Monthly water situation report:

South-east England

1 Summary - July 2025

July was the first month since March when above the long term average (LTA) rainfall fell, with 118% recorded across the south-east of England. The month was characterised by typically heavy isolated summer showers, with the top 3 daily rainfall totals occurring on different days through the month. The widespread heavy rainfall recorded across the south-east on 6 July accounted for a fifth of the monthly total. There were on average 17 ‘dry’ days where less than 0.2mm rainfall was recorded. The soil moisture deficits (SMDs) rose steadily during the month to end July on average 160% of the LTA across the south-east of England. Cotswolds West (Thames, THM) and Test Chalk (Solent and South Downs, SSD) both had the highest SMD on record for the end of July. There was limited effective rainfall during the month as would be expected with the high SMDs. There were 24 flood alerts and 2 flood warnings issued in July in response to the intense summer showers. Groundwater levels continued to fall during the month with 14 of the 16 indicator sites in the normal or below range for July. Hosepipe bans have been issued in parts of the south-east of England supplied by Thames Water and South East Water to preserve stocks and manage demand.

1.1 Rainfall

July was the first month since March when above the LTA rainfall fell, with 118% recorded across the south-east of England. Kent and South London (KSL) was much wetter than the other 3 areas of the south-east with 174% the LTA for July. By contrast, THM was drier with 84% of the LTA for the month.

The month was characterised by typically heavy isolated summer showers, with the top 3 daily rainfall totals occurring on different days through the month. The highest daily total (56.3mm) was recorded at Eastry, in the Stour catchment (KSL) on 6 July. Nearly 43mm of this fell in an hour. The second highest daily rainfall total (53mm) was recorded at Warnford, East Hampshire Chalk, SSD on 31 July. Once again a high proportion of the daily total fell in a limited time with 32mm falling in two and a half hours. The third highest daily total (42.8mm) was recorded on 20 July at Paddock Wood, Medway (KSL), nearly 28mm of which fell in an hour. The wettest day for Hertfordshire and North London (HNL) was 19 July, with totals close to 28mm being recorded at Wheathampstead, Lee Chalk.

The widespread heavy rainfall recorded across the south-east on 6 July accounted for a fifth of the monthly total. There were on average 17 ‘dry’ days where less than 0.2mm rainfall was recorded.

The 4 months ending July were the driest

- since 1976 for Cotswolds West (THM)
- since 1995 for Cotswolds East (THM)
- since 2010 for Cherwell (THM)

- since 2022 for the south-east of England, THM, HNL, SSD and KSL

1.2 Soil moisture deficit and recharge

The soil moisture deficits (SMDs) rose steadily during the month, with slight reductions in response to the rainfall on 6, 20 and 31 July to end on average 160% of the LTA across the south-east of England. The highest SMDs this month were in HNL, although were only the 4th highest on record after July 2022. The high SMDs in THM reflected the below average rainfall where Cotswolds West had the highest SMD on record for the end of July and Cotswolds East had the second highest SMD after 1976. Test Chalk (SSD) also had the highest SMD on record. As would be expected at this time of year, there was limited recharge across the south-east of England.

1.3 River flows

The seasonal decline of groundwater fed rivers continued during the month. However, the Ver at Colney Street and Mimram at Panshanger (both HNL) responded strongly to the localised rainfall on 19 July. The Stour at Horton (KSL) also responded to the rainfall on 19 and 20 July. Elsewhere, response to any rainfall was muted as a result of the high SMDs and the scattered distribution of the rainfall. Over half of the key indicator sites were in the normal or above band during the month. These were largely draining Chalk catchments. The Thames at Kingston and Farmoor (both THM) and the Lymington River (SSD) all had flows in the notably low category. The Coln at Bibury had the third lowest monthly flow on record, after 2022, and was in the exceptionally low range. There were 24 fluvial alerts and 2 fluvial warnings issued in response to the intense summer showers on 6,7,18,19,20 and 31 July.

	HNL	THM	SSD	KSL	Total
Fluvial Alerts	8	1	8	7	24
Fluvial Warnings	2	0	0	0	2
Total	10	1	8	7	26

1.4 Groundwater levels

The expected steady decline of groundwater levels for this time of year continued during the month, with 14 of the 16 indicator sites in the normal or below range for July. Jackaments (THM) recorded levels in the exceptionally low category and had the lowest level recorded for July. Carisbrooke, IOW (SSD) registered the lowest levels since 1979. Both Lilley Bottom (HNL) and Stonor (THM) retained levels in the above normal category as a legacy of the wet winter.

1.5 Reservoir stocks

The high temperatures and lack of rainfall over the last few months has resulted in significant declines in reservoir storage. Lower Lee (HNL) and Weir Wood (KSL) reservoirs remained

above the LTA. Bough Beech (KSL) storage was close to the LTA for July. Lower Thames (THM), Arlington (SSD), Bewl (KSL), Darwell (KSL) and Powdermill (KSL) were all below the LTA. Both Farmoor (THM) and Ardingly (SSD) ended the month close to the July minimum storage on record. Hosepipe bans have been issued in parts of the south-east of England supplied by Thames Water and South East Water to preserve stocks and manage demand..

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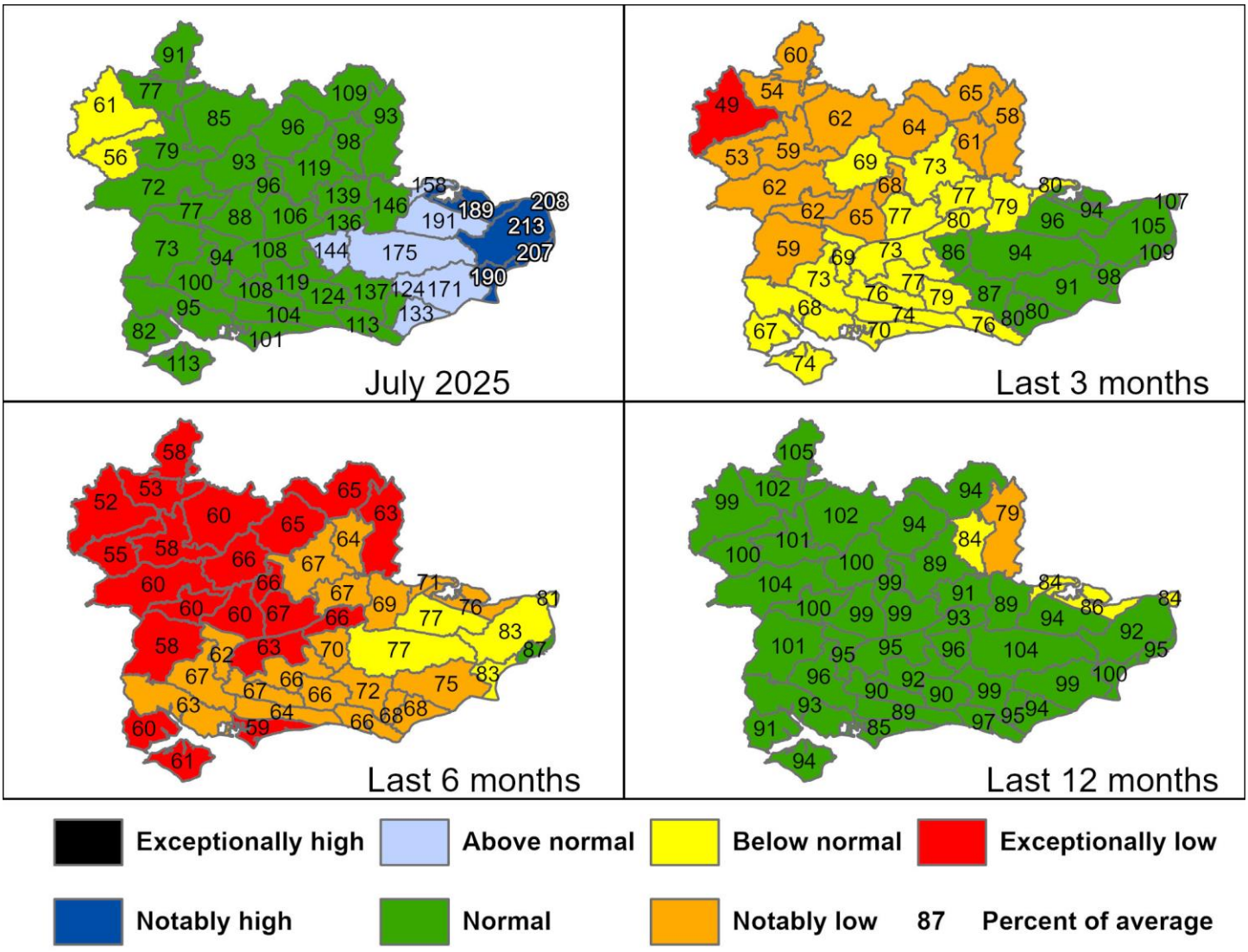
2 Maps

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 July 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. The numbers refer to percentage of the 1991-2020 long term average.

