

Monthly water situation report:

South-east England

1 Summary - March 2025

March was a dry month with only 12% of the long term average (LTA) rainfall recorded across the south-east of England. There were 23 'dry' (less than 0.2mm rainfall) days during the month and meant that it was the driest March since 1961 for the south-east of England and all four Areas. Soil moisture deficits (SMDs) increased throughout the month and ended March at three times the LTA. The combination of such low rainfall and high SMDs meant that there was zero recharge during March. For the winter as a whole (October to March), there was 127% of the LTA recharge, which was the third consecutive winter when above average recharge was recorded. River flows fell at all of the key indicator sites across the south-east of England and ranged from exceptionally high down to notably low during March. Groundwater levels at most of the key indicator sites fell during the month. By the end of March, groundwater levels ranged from exceptionally high in the Lee Chalk (Hertfordshire and North London, HNL) and Chilterns (Thames, THM) to notably low in the faster responding Oolites in THM.

1.1 Rainfall

March was a dry month with only 12% of the LTA rainfall recorded across the south-east of England. The rainfall was consistent across all Areas that recorded 12% LTA except THM that recorded 11%. The highest daily total was 10.8mm on 22 March at Aylesbury (THM). The wettest day was 3 March when the top 5 daily rainfall totals in Solent and South Downs (SSD), Kent and South London (KSL) and THM (with the exception of Aylesbury on 22 March) were recorded. Just over a quarter of the monthly rainfall total fell on this day. There were 23 'dry' (less than 0.2mm rainfall) days during the month, that meant it was the driest March since 1961 for the south-east of England, all four Areas and around a third of the areal units. It has also been the driest March since 1990 for another third of the areal units.

1.2 Soil moisture deficit and recharge

SMDs increased throughout the month, with a small exception around 23 March when it rained. SMDs ended the month at three times the LTA for the end of March. This was the first time that SMDs were above average since August 2024. The combination of such low rainfall and high SMDs meant that there was zero recharge during March. For the winter as a whole (October to March), there was 127% of the LTA recharge, which was the third consecutive winter when above average recharge was recorded.

1.3 River flows

River flows fell at all of the key indicator sites across the south-east of England. Flows ranged from exceptionally high to notably low during March. Generally, flows fell more steeply and to lower flows than have been seen for quite some time across the clay catchments across the Weald in KSL. Rivers in the chalk, groundwater-fed catchments were maintained at higher and more steady flows by the high groundwater levels. The Mimram at Panshanger and the Ver at Colney Street (both HNL) were the fourth and sixth highest March flows, respectively. This is the second consecutive year that both these rivers have been at their highest March flows. Just one fluvial flood alert was issued in KSL.

	HNL	THM	SSD	KSL	Total
Fluvial Alerts	0	0	0	1	1
GW Alerts	2	1	3	0	6
Total	2	1	3	1	7

1.4 Groundwater levels

The low rainfall totals, coupled with climbing SMDs and the lack of recharge has meant that groundwater levels at most of the key indicator sites fell during March. A couple of sites (Chipstead, KSL and Ashley Green, HNL) levelled off and there were a number of sites that continued to rise. The sites that rose included the slower responding chalk at Stonor (THM) and several sites in KSL including Riddles Lane in the North Kent Chalk. By the end of March, groundwater levels ranged from exceptionally high in the Lee Chalk (HNL) and Chilterns (THM) to notably low in the faster responding Oolites in THM. Lilley Bottom (HNL) remained exceptionally high and was the second highest March level on record. There were 6 groundwater alerts still in force, across THM, SSD and HNL.

1.5 Reservoir stocks

Farmoor and most of the reservoirs in KSL ended the month above the LTA. Only Lower Thames (THM) and Darwell (KSL) were below the LTA. The Lee Valley (HNL) and Arlington and Ardingly (SSD) reservoirs all ended March at the LTA.

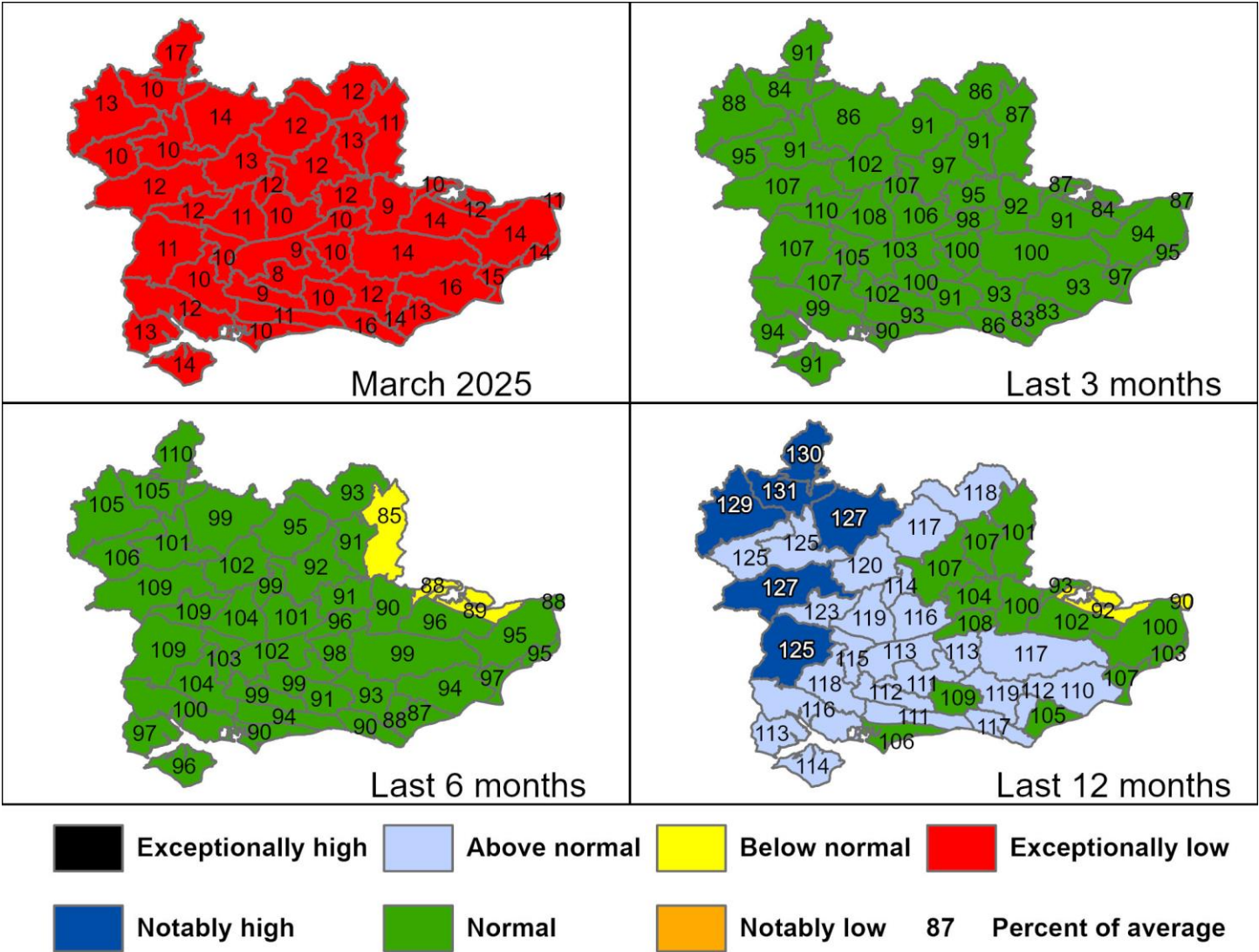
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2 Maps

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 March 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.



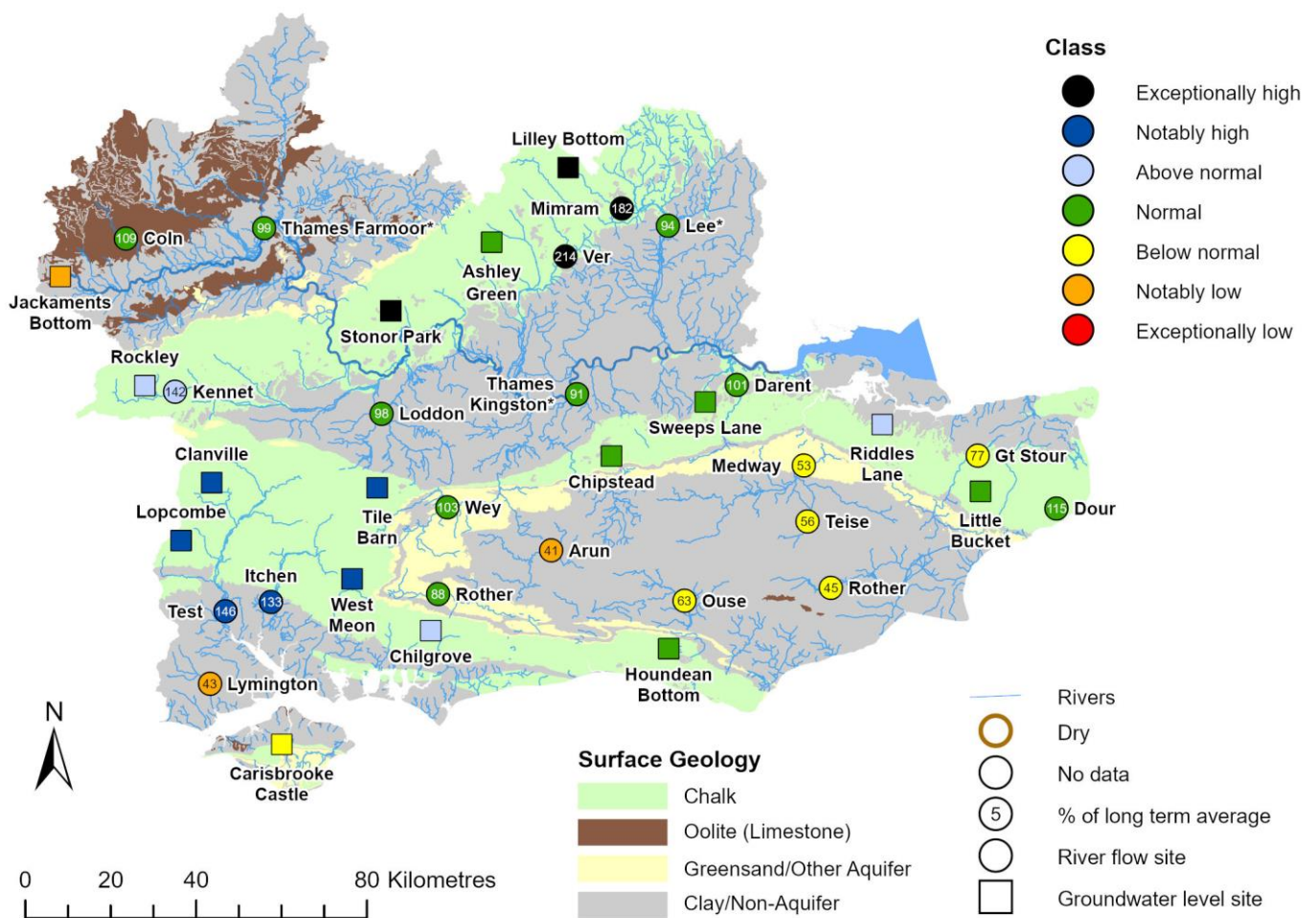
Rainfall data for 2025, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to 2025, extracted from Met Office HadUK 1km gridded rainfall dataset derived 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 March 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic March monthly means Table available in the appendices with detailed information.

