Monthly water situation report: Kent and South London Area

1 Summary - May 2025

The Kent and South London (KSL) area as a whole received 35% of its long-term Average (LTA) rainfall in May. Soil moisture deficits (SMD) continued to increase and ended the month above the LTA. Monthly mean river flows (MMF's) varied between exceptionally low and normal, with most in the normal range. Groundwater levels continued to decline at all our key indicator sites throughout May and ended the month in the normal category. Reservoir levels also continued to decline and varied between normal and exceptionally low.

1.1 Rainfall

The whole KSL area received 35% of the LTA rainfall during May. Rainfall received was notably low across most catchments. Three catchments received below normal rainfall. The percentage of long-term average rainfall received ranged from 22% in the Thanet Chalk in the East to 70% in the Lower Mole area in the West. In the previous three months, spanning from March to May, exceptionally low rainfall was recorded in most catchments in line with the low rainfall received. The KSL area registered the fourth driest three months spanning March to May on record since records began in 1871. In the previous six months, from December to May, rainfall was notably low in the north of the catchment, below normal in the south. In the last twelve months, rainfall ranged from normal to exceptionally low in KSL area. The highest daily rainfall total of 19.5mm for May was recorded at Leatherhead rain gauge in the North downs – South London catchment on 2 May. The next highest daily rainfall totals were on 11, 21, 27 and 23 May and ranged from 13.9mm to 8.2mm. Ten days with less than 0.3mm of rainfall was recorded this month.

1.2 Soil moisture deficit and recharge

At the end of April SMDs ranged from forty-one to one hundred and thirty millimetres. At the end of May, soil moisture deficits had increased further, now ranging from seventy-one to one hundred and sixty millimetres. In May, all catchments registered higher SMDs than long-term average. SMDs increased in all catchments due to the lack of effective rainfall in May. Across the whole area, on average, effective rainfall received this month was 9% of the LTA.

1.3 River flows

MMFs ranged from normal to exceptionally low in May in KSL. Notably low flows were recorded in three of the eleven at the River Mole at Dorking, the River Eden at Vexour and Penshurst and in the East Stour at South Willesborough. One Exceptionally low flow was recorded at River Ravensbourne at Catford. River Dour at Crabble Mill recorded the highest MMF percentage LTA of 99% for the month of May. River Ravensbourne at Catford recorded the lowest percentage LTA of 36%. The fall in MMFs is consistent with the effective rainfall of 9% of the LTA and the SMDs registered by the end of May.

1.4 Groundwater levels

At the end of May, groundwater levels in the Chalk were declining at normal levels for this time of year. Groundwater levels at the Lower Greensand aquifer at Riverhead have also continued to decrease, and now they are now within the normal range too. Levels in all monitoring points have continued to fall since the end of April. The fall in groundwater levels is consistent with the effective rainfall of 9% of the LTA and the SMDs registered by the end of May.

1.5 Reservoir stocks

Throughout May, water levels in all the water company reservoirs declined.
At the end of May, reservoir levels were:

- Exceptionally low at Darwell with 68% full.
- Below normal at Bough Beech with 84% full.
- Normal at Weir Wood at 96% full, Powdermill at 89% and Bewl at 82% full.

1.6 Environmental impact

- On 1 May, a small number of constraints were applied to abstractors in the Medway and Stour catchment, with licences linked to Stilebridge and Littlebourne gauging station.
- Similarly, on 12 May, constraints were imposed on abstractors in the Stour catchment, with licences linked to Poulton Farm gauging station.
- Finally, on 16 May, a single constraint was imposed on abstractors in the Medway catchment, with licences linked to Teston gauging station. The bulk of Teston constraints were applied on 3 April and have persisted throughout the months of April and May.
- Constraints were applied to abstractors in the Stour catchment linked to the Wye gauging station on 23 April, and have continued throughout the month of May due to the hydrological conditions.

Despite below LTA rainfall for the last 3 consecutive months, due to groundwater influences within catchments the Areas water resources status remains normal.

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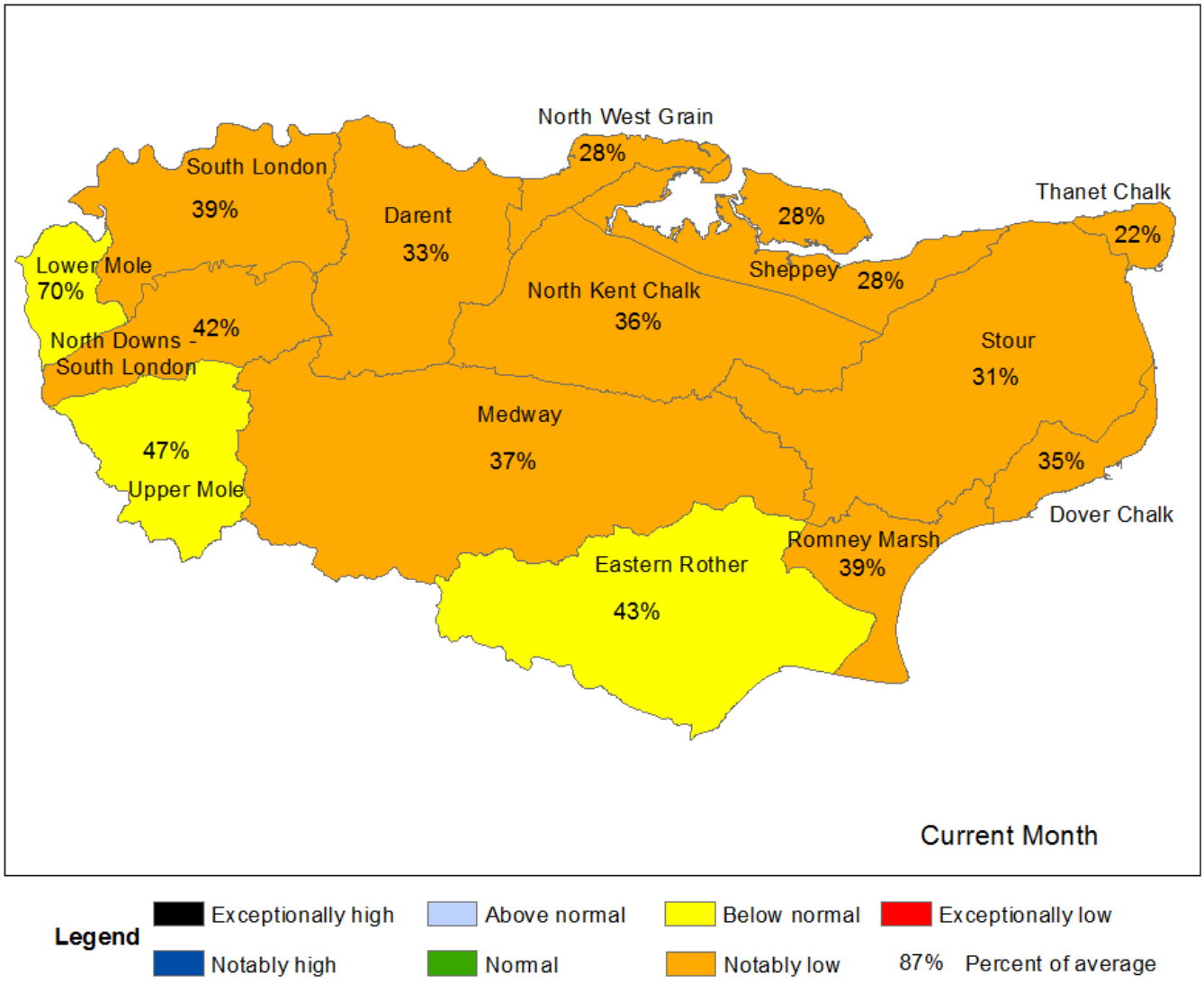
2 Rainfall

