

# Monthly water situation report: Kent and South London Area

## 1 Summary - January 2025

The whole of the Kent and South London (KSL) area received 144% of the long-term average (LTA) rainfall during January. Rainfall received was above normal across most catchments. The Lower Mole and Medway catchments experienced the fourth and fifth wettest 12-month periods on record, respectively. At the end of January, soil moisture deficits (SMDs) were zero in all catchments, except for the Thanet Chalk in the northeast of KSL. On average, effective rainfall received this month was at 157% of the LTA. Monthly mean flows (MMFs) ranged from normal to above normal in January in KSL. Eight out of the eleven key flow sites saw above normal MMFs. Groundwater levels in the Chalk continued to increase at the expected rates across the KSL 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 KSL area received 144% of the LTA rainfall during January. Rainfall received was above normal across most catchments. The percentage of LTA rainfall received ranged from 169% across Lower Mole rainfall area to 136% in the Thanet Chalk and Sheppey rainfall areas. The Lower Mole and Medway catchments experienced the fourth and fifth wettest 12-month periods on record, respectively. The highest daily rainfall total of 33.6mm for January was recorded at Brede PS TBR in the Eastern Rother catchment on 4 January. The next highest daily rainfall totals were on 26, 5, 1 and 23 January and ranged from 30.9mm to 19.7mm. Five days with less than 0.2mm of rainfall were recorded this month, mostly during the dry spell in the middle of the month.

### 1.2 Soil moisture deficit and recharge

At the end of January, SMDs were zero in all catchments, except for the Thanet Chalk in the northeast of KSL. Although the Thanet Chalk registered twenty-four millimetres of SMDs, this is still below the LTA for this catchment. SMDs decreased in most catchments in January due to the increase in the effective rainfall received. Across the whole area, on average, effective

rainfall received this month was at 157% of the LTA. In January, the difference from LTA decreased in most catchments.

### 1.3 River flows

MMFs ranged from normal to above normal in January in KSL. River Ravensbourne at Catford in the northwest, Great Stour River at Horton and River Dour at Crabble Mill in the east saw normal flows. Eight out of the eleven key flow sites saw above normal MMFs. River Eden at Vexour/Penshurst recorded the highest MMF highest percentage LTA of 158% for the month of January. River Ravensbourne at Catford recorded the lowest percentage LTA of 105%.

### 1.4 Groundwater levels

Groundwater levels in the Chalk are now predominantly normal for this time of year at the end of January. Only levels at Riddles Lane and Chipstead are still being registered as above normal. 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. The rise in groundwater levels is consistent with the effective rainfall of 157% of the LTA and the SMDs registered by the end of January. However, the rate of rise was steadied by the drier spell in the middle of the month.

### 1.5 Reservoir stocks

At the end of January, reservoir levels were:

- Below normal at Bough Beech at 92%
- Normal at Bough Beech with 94% and Bewl at 88%
- Weir Wood and Powdermill reservoirs were full at the end of this month. Weir Wood reservoir remained offline during January

### 1.6 Environmental impact

Thirty-one fluvial flood alerts and ten flood warnings were issued in January.

Author: Groundwater and Hydrology Team, [ksl.gwh@environment-agency.gov.uk](mailto:ksl.gwh@environment-agency.gov.uk)

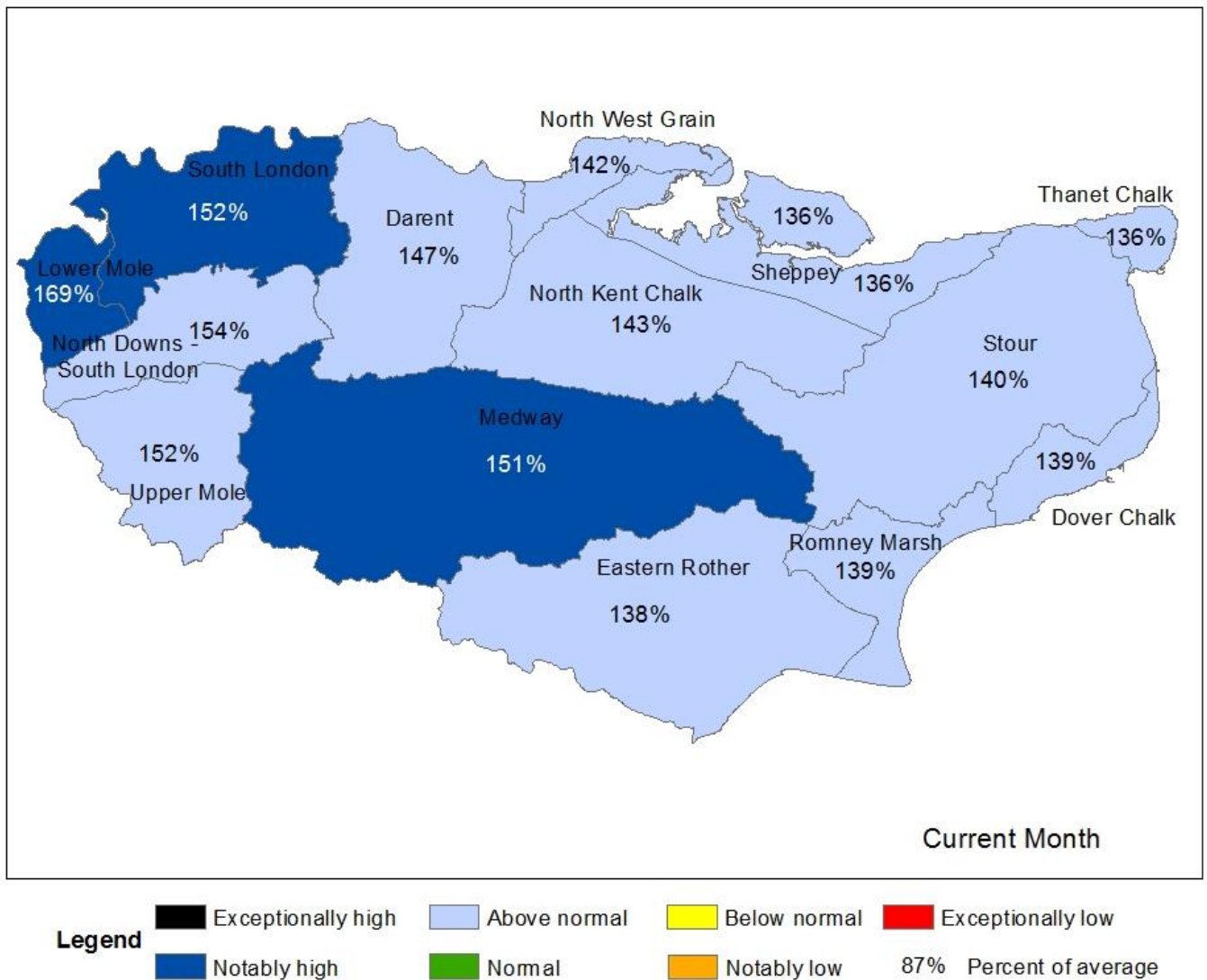
Contact Details: 03708 506 506

All data are provisional and may be subject to revision. The views expressed in this document are not necessarily those of the Environment Agency. Its officers, servants or agents accept no liability for any loss or damage arising from the interpretation or use of the information, or reliance upon views contained in this report.

