Monthly water situation report: Kent and South London Area

1 Summary – February 2025

The whole of the Kent and South London area received 116% of the long-term average rainfall during February. Rainfall received was normal across all catchments. At the end of February, Soil moisture deficits were below 10mm in all catchments, except for the Thanet Chalk in the northeast of Kent and South London. On average, effective rainfall received this month was at 126% of the Long-term average. Monthly mean flows ranged from normal to above normal in February in Kent and south London. Three out of the eleven key flow sites saw above normal Monthly mean flows. Groundwater levels in the Chalk continued to increase at the expected rates across the Kent and South London area and are predominantly normal for this time of year. The Lower Greensand aquifer at Riverhead continued to register groundwater levels that are notably high. Levels at the end of the month at the five water company reservoirs in the area ranged from below normal to above average.

1.1 Rainfall

The whole of the Kent and South London (KSL) area received 116% of the long-term average (LTA) rainfall during February. Rainfall received was normal across all catchments. The percentage of LTA rainfall received ranged from 135% across Lower Mole rainfall area to 96% in the Sheppey rainfall area. In the previous three months, spanning from December to February, normal rainfall was recorded across all catchments. In the previous six months, from August to February, rainfall was normal in across catchments in the northeast of the patch. Medway and Lower Mole rainfall areas saw notably high rainfall, whilst all other rainfall areas in the south and west received above normal rainfall. In the last twelve months, rainfall ranged from notably high to normal in KSL area. Notably high and above normal rainfall were recorded in catchments in the south and west, whilst normal was recorded in catchments in in the northeast of the area. The highest daily rainfall total of 23mm for February was recorded at Eden Vale STW Rain gauge in the Medway catchment on 23 February. The next highest daily rainfall totals were on 21, 26, 7 and 9 February and ranged from 19.4mm to 10.5mm. In the month of February, the rainfall received was concentrated at the begging and the end of the month with a dryer period in the middle. There were no ‘dry’ days were rainfall received was less than 0.2mm in February.

1.2 Soil moisture deficit and recharge

At the end of February, soil moisture deficits (SMDs) throughout all rainfall areas were minimal, with the majority of these being close to 0mm. The SMD for the whole KSL area was 2mm. This is slightly less than the LTA for this time of year, which is 8mm. SMDs increased slightly in most catchments in February due to the very slight decrease in the effective rainfall

received compared to January. Across the whole area, on average, effective rainfall received this month was 126% of the LTA.

1.3 River flows

Monthly mean flows (MMFs) ranged from normal to above normal in February in KSL. The River Wandle at Conolly's Mill, the River Mole at Dorking in the northwest, and River Medway at Teston in the centre of the patch saw above normal flows. Three out of the eleven key flow sites saw above normal MMFs. River Medway at Teston recorded the highest MMF highest percentage LTA of 124% for the month of February. River Ravensbourne at Catford recorded the lowest percentage LTA of 76%.

1.4 Groundwater levels

Groundwater levels in the Chalk are remaining predominantly normal for this time of year at the end of February. Only levels at Riddles Lane are still being registered as above normal in the chalk. The Lower Greensand aquifer at Riverhead continued to register groundwater levels that are notably high. Groundwater levels in the Chalk continued to increase at the expected rates across the KSL area, except at Fleete Reservoir (Thanet) where the rise has levelled out in response to lower effective rainfall there. Elsewhere, the rise in groundwater levels is consistent with the effective rainfall of 126% of the LTA and the SMDs registered by the end of February. Like January, the rate of rise was steadied by the drier spell in the middle of the month.

1.5 Reservoir stocks

At the end of February, reservoir levels were:

- Below normal at Darwell at 80%
- Normal at Bough Beech with 94% and Bewl at 88%
- Above normal at Weir Wood and Powdermill reservoirs as they were full at the end of this month. Weir Wood reservoir remained offline during February.

1.6 Environmental impact

Nine fluvial flood alerts were issued in February.

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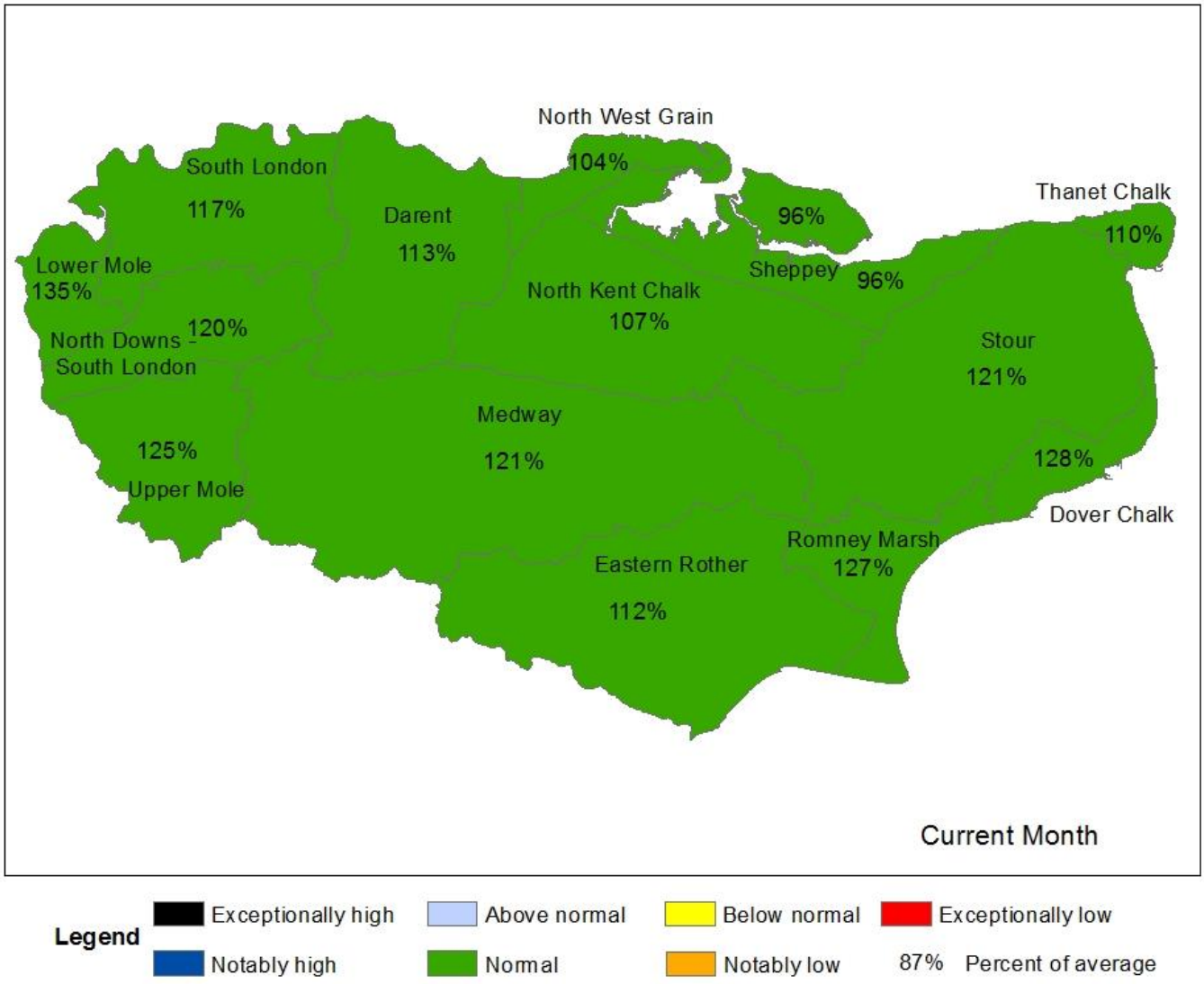
2 Rainfall