2.1 Rainfall map one

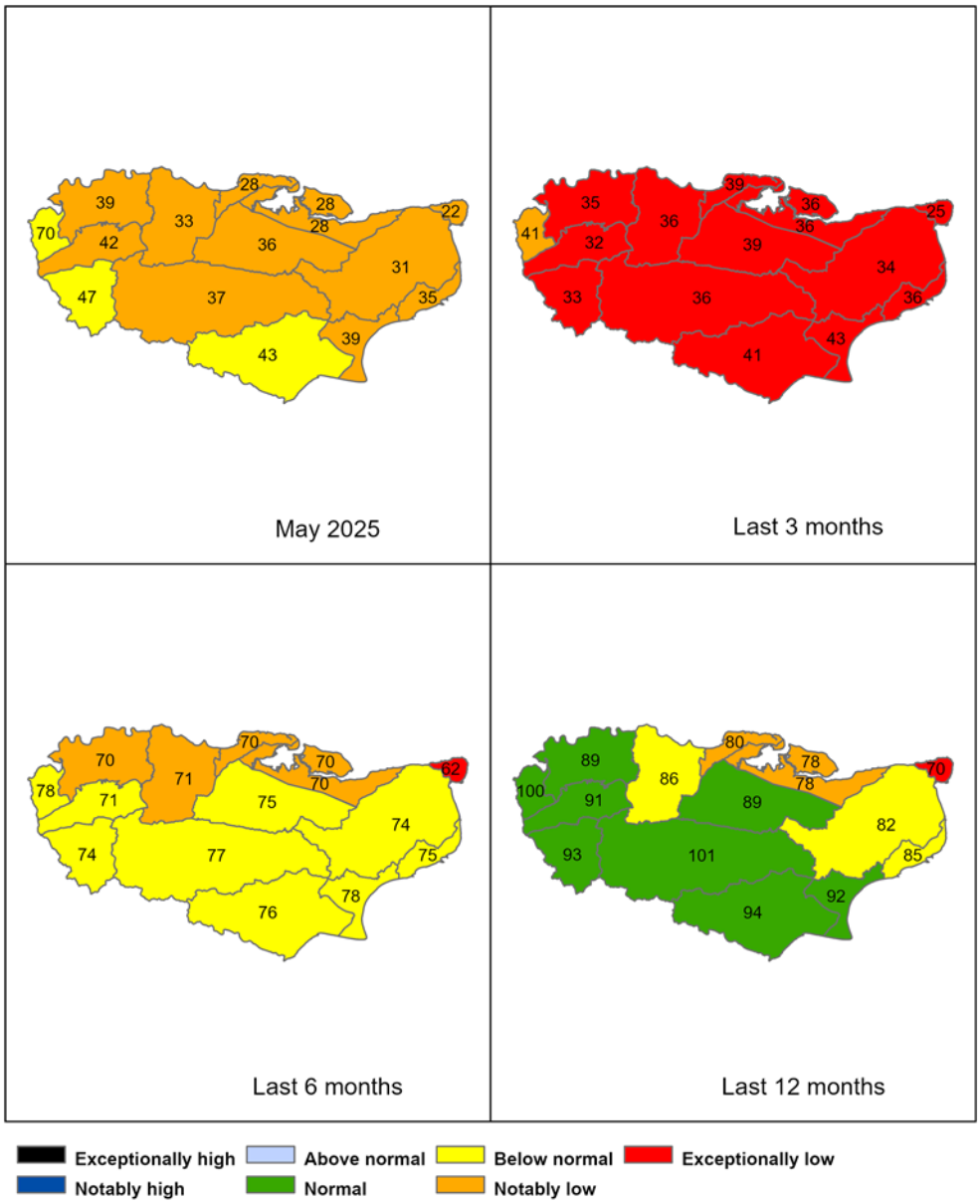
Figure 2.1: Total rainfall for hydrological areas across Kent and South London for the current month (up to 31 May 2025), classed relative of historic totals. The percentage of average uses the period of 1991 – 2020. Table available in the appendices with more detailed information.