## 2 Rainfall

### 2.1 Rainfall map one

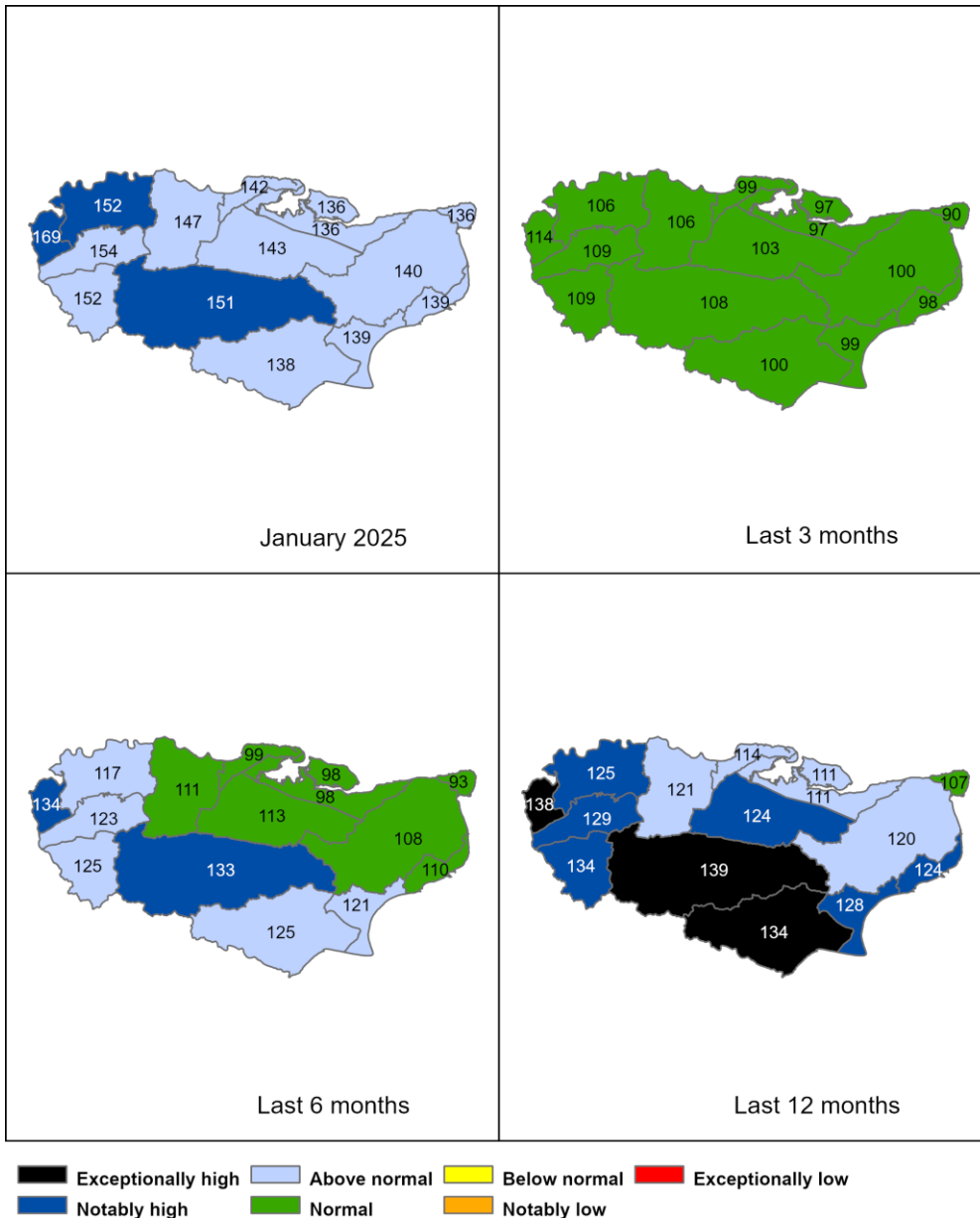
Figure 2.1: Total rainfall for hydrological areas across Kent and South London for the current month (up to 31 January 2025), classed relative to an analysis of respective historic totals. Table available in the appendices with more detailed information.



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

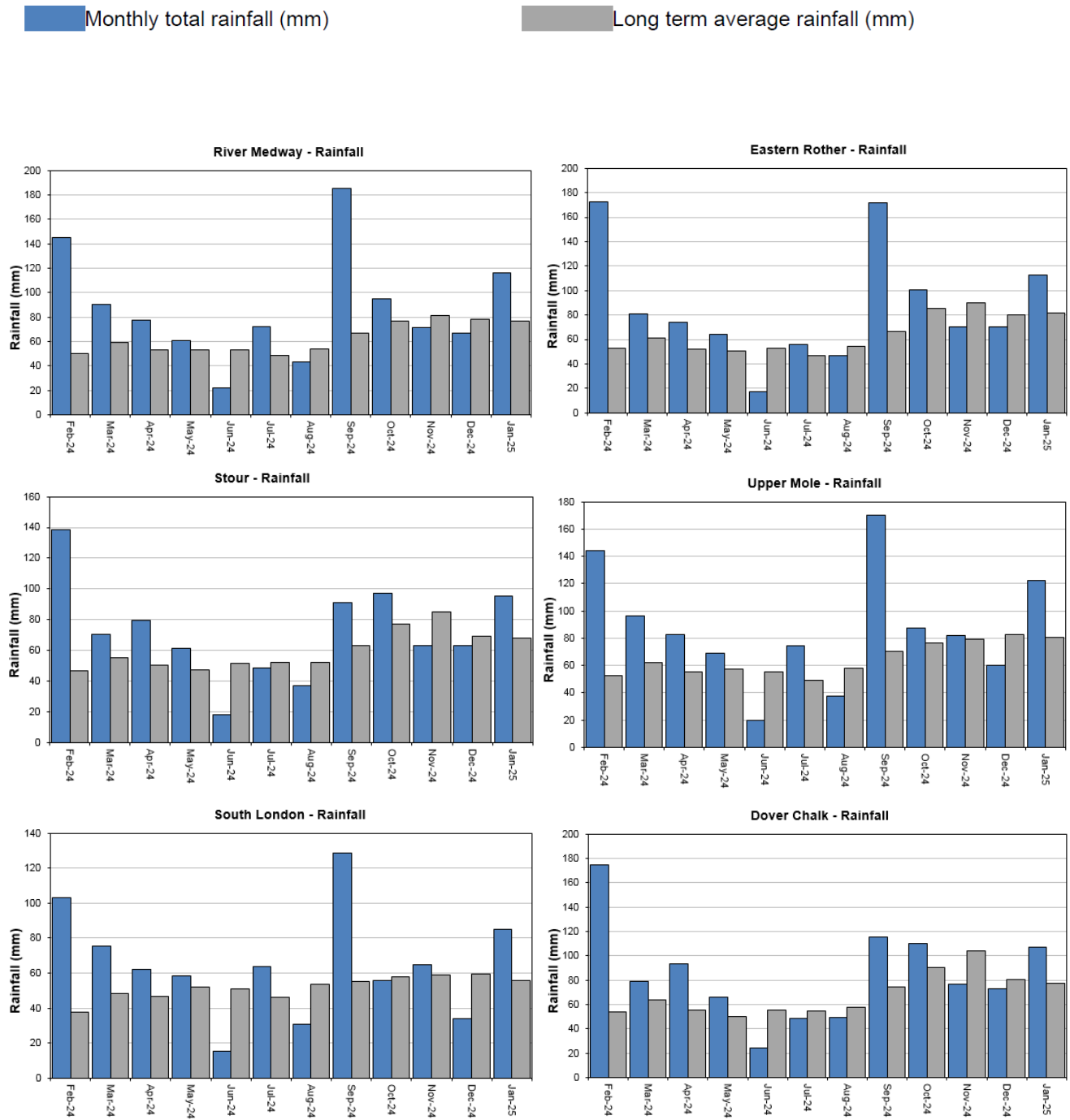
Figure 2.2: Total rainfall for hydrological areas for the current month (up to 31 January 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