2.1 Rainfall map one

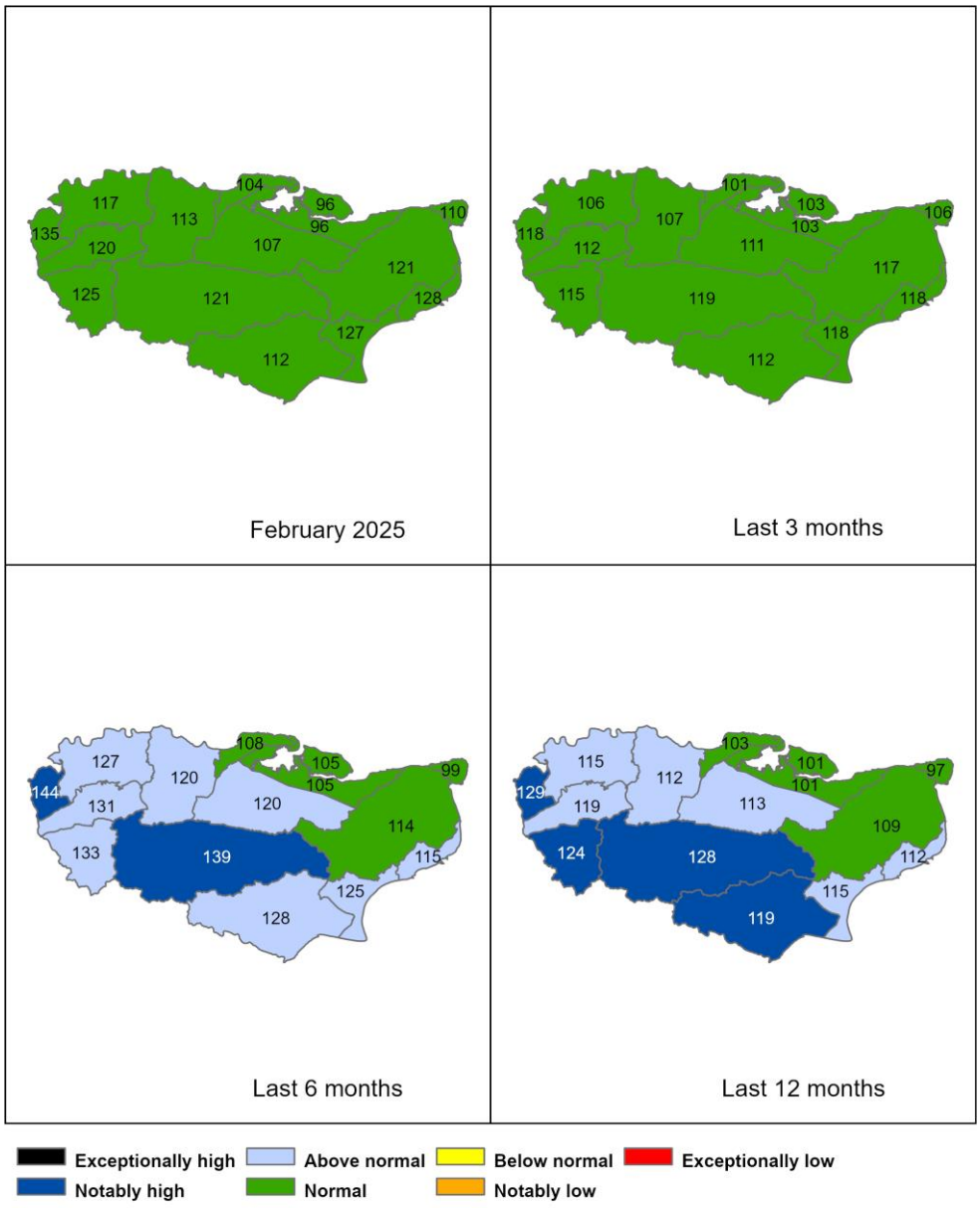
Figure 2.1: Total rainfall for hydrological areas across Kent and South London for the current month (up to 28th February), classed relative to an analysis of respective historic totals. Table available in the appendices with more detailed information.



HadUK data for October 2023 onwards, based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material based on Ordnance Survey 1:50 000 maps with the permission of the controller of His Majesty's Stationery Office © Crown copyright. All rights reserved. Environment Agency, 100026380, 2025.

2.2 Rainfall map two

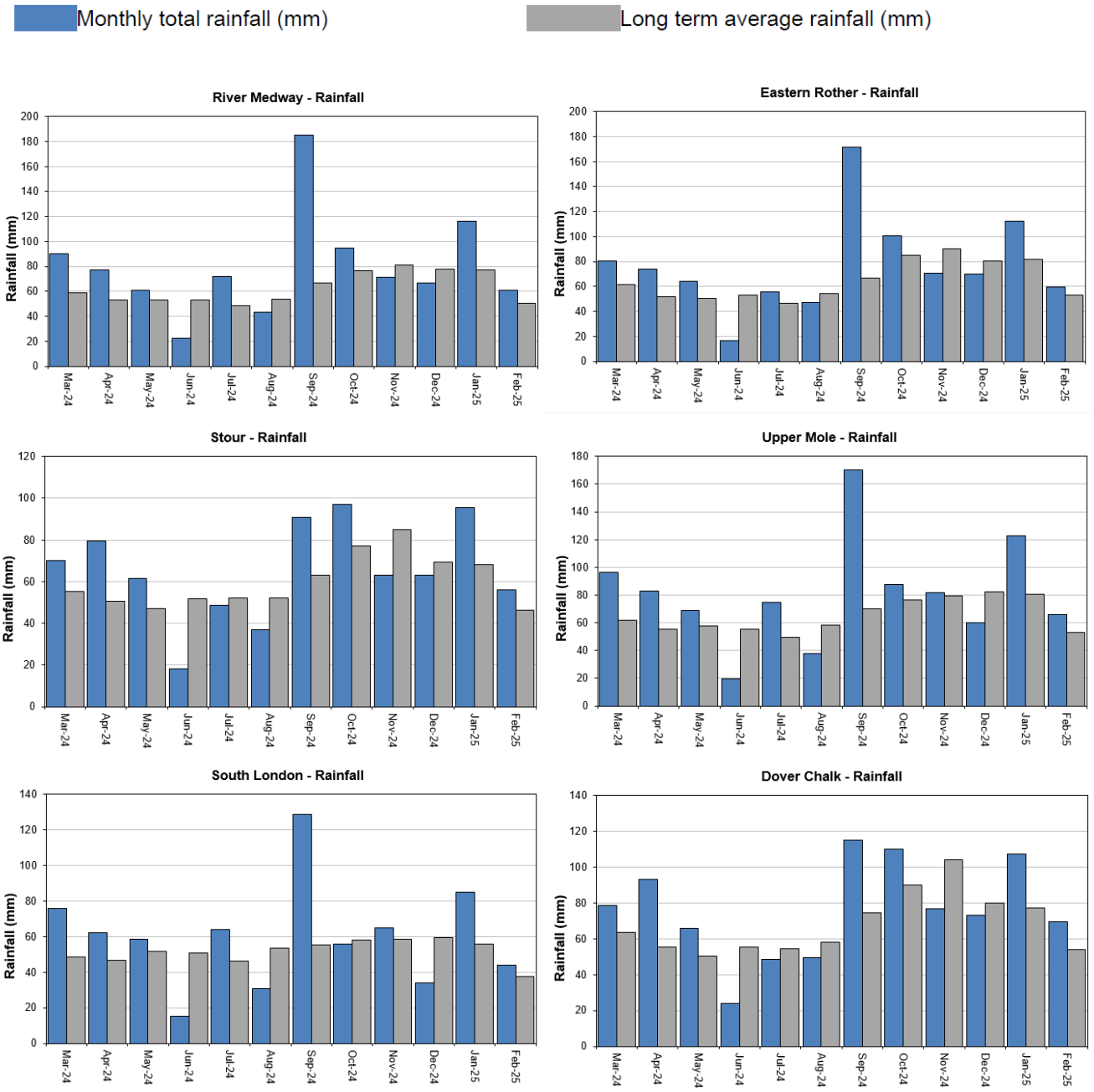
Figure 2.2: Total rainfall for hydrological areas for the current month (up to 28th February), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