Groundwater levels for indicator sites at the end of March 2025, classed relative to an analysis of respective historic March 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	March % LTA	Effective Rainfall (mm) 31 day total	March % LTA	SMD (mm) Day 31	End Mar LTA
6010TH	Cotswolds - West (A)	8	13%	0	0%	29	7
6070TH	Berkshire Downs (G)	8	12%	0	0%	30	8
6130TH	Chilterns - West (M)	8	13%	0	1%	30	8
6162TH	North Downs - Hampshire (P)	7	10%	0	1%	31	7
6190TH	Wey - Greensand (S)	6	8%	0	0%	31	7
	Thames Average	7	11%	0	0%	31	8
	Thames Catchment Average	7	11%	0	0%	31	8
6140TH	Chilterns - East - Colne (N)	7	12%	0	1%	30	8
6600TH	Lee Chalk	6	12%	0	1%	32	12
6507TH	North London	6	12%	0	0%	34	11
6509TH	Roding	5	10%	0	0%	33	11
	Herts and North London	6	12%	0	0%	32	10

6230TH	North Downs - South London (W)	6	10%	0	1%	30	7
6706So	Darent	5	9%	0	0%	32	8
6707So	North Kent Chalk	7	13%	0	1%	29	7
6708So	Stour	7	13%	0	0%	30	7
6809So	Medway	8	14%	0	0%	27	6
	Kent & South London Average	7	12%	0	0%	32	11
6701So	Test Chalk	8	11%	0	1%	30	7
6702So	East Hampshire Chalk	8	10%	0	1%	29	6
6703So	West Sussex Chalk	8	11%	0	0%	28	6
6804So	Arun	5	7%	0	0%	31	6
6805So	Adur	6	10%	0	0%	29	6
	Solent & South Downs Average	8	12%	0	0%	29	7
	South East Average	7	12%	0	0%	31	9
6010TH	Cotswolds - West (A)	8	13%	0	0%	29	7

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 31/03/2024

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)	446	105%	347	129%
6070TH	Berkshire Downs (G)	451	109%	354	157%
6130TH	Chilterns - West (M)	388	102%	291	153%
6162TH	North Downs - Hampshire (P)	487	102%	386	133%
6190TH	Wey - Greensand (S)	466	102%	355	129%
Thames Catchment Average		394	102%	294	148%
6140TH	Chilterns - East - Colne (N)	363	95%	264	138%
6600TH	Lee Chalk	302	93%	188	155%
6507TH	North London	303	91%	167	136%
6509TH	Roding	261	85%	104	98%
6230TH	North Downs - South London (W)	397	95%	282	120%
6706So	Darent	324	90%	165	99%

6707So	North Kent Chalk	366	96%	201	105%
6708So	Stour	382	95%	194	96%
6809So	Medway	419	99%	325	130%
Kent & South London Average		356	94%	201	111%
6701So	Test Chalk	497	109%	400	150%
6702So	East Hampshire Chalk	521	104%	420	130%
6703So	West Sussex Chalk	481	94%	379	111%
6804So	Arun	455	99%	354	125%
6805So	Adur	420	90%	327	111%
Solent & South Downs Average		454	95%	349	119%
South East Average		392	97%	272	127%

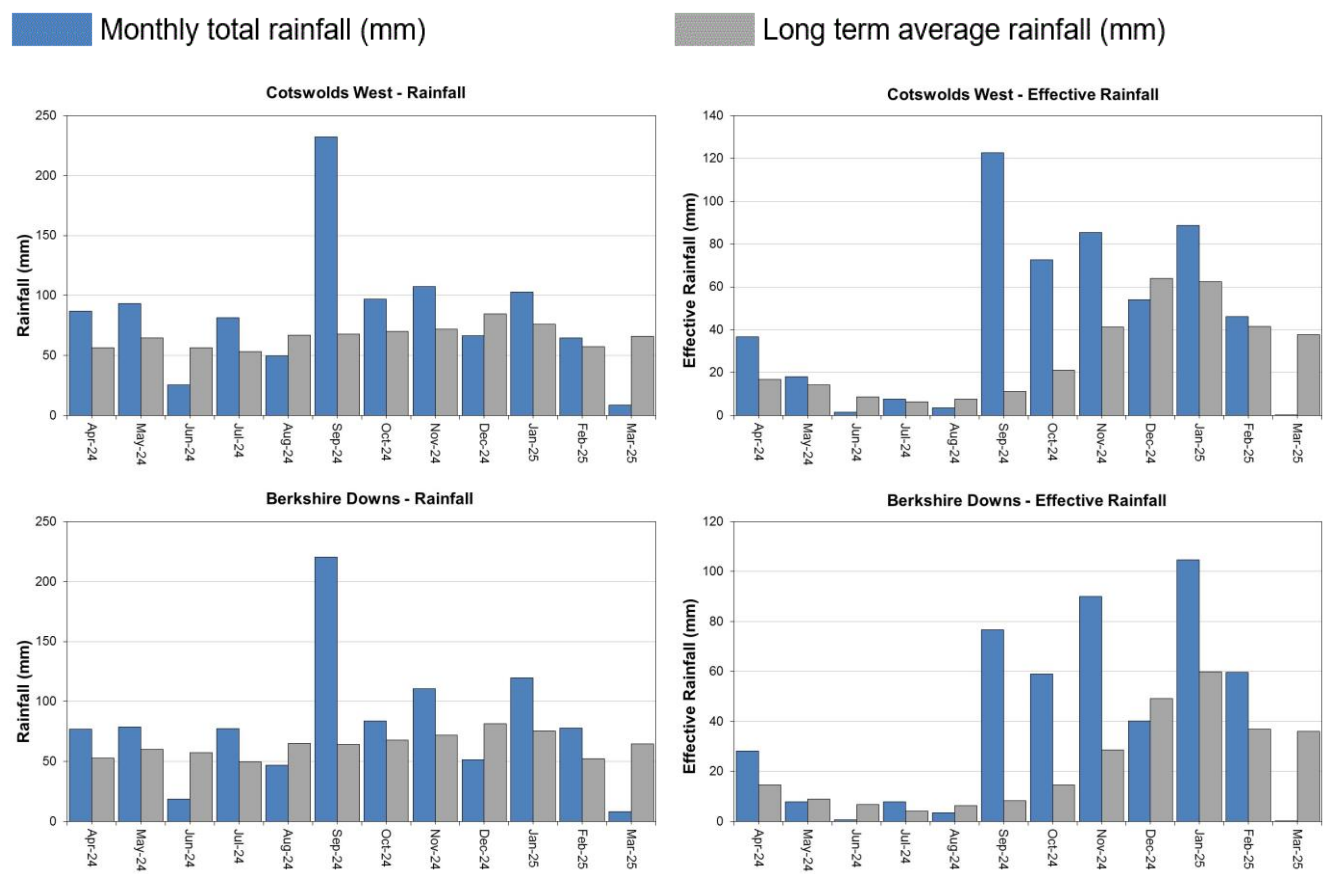
HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

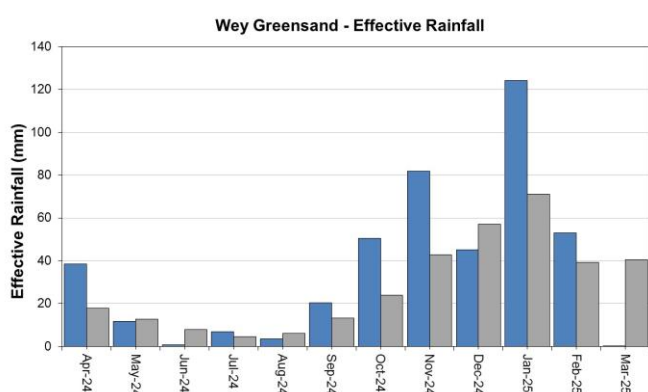
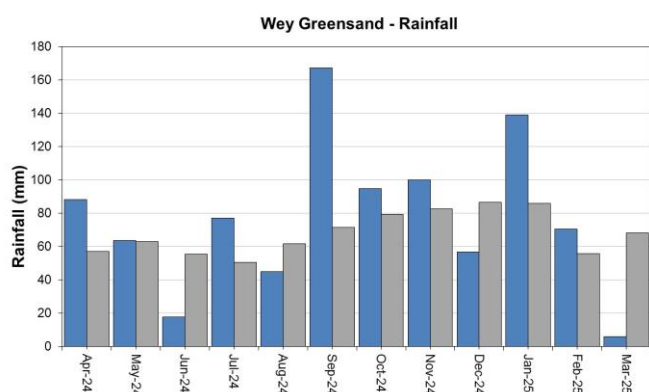
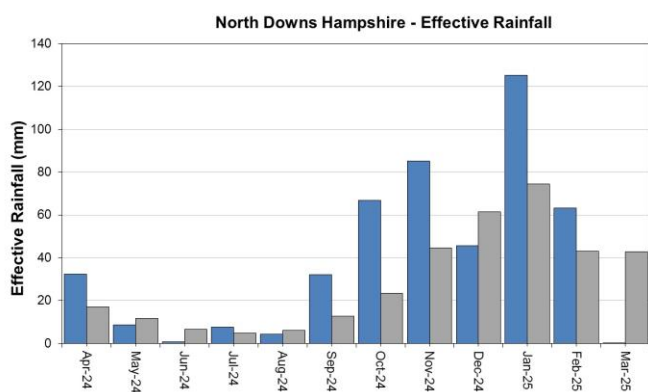
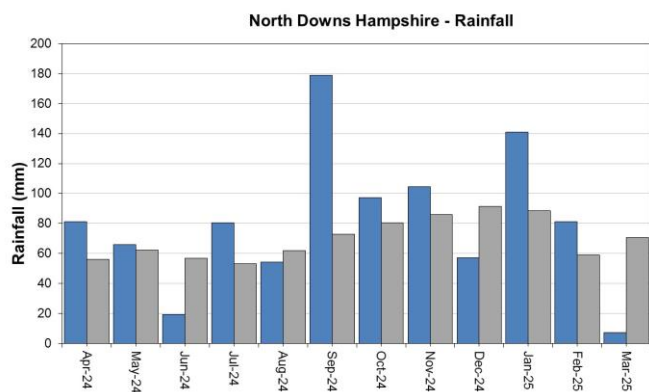
EA effective rainfall data (Source EA Soil Moisture Model 2025.)