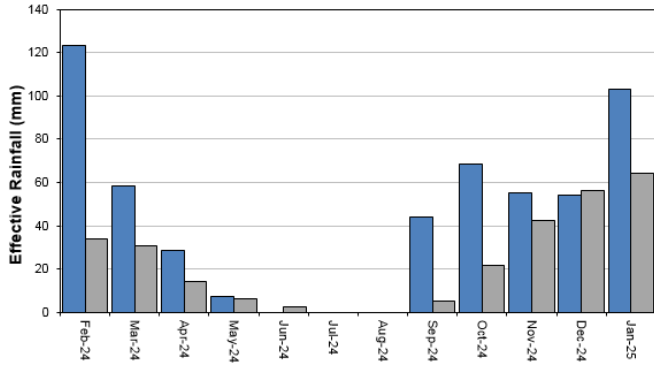
HadUK data for October 2023 onwards, based the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material 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

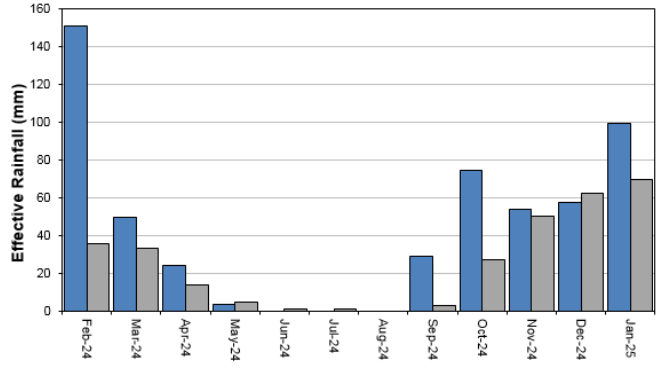
Figure 2.3: : Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1961 to 1990 long term average (LTA) for a selection of areal units. HadUK rainfall data. (Source: Met Office. Crown copyright, 2025). EA effective rainfall data (Source EA Soil Moisture Model).



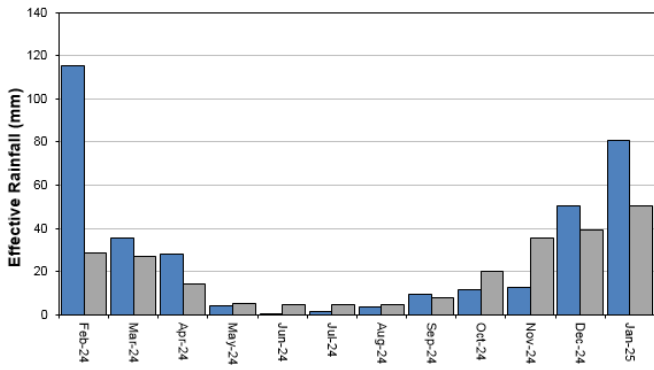
River Medway - Effective Rainfall



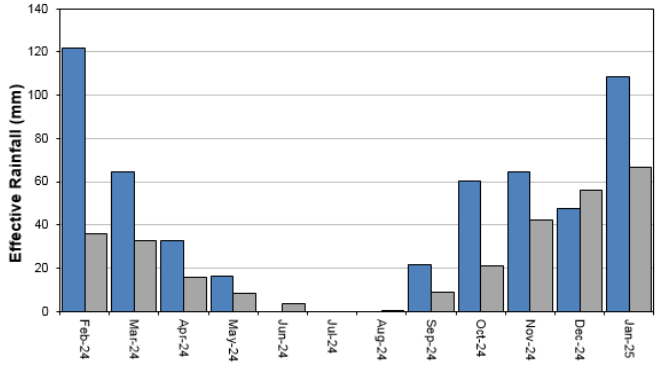
Eastern Rother - Effective Rainfall



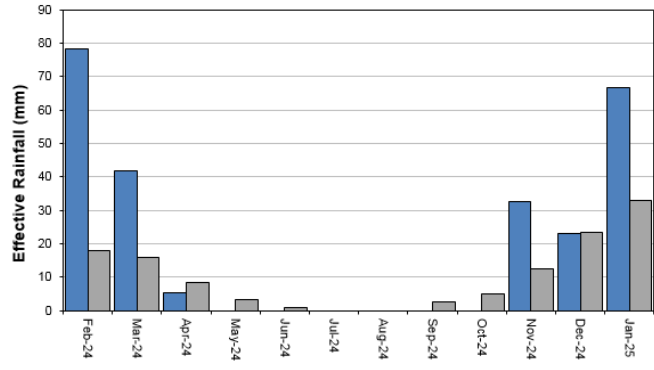
Stour - Effective Rainfall



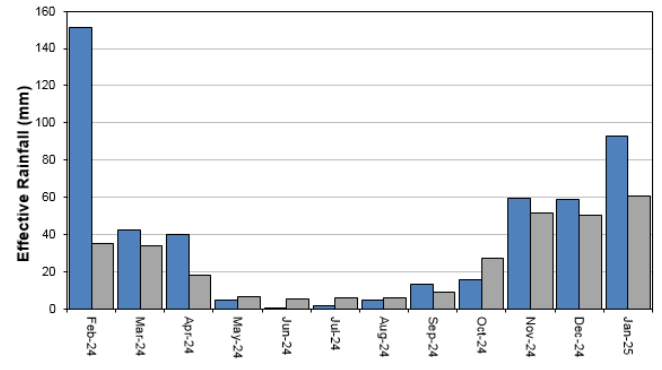
Upper Mole - Effective Rainfall



South London - Effective Rainfall



Dover Chalk - Effective Rainfall



## 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) 31 day Total	January % LTA	Effective Rainfall (mm) 31 day Total	January % LTA
6230TH	North Downs - South London (W)	118	154%	102	166%
6505TH	Upper Mole	122	152%	109	163%
6508TH	South London	85	152%	67	203%
6706So	Darent	95	147%	79	173%
6707So	North Kent Chalk	97	143%	82	159%
6708So	Stour	95	140%	81	159%
6709So	Dover Chalk	107	139%	93	153%
6710So	Thanet Chalk	67	136%	9	62%
6809So	Medway	117	151%	103	160%
6810So	Eastern Rother	113	138%	99	143%

6811So	Romney Marsh	92	139%	79	153%
6812So	North West Grain	69	142%	33	143%
6813So	Sheppey	70	136%	36	143%
	Kent & South London Average	96	144%	75	157%

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.