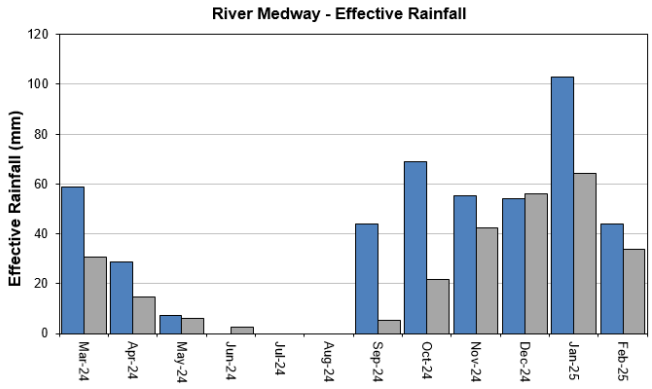


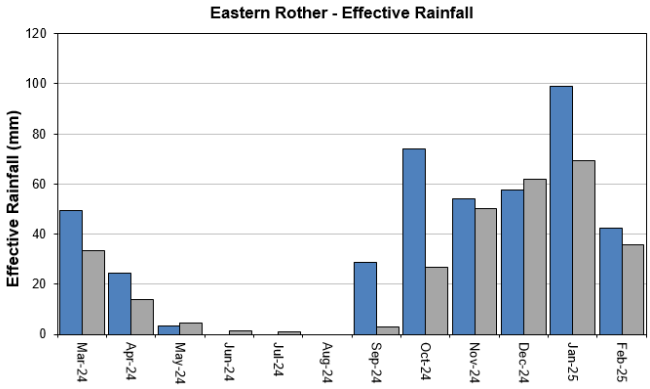
HadUK data for October 2023 onwards, based the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material based on Ordnance Survey 1:50 000 maps with the permission of the controller of His Majesty's Stationery Office © Crown copyright. All rights reserved. Environment Agency, 100026380, 2025.

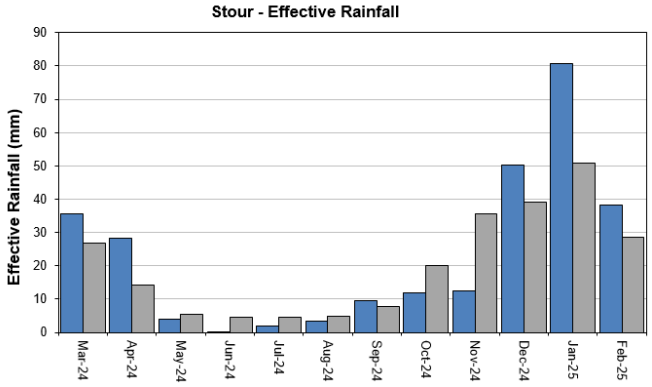
2.3 Rainfall and effective rainfall charts

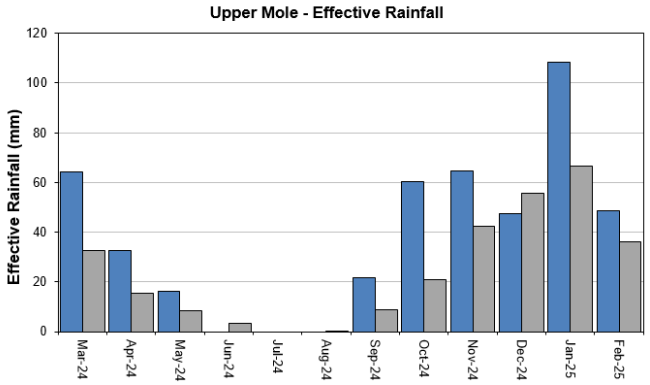
Figure 2.3: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1961 to 1990 long term average (LTA) for a selection of areal units. HadUK rainfall data. (Source: Met Office. Crown copyright, 2025). EA effective rainfall data (Source EA Soil Moisture Model).

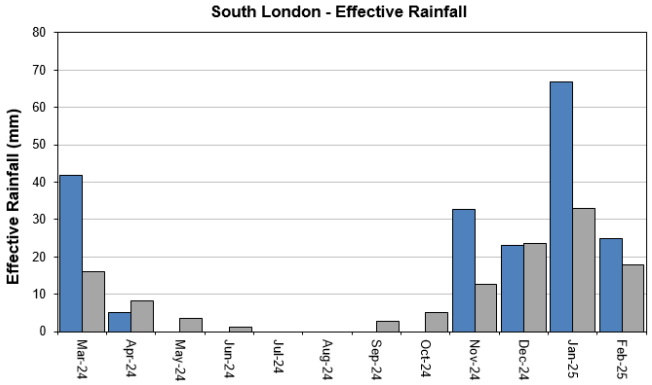


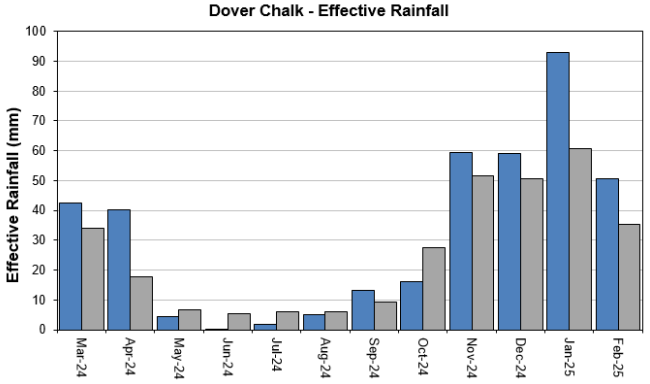

River Medway - Effective Rainfall
Effective Rainfall (mm)
0
20
40
60
80
100
120
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25


Eastern Rother - Effective Rainfall
Effective Rainfall (mm)
0
20
40
60
80
100
120
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25


Stour - Effective Rainfall
Effective Rainfall (mm)
0
10
20
30
40
50
60
70
80
90
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25


Upper Mole - Effective Rainfall
Effective Rainfall (mm)
0
20
40
60
80
100
120
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25


South London - Effective Rainfall
Effective Rainfall (mm)
0
10
20
30
40
50
60
70
80
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25


Dover Chalk - Effective Rainfall
Effective Rainfall (mm)
0
10
20
30
40
50
60
70
80
90
100
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25

2.4 Rainfall and effective rainfall table

Figure 2.4: This is a second estimate of areal rainfall and effective rainfall (percolation or runoff) for a selection of the hydrological areas across the Kent and South London area. 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 section 2.5.