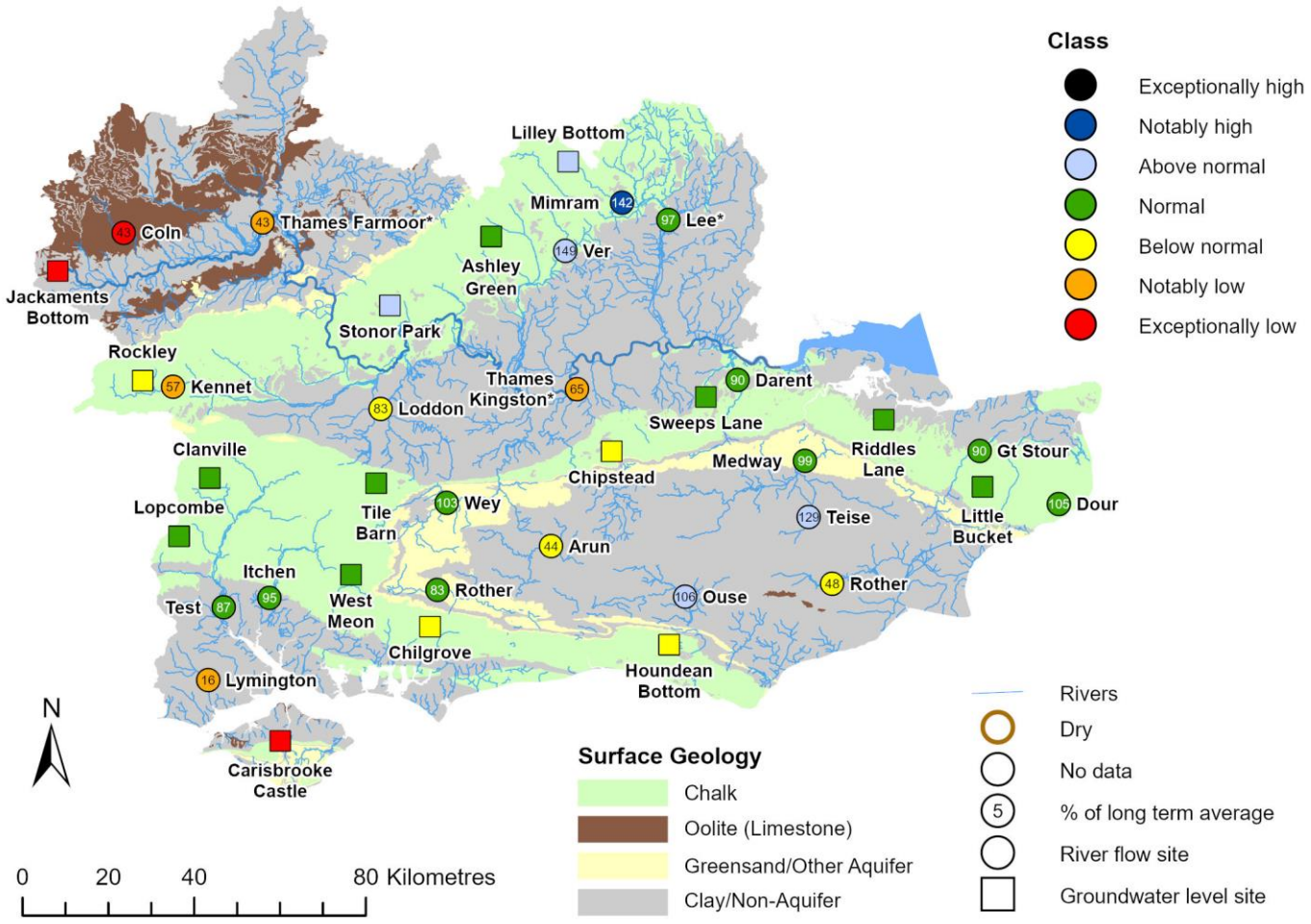


Rainfall data for 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to 2025, extracted from Met Office HadUK 1km gridded rainfall dataset derived 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 July 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic July monthly means Table available in the appendices with detailed information. Groundwater levels for indicator sites at the end of July 2025, classed relative to an analysis of respective historic July 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) 31 day Total	July % LTA	Effective Rainfall (mm) 31 day total	July % LTA	SMD (mm) Day 31	End Jul LTA
6010TH	Cotswolds - West (A)	39	60%	1	9%	123	55
6070TH	Berkshire Downs (G)	42	71%	2	25%	150	88
6130TH	Chilterns - West (M)	49	93%	3	64%	145	93
6162TH	North Downs - Hampshire (P)	55	94%	4	55%	143	87
6190TH	Wey - Greensand (S)	60	109%	5	88%	142	90
	Thames Average	46	84%	1	29%	146	86
	Thames Catchment Average	50	91%	2	38%	146	87
6140TH	Chilterns - East - Colne (N)	51	95%	4	89%	152	92
6600TH	Lee Chalk	56	110%	5	115%	154	105
6507TH	North London	57	120%	0	-	152	101
6509TH	Roding	46	92%	0	0%	155	99
	Herts and North London	52	103%	2	82%	153	99
6230TH	North Downs - South London (W)	74	134%	6	103%	144	89
6706So	Darent	67	146%	4	110%	148	98

6707So	North Kent Chalk	87	190%	7	184%	136	96
6708So	Stour	109	212%	11	250%	120	95
6809So	Medway	87	176%	0	0%	128	87
	Kent & South London Average	86	174%	4	159%	137	104
6701So	Test Chalk	42	73%	2	27%	154	87
6702So	East Hampshire Chalk	61	101%	5	60%	135	84
6703So	West Sussex Chalk	64	104%	5	66%	133	83
6804So	Arun	65	121%	0	0%	136	84
6805So	Adur	67	125%	0	0%	136	83
	Solent & South Downs Average	60	109%	2	44%	137	85
	South East Average	62	118%	2	64%	142	92

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 31/07/2025

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)	117	47%	6	12%
6070TH	Berkshire Downs (G)	122	53%	6	17%
6130TH	Chilterns - West (M)	134	63%	8	29%
6162TH	North Downs - Hampshire (P)	139	59%	9	21%
6190TH	Wey - Greensand (S)	142	64%	10	27%
	Thames Average	122	57%	3	14%
	Thames Catchment Average	127	59%	4	16%
6140TH	Chilterns - East - Colne (N)	136	63%	10	36%
6600TH	Lee Chalk	130	66%	10	45%
6507TH	North London	132	69%	0	0%
6509TH	Roding	118	63%	0	0%
	Herts and North London	128	65%	4	28%
6230TH	North Downs - South London (W)	151	69%	12	35%

6706So	Darent	146	75%	11	45%
6707So	North Kent Chalk	171	88%	15	58%
6708So	Stour	186	93%	17	70%
6809So	Medway	170	83%	0	0%
	Kent & South London Average	162	83%	7	40%
6701So	Test Chalk	117	51%	6	16%
6702So	East Hampshire Chalk	155	65%	12	26%
6703So	West Sussex Chalk	155	66%	13	27%
6804So	Arun	146	68%	0	0%
6805So	Adur	151	71%	0	0%
	Solent & South Downs Average	147	68%	5	16%
	South East Average	142	68%	5	21%

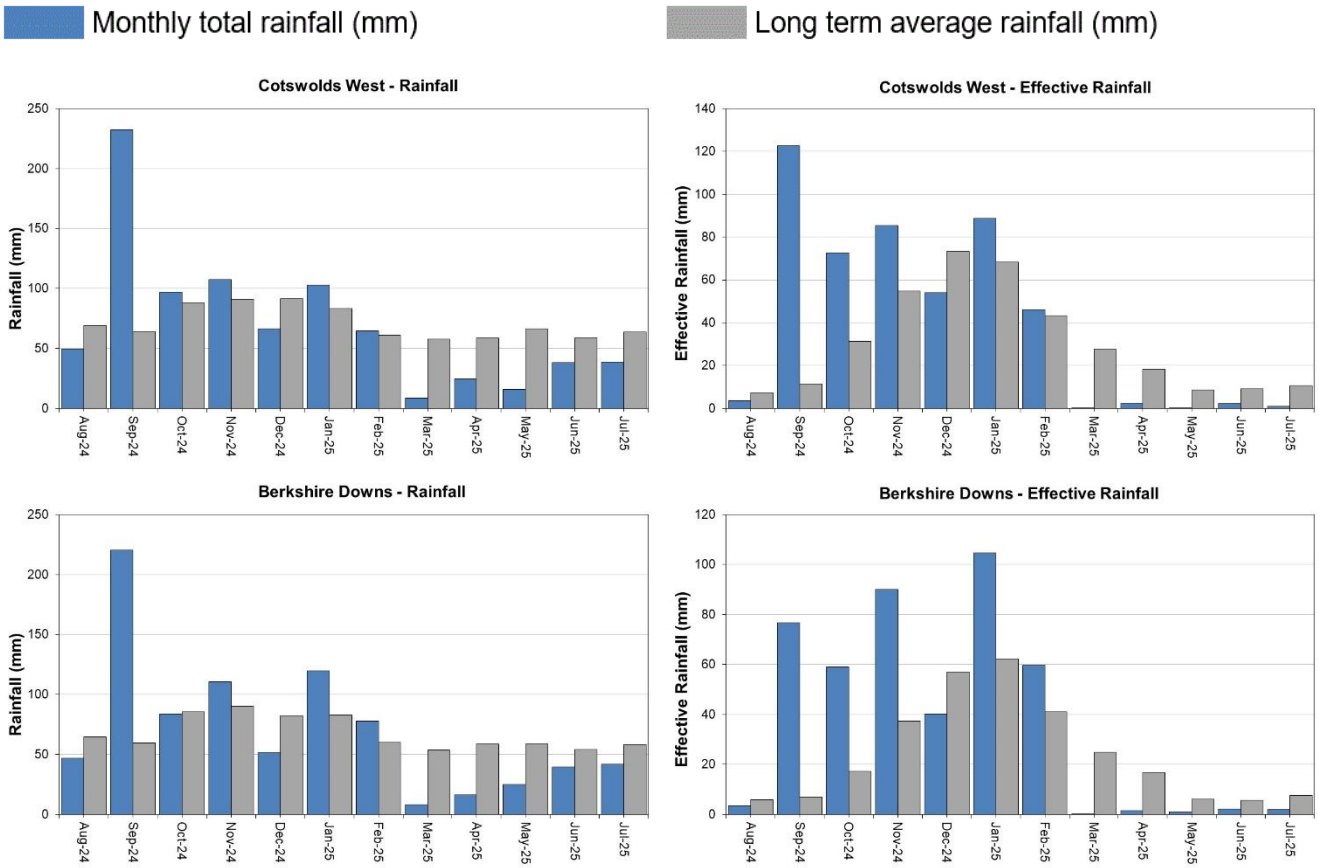
HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