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

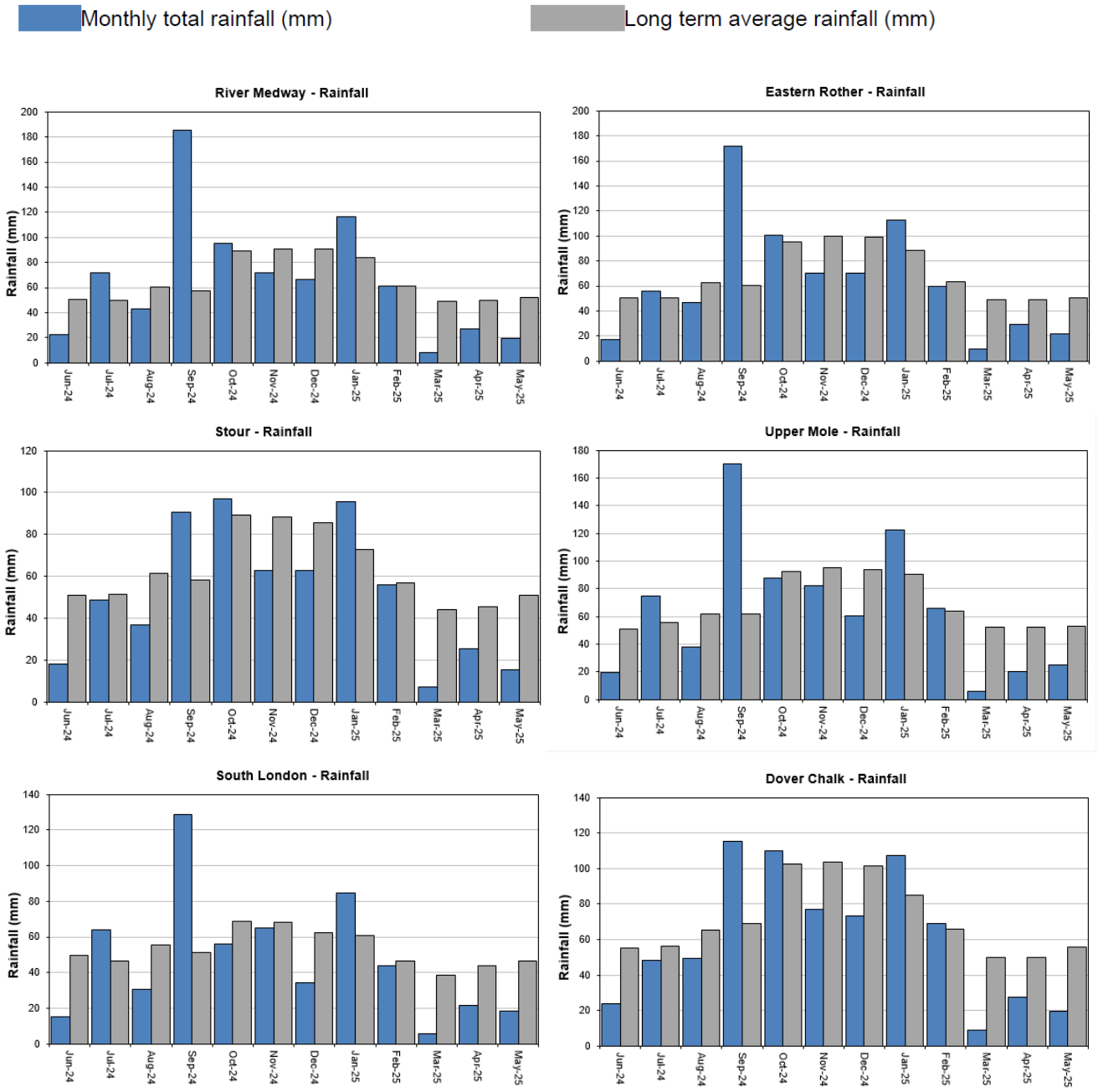
Figure 2.2: Total rainfall for hydrological areas for the current month (up to 31 May 2025), the last 3 months, the last 6 months, and the last 12 months,), classed relative of historic totals. The percentage of average uses the period of 1991 – 2020. Table available in the appendices with detailed information.

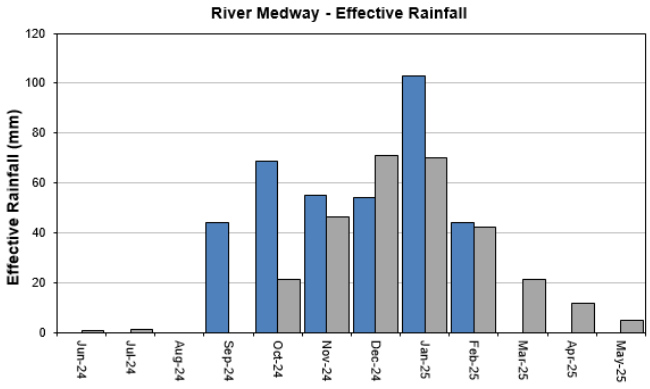


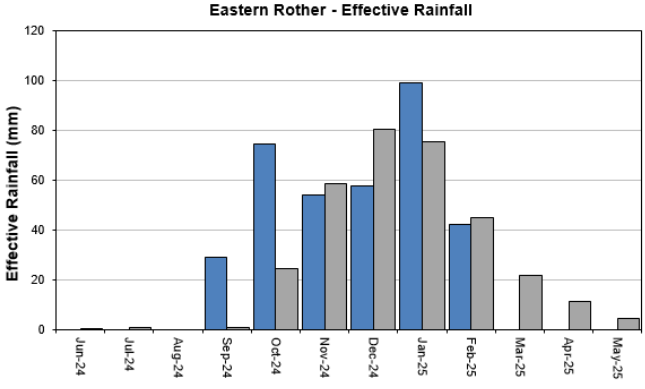
HadUK data for October 2023 onwards, based the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material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

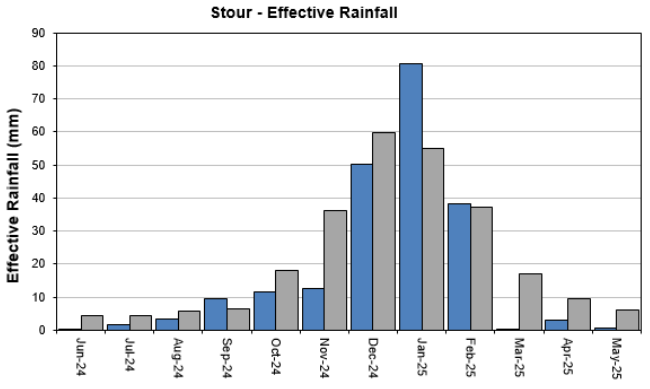
2.3 Rainfall and effective rainfall charts

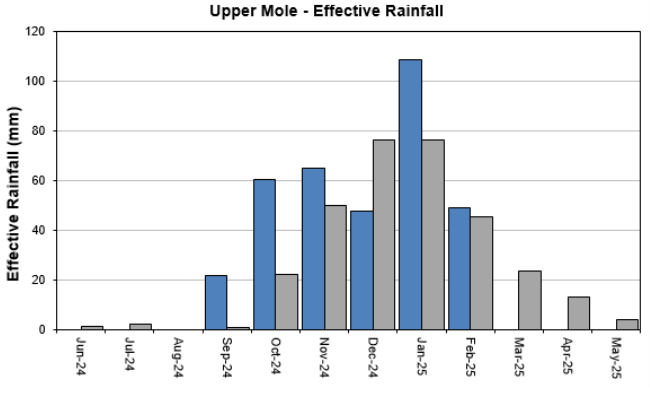
Figure 2.3: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average (LTA) for a selection of areal units. HadUK rainfall data. (Source: Met Office. Crown copyright, 2025). EA effective rainfall data (Source EA Soil Moisture Model).