Number	Hydrological Area	Rainfall (mm) 28 day Total	February % LTA	Effective Rainfall (mm) 28 day Total	February % LTA
6230TH	North Downs - South London (W)	60	120%	43	127%
6505TH	Upper Mole	66	125%	49	136%
6508TH	South London	44	117%	25	139%
6706So	Darent	49	113%	31	121%
6707So	North Kent Chalk	49	107%	32	112%
6708So	Stour	56	120%	38	134%
6709So	Dover Chalk	69	129%	51	143%
6710So	Thanet Chalk	36	109%	4	43%
6809So	Medway	61	121%	44	130%
6810So	Eastern Rother	59	112%	42	118%

6811So	Romney Marsh	54	127%	36	152%
6812So	North West Grain	35	104%	16	112%
6813So	Sheppey	35	96%	16	94%
	Kent & South London Average	52	116%	33	126%

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

EA effective rainfall data (Source EA Soil Moisture Model)

2.5 Seasonal summary table of rainfall and effective rainfall

Figure 2.5: This is a seasonal estimate of areal rainfall and effective rainfall (percolation or runoff) for a selection of the hydrological areas across the Kent and South London area, 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 01/010/2024 to 28/02/2025

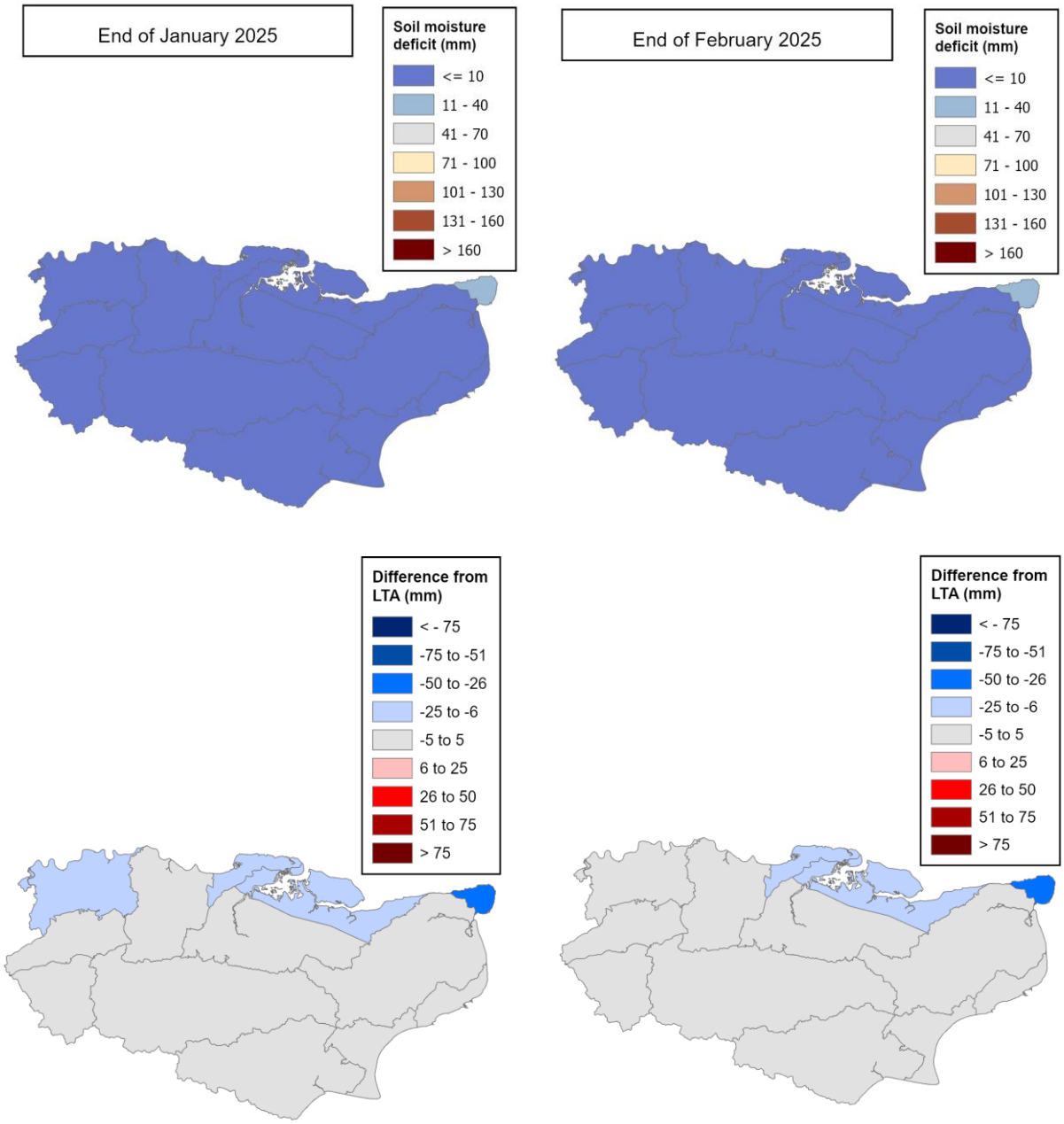
Number	Hydrological Area	Seasonal Rainfall (mm) Total	% LTA	Seasonal Effective Rainfall (mm) Total	% LTA
6230TH	North Downs - South London (W)	391	110%	282	140%
6505TH	Upper Mole	418	112%	330	149%
6508TH	South London	284	105%	147	160%
6706So	Darent	319	104%	165	115%
6707So	North Kent Chalk	358	110%	201	122%
6708So	Stour	375	108%	194	111%
6709So	Dover Chalk	437	108%	278	123%
6710So	Thanet Chalk	267	100%	32	55%
6809So	Medway	411	113%	325	149%
6810So	Eastern Rother	413	106%	327	134%

6811So	Romney Marsh	364	109%	233	140%
6812So	North West Grain	247	102%	49	81%
6813So	Sheppey	264	102%	52	76%
	Kent & South London Average	350	107%	201	128%