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.



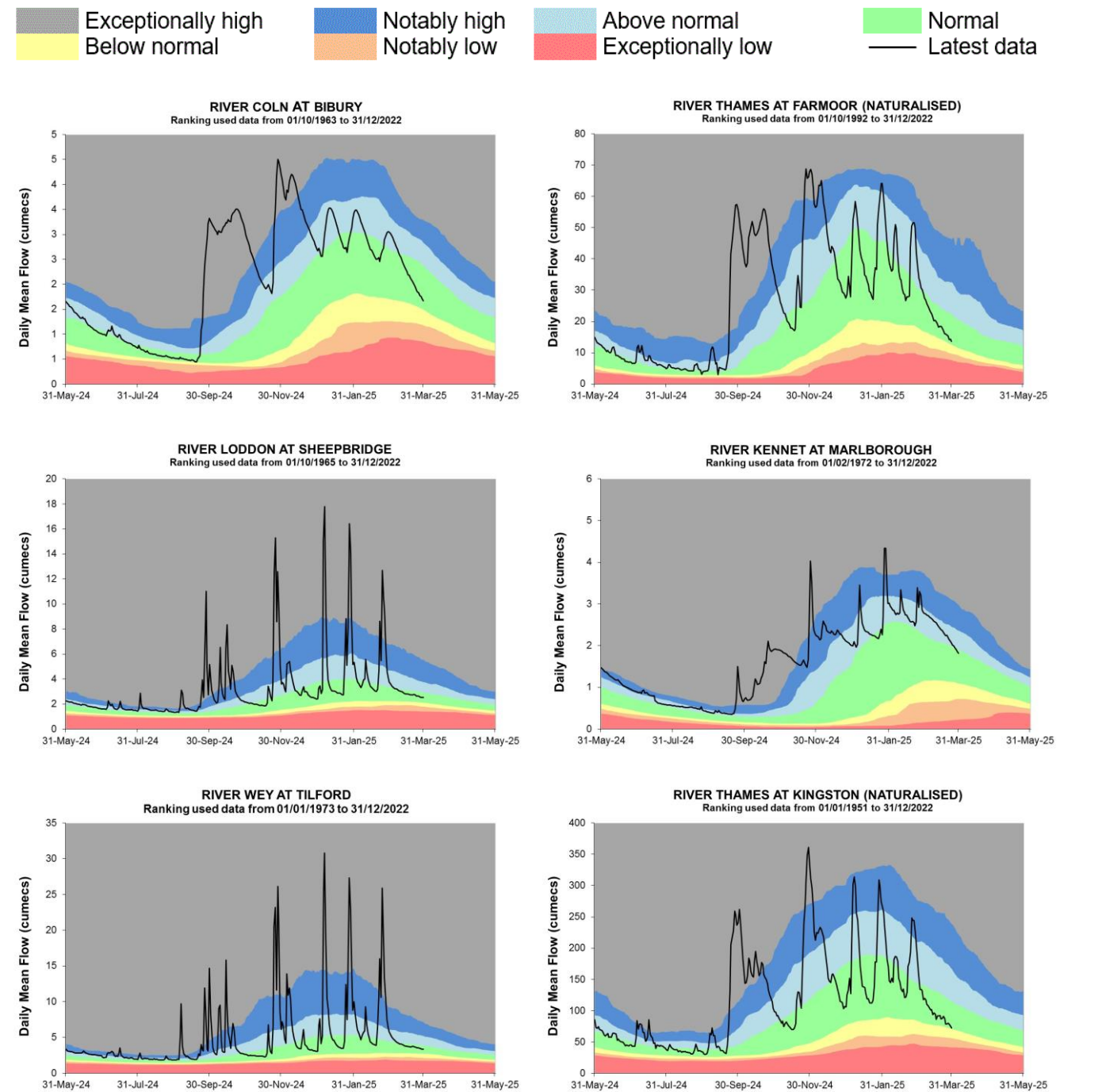


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

4.2 Thames River flow charts

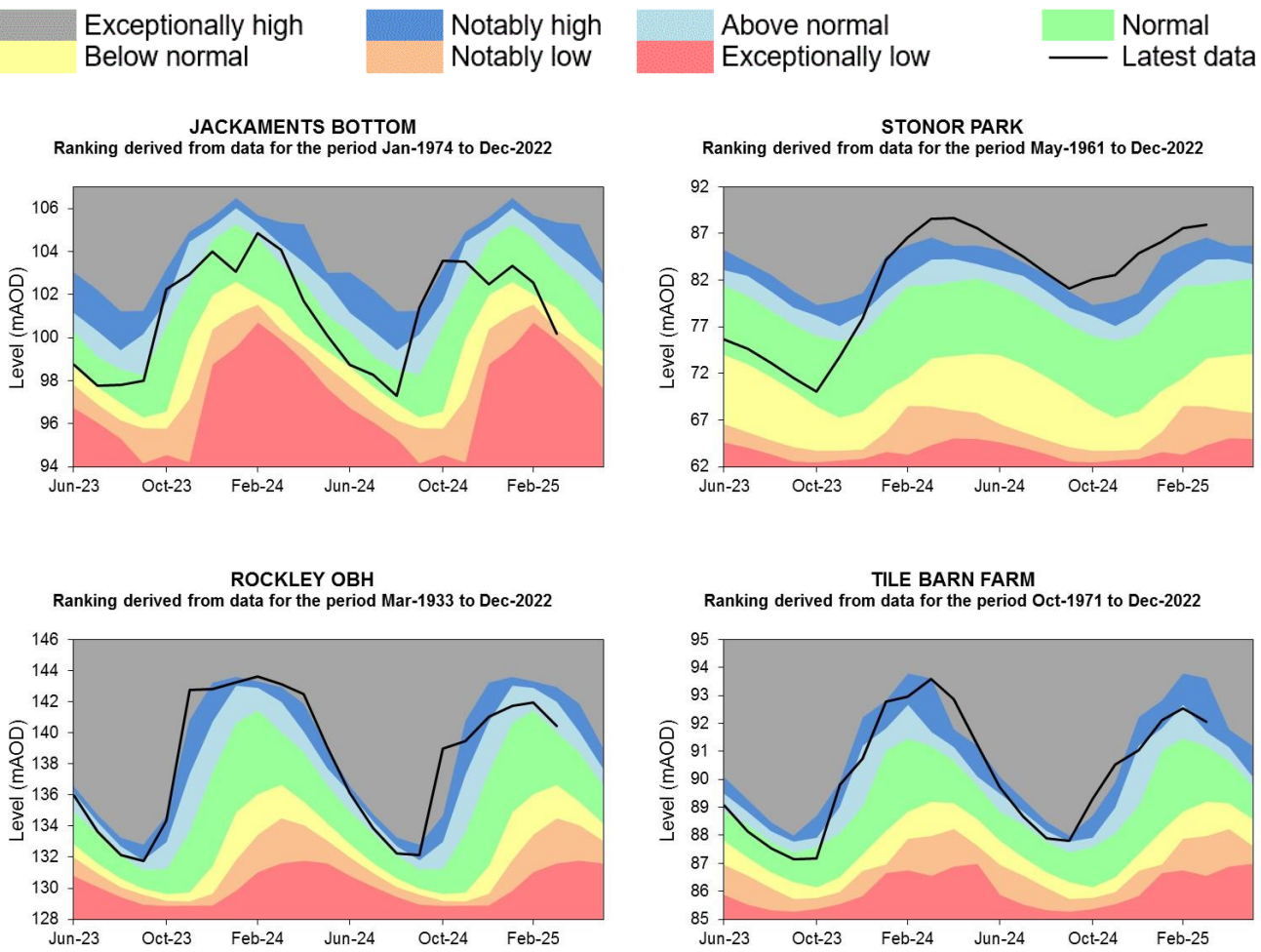
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

4.3 Thames Groundwater level charts

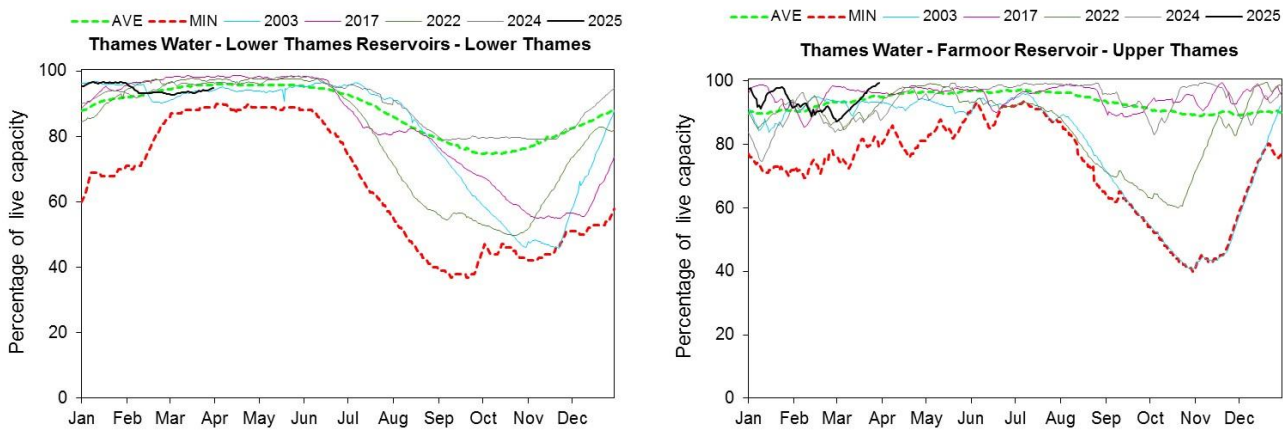
Figure 4.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels. Tile Barn Farm data has been estimated from 2 local sites since April 2022. A replacement is planned.