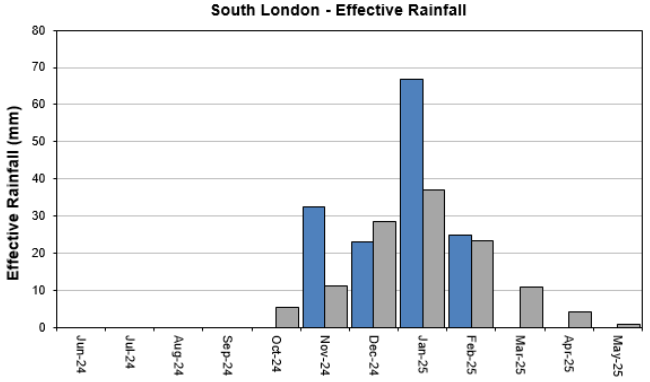


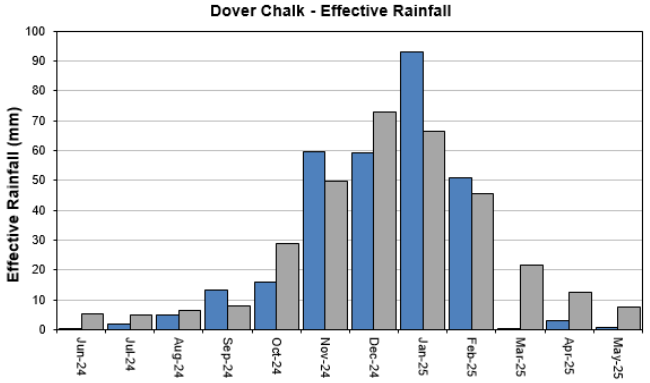

River Medway - Effective Rainfall
Effective Rainfall (mm)
0
20
40
60
80
100
120
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25


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


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


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


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


Dover Chalk - Effective Rainfall
Effective Rainfall (mm)
0
10
20
30
40
50
60
70
80
90
100
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-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) 31 day Total	May % LTA	Effective Rainfall (mm) 31 day Total	May % LTA
6230TH	North Downs - South London (W)	23	41%	1	17%
6505TH	Upper Mole	25	46%	0	0%
6508TH	South London	18	38%	0	0%
6706So	Darent	16	32%	1	16%
6707So	North Kent Chalk	18	35%	1	15%
6708So	Stour	16	30%	1	9%
6709So	Dover Chalk	19	34%	1	10%
6710So	Thanet Chalk	10	22%	0	2%
6809So	Medway	19	37%	0	0%
6810So	Eastern Rother	22	43%	0	0%
6811So	Romney Marsh	18	39%	0	0%

6812So	North West Grain	12	28%	0	0%
6813So	Sheppey	12	27%	0	0%
	Kent & South London Average	17	35%	0	9%

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 01/04/2025 to 31/05/2025

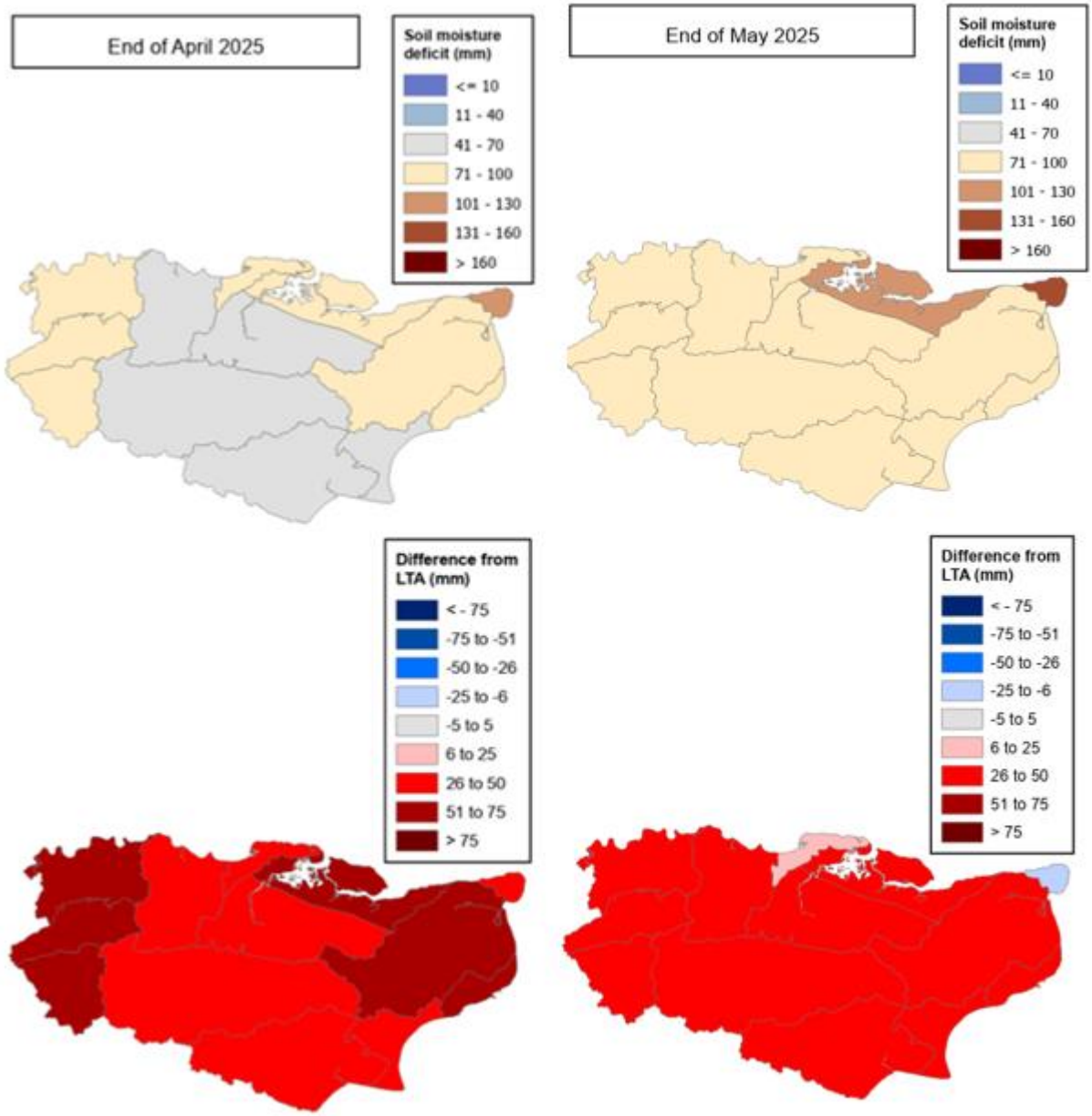
Number	Hydrological Area	Seasonal Rainfall (mm) Total	% LTA	Seasonal Effective Rainfall (mm) Total	% LTA
6230TH	North Downs - South London (W)	44	40%	3	14%
6505TH	Upper Mole	45	42%	0	0%
6508TH	South London	39	43%	0	0%
6706So	Darent	46	47%	4	26%
6707So	North Kent Chalk	48	49%	5	27%
6708So	Stour	41	42%	3	21%
6709So	Dover Chalk	47	44%	4	19%
6710So	Thanet Chalk	25	30%	1	16%
6809So	Medway	47	45%	0	0%
6810So	Eastern Rother	51	51%	0	0%