3 Soil moisture deficit

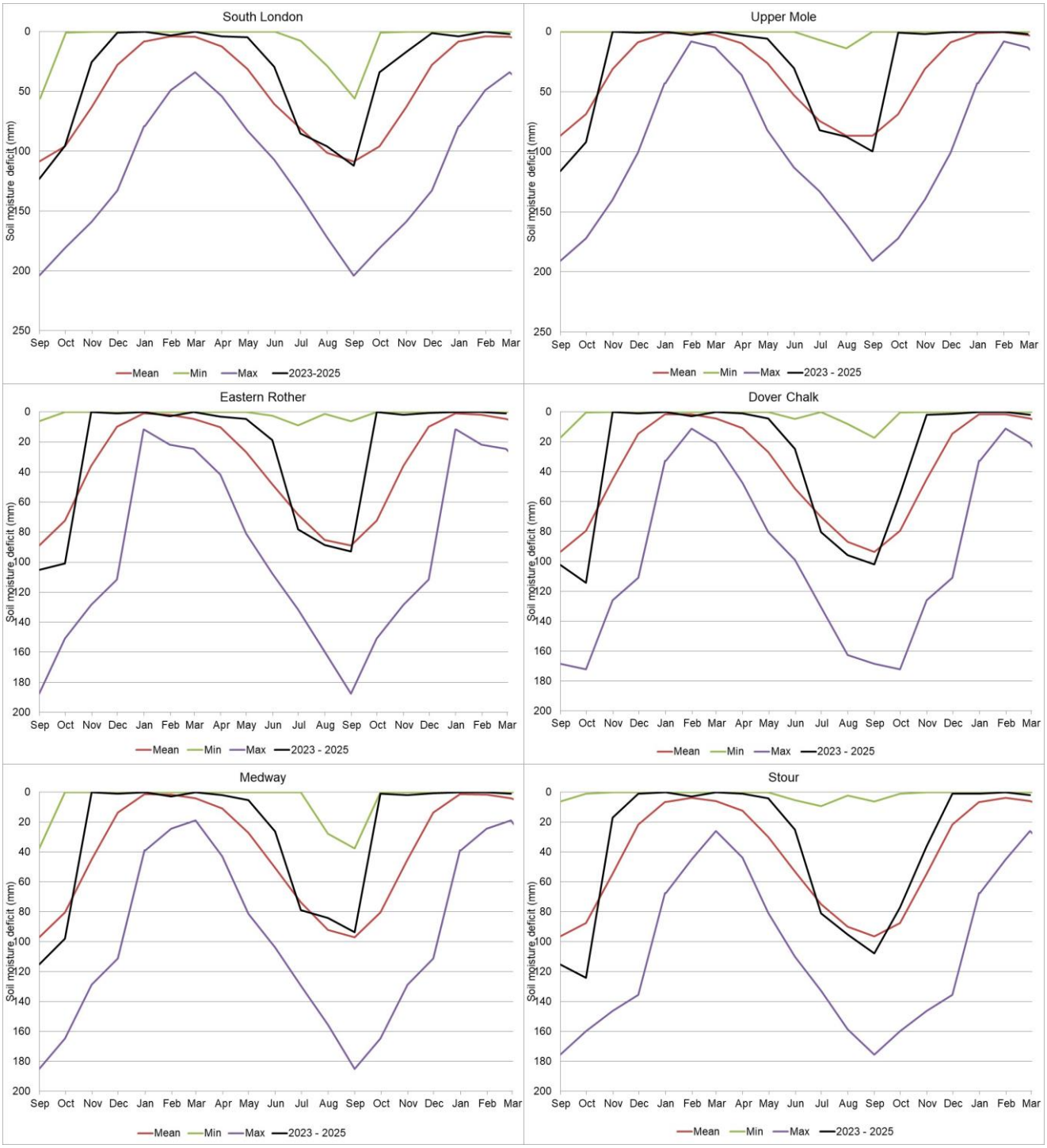
3.1 Soil moisture deficit map

Figure 3.1: Soil moisture deficits for weeks ending 31 January (left panel) and 28 February 2025 (right panel). Top row shows actual soil moisture deficits (mm) and bottom row shows the difference (mm) of the actual from the 1961 to 90 long term average soil moisture deficits. EA Soil Moisture Deficit data (Source EA Soil Moisture Model).



3.2 Soil moisture deficit charts

Figure 3.2: Latest soil moisture deficit compared to maximum, minimum, and 1961 to 1990 long term average. EA soil moisture deficit data (Source EA Soil Moisture Model).



3.3 Soil moisture deficit table

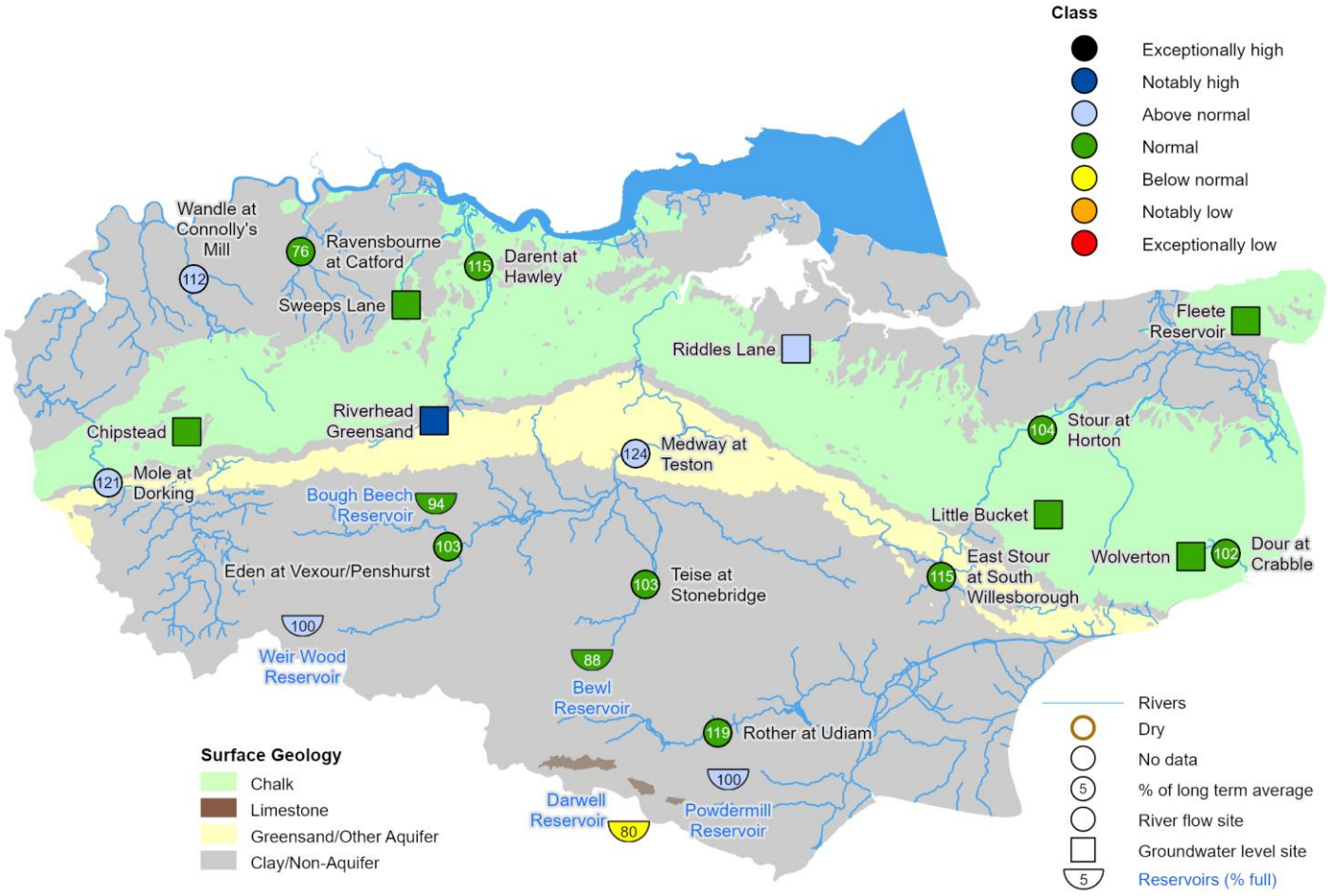
Figure 3.3: This is a second estimate of soil moisture deficit for the hydrological areas across the Kent and South London area. There may be significant variation within each area which must be considered when interpreting these data. EA soil moisture deficit data (Source EA Soil Moisture Model).