Winter period 01/10/2024 to 31/01/2025

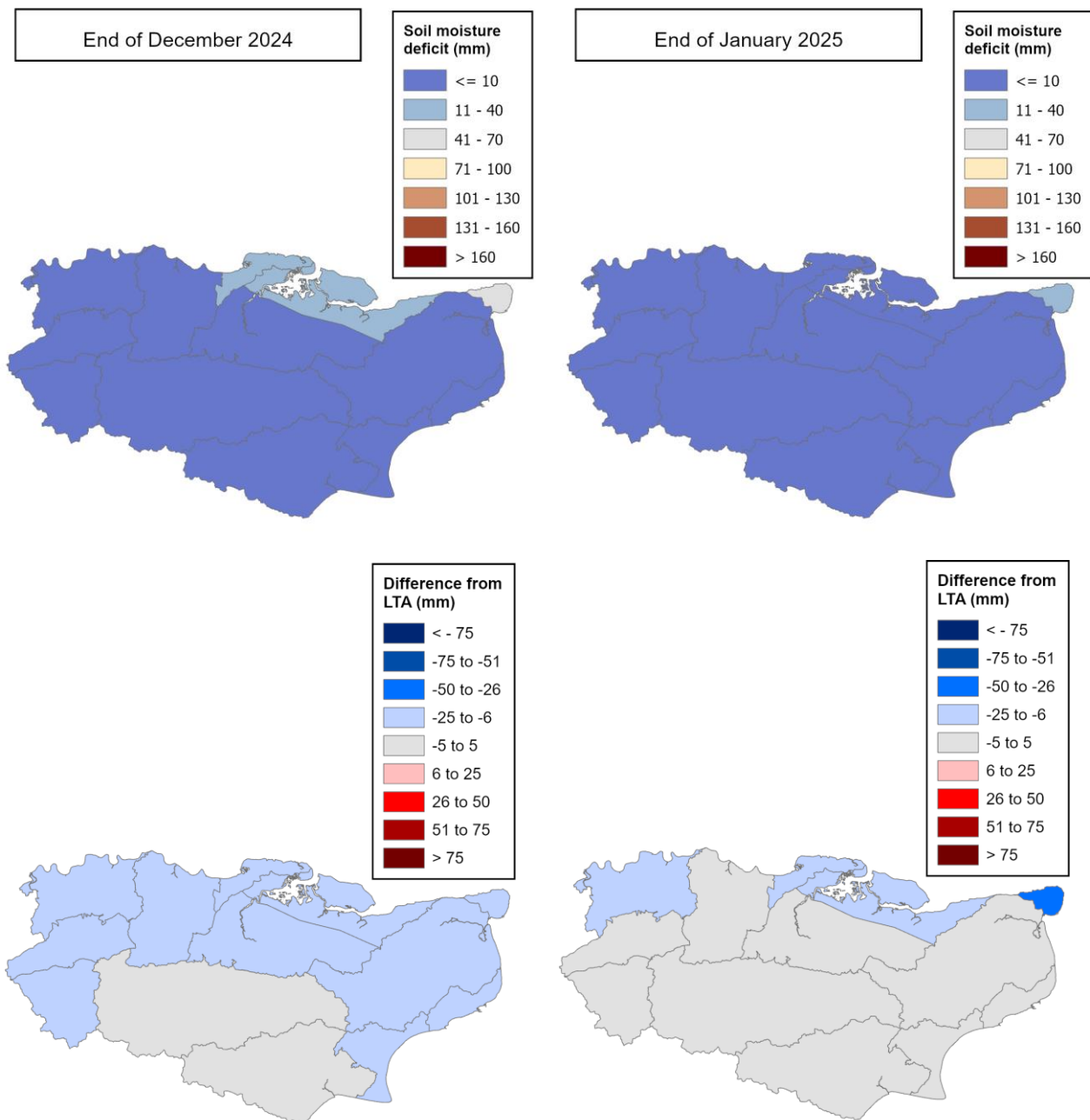
Number	Hydrological Area	Seasonal Rainfall (mm) Total	% LTA	Seasonal Effective Rainfall (mm) Total	% LTA
6230TH	North Downs - South London (W)	331	108%	239	143%
6505TH	Upper Mole	352	110%	281	151%
6508TH	South London	240	103%	122	165%
6706So	Darent	270	102%	134	114%
6707So	North Kent Chalk	309	110%	169	124%
6708So	Stour	319	106%	155	107%
6709So	Dover Chalk	368	105%	228	119%
6710So	Thanet Chalk	232	99%	28	58%
6809So	Medway	350	112%	281	152%
6810So	Eastern Rother	353	105%	285	136%

6811So	Romney Marsh	310	106%	198	139%
6812So	North West Grain	212	101%	33	72%
6813So	Sheppey	229	103%	36	70%
	Kent & South London Average	298	106%	168	129%

### 3 Soil moisture deficit

#### 3.1 Soil moisture deficit map

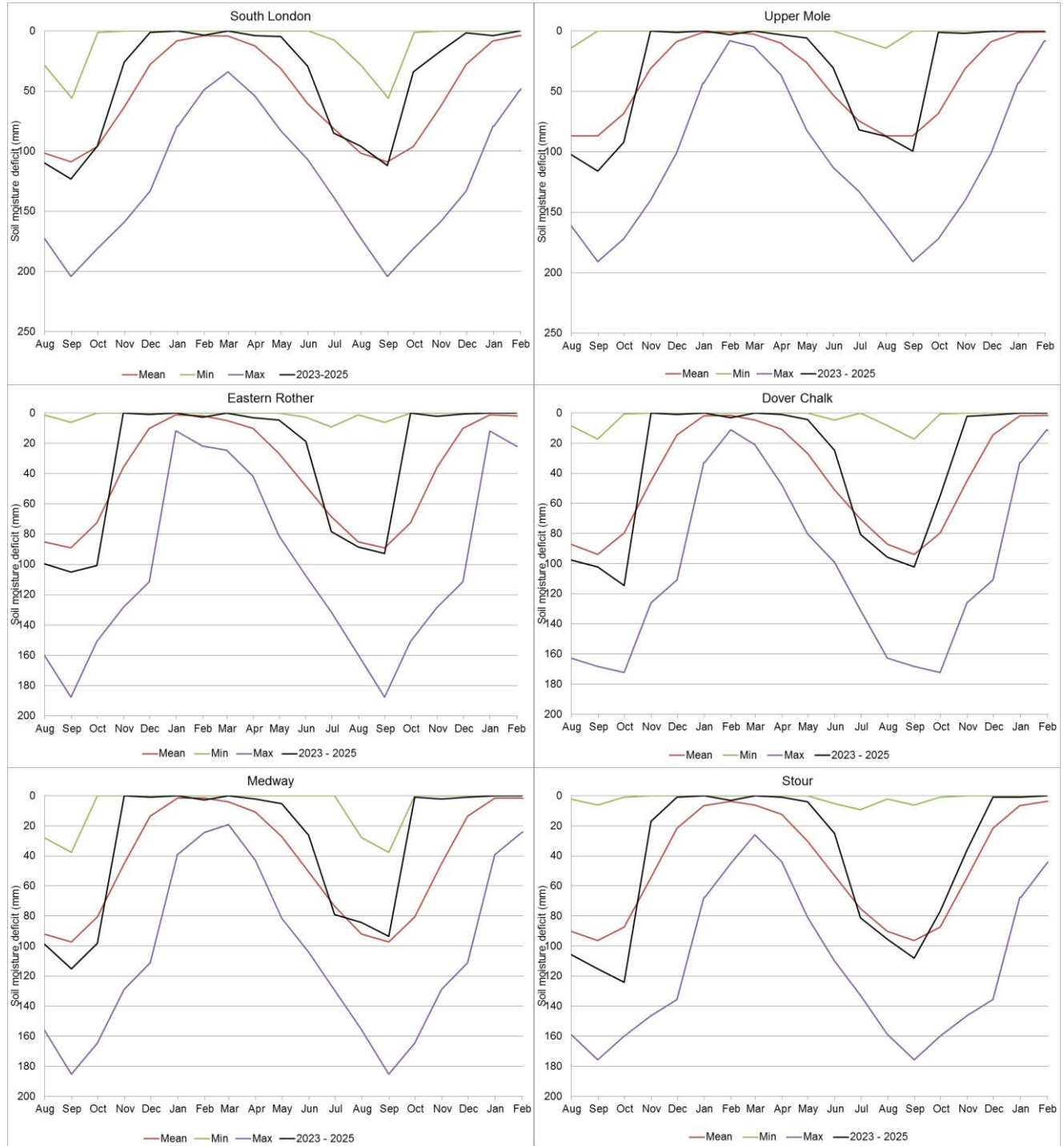
Figure 3.1: Soil moisture deficits for weeks ending 31 August (left panel) and 31 January 2025 (right panel). Top row shows actual soil moisture deficits (mm) and bottom row shows the difference (mm) of the actual from the 1961 to 90 long term average soil moisture deficits. EA Soil Moisture Deficit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