6811So	Romney Marsh	46	53%	0	0%
6812So	North West Grain	41	50%	0	0%
6813So	Sheppey	37	45%	0	0%
	Kent & South London Average	43	45%	2	12%

3 Soil moisture deficit

3.1 Soil moisture deficit map

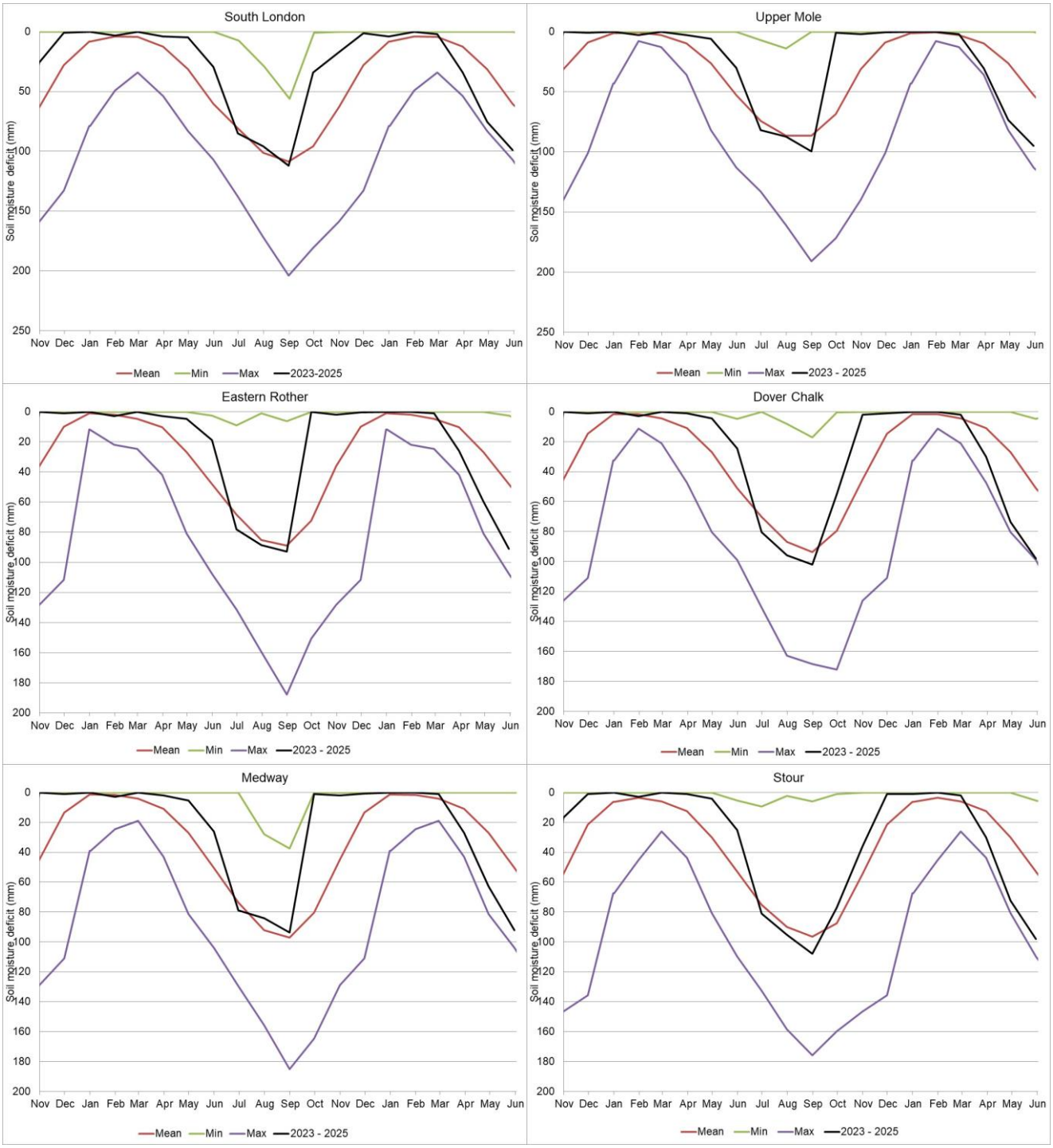
Figure 3.1: Soil moisture deficits for weeks ending 30 April (left panel) and 31 May 2025 (right panel). Top row shows actual soil moisture deficits (mm) and bottom row shows the difference (mm) of the actual from the 1991 to 2020 long term average soil moisture deficits.



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 1991 to 2020 long term average. EA soil moisture deficit data (Source EA Soil Moisture Model).