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.

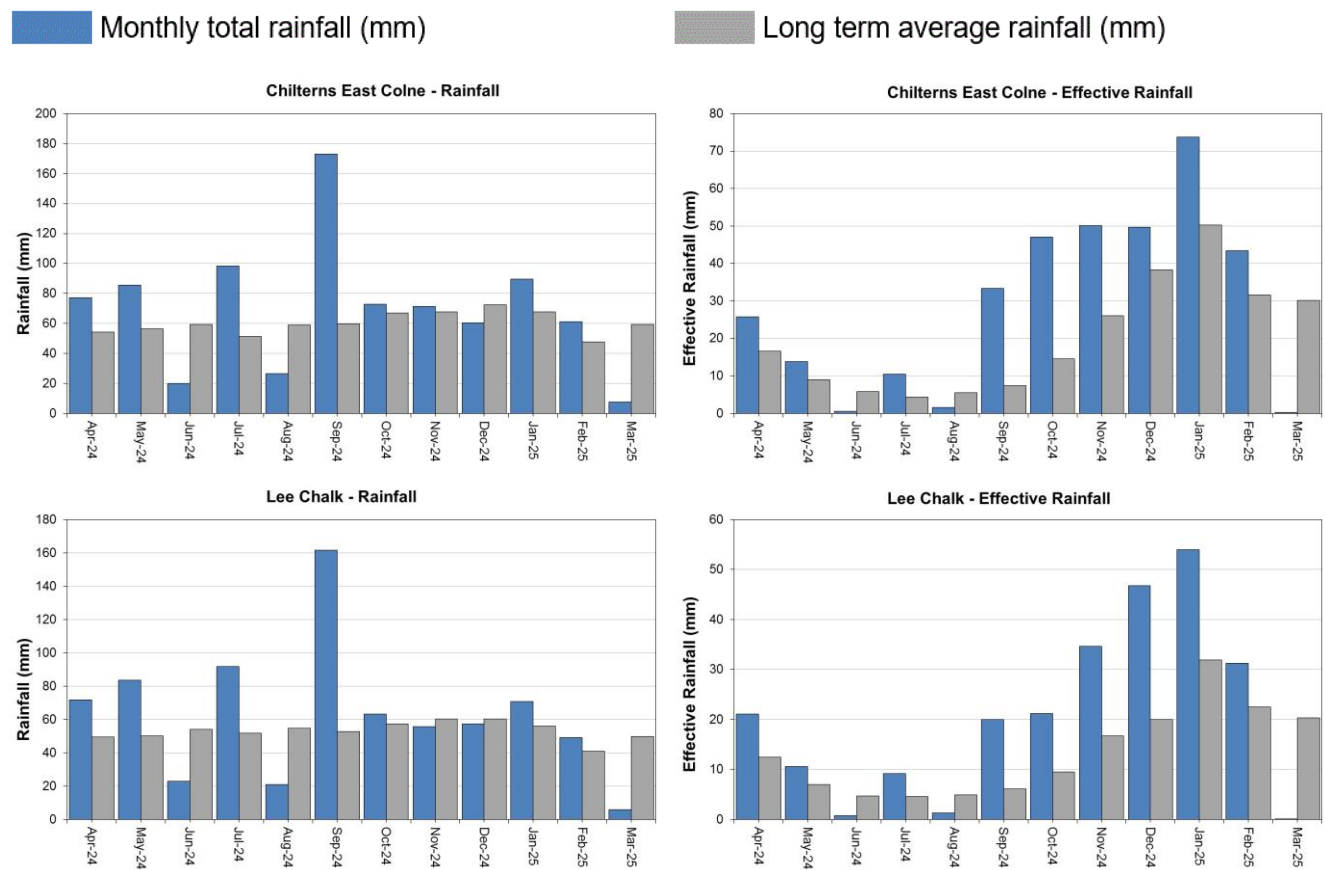


(Source: water companies).

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.

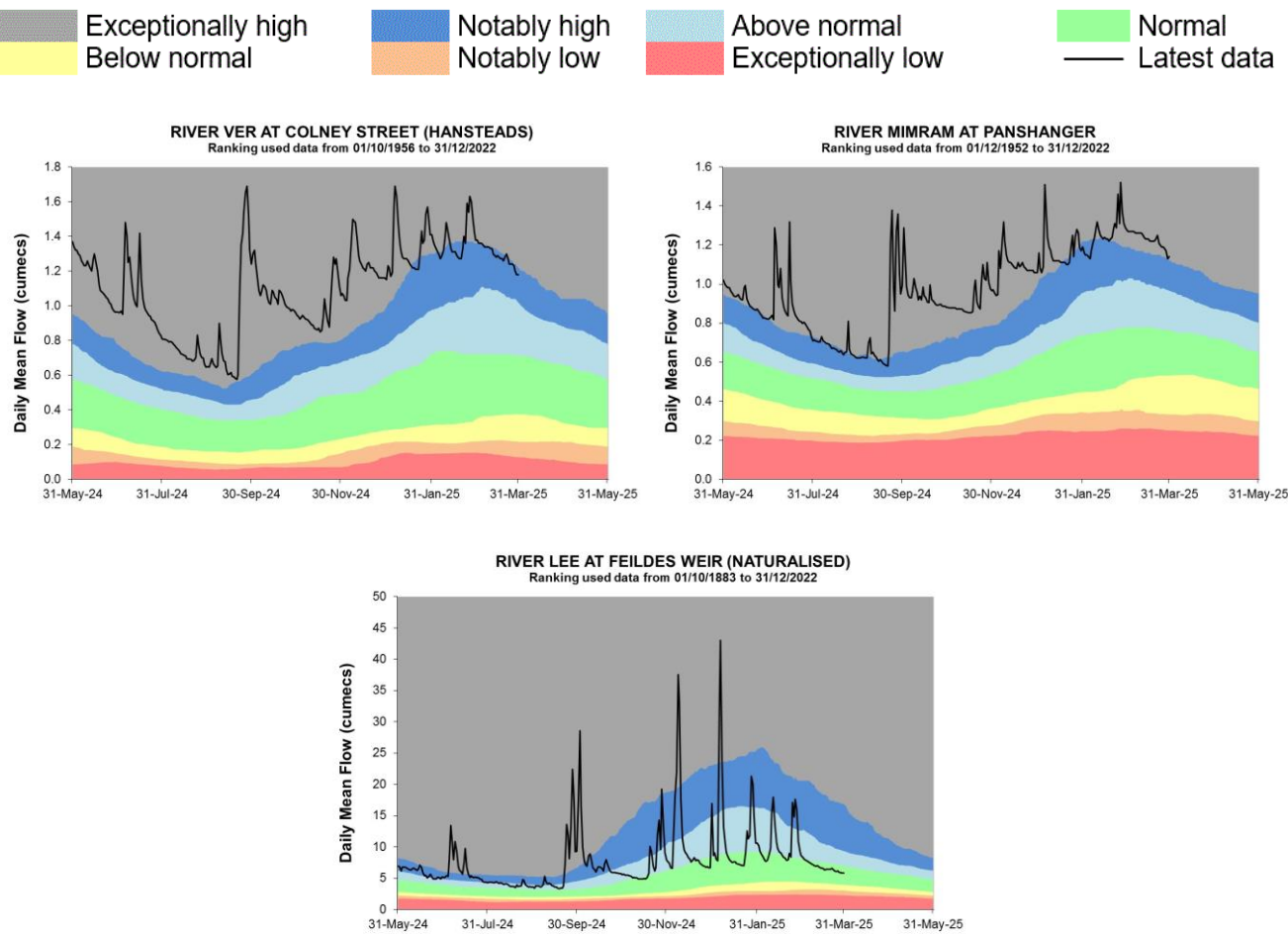


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

5.2 HNL River flow charts

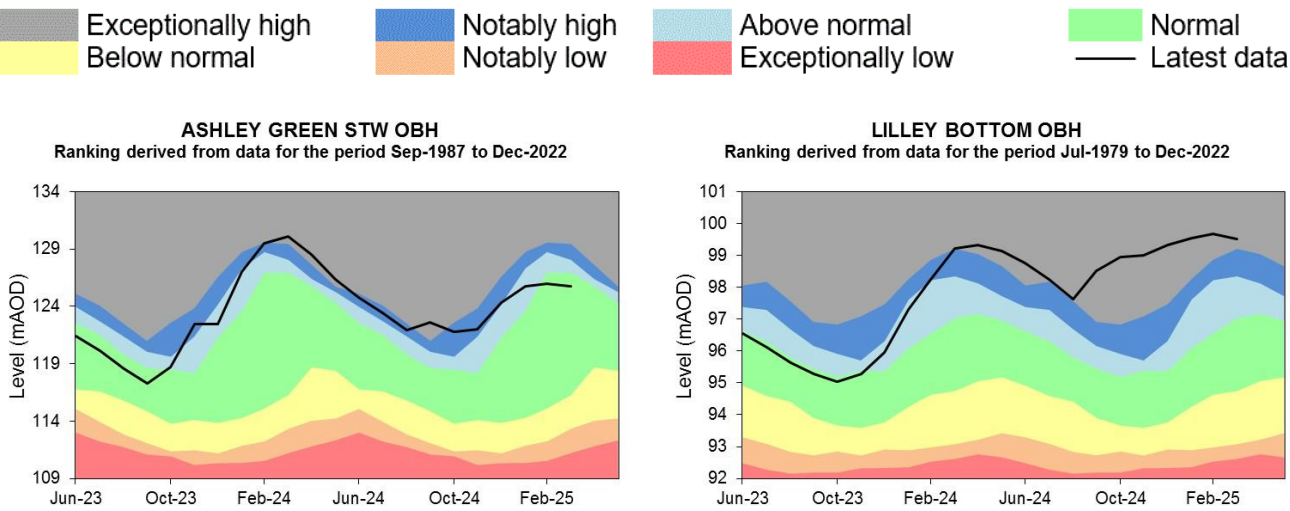
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

5.3 HNL Groundwater level charts

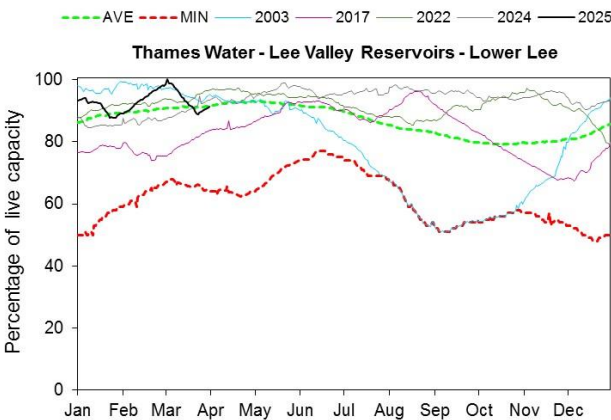
Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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.