(Source: Met Office. Crown copyright, 2025). All rights reserved. Environment Agency, 100024198, 2025.

### 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).



(Source: Met Office. Crown copyright, 2025). All rights reserved. Environment Agency, 100024198, 2025

### 3.3 Soil moisture deficit table

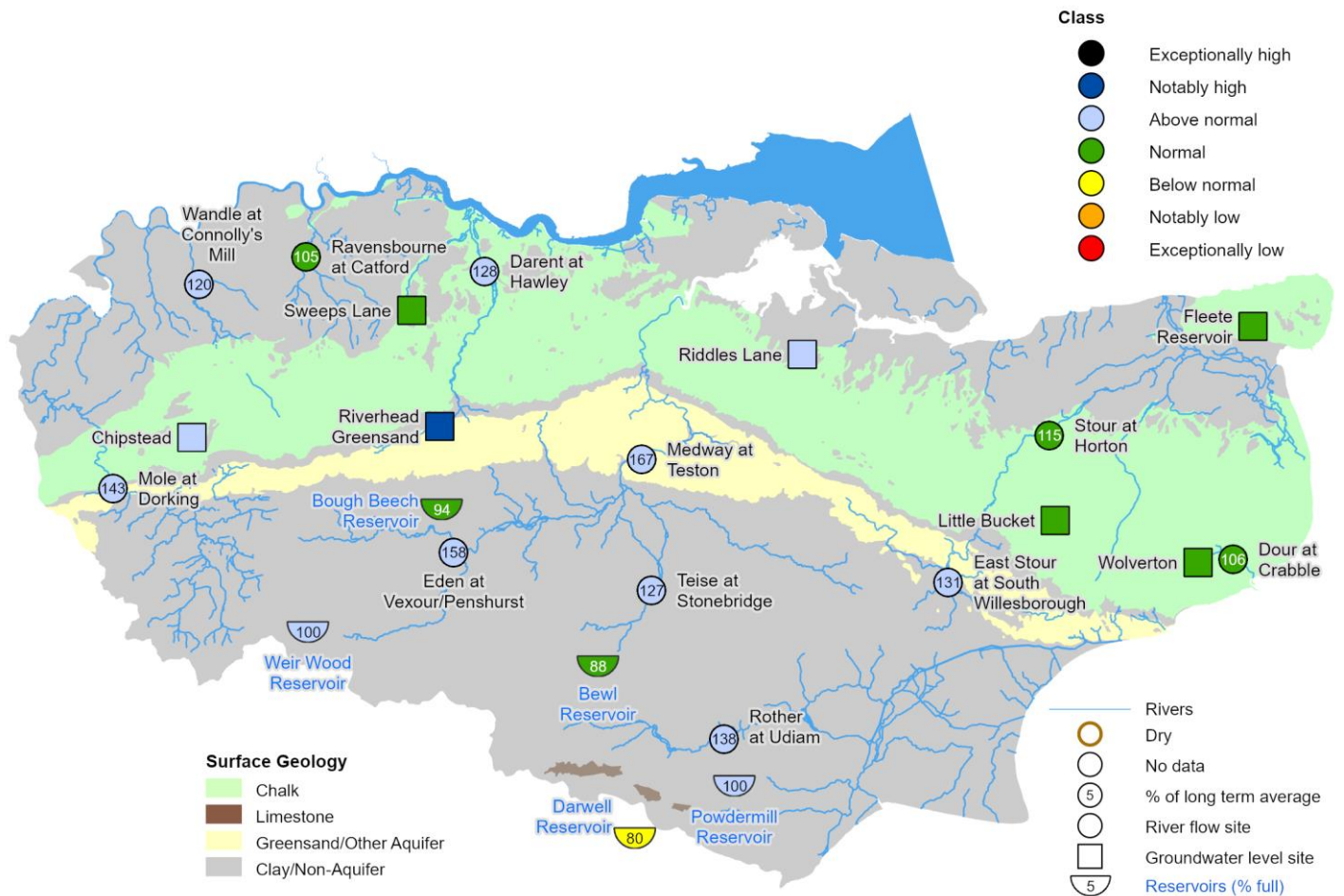
Figure 3.3: This is a second estimate of soil moisture deficit for the hydrological areas across the Kent and South London area. There may be significant variation within each area which must be considered when interpreting these data. EA soil moisture deficit data (Source EA Soil Moisture Model).

Number	Hydrological Area	SMD (mm) Day 31	End January LTA
6230TH	North Downs - South London (W)	0	2
6505TH	Upper Mole	0	1
6508TH	South London	0	9
6706So	Darent	0	5
6707So	North Kent Chalk	0	4
6708So	Stour	0	3
6709So	Dover Chalk	0	2
6710So	Thanet Chalk	24	53
6809So	Medway	0	1
6810So	Eastern Rother	0	1
6811So	Romney Marsh	0	2
6812So	North West Grain	0	16
6813So	Sheppey	0	14
	Kent & South London Average	2	9