Number	Hydrological Area	SMD (mm) Day 28	End February LTA
6230TH	North Downs - South London (W)	1	3
6505TH	Upper Mole	2	2
6508TH	South London	2	7
6706So	Darent	1	4
6707So	North Kent Chalk	1	4
6708So	Stour	2	3
6709So	Dover Chalk	2	3
6710So	Thanet Chalk	15	42
6809So	Medway	1	2
6810So	Eastern Rother	1	3
6811So	Romney Marsh	1	4
6812So	North West Grain	2	11
6813So	Sheppey	2	9
	Kent & South London Average	2	8

4 River flows, groundwater levels and reservoir stocks

4.1 River flows, groundwater levels and reservoir stocks map

Figure 4.1: Monthly mean river flows* ** for indicator sites for February 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic August monthly means. End of month groundwater levels for indicator sites for February 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic August levels. Tables available in the appendices with detailed information. End of month levels for reservoirs for February 2025, expressed as percent full. (Source: Water Companies).

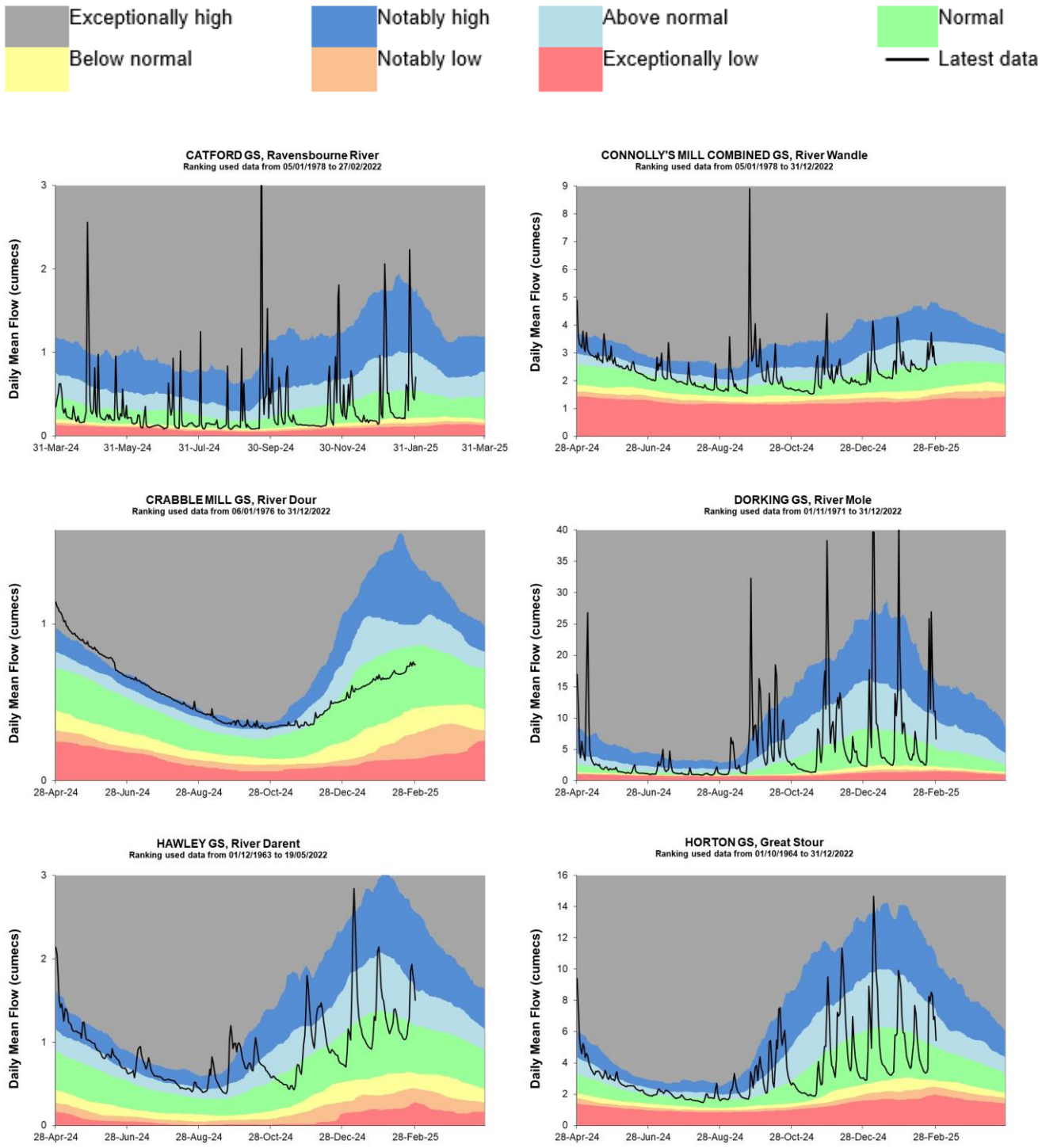


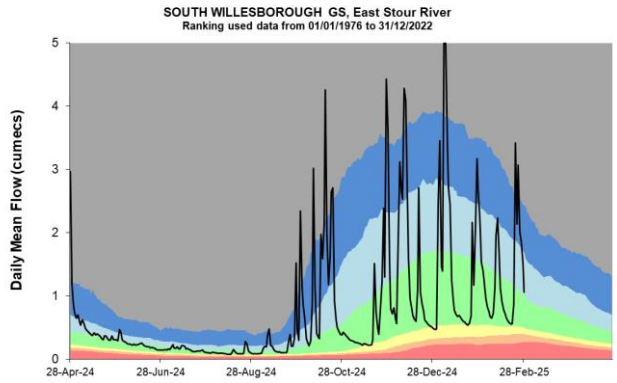
*Weir Wood Reservoir is currently offline

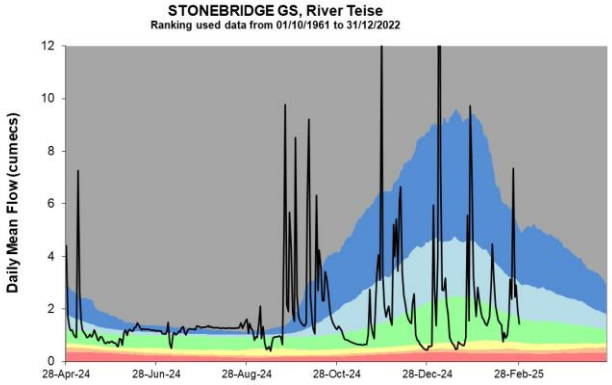
**Flows at gauging stations in the Medway catchment might be affected by upstream reservoir releases

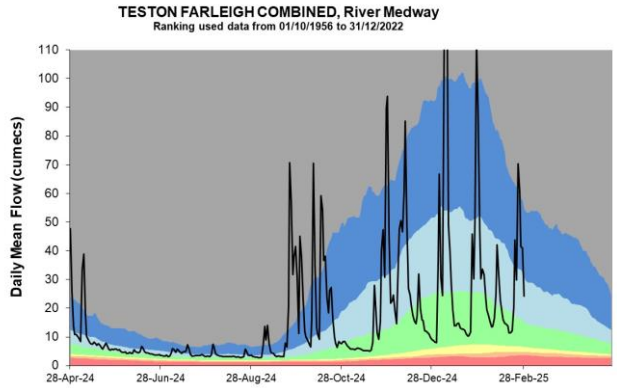
4.2 River flow charts

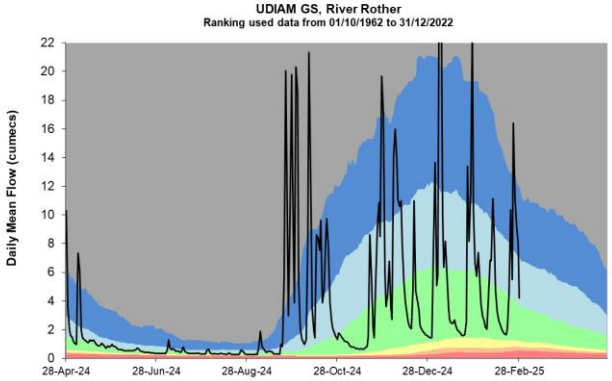
Figure 4.1: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.