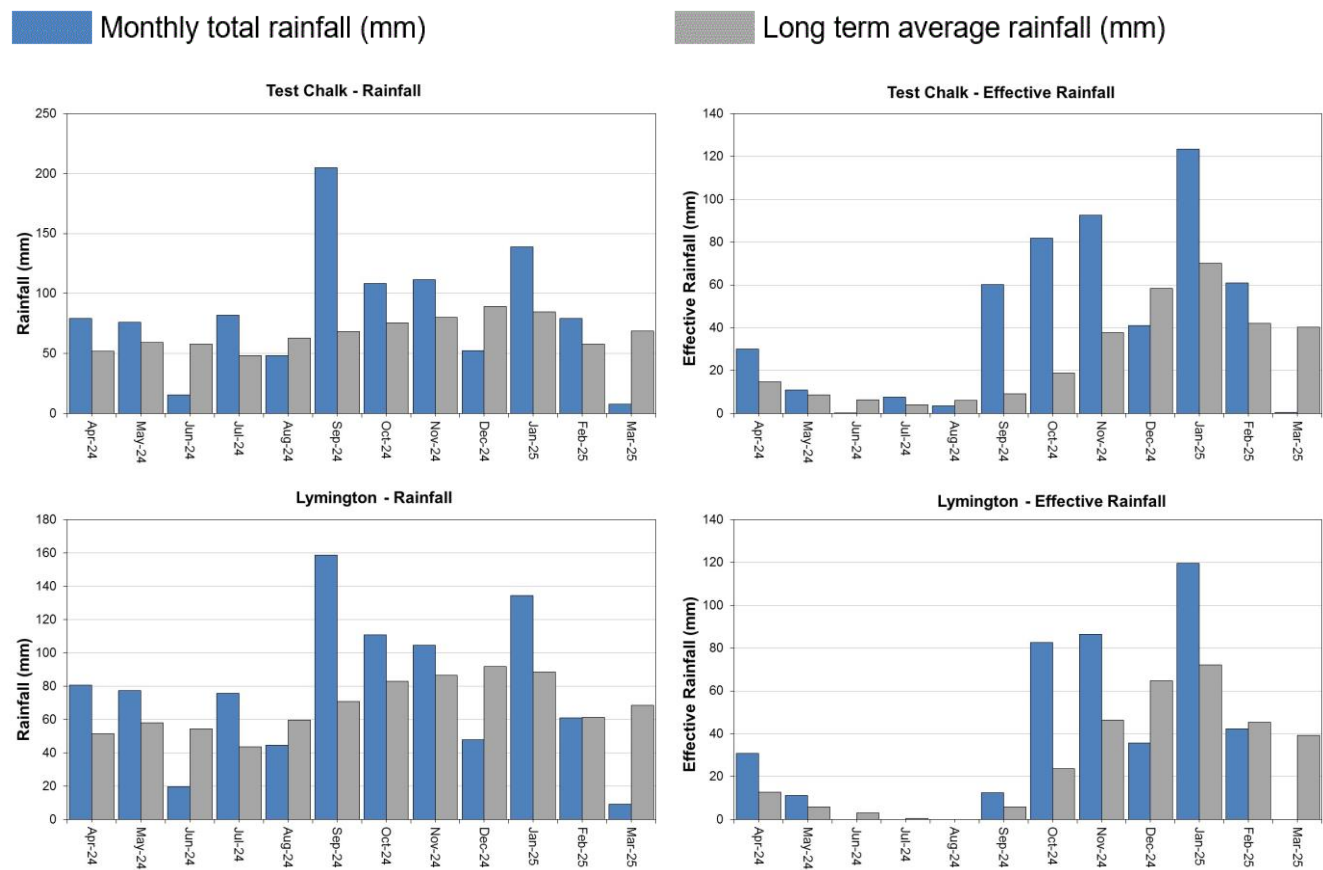


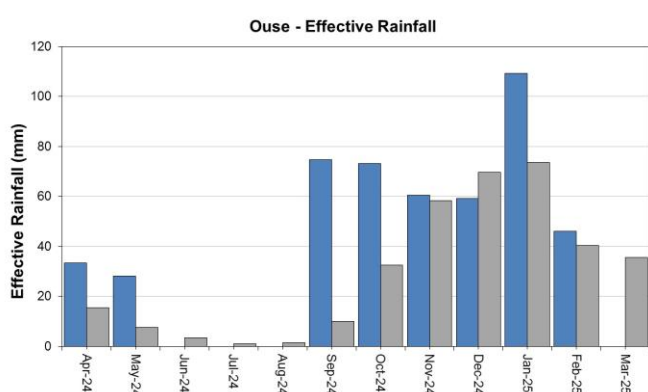
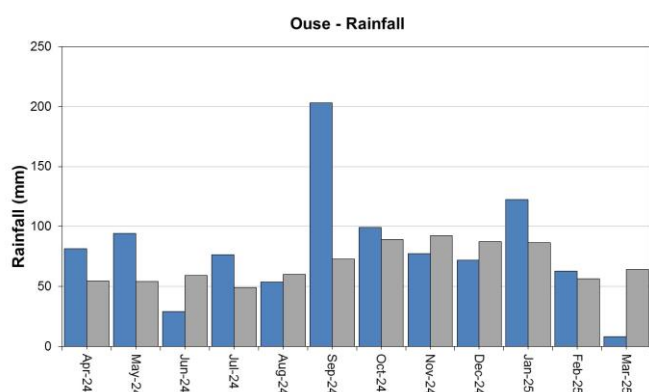
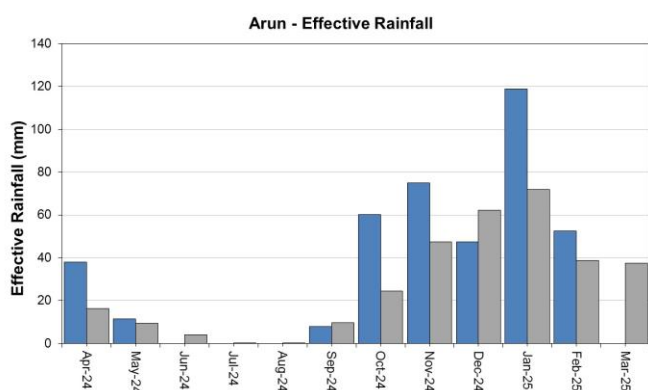
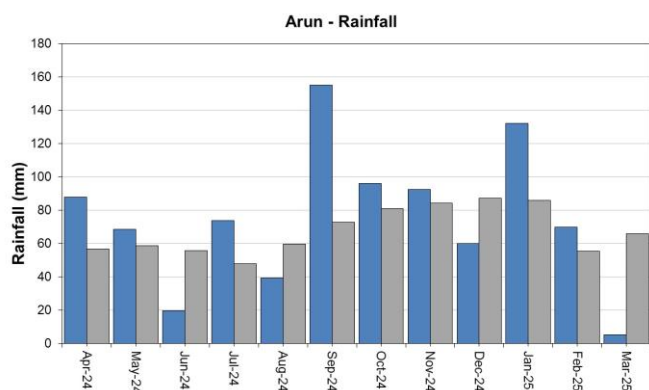
(Source: water companies).

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.