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



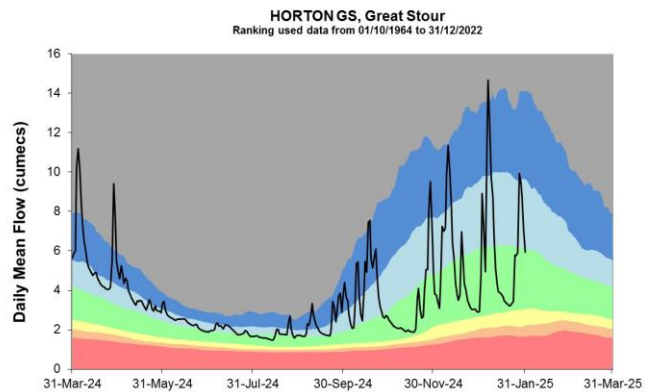
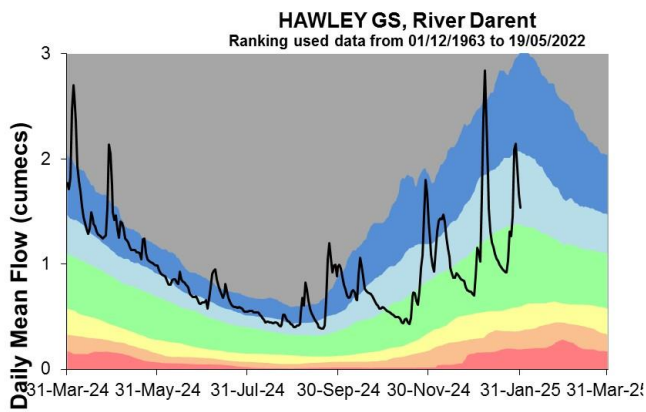
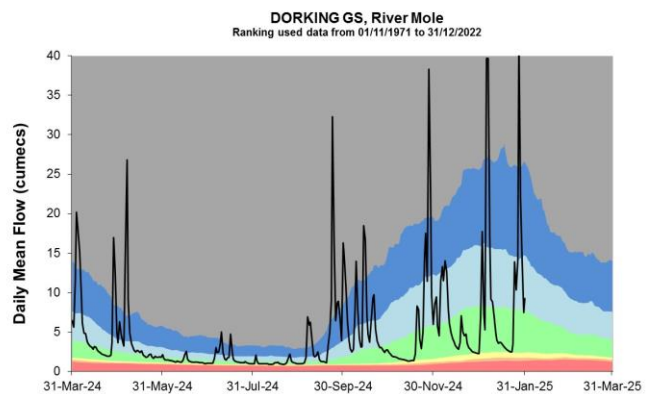
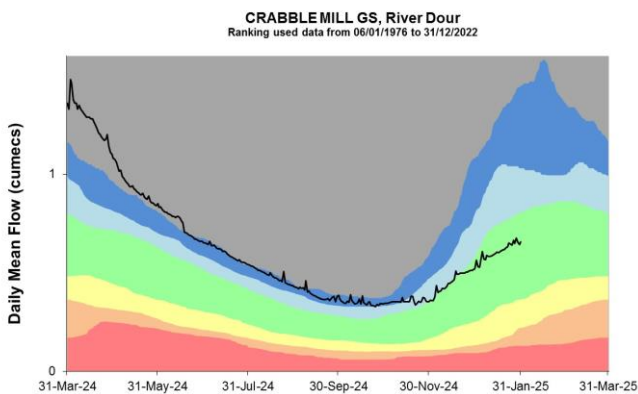
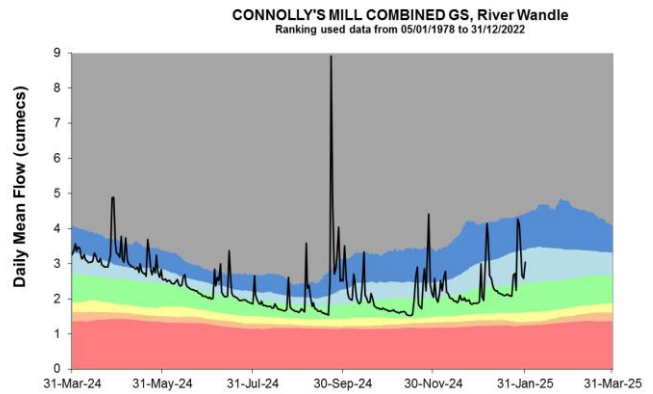
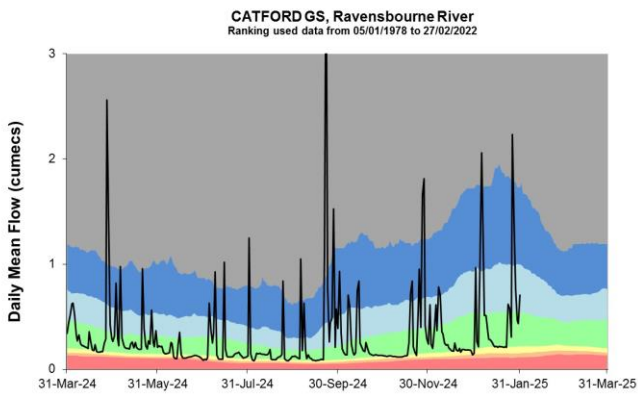
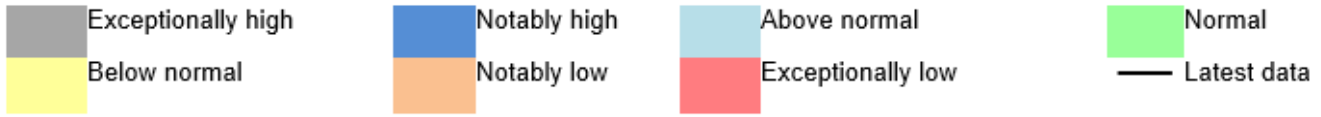
\*Weir Wood Reservoir is currently offline