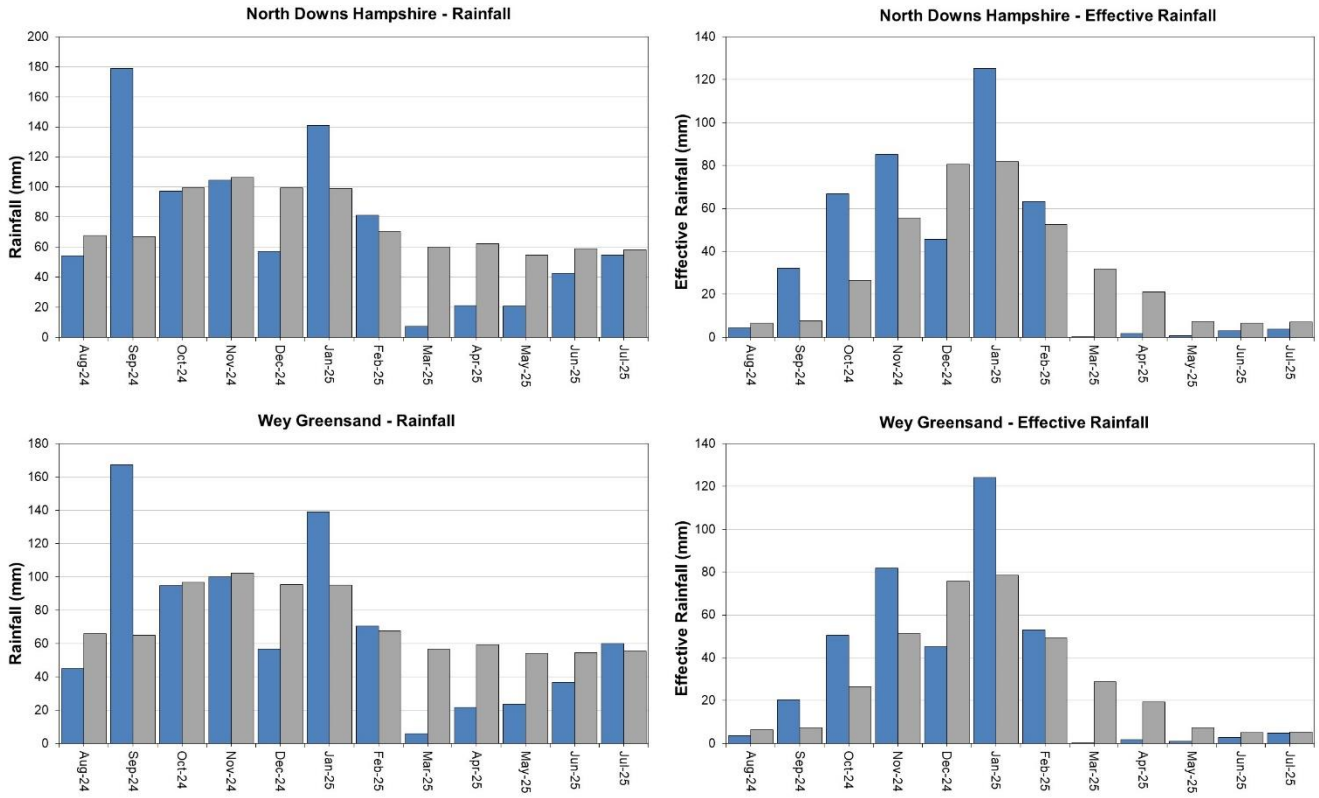
EA effective rainfall data (Source EA Soil Moisture Model 2025.)

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 1991 to 2020 long term average for a selection of areal units.



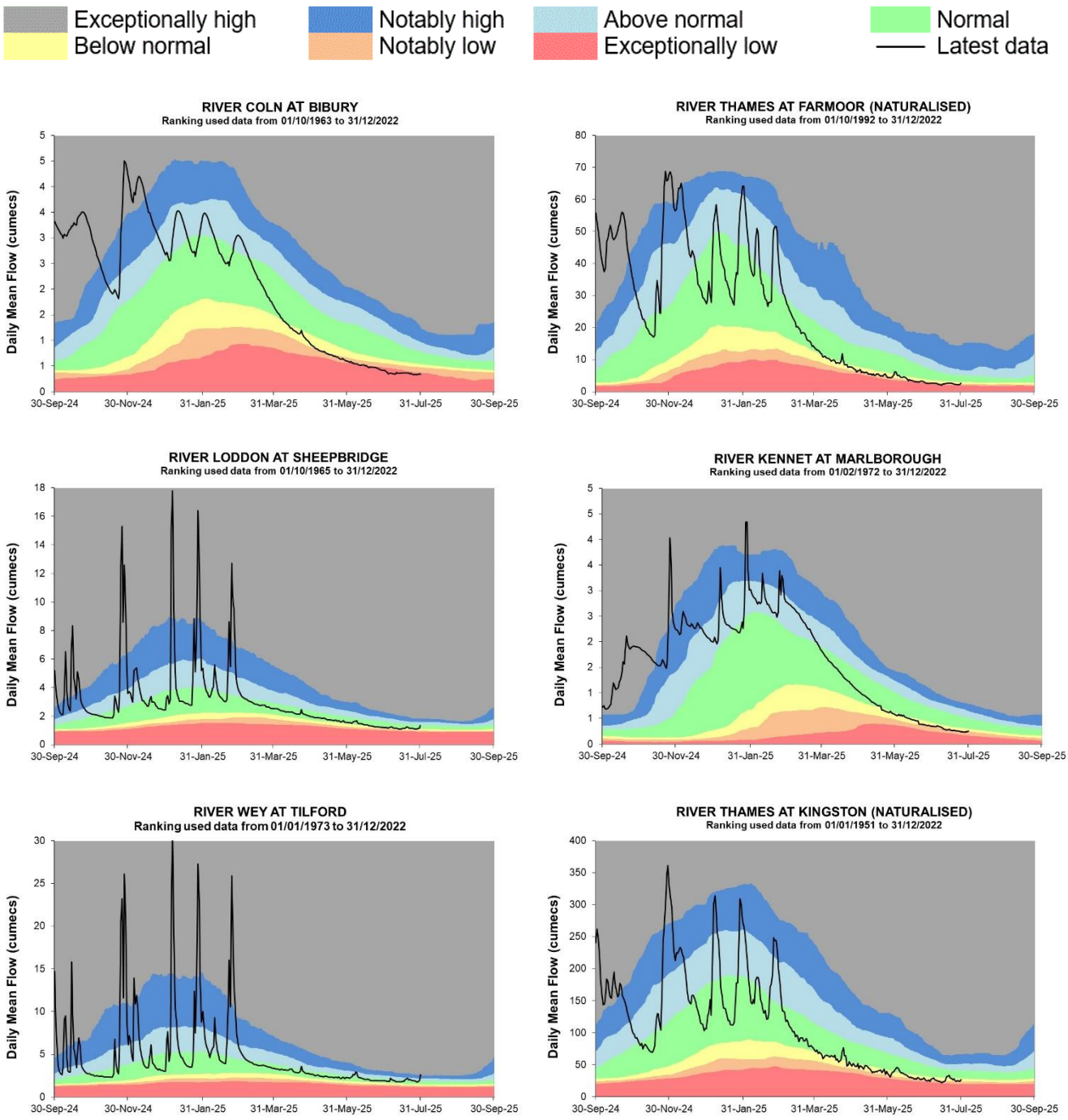


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

4.2 Thames River flow charts

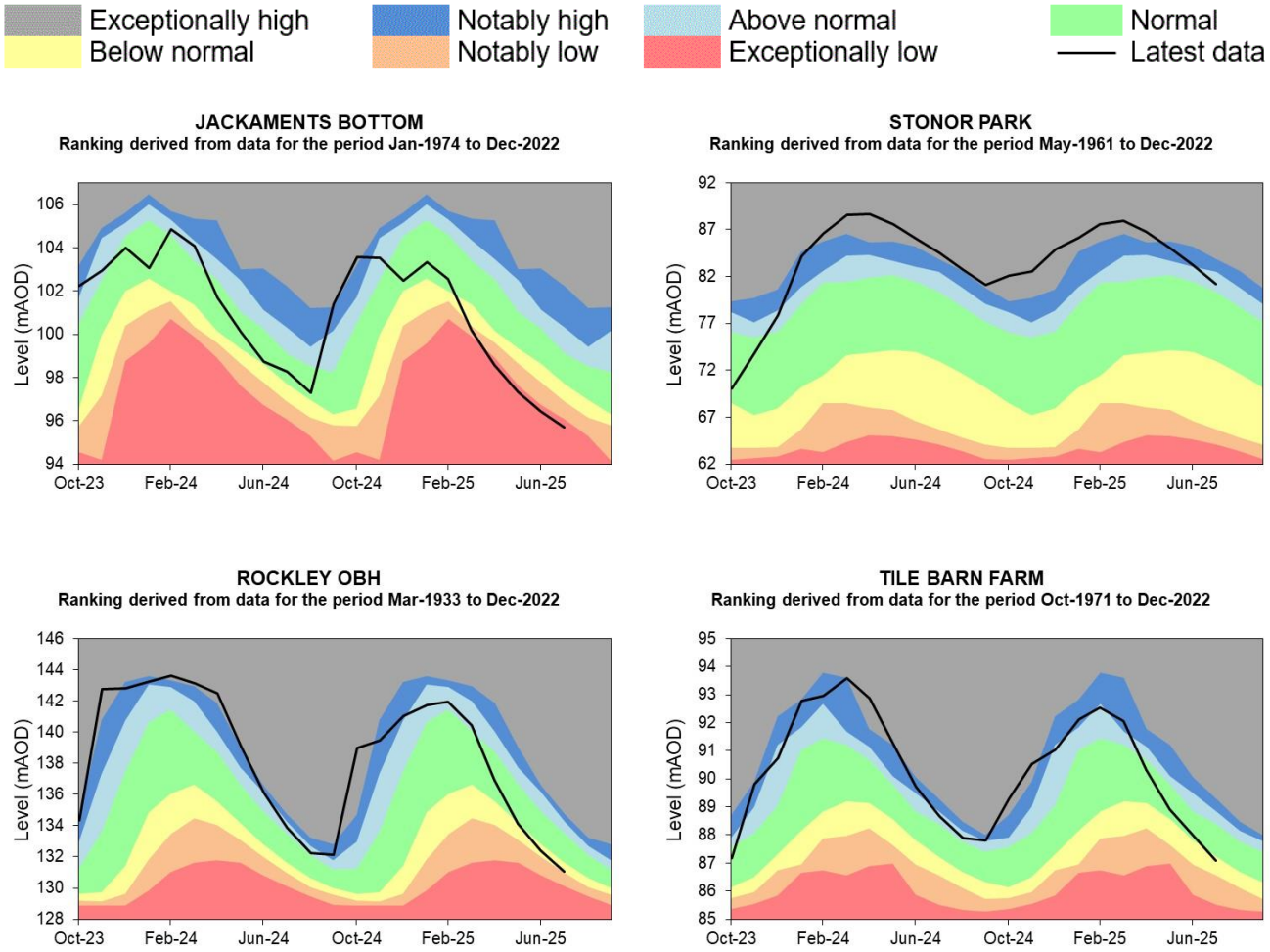
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