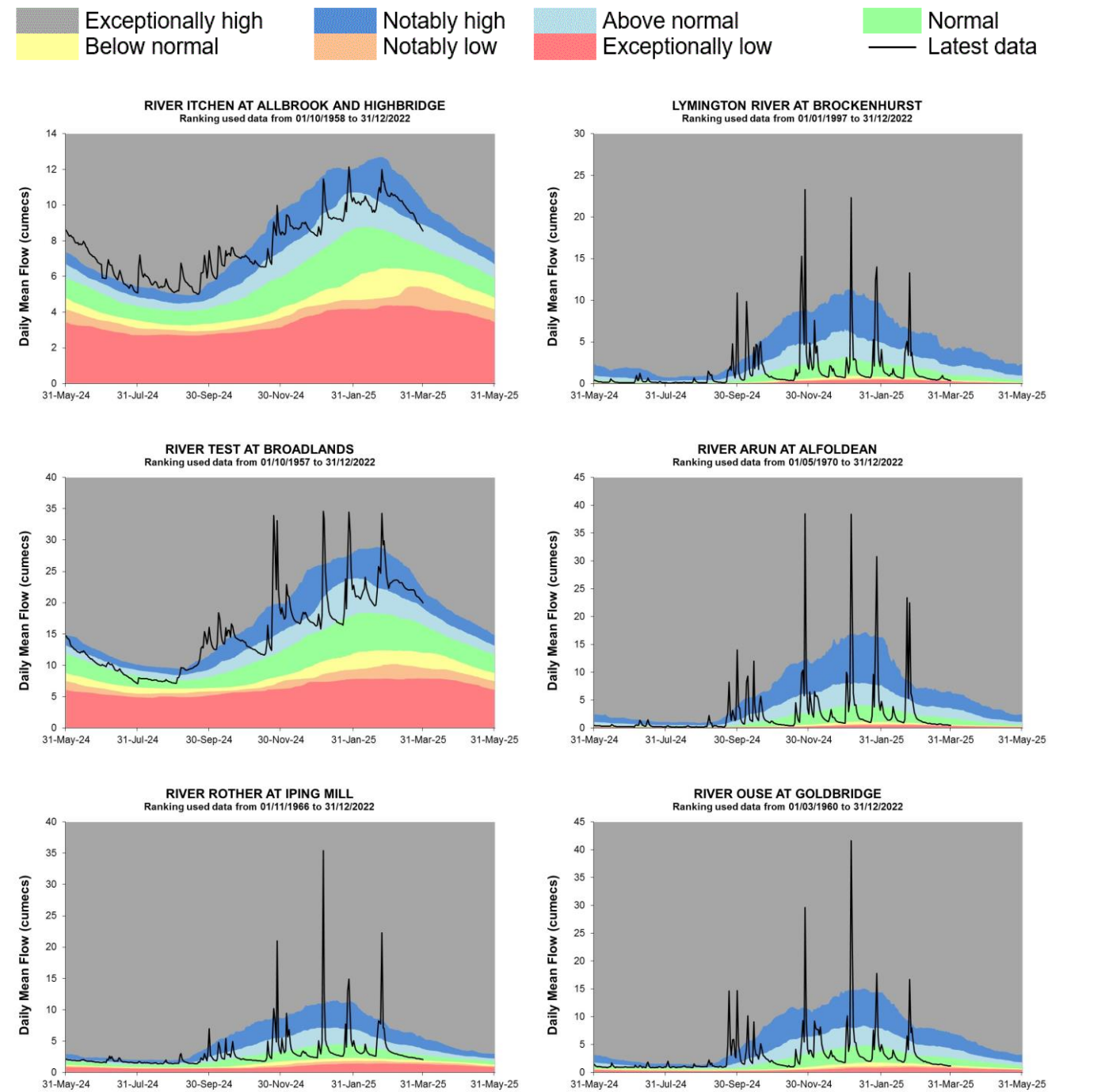


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

6.2 SSD River flow charts

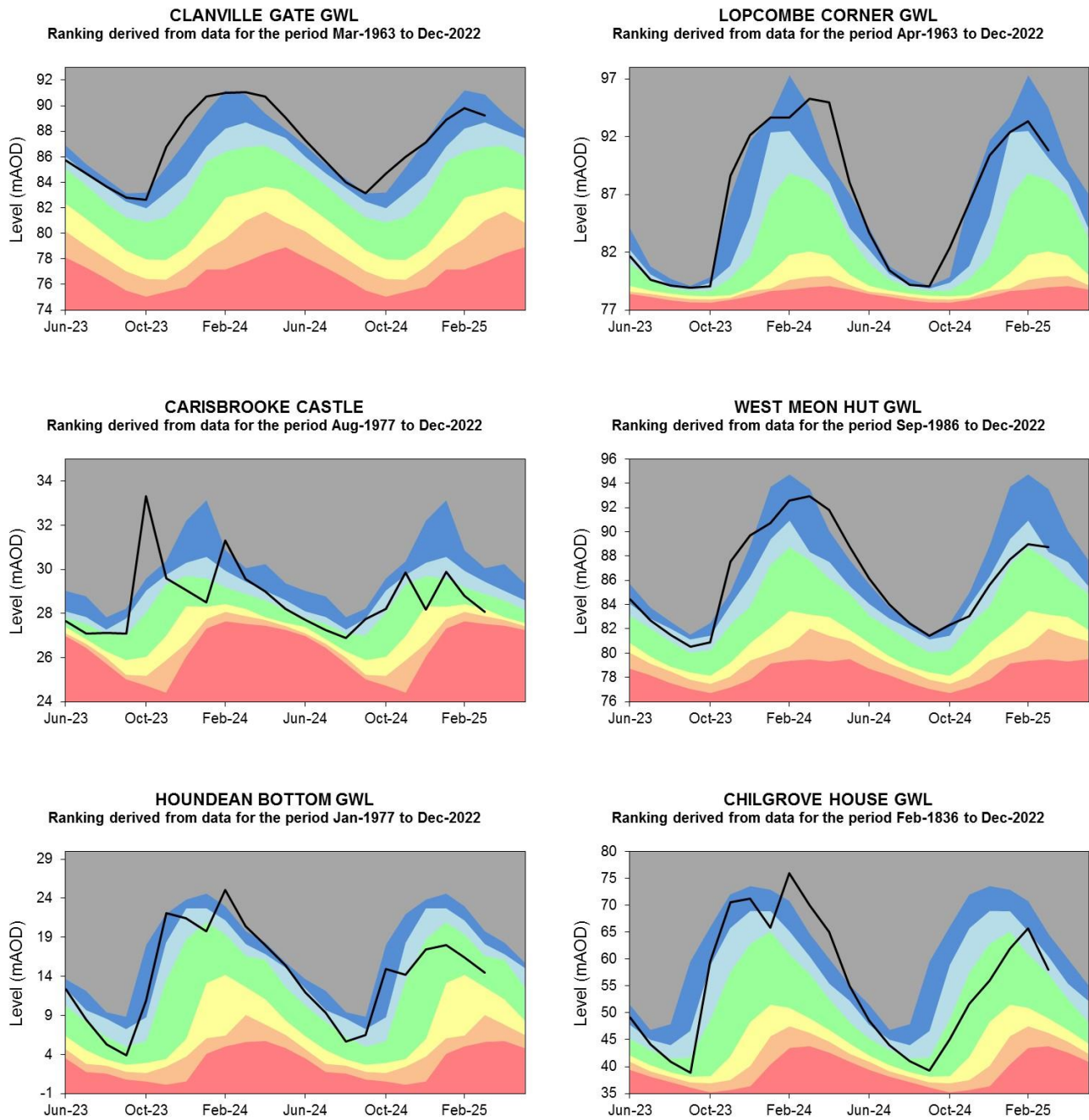
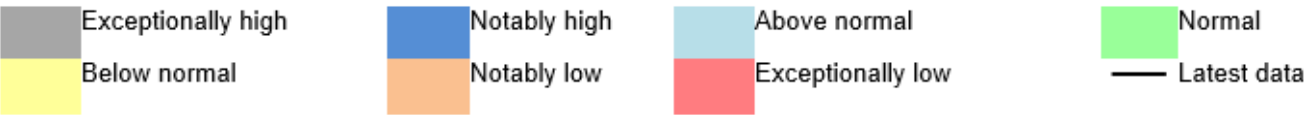
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

6.3 SSD Groundwater levels

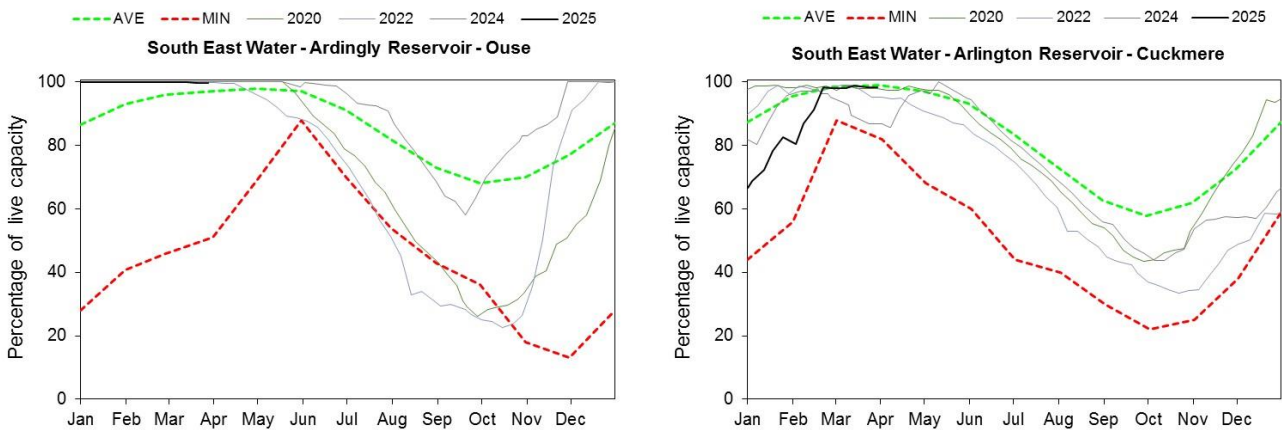
Figure 6.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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.