3.3 Soil moisture deficit table

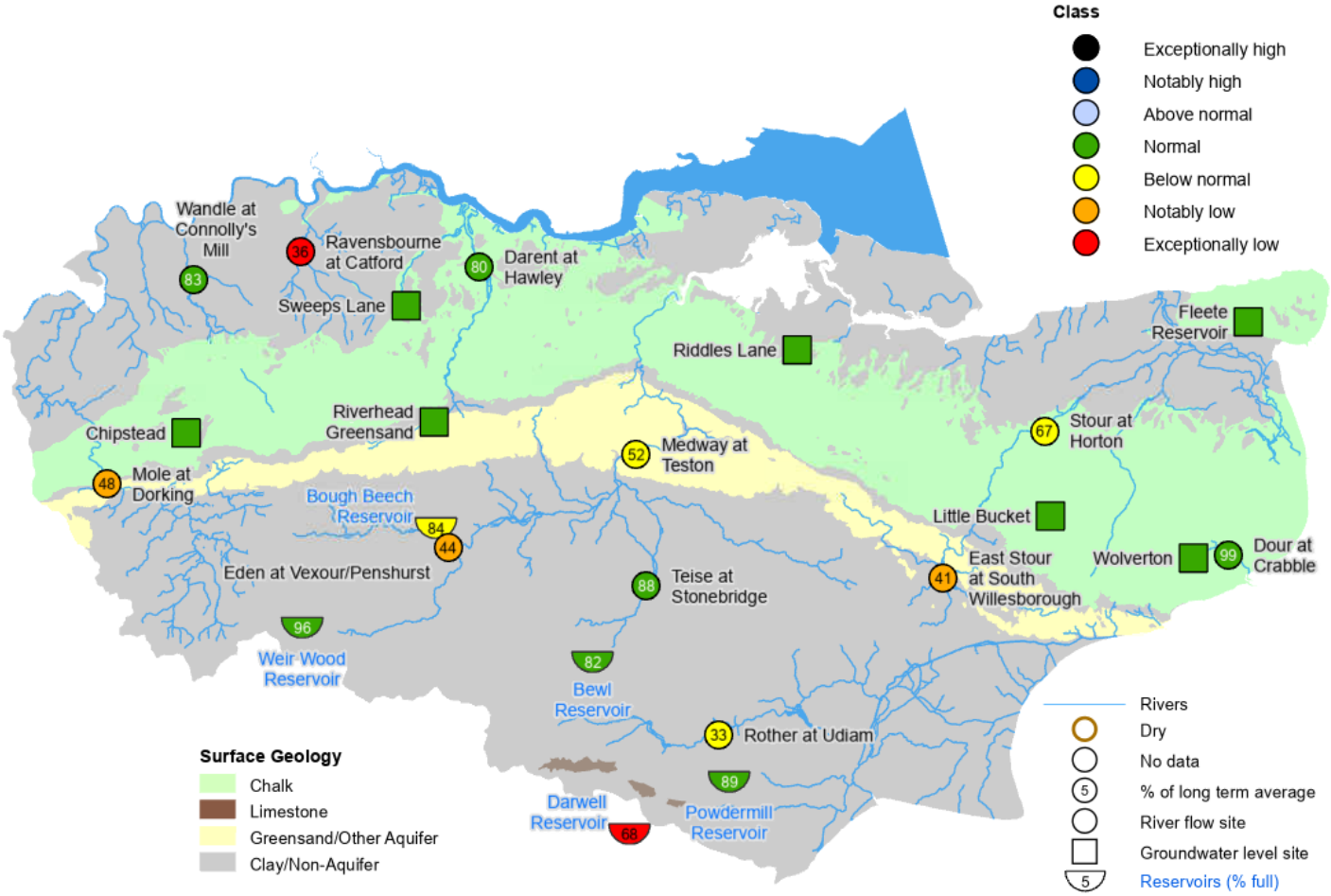
Figure 3.3: This is a second estimate of soil moisture deficit for the hydrological areas across the Kent and South London area. There may be significant variation within each area which must be considered when interpreting these data. EA soil moisture deficit data (Source EA Soil Moisture Model).

Number	Hydrological Area	SMD (mm) Day 31	End May LTA
6230TH	North Downs - South London (W)	96	50
6505TH	Upper Mole	95	49
6508TH	South London	99	62
6706So	Darent	96	56
6707So	North Kent Chalk	95	53
6708So	Stour	98	54
6709So	Dover Chalk	98	52
6710So	Thanet Chalk	131	149
6809So	Medway	92	49
6810So	Eastern Rother	91	50
6811So	Romney Marsh	95	55
6812So	North West Grain	100	83
6813So	Sheppey	102	72
	Kent & South London Average	99	64

4 River flows, groundwater levels and reservoir stocks

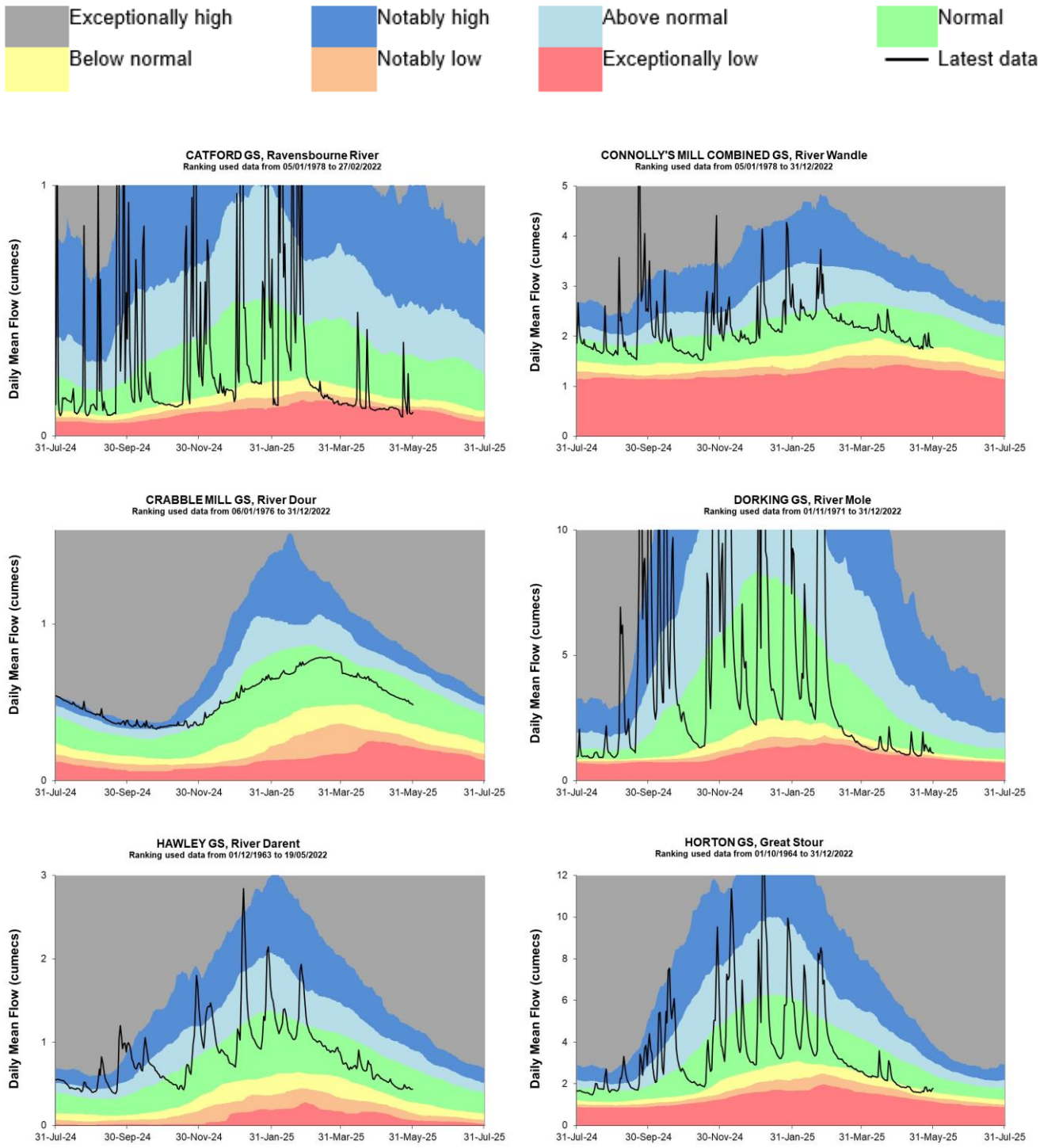
4.1 River flows, groundwater levels and reservoir stocks map