4.3 Thames Groundwater level charts

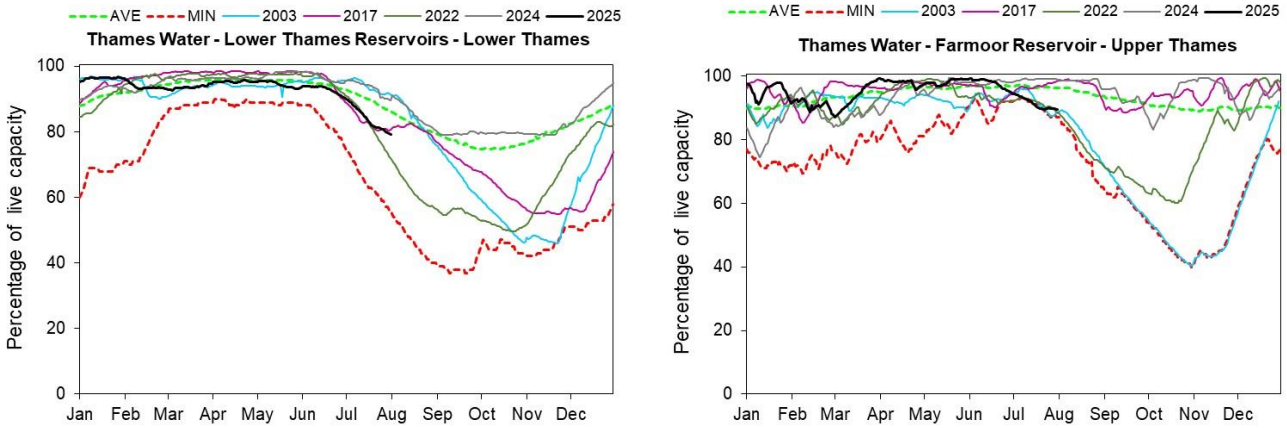
Figure 4.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels. Tile Barn Farm data has been estimated from 2 local sites since April 2022. A replacement is planned.



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.

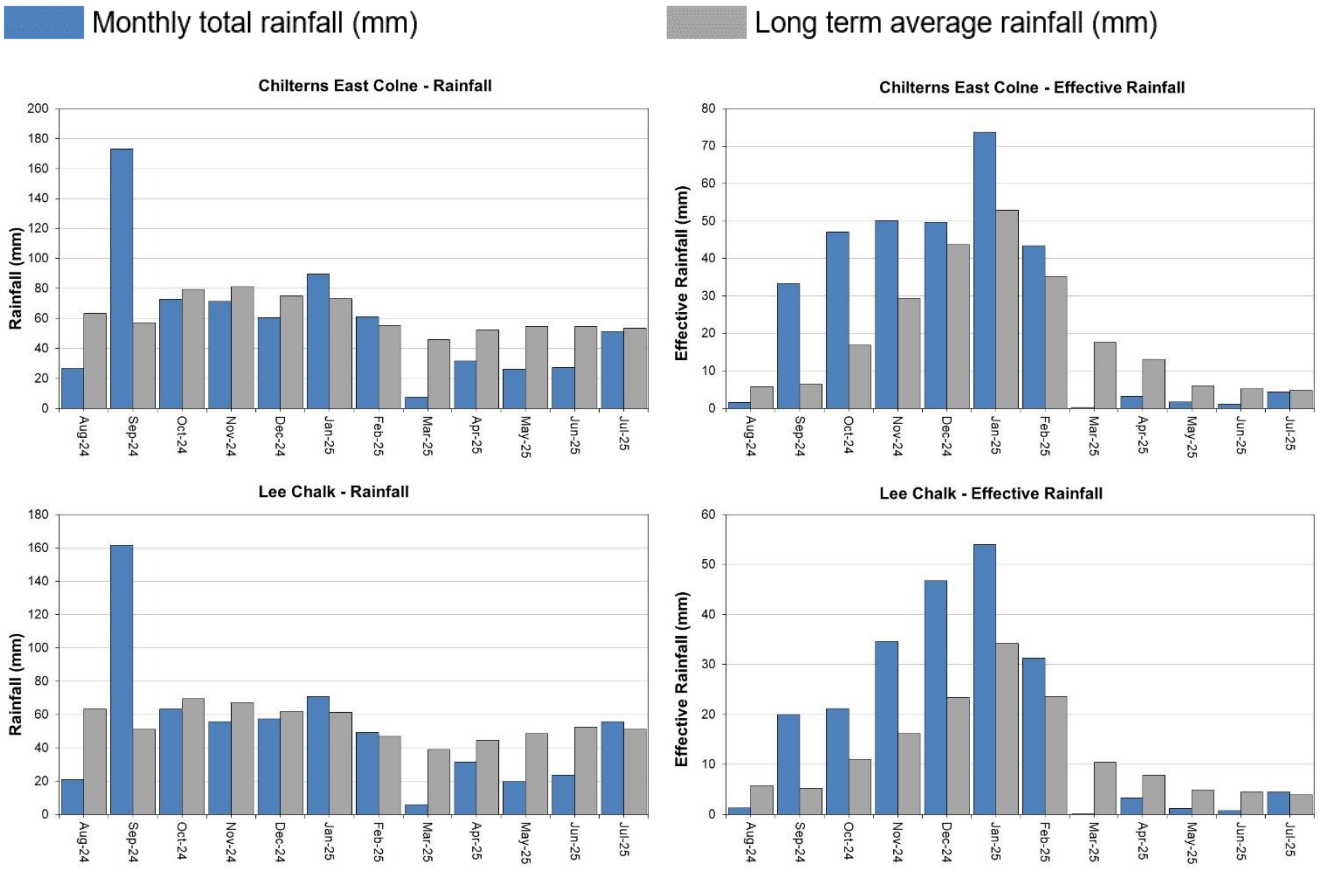


(Source: water companies).

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 1991 to 2020 long term average for a selection of areal units.

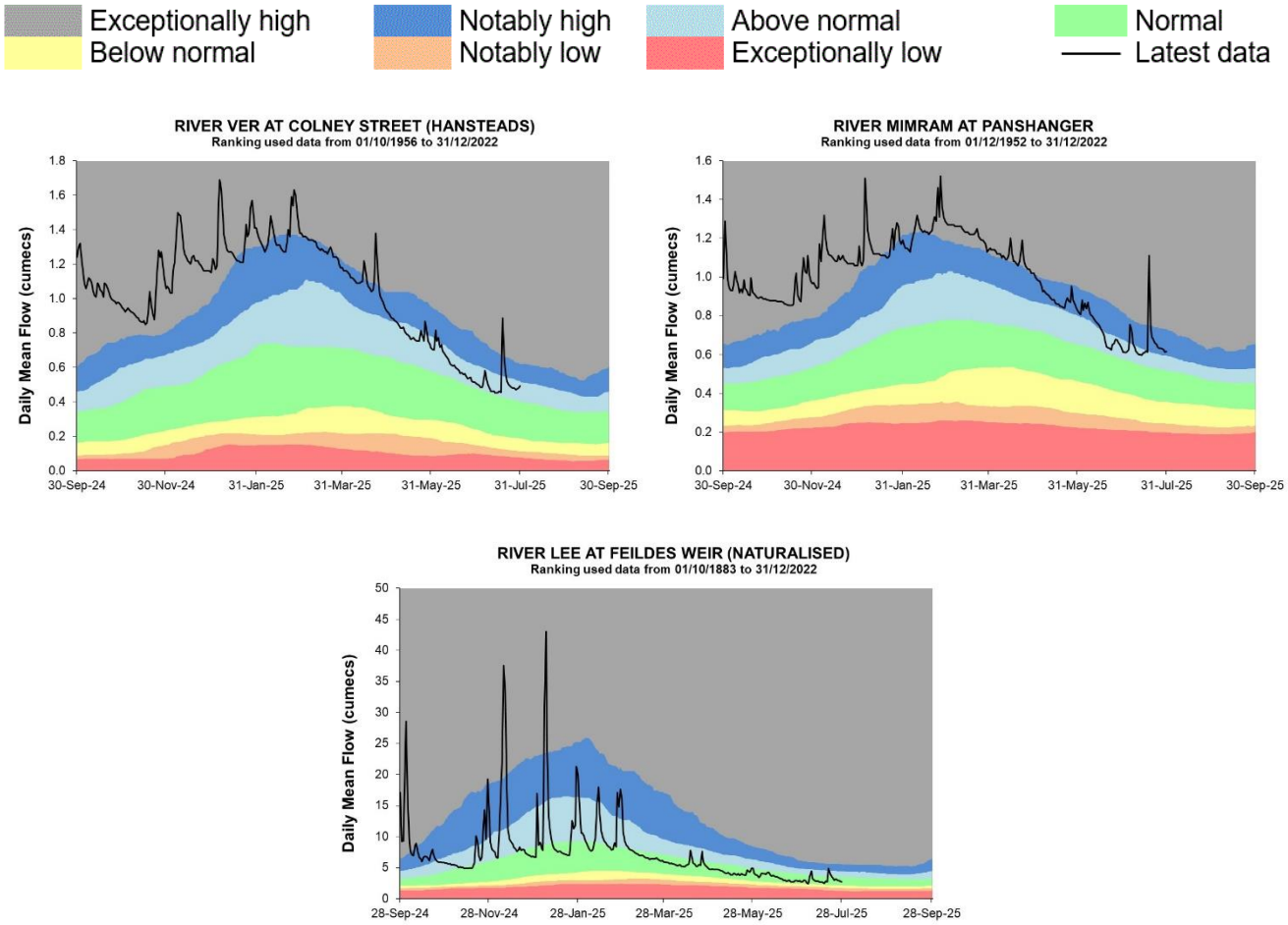


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

5.2 HNL River flow charts

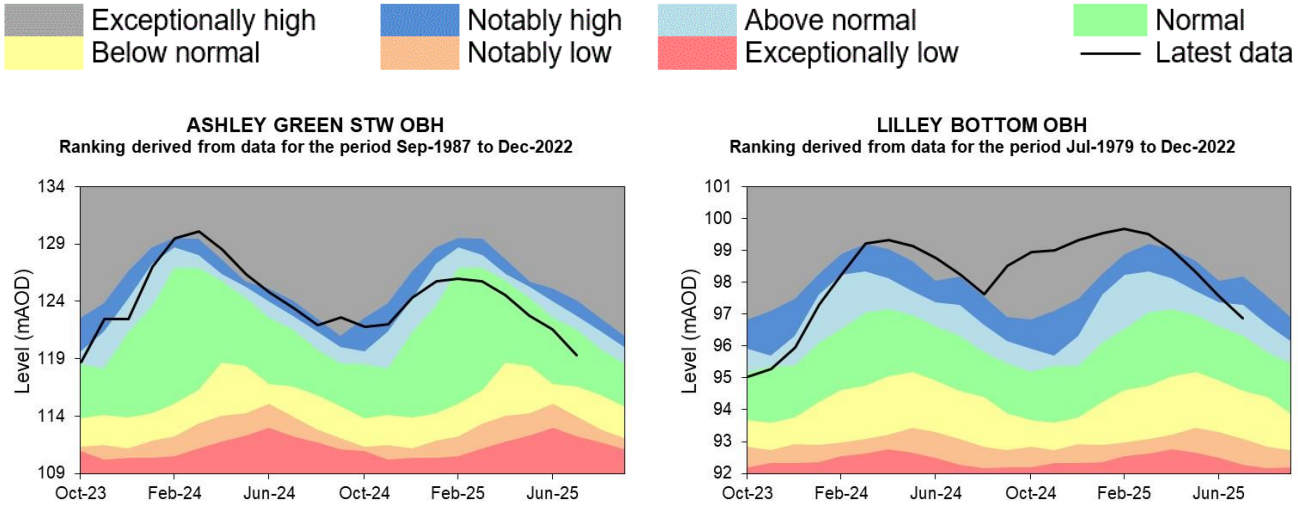
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