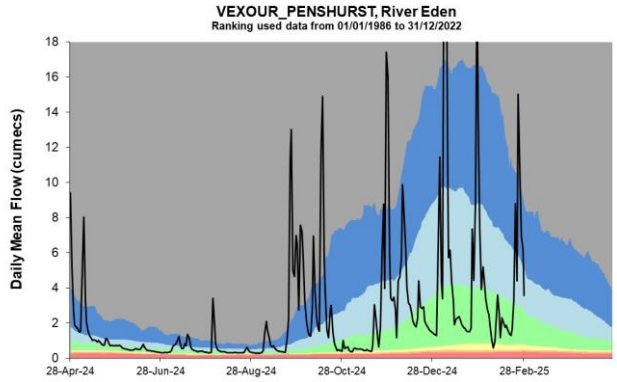










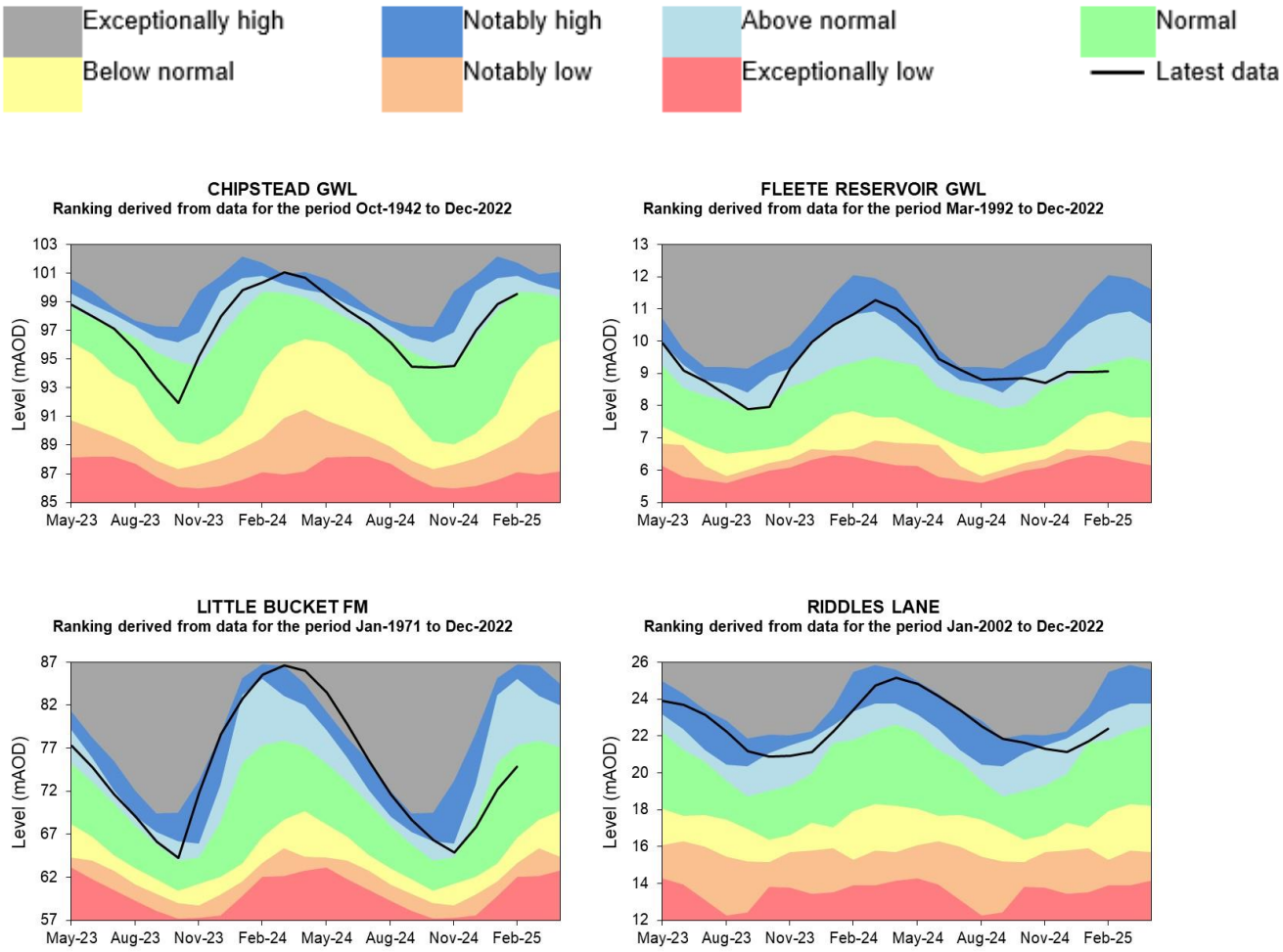


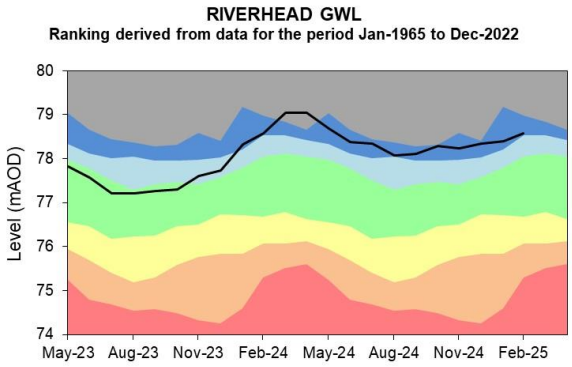
Source: Environment Agency.

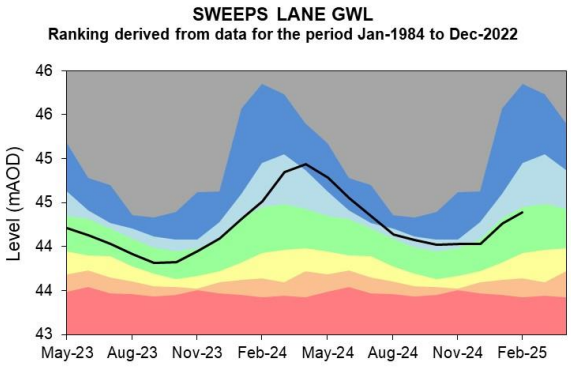
5 Groundwater levels

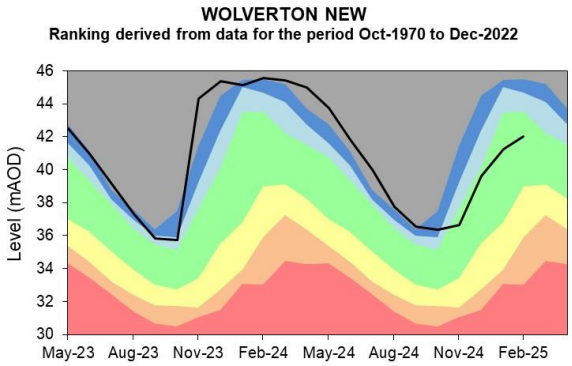
5.1 Groundwater level charts

Figure 5.1: 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.