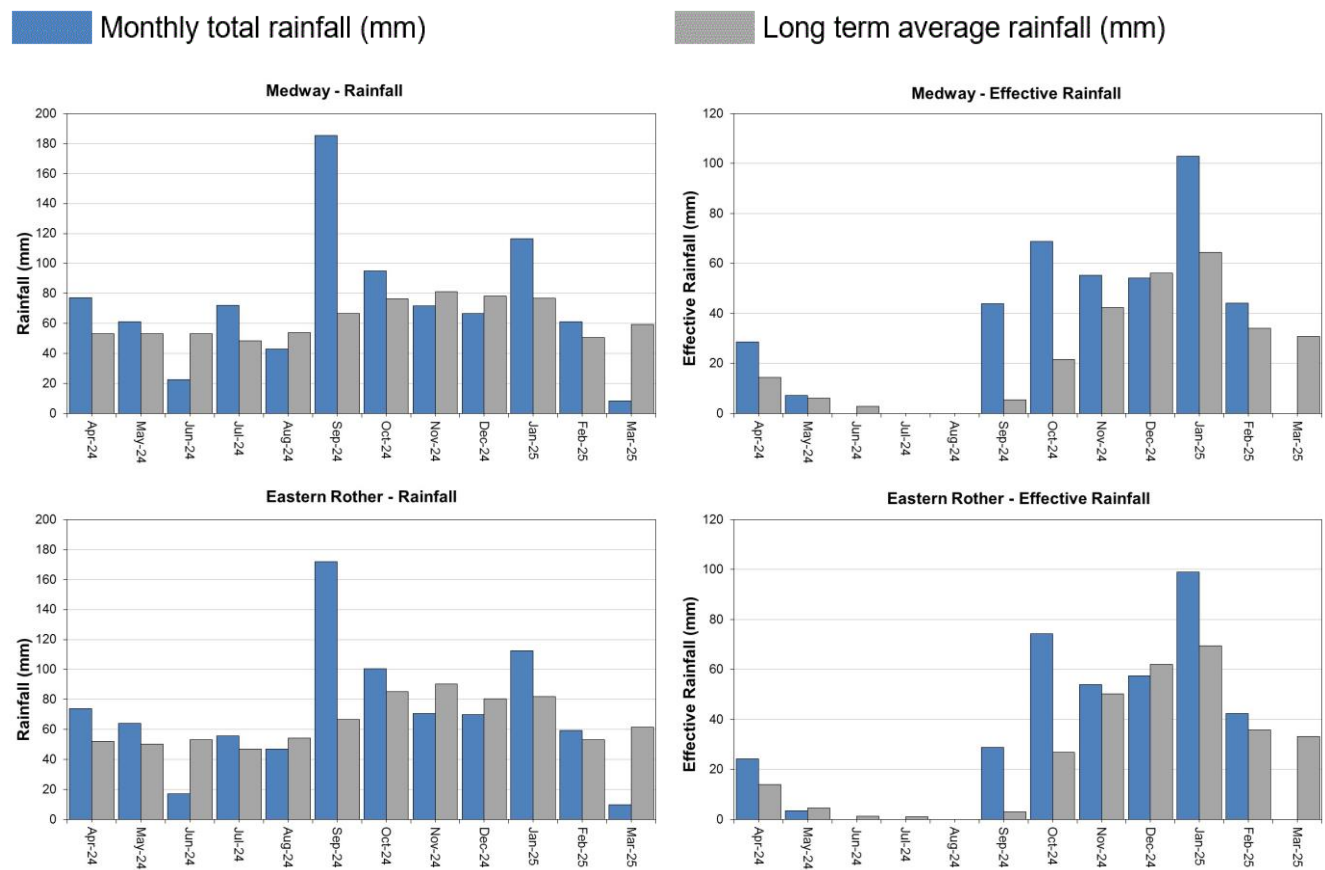


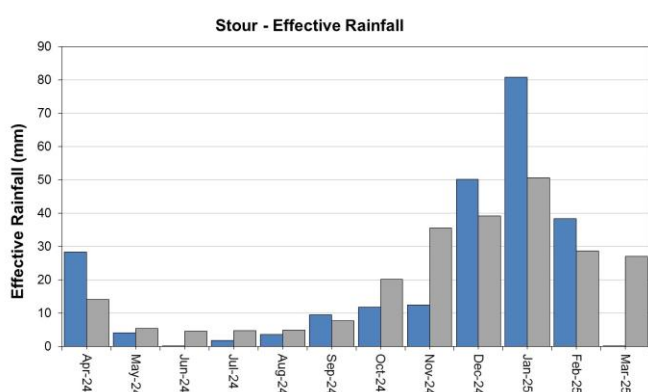
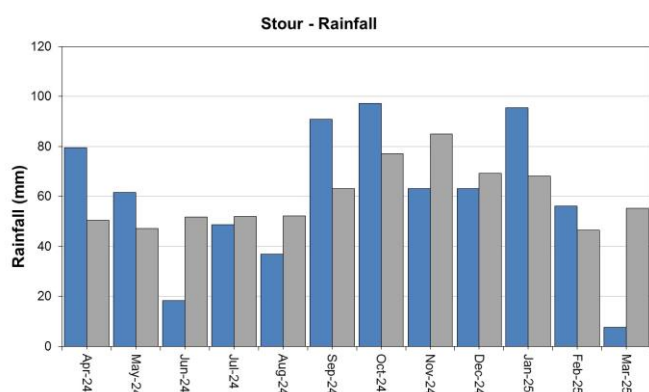
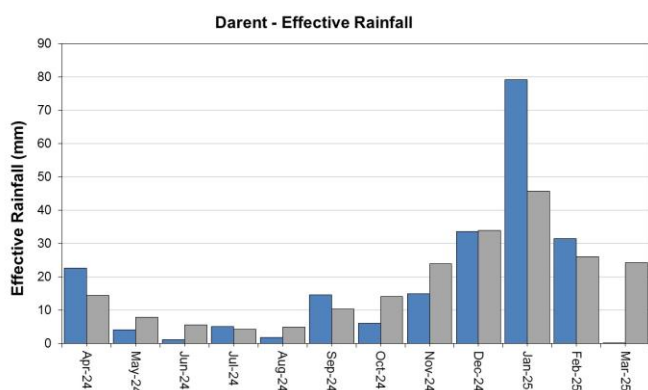
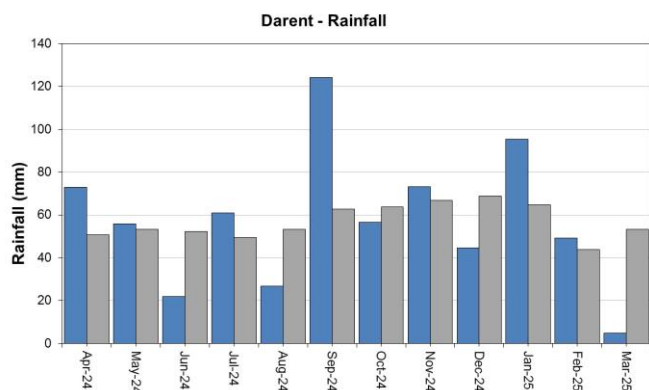
(Source: water companies).

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.



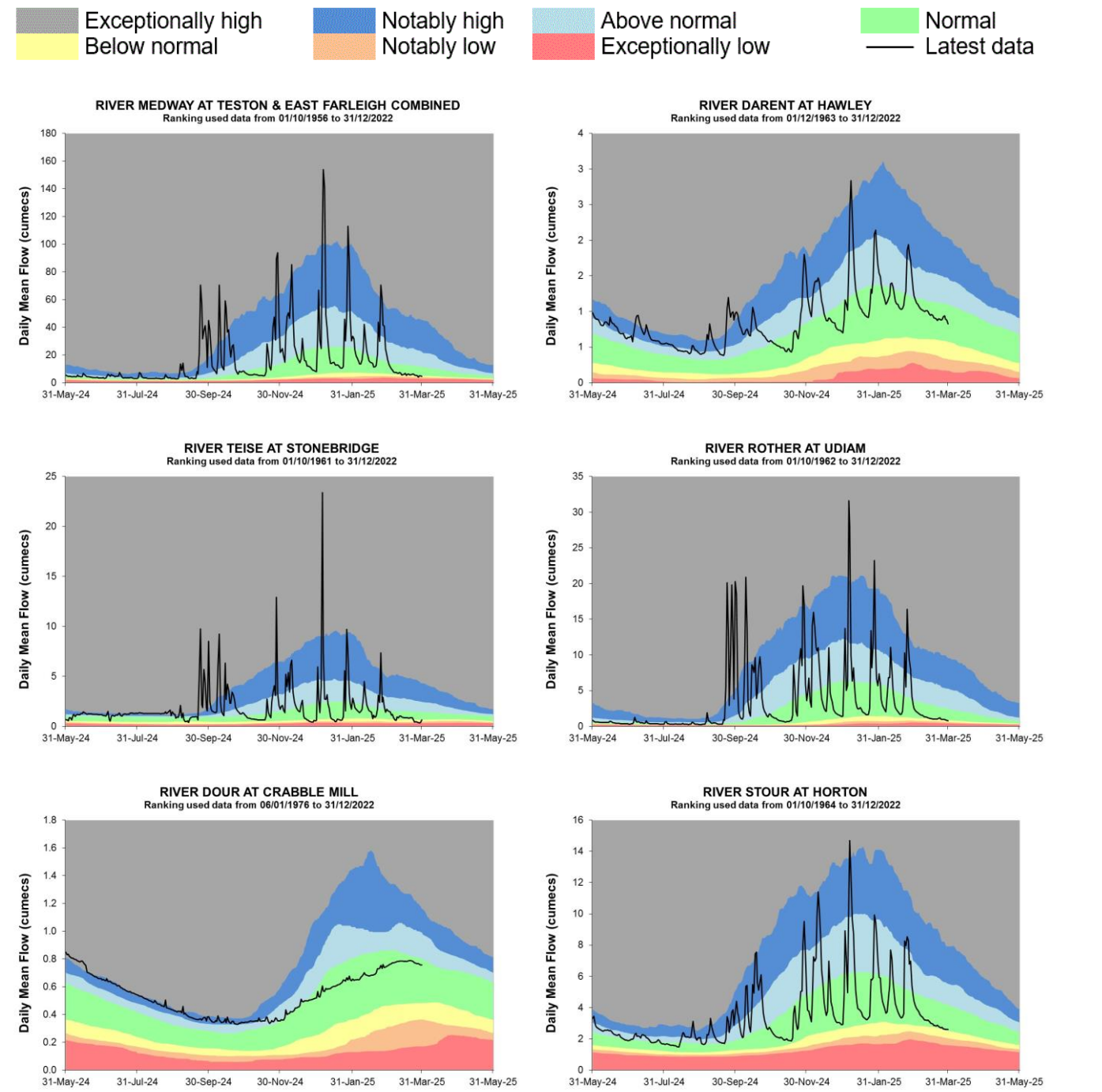


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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