5.3 HNL Groundwater level charts

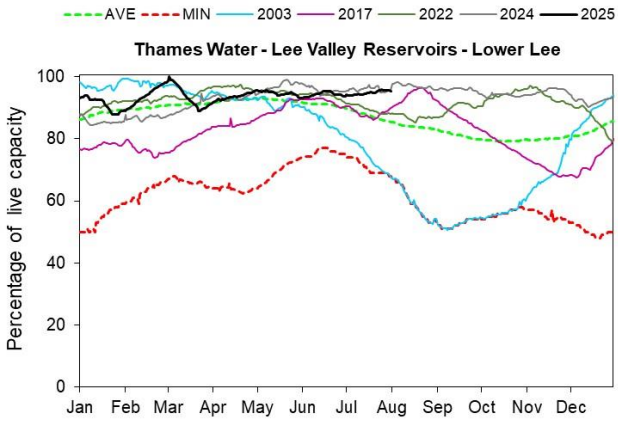
Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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.

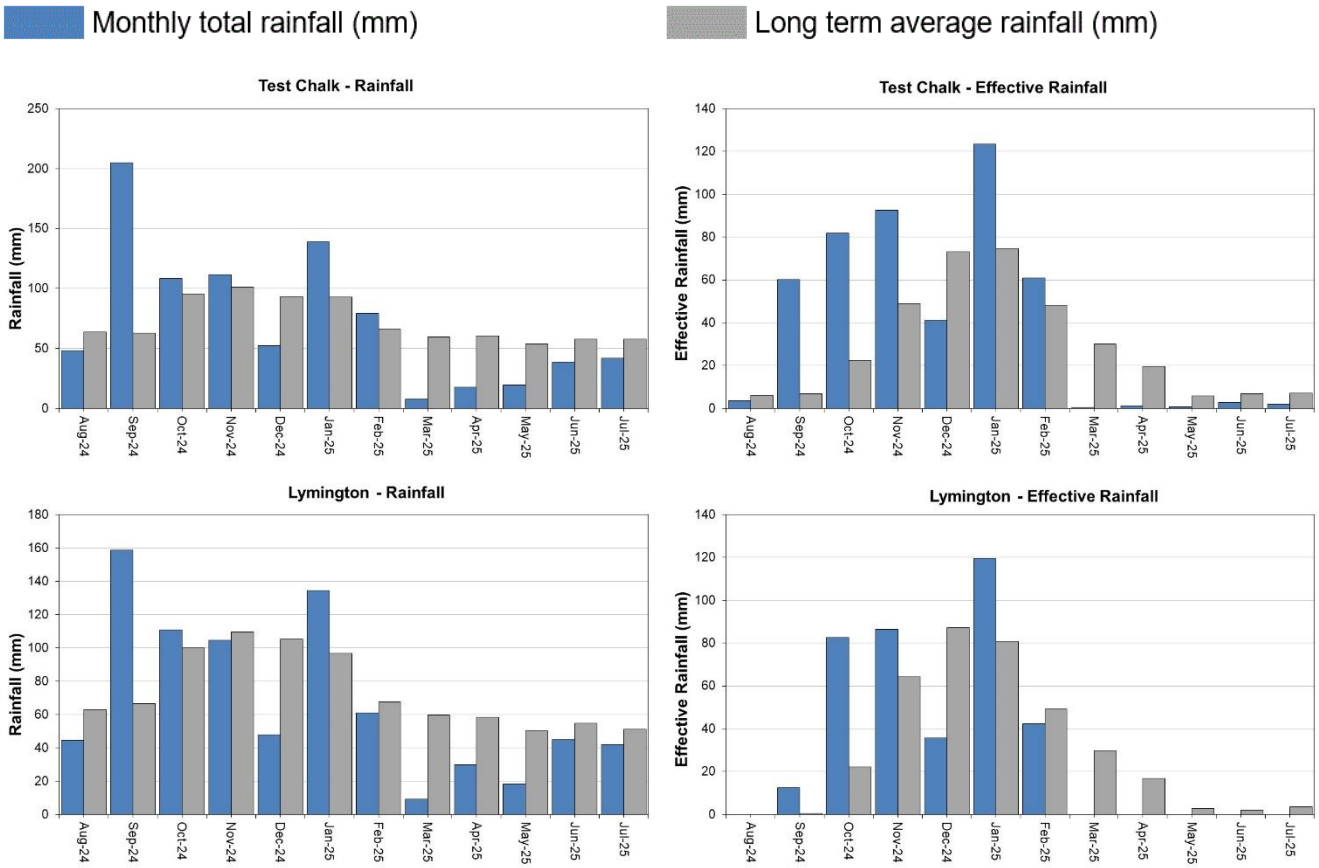


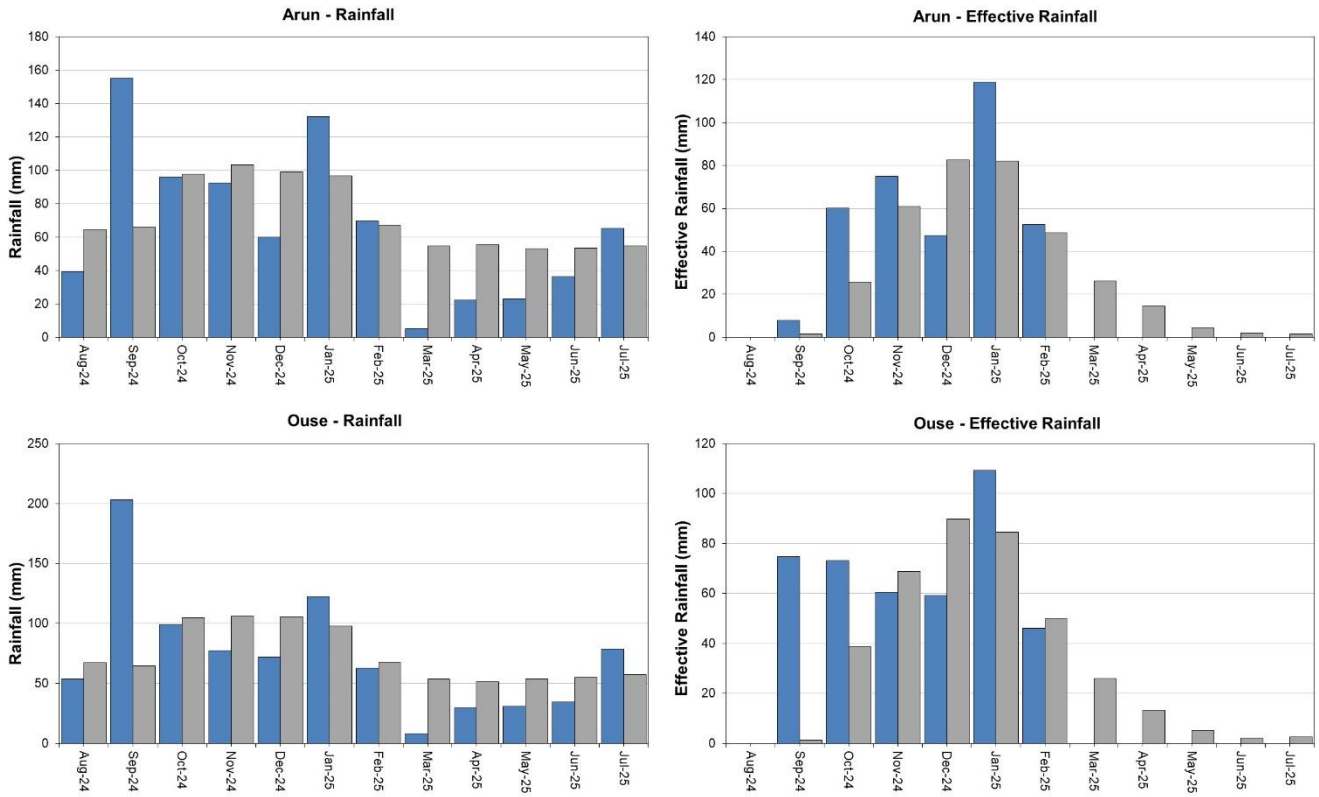
(Source: water companies).

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 1991 to 2020 long term average for a selection of areal units.



