lymington	New Forest	Normal	Notably high

Goldbridge Gs	Ouse (so)	Ouse Sussex	Normal	Above normal
Iping Mill Gs	Rother	West Rother	Above normal	Above normal
Farmoor (naturalised)	River Thames	Thames	Above normal	Normal
Kingston (naturalised)	River Thames	Thames North Bank	Above normal	Normal
Marlborough	River Kennet	Kennet	Above normal	Above normal
Sheepbridge	River Loddon	Loddon	Notably high	Exceptionally high
Tilford	River Wey	Wey Addleston Bourne	Notably high	Exceptionally high

9.3 Groundwater table

Site name	Aquifer	End of Feb 2025 band	End of Jan 2025 band
Ashley Green Stw	Mid-chilterns Chalk	Normal	Above normal
Lilley Bottom	Upper Lee Chalk	Exceptionally high	Exceptionally high
Little Bucket Fm	East Kent Chalk - Stour	Normal	Normal
Chipstead Gwl	Epsom North Downs Chalk	Normal	Above normal
Riddles Lane	North Kent Swale Chalk	Above 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	Notably high	Normal
Carisbrooke Castle	Isle Of Wight Central Downs Chalk	Normal	Above normal
West Meon Hut Gwl	River Itchen Chalk	Above normal	Above normal
Clanville Gate Gwl	River Test Chalk	Notably high	Notably high
Lopcombe Corner Gwl	River Test Chalk	Notably high	Notably high
Tile Barn Farm	Basingstoke Chalk	Above normal	Notably high
Rockley Obh	Berkshire Downs Chalk	Above normal	Above normal

Jackaments Bottom Obh	Burford Oolitic Limestone (inferior)	Normal	Normal
Stonor Estate	South-west Chilterns Chalk	Exceptionally high	Exceptionally high

9.4 South-east England areal units for reference

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