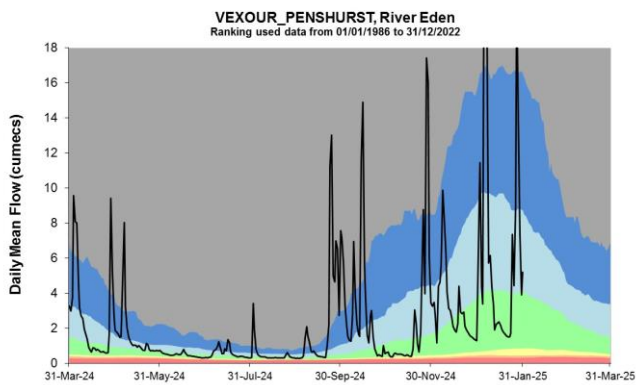
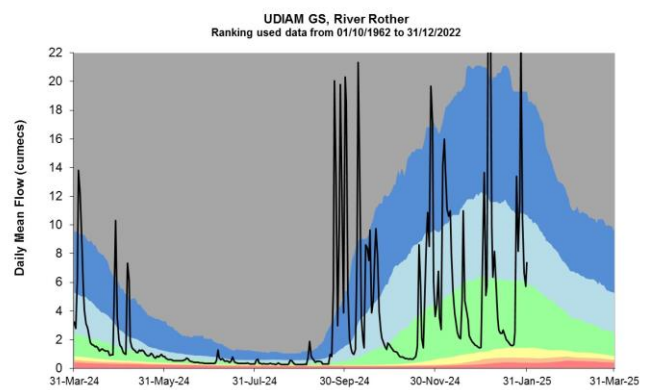
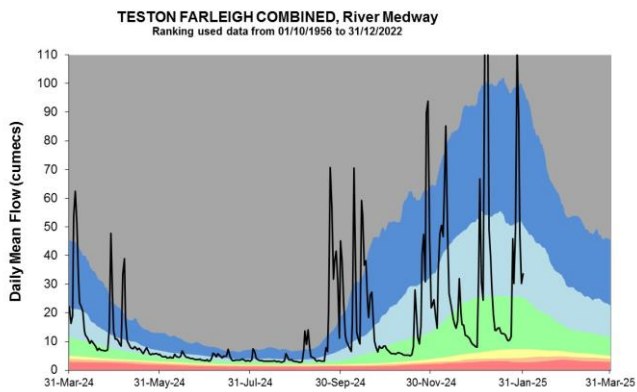
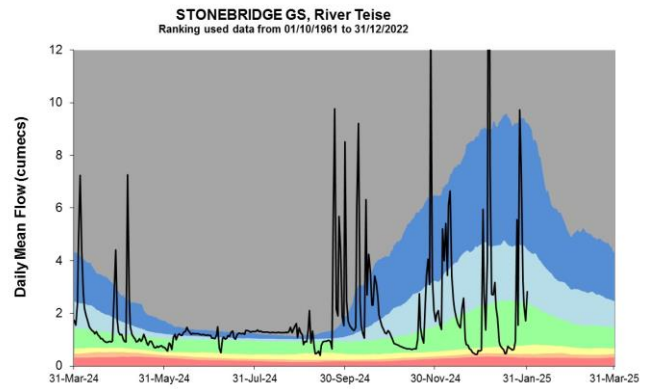
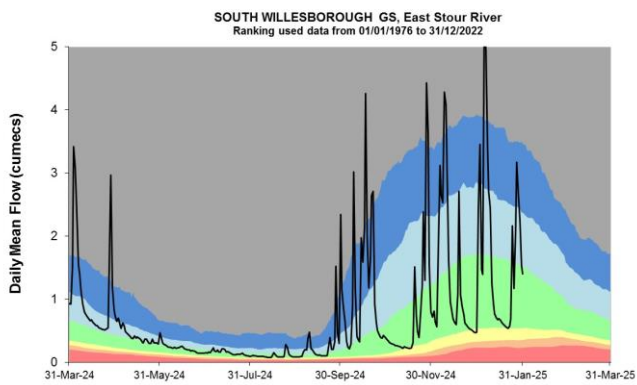
\*\*Flows at gauging stations in the Medway catchment might be affected by upstream reservoir releases

Some features of this map are based on digital spatial data licensed from the UK Centre for Ecology and Hydrology, © UKCEH. Includes material based on Ordnance Survey 1:50 000 maps with the permission of the controller of His Majesty's Stationery Office © Crown copyright. Geological map reproduced with kind permission from UK Groundwater Forum, BGS © NERC. All rights reserved. Environment Agency, 100026380, 2025.

## 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.





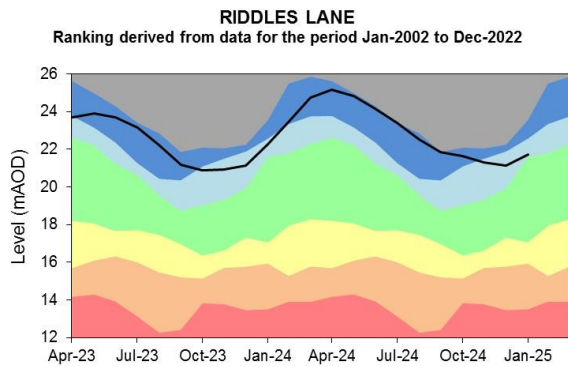
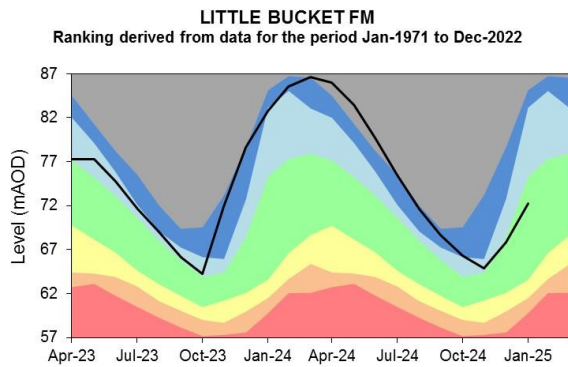
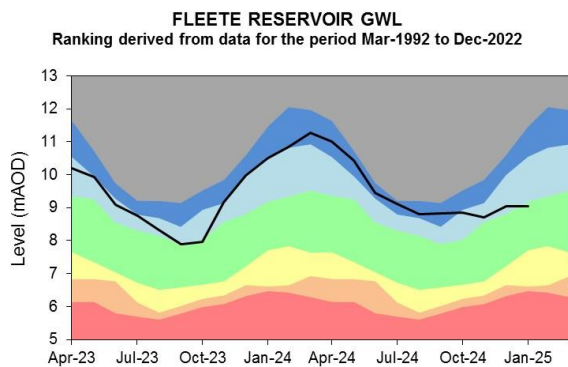
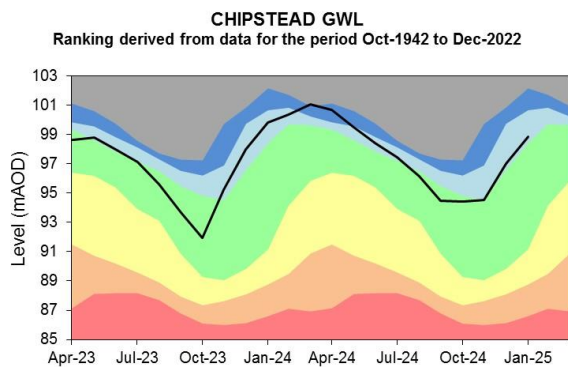
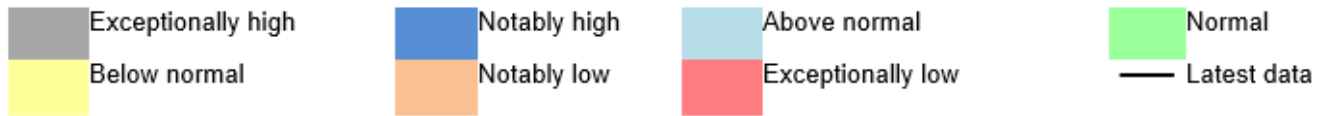
Source: Environment Agency.