7.2 KSL River flow charts

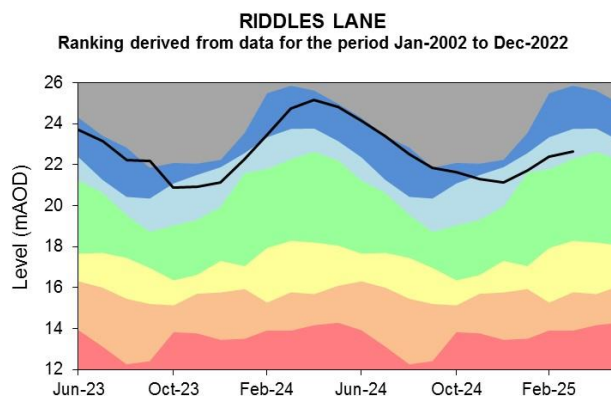
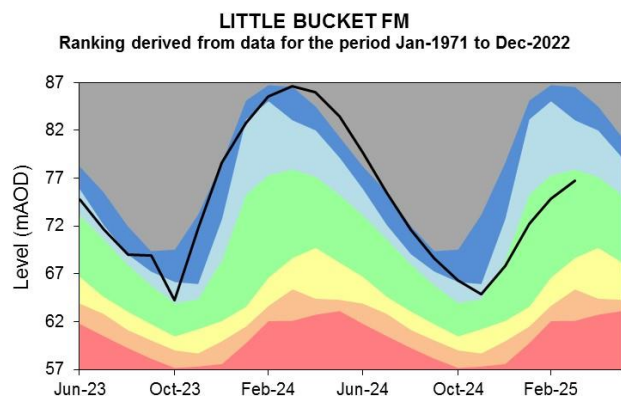
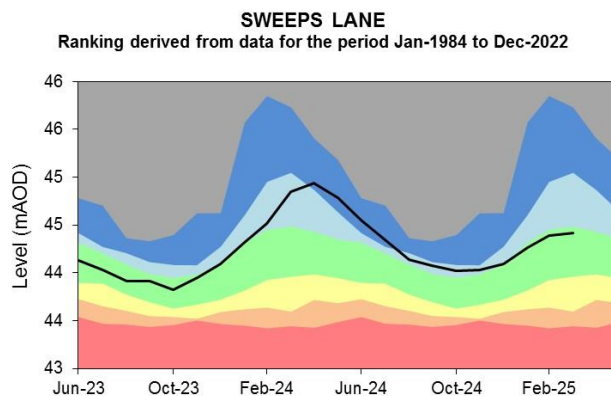
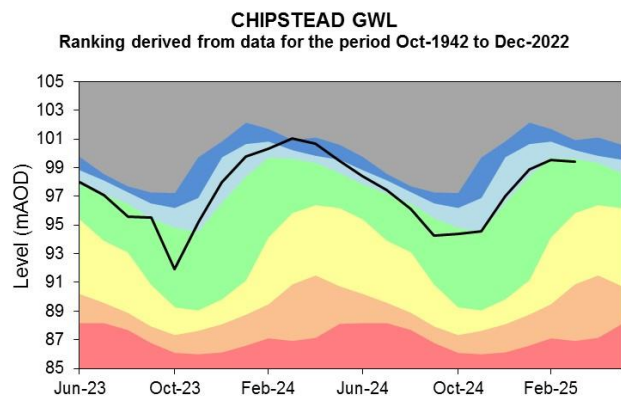
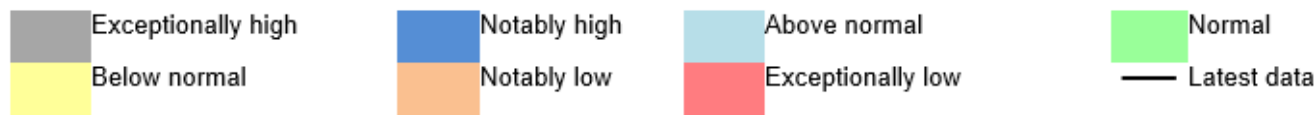
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency. 2025

7.3 KSL Groundwater levels

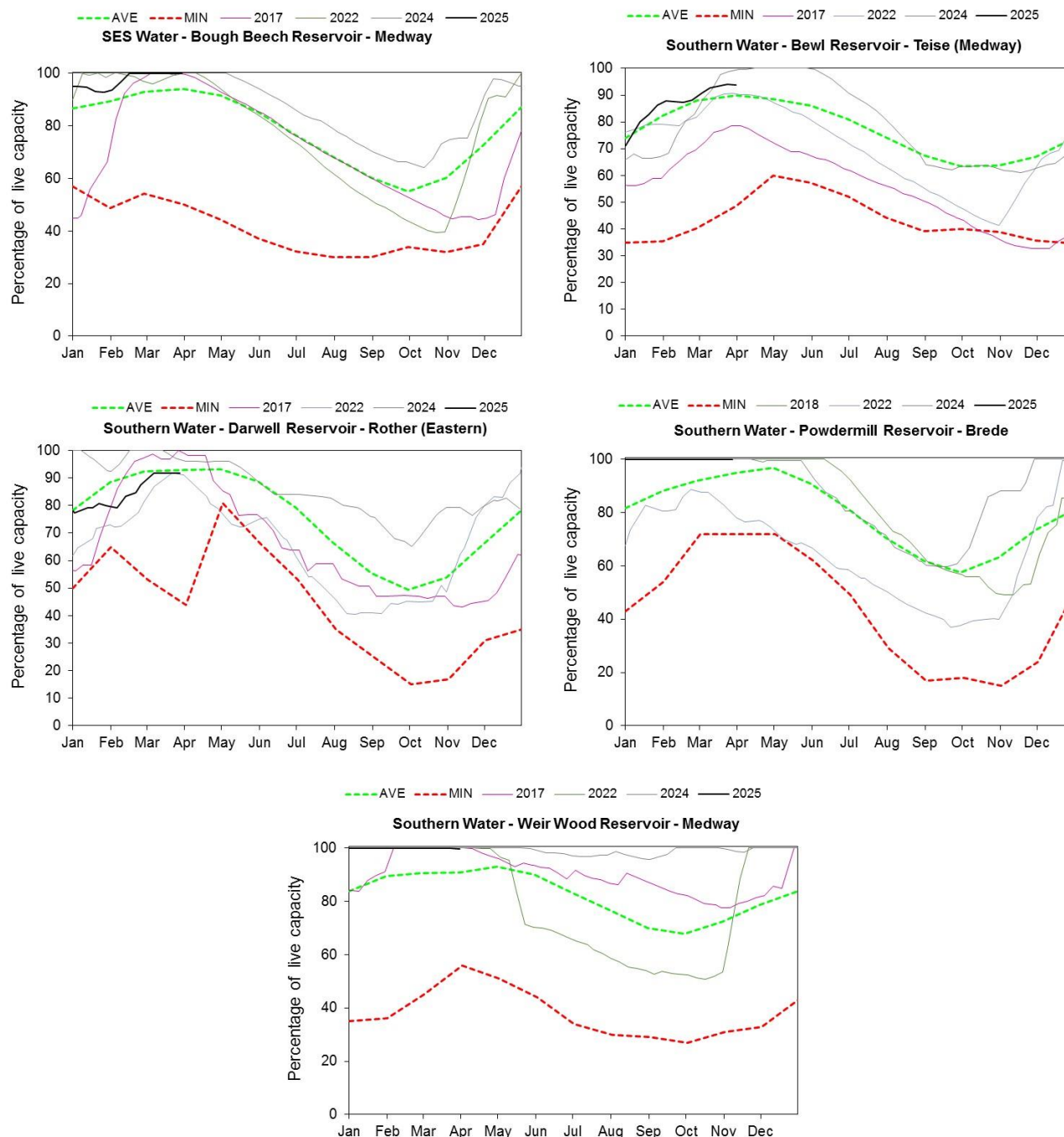
Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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	Mar 2025 rainfall % of long term average 1961 to 1990	Mar 2025 band	Jan 2025 to March cumulative band	Oct 2024 to March cumulative band	Apr 2024 to March cumulative band
Cotswold West	13	Exceptionally Low	Normal	Normal	Notably high
Cotswold East	10	Exceptionally Low	Normal	Normal	Notably high
Berkshire Downs	12	Exceptionally Low	Normal	Normal	Notably high
Chilterns West	13	Exceptionally Low	Normal	Normal	Above normal
Chilterns East Colne	12	Exceptionally Low	Normal	Normal	Above normal
North Downs - Hampshire	10	Exceptionally Low	Normal	Normal	Above normal
North Downs - South London	10	Exceptionally Low	Normal	Normal	Normal
Upper Thames	10	Exceptionally Low	Normal	Normal	Above normal
Upper Cherwell	17	Exceptionally Low	Normal	Normal	Notably high
Thame	14	Exceptionally Low	Normal	Normal	Notably high
Loddon	11	Exceptionally Low	Normal	Normal	Above normal
Lower Wey	10	Exceptionally Low	Normal	Normal	Above normal
Upper Mole	10	Exceptionally Low	Normal	Normal	Above normal
Lower Lee	13	Exceptionally Low	Normal	Normal	Normal
North London	12	Exceptionally Low	Normal	Normal	Normal
South London	12	Exceptionally Low	Normal	Normal	Normal
Roding	11	Exceptionally Low	Normal	Below normal	Normal

Ock	10	Exceptionally Low	Normal	Normal	Above normal
Enborne	12	Exceptionally Low	Normal	Normal	Above normal
Cut	12	Exceptionally Low	Normal	Normal	Above normal
Lee Chalk	12	Exceptionally Low	Normal	Normal	Above normal
River Test	11	Exceptionally Low	Normal	Normal	Notably high
East Hampshire Chalk	10	Exceptionally Low	Normal	Normal	Above normal
West Sussex Chalk	11	Exceptionally Low	Normal	Normal	Above normal
East Sussex Chalk	16	Exceptionally Low	Normal	Normal	Above normal
Sw Isle Of Wight	14	Exceptionally Low	Normal	Normal	Above normal
River Darent	9	Exceptionally Low	Normal	Normal	Normal
North Kent Chalk	14	Exceptionally Low	Normal	Normal	Normal
Stour	14	Exceptionally Low	Normal	Normal	Normal
Dover Chalk	14	Exceptionally Low	Normal	Normal	Normal
Thanet Chalk	11	Exceptionally Low	Normal	Normal	Below normal
Western Rother Greensand	9	Exceptionally Low	Normal	Normal	Above normal
Hampshire Tertiaries	12	Exceptionally Low	Normal	Normal	Above normal
Lymington River Avon Water And O	13	Exceptionally Low	Normal	Normal	Above normal
Sussex Coast	10	Exceptionally Low	Normal	Normal	Normal
River Arun	8	Exceptionally Low	Normal	Normal	Above normal
River Adur	10	Exceptionally Low	Normal	Normal	Normal
River Ouse	12	Exceptionally Low	Normal	Normal	Above normal
Cuckmere River	14	Exceptionally Low	Normal	Normal	Above normal

Pevensey Levels	13	Exceptionally Low	Normal	Normal	Normal
River Medway	14	Exceptionally Low	Normal	Normal	Above normal
Eastern Rother	16	Exceptionally Low	Normal	Normal	Above normal
Romney Marsh	15	Exceptionally Low	Normal	Normal	Normal
North West Grain	10	Exceptionally Low	Normal	Below normal	Normal
Sheppy	12	Exceptionally Low	Normal	Below normal	Below normal

9.2 River flows table

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

9.3 Groundwater table

Site name	Aquifer	End of Mar 2025 band	End of Feb 2025 band
Ashley Green Stw	Mid-chilterns Chalk	Normal	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	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	Above normal	Notably high
Carisbrooke Castle	Isle Of Wight Central Downs Chalk	Below normal	Normal
West Meon Hut Gwl	River Itchen Chalk	Notably high	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	Notably high	Above normal
Rockley Obh	Berkshire Downs Chalk	Above normal	Above normal
Jackaments Bottom Obh	Burford Oolitic Limestone (inferior)	Notably low	Normal
Stonor Estate	South-west Chilterns Chalk	Exceptionally high	Exceptionally high

9.4 South-east England area units for reference



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