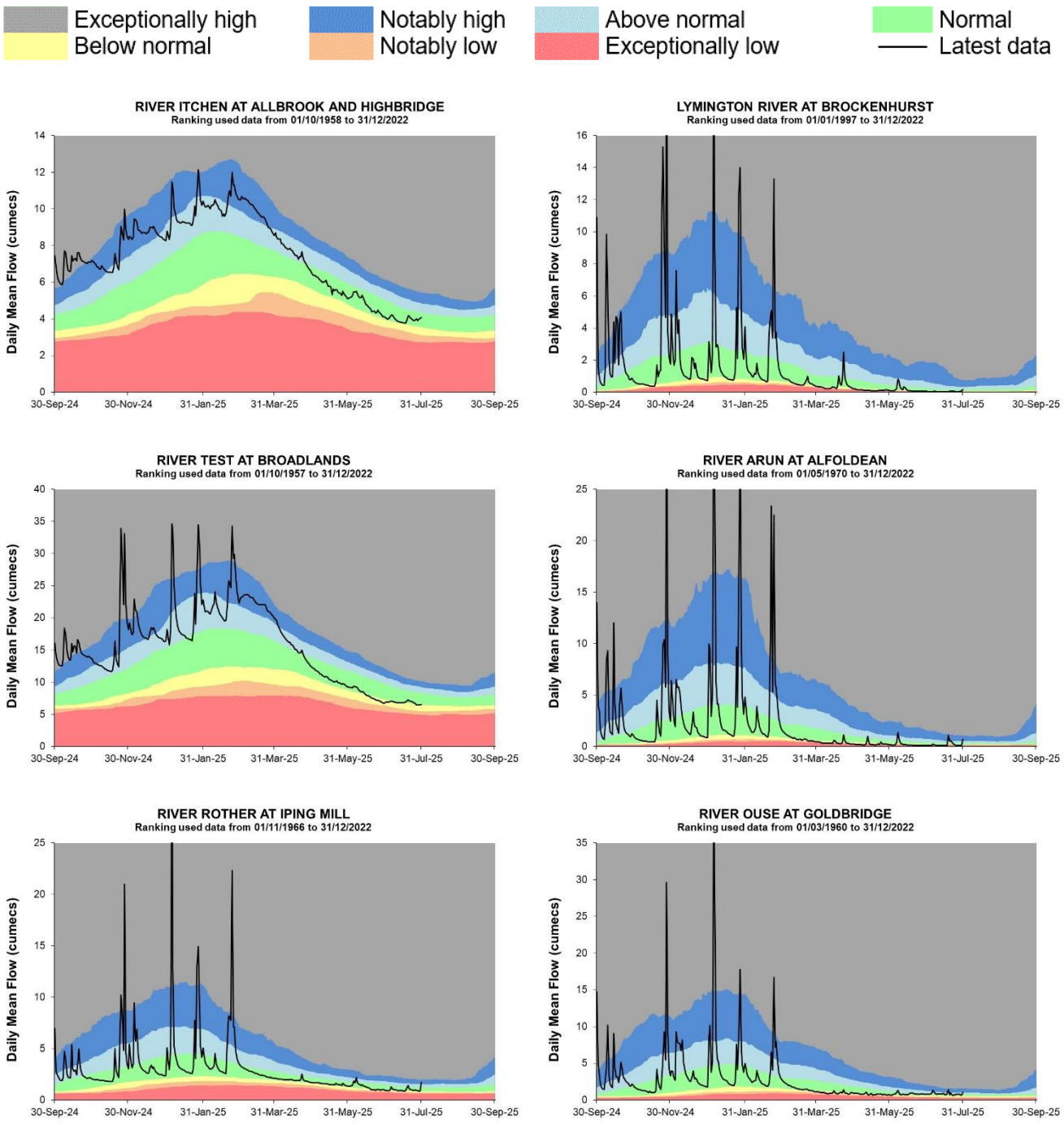


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

6.2 SSD River flow charts

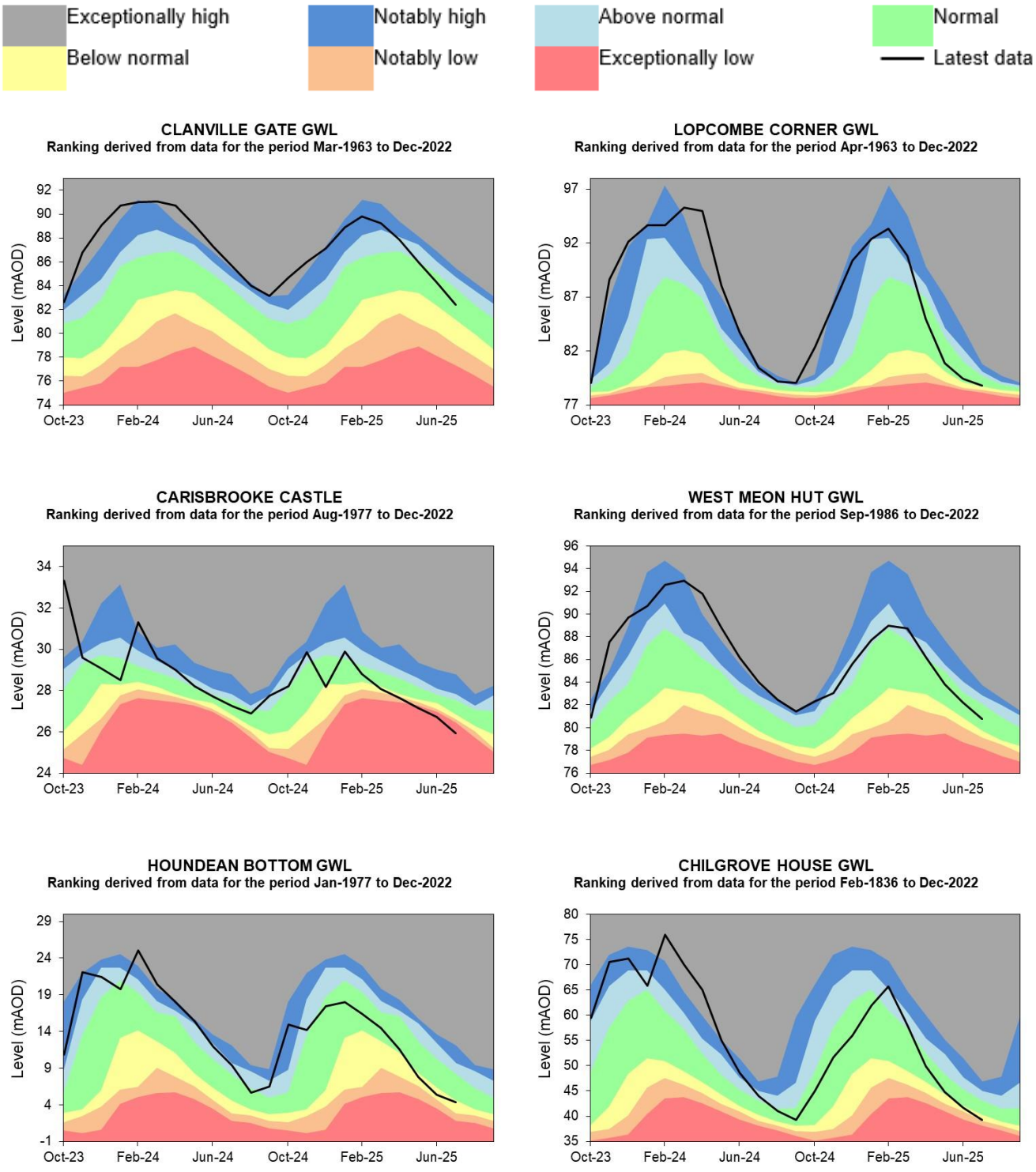
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

6.3 SSD Groundwater levels

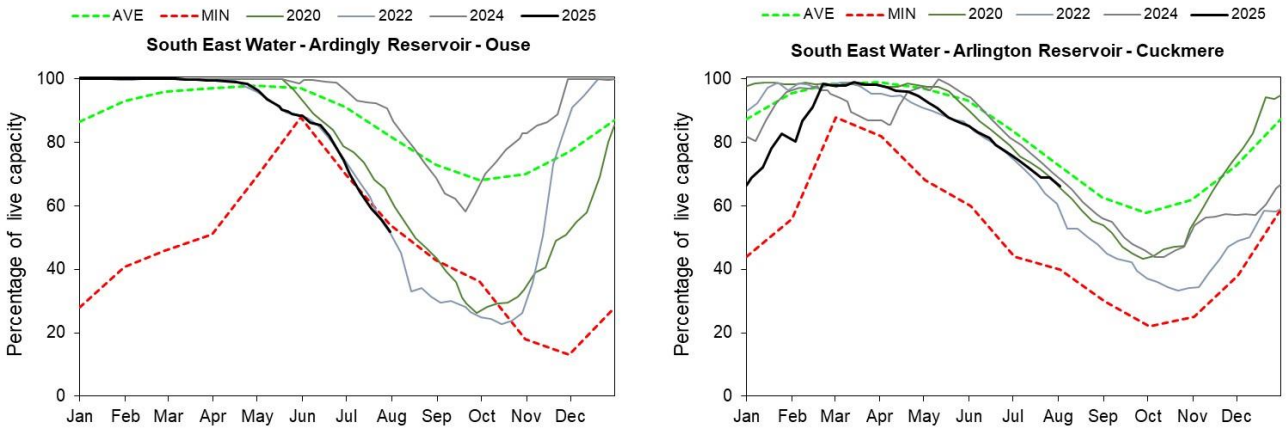
Figure 6.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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.