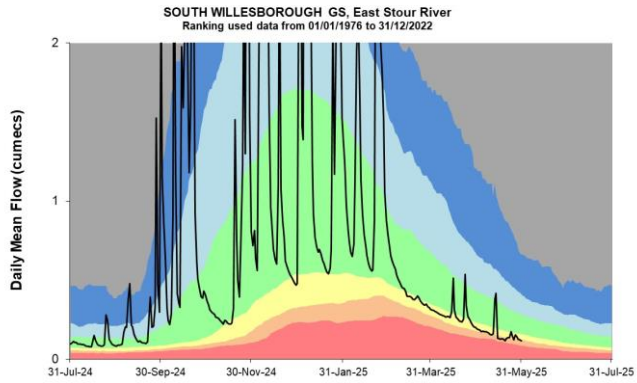
Figure 4.1: Monthly mean river flows for indicator sites for May 2025, expressed as a percentage of the respective long term average (period 1992 – 2020) and classed relative to an analysis of historic May monthly means. End of month groundwater levels for indicator sites for May 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic May levels. Tables available in the appendices with detailed information. End of month levels for reservoirs for May 2025, expressed as percent full. (Source: Water Companies).

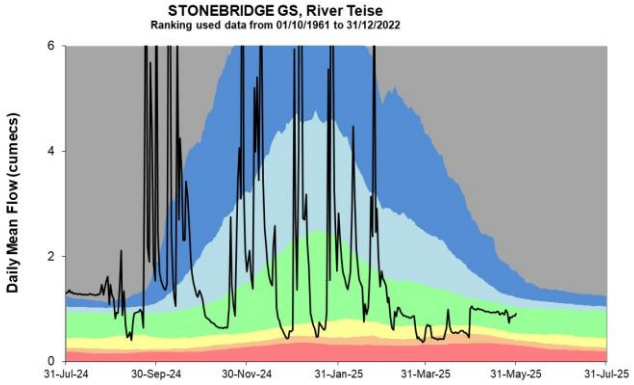


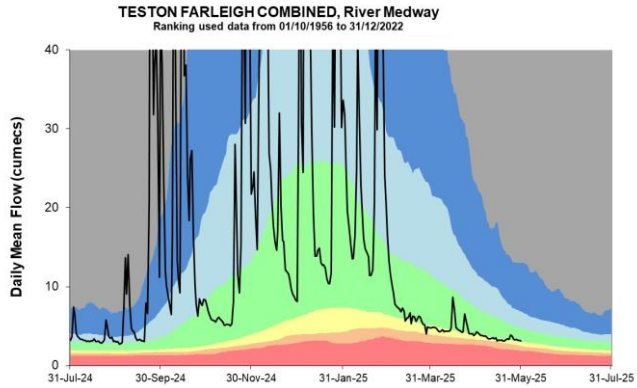
4.2 River flow charts

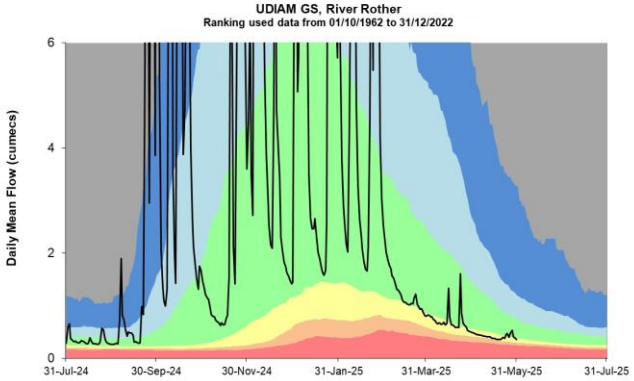
Figure 4.1: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.