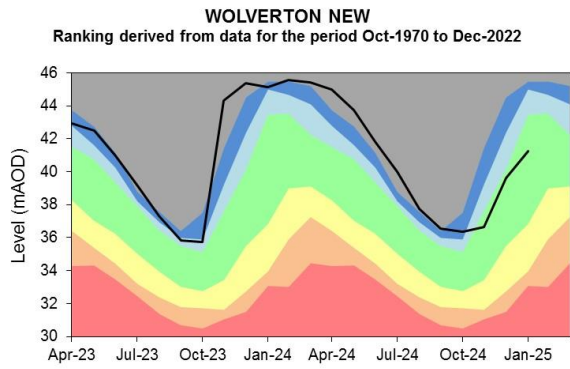
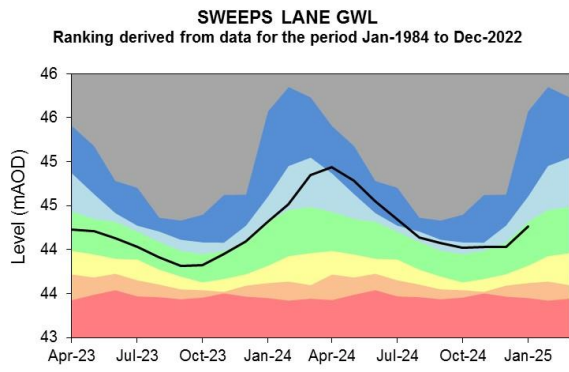
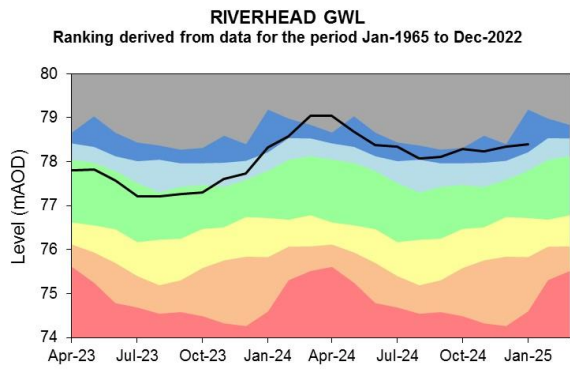


# 5 Groundwater levels

## 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.



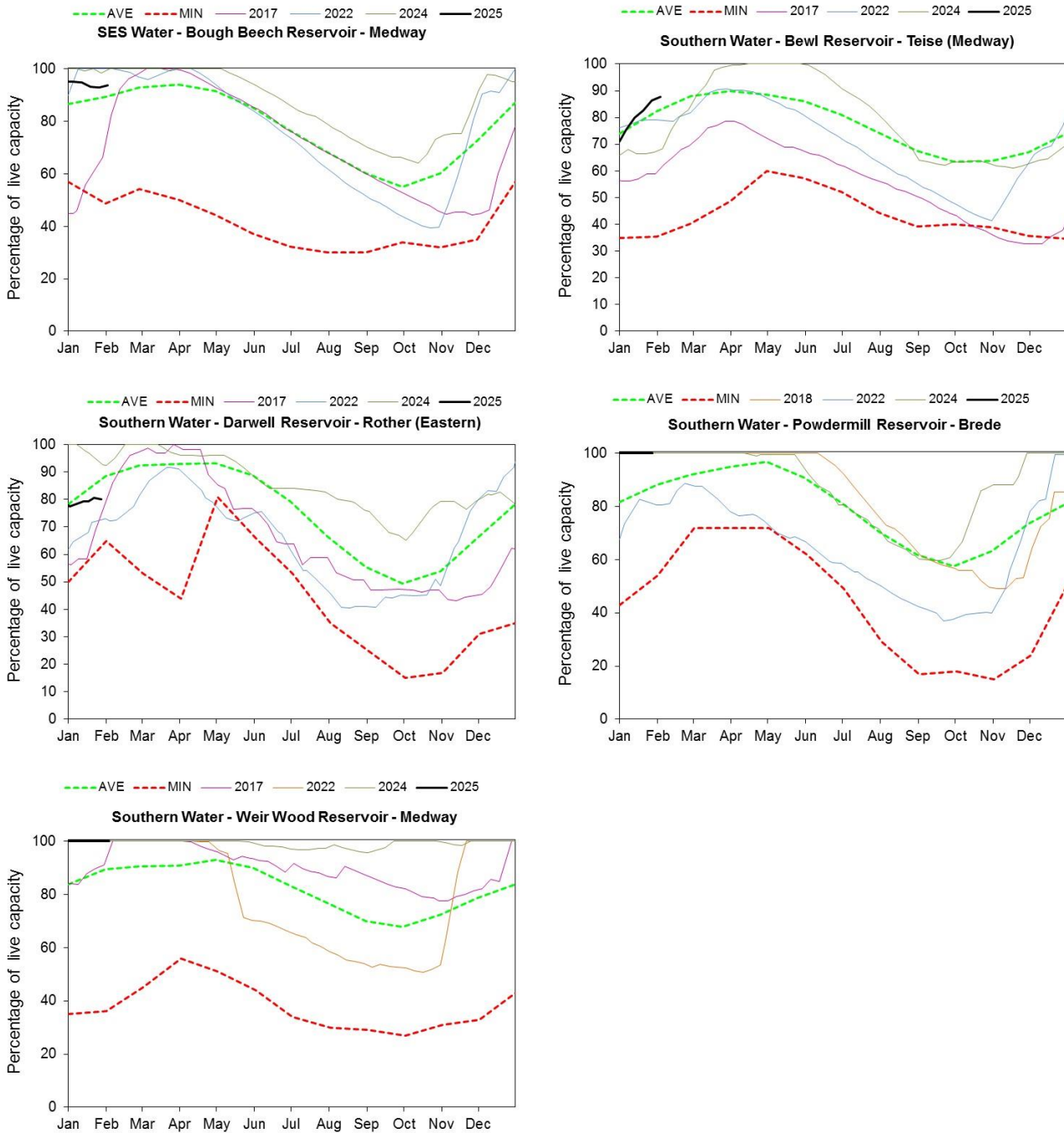


Source: Environment Agency, 2025.

# 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 ( $\text{m}^3\text{s}^{-1}$ ).

#### **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	Jan 2025 rainfall % of long term average 1961 to 1990	Jan 2025 band	Nov 2024 to January cumulative band	Aug 2024 to January cumulative band	Feb 2024 to January cumulative band
North Downs - South London	154	Above Normal	Normal	Above normal	Notably high
Upper Mole	152	Above Normal	Normal	Above normal	Notably high
South London	152	Notably High	Normal	Above normal	Notably high
River Darent	147	Above Normal	Normal	Normal	Above normal
North Kent Chalk	143	Above Normal	Normal	Normal	Notably high
Stour	140	Above Normal	Normal	Normal	Above normal
Dover Chalk	139	Above Normal	Normal	Normal	Notably high
Thanet Chalk	136	Above Normal	Normal	Normal	Normal
River Medway	151	Notably High	Normal	Notably high	Exceptionally high

Eastern Rother	138	Above Normal	Normal	Above normal	Exceptionally high
Romney Marsh	139	Above Normal	Normal	Above normal	Notably high
North West Grain	142	Above Normal	Normal	Normal	Above normal
Sheppey	136	Above Normal	Normal	Normal	Above normal



## 8.2 River flows table

Site name	River	Catchment	Jan 2025 band	Dec 2024 band
Catford Gs	River Ravensbourne	Ravensbourne	Normal	Below 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	Normal
Hawley Gs	River Darent and Cray	Darent and Cray	Above normal	Above normal
Horton Gs	Great Stour River	Great Stour	Normal	Normal
South Willesborough Gs	East Stour River	East Stour	Above normal	Normal
Stonebridge Gs	River Teise	Teise	Above normal	Normal
Teston Farleigh Combined	River Medway	Medway (Middle)	Above normal	Normal
Udiam Gs	River Rother	Rother (Kent)	Above normal	Normal
Vexour_penshurst	River Eden	Eden (Kent)	Above normal	Normal

### 8.3 Groundwater table

Site name	Aquifer	End of Jan 2025 band	End of Dec 2024 band
Fleete Reservoir Gwl	Isle Of Thanet Chalk	Normal	Above normal
Chipstead Gwl	Epsom North Downs Chalk	Above 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