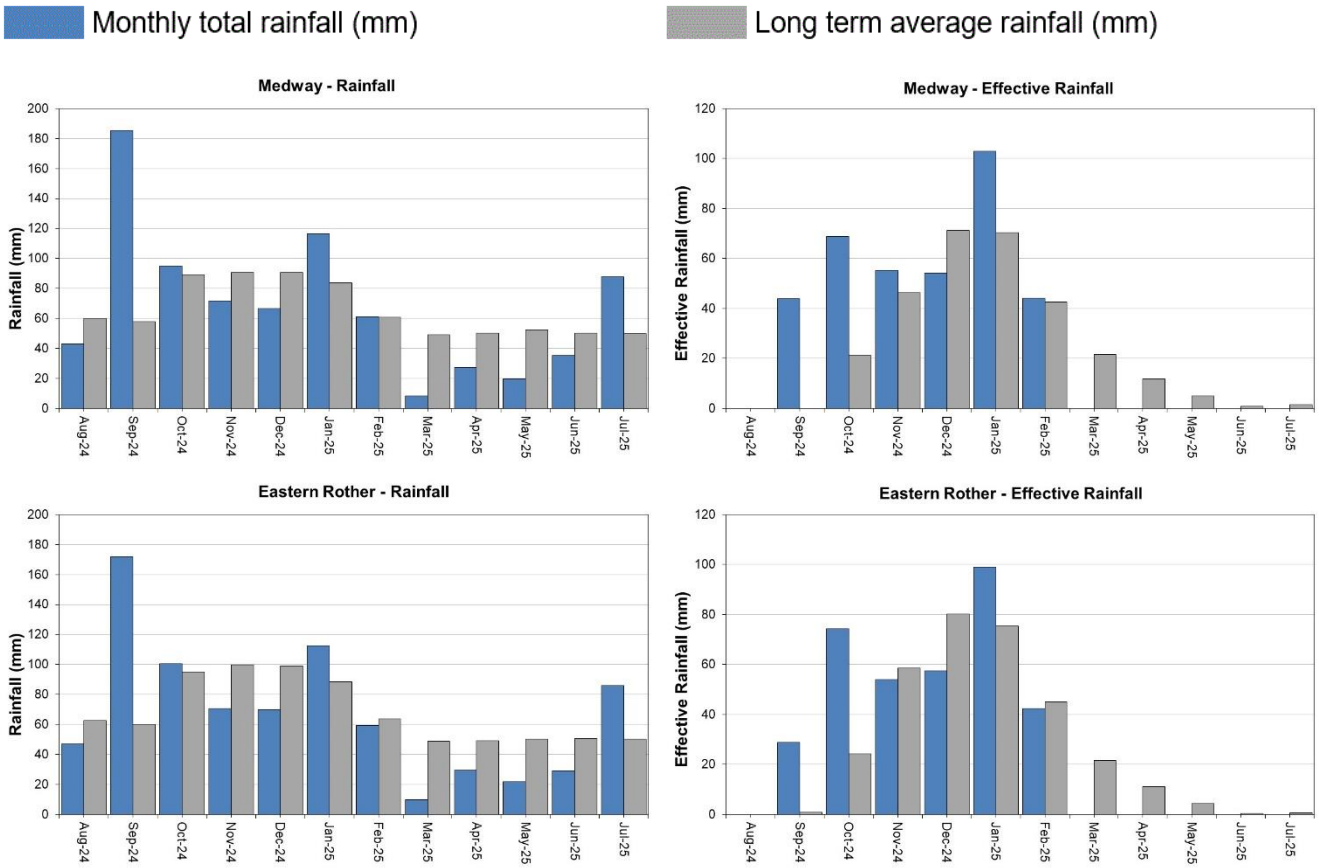


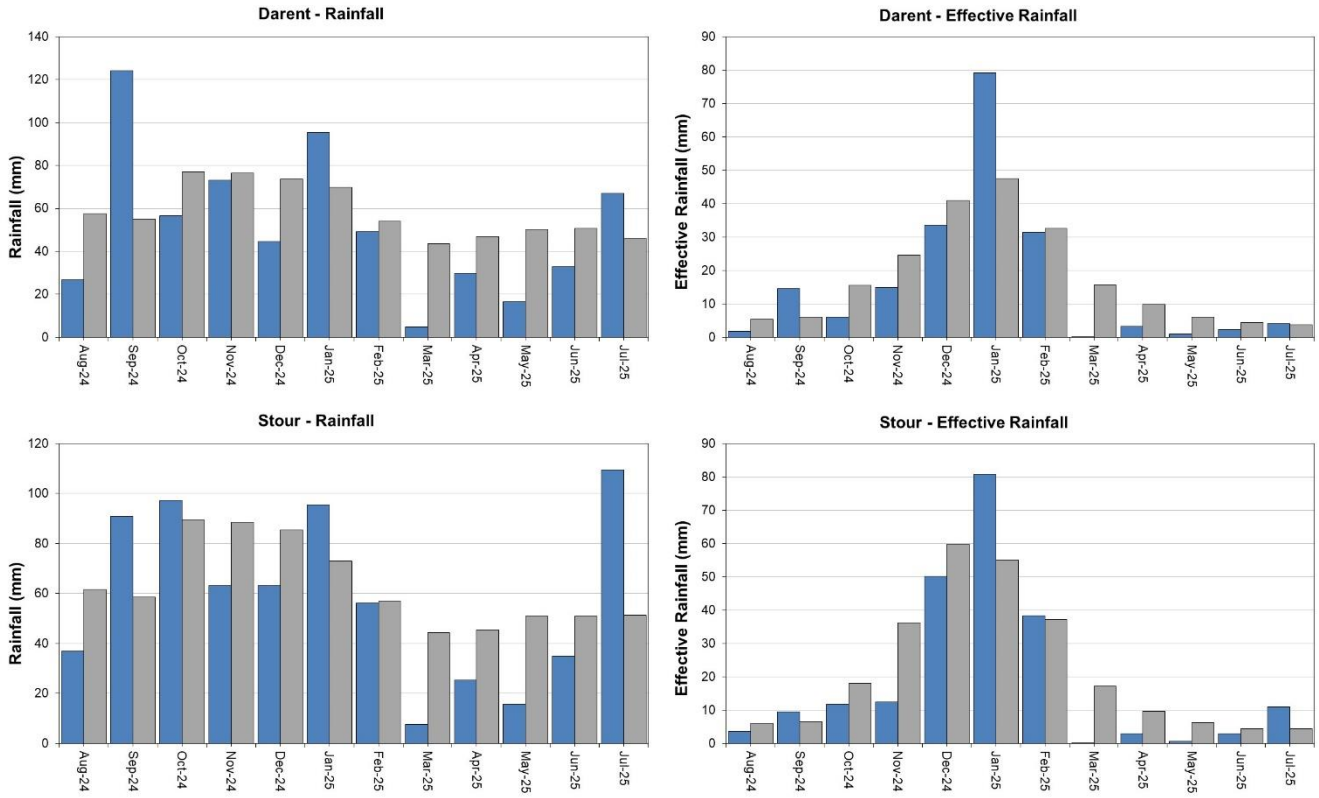
(Source: water companies).

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 1991 to 2020 long term average for a selection of areal units.