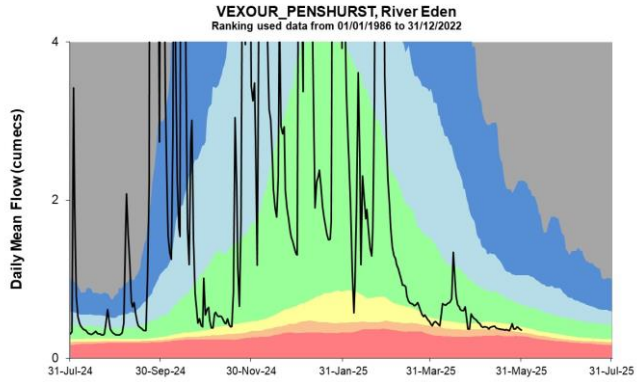










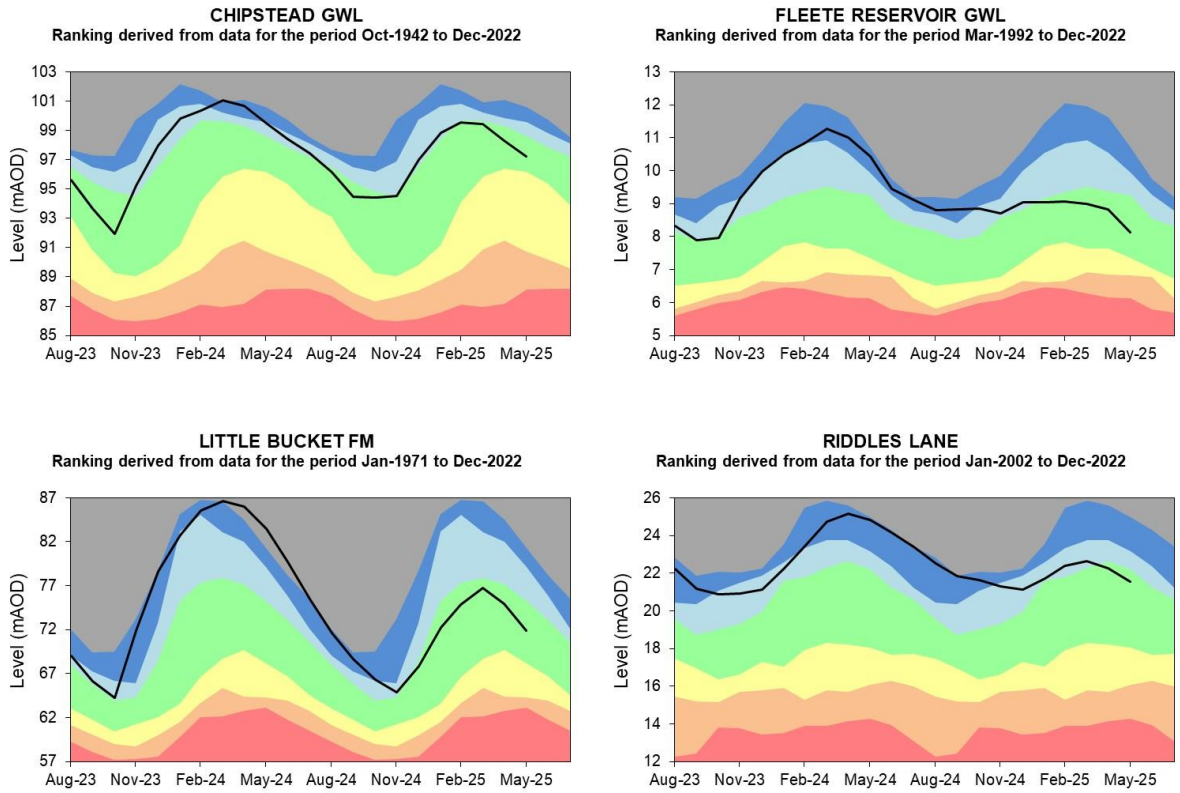


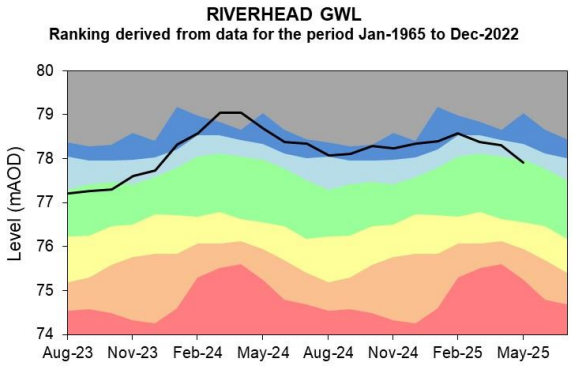
Source: Environment Agency.

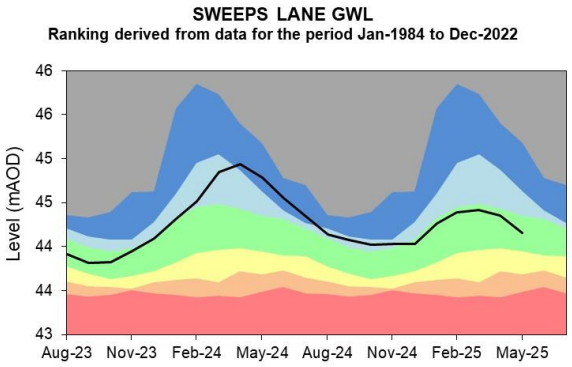
5 Groundwater levels

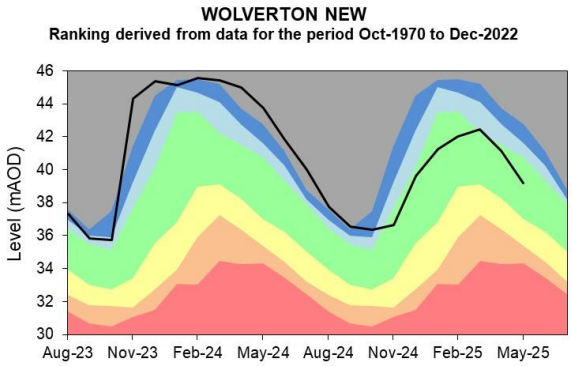
5.1 Groundwater level charts

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.







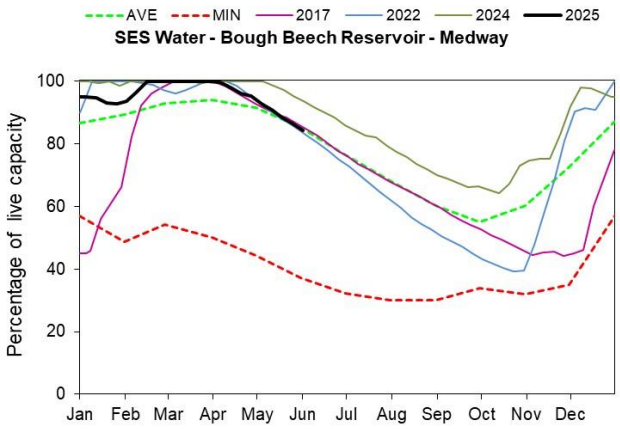


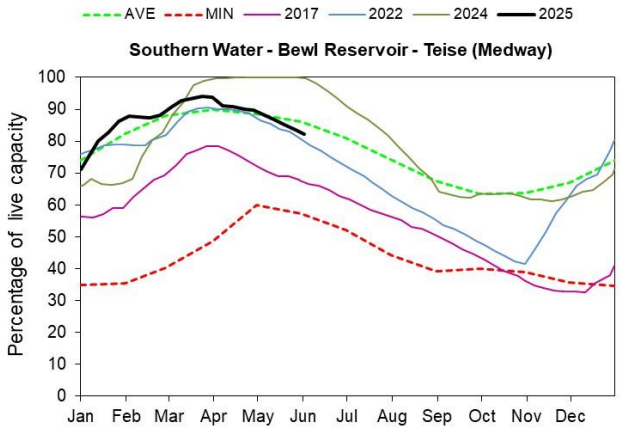
Source: Environment Agency, 2025.