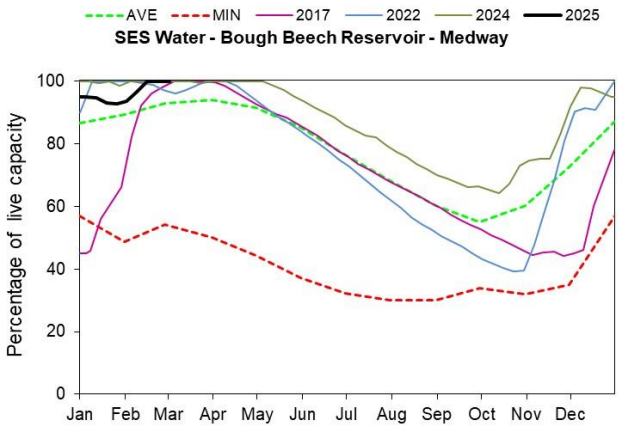


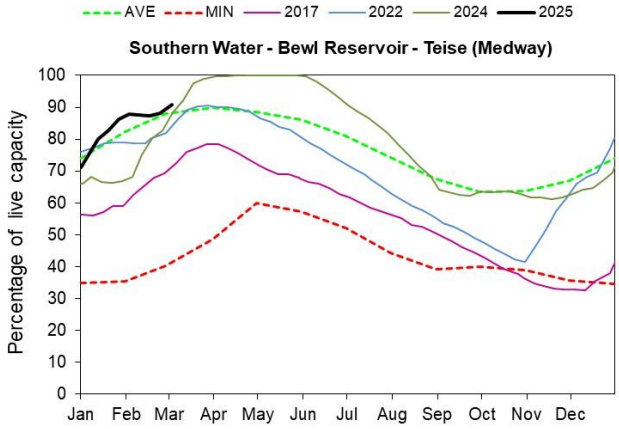
Source: Environment Agency, 2025.

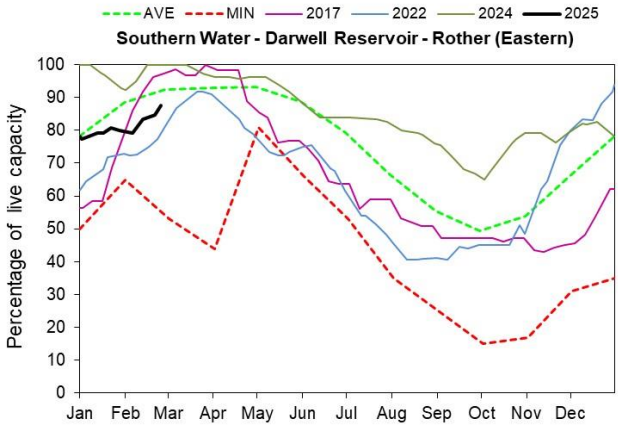
6 Reservoir stocks

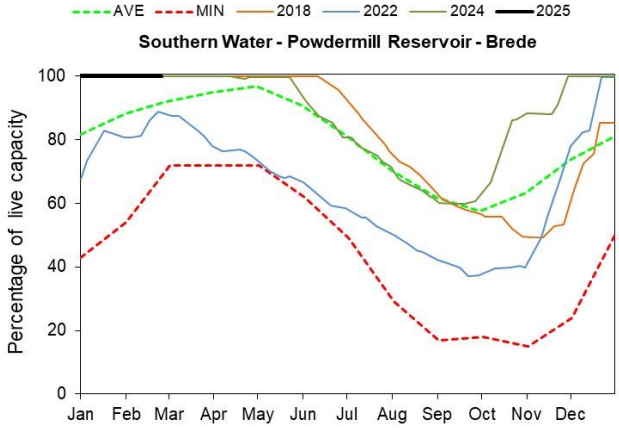
6.1 Reservoir stocks charts

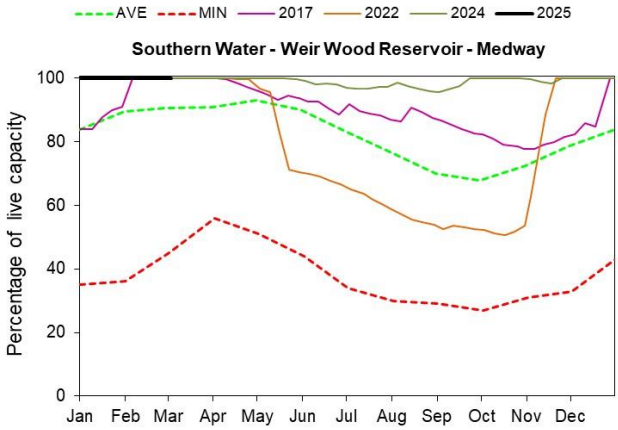
Figure 7.1: End of month regional reservoir stocks compared to long term maximum, minimum and average stocks. (Source: Water Companies). Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.











7 Glossary

7.1 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).

7.2 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.

8 Appendices

8.1 Rainfall table

Hydrological area	Feb 2025 rainfall % of long term average 1961 to 1990	Feb 2025 band	Dec 2024 to Feb 2025 cumulative band	September 2024 to Feb 2025 cumulative band	March 2024 to Feb 2025 cumulative band
North Downs - South London	120	Normal	Normal	Above normal	Above normal
Upper Mole	126	Normal	Normal	Above normal	Notably high
South London	117	Normal	Normal	Above normal	Above normal
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
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

8.2 River flows table

Site name	River	Catchment	Feb 2025 band	Jan 2025 band
Catford Gs	River Ravensbourne	Ravensbourne	Normal	Normal
Connolly's Mill Combined Gs	River Wandle	Wandle	Above normal	Above normal
Crabble Mill Gs	River Dour	Dour	Normal	Normal
Dorking Gs	River Mole	Mole Surrey	Above normal	Above normal
Hawley Gs	River Darent and Cray	Darent and Cray	Normal	Above normal
Horton Gs	Great Stour River	Great Stour	Normal	Normal
South Willesborough Gs	East Stour River	East Stour	Normal	Above normal
Stonebridge Gs	River Teise	Teise	Normal	Above normal
Teston Farleigh Combined	River Medway	Medway (Middle)	Above normal	Above normal
Udiam Gs	River Rother	Rother (Kent)	Normal	Above normal
Vexour_penshurst	River Eden	Eden (Kent)	Normal	Above normal

8.3 Groundwater table

Site name	Aquifer	End of Feb 2025 band	End of Jan 2025 band
Fleete Reservoir Gwl	Isle Of Thanet Chalk	Normal	Normal
Chipstead Gwl	Epsom North Downs Chalk	Normal	Above normal
Little Bucket Fm	East Kent Chalk - Stour	Normal	Normal
Riddles Lane	North Kent Swale Chalk	Above normal	Above normal
Riverhead Gwl	Kent Greensand	Notably high	Notably high
Sweeps Lane Gwl	West Kent Chalk	Normal	Normal
Wolverton New	East Kent Chalk - Stour	Normal	Normal