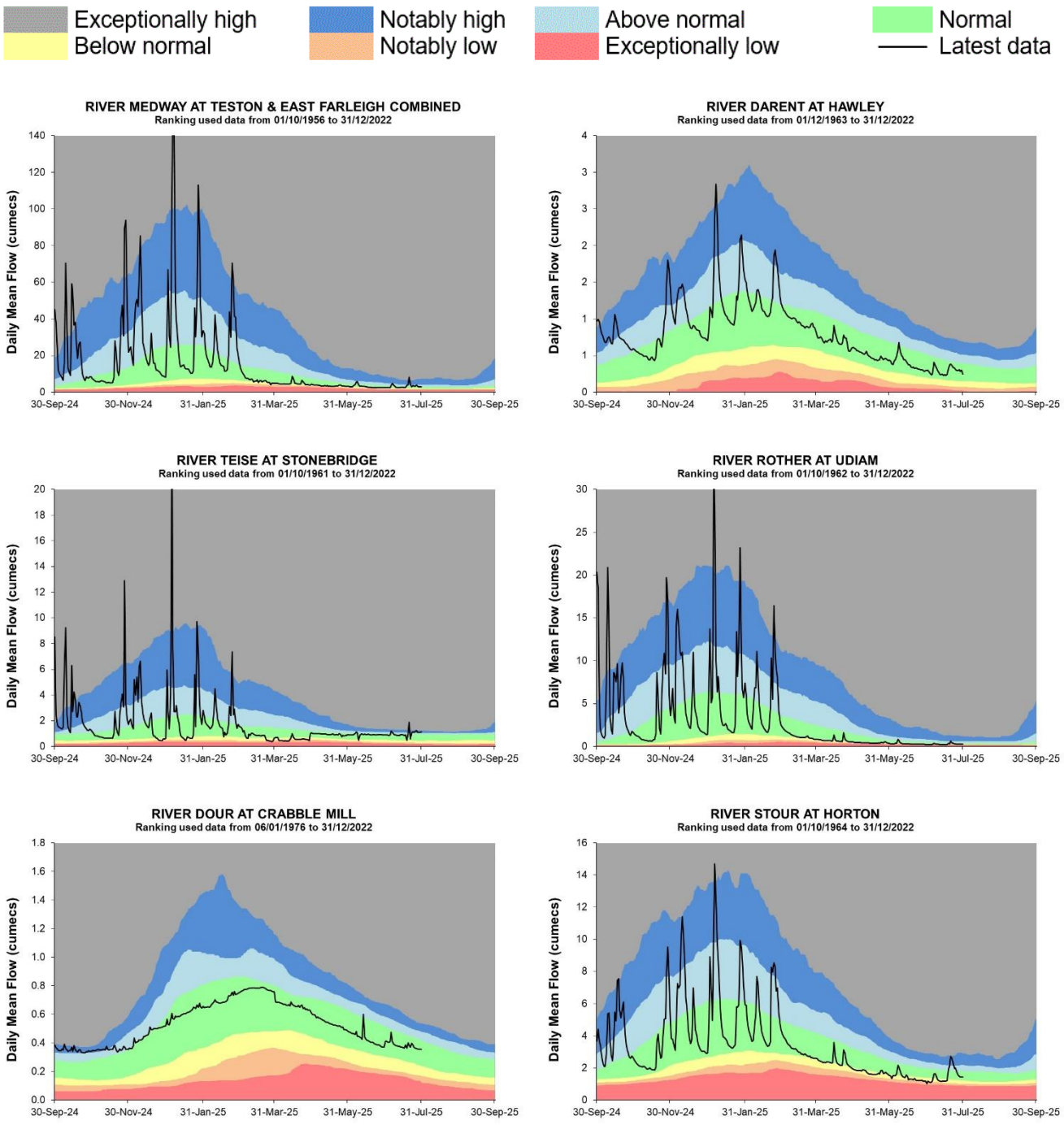


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

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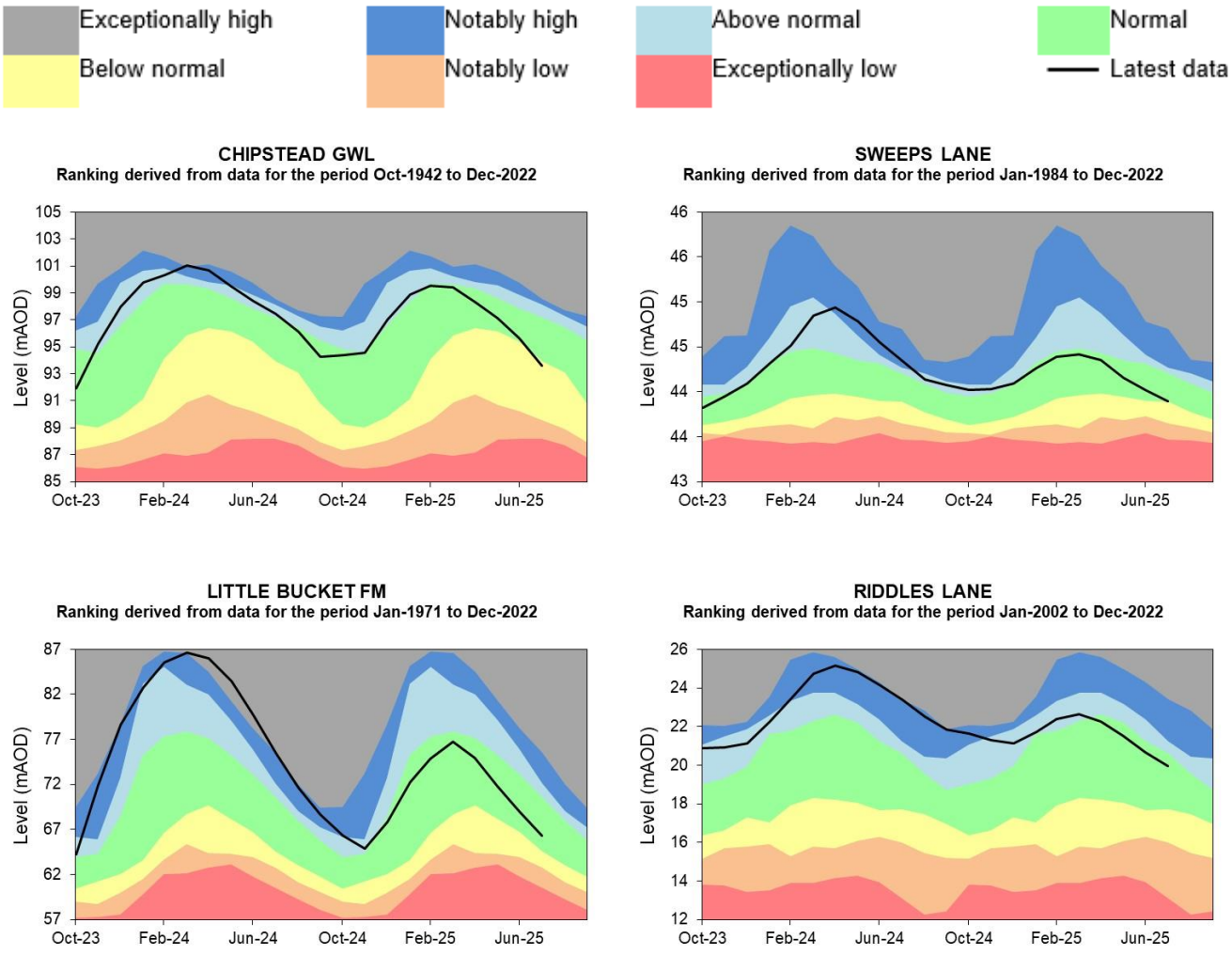
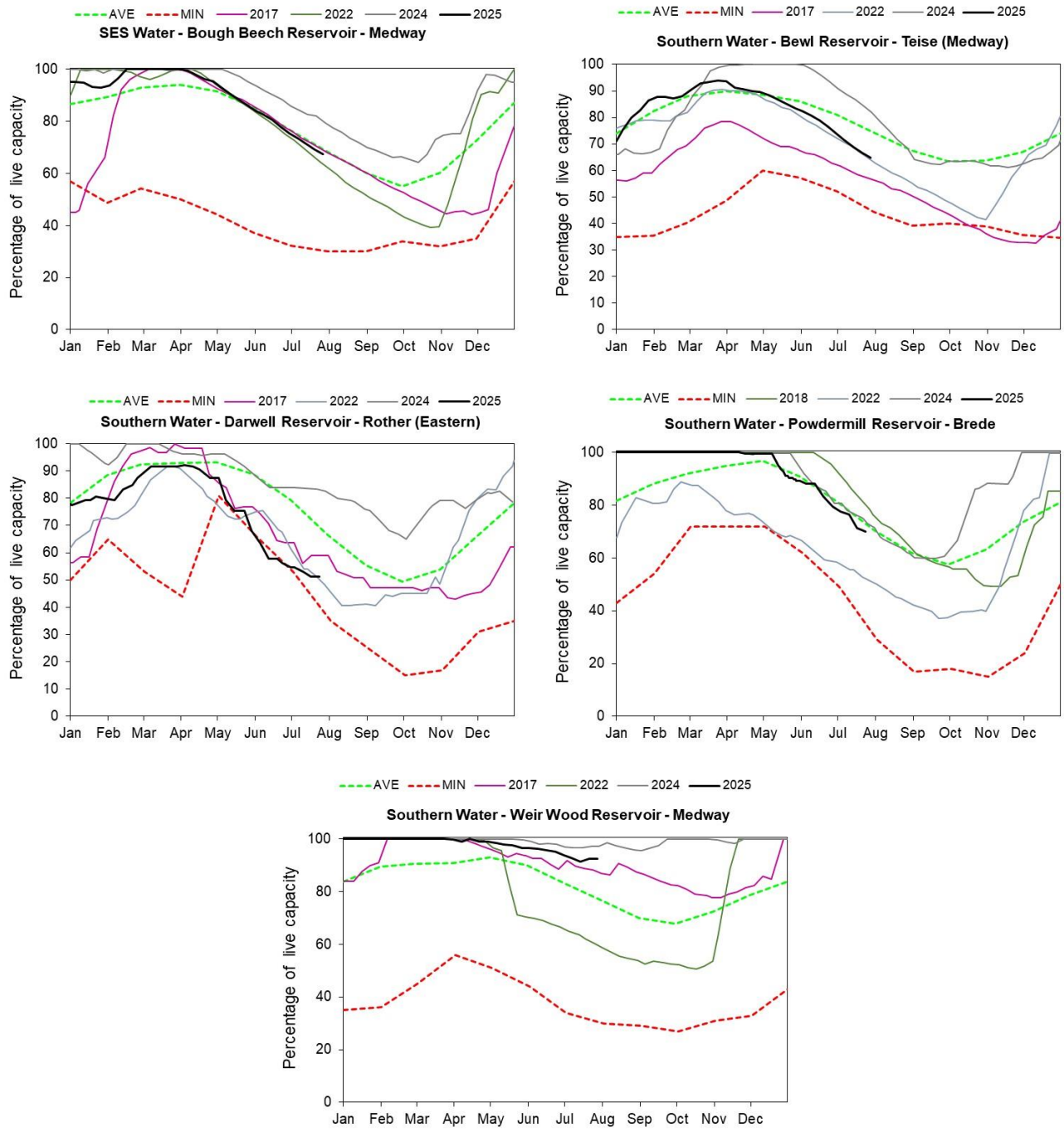


Source: Environment Agency. 2025

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 1991 to 2020. However, the period used may vary by parameter being reported on (see figure captions for details).

mAOD

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

MORECS

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

Naturalised flow

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

NCIC

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

Recharge

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

Reservoir gross capacity

The total capacity of a reservoir.

Reservoir live capacity

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

Soil moisture deficit (SMD)

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

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	Jul 2025 rainfall % of long term average 1991 to 2020	Jul 2025 band	May 2025 to July cumulative band	Feb 2025 to July cumulative band	Aug 2024 to July cumulative band
Cotswold West	61	Below Normal	Exceptionally low	Exceptionally low	Normal
Cotswold East	77	Normal	Notably low	Exceptionally low	Normal
Berkshire Downs	72	Normal	Notably low	Exceptionally low	Normal
Chilterns West	93	Normal	Below normal	Exceptionally low	Normal
Chilterns East Colne	96	Normal	Notably low	Exceptionally low	Normal
North Downs - Hampshire	94	Normal	Below normal	Notably low	Normal
North Downs - South London	136	Normal	Below normal	Exceptionally low	Normal
Upper Thames	56	Below Normal	Notably low	Exceptionally low	Normal
Upper Cherwell	91	Normal	Notably low	Exceptionally low	Normal
Thame	85	Normal	Notably low	Exceptionally low	Normal
Loddon	88	Normal	Notably low	Exceptionally low	Normal
Lower Wey	106	Normal	Below normal	Exceptionally low	Normal
Upper Mole	144	Above Normal	Normal	Notably low	Normal
Lower Lee	98	Normal	Notably low	Notably low	Below normal
North London	119	Normal	Below normal	Notably low	Normal
South London	139	Normal	Below normal	Notably low	Normal
Roding	93	Normal	Notably low	Exceptionally low	Notably low

Ock	79	Normal	Notably low	Exceptionally low	Normal
Enborne	77	Normal	Notably low	Exceptionally low	Normal
Cut	96	Normal	Notably low	Exceptionally low	Normal
Lee Chalk	109	Normal	Notably low	Exceptionally low	Normal
River Test	73	Normal	Notably low	Exceptionally low	Normal
East Hampshire Chalk	100	Normal	Below normal	Notably low	Normal
West Sussex Chalk	104	Normal	Below normal	Notably low	Normal
East Sussex Chalk	113	Normal	Below normal	Notably low	Normal
Sw Isle Of Wight	113	Normal	Below normal	Exceptionally low	Normal
River Darent	146	Normal	Below normal	Notably low	Normal
North Kent Chalk	191	Above Normal	Normal	Below normal	Normal
Stour	213	Notably High	Normal	Below normal	Normal
Dover Chalk	207	Notably High	Normal	Normal	Normal
Thanet Chalk	208	Notably High	Normal	Below normal	Below normal
Western Rother Greensand	108	Normal	Below normal	Notably low	Normal
Hampshire Tertiaries	95	Normal	Below normal	Notably low	Normal
Lymington River Avon Water And O	82	Normal	Below normal	Exceptionally low	Normal
Sussex Coast	101	Normal	Below normal	Exceptionally low	Normal
River Arun	119	Normal	Below normal	Notably low	Normal
River Adur	124	Normal	Below normal	Notably low	Normal
River Ouse	137	Normal	Normal	Notably low	Normal
Cuckmere River	124	Normal	Normal	Notably low	Normal
Pevensey Levels	133	Above Normal	Normal	Notably low	Normal
River Medway	175	Above Normal	Normal	Below normal	Normal
Eastern Rother	172	Above Normal	Normal	Notably low	Normal

Romney Marsh	190	Notably High	Normal	Below normal	Normal
North West Grain	158	Above Normal	Below normal	Notably low	Below normal
Sheppy	189	Notably High	Normal	Notably low	Below normal

9.2 River flows table

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

9.3 Groundwater table

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

9.4 South-east England areal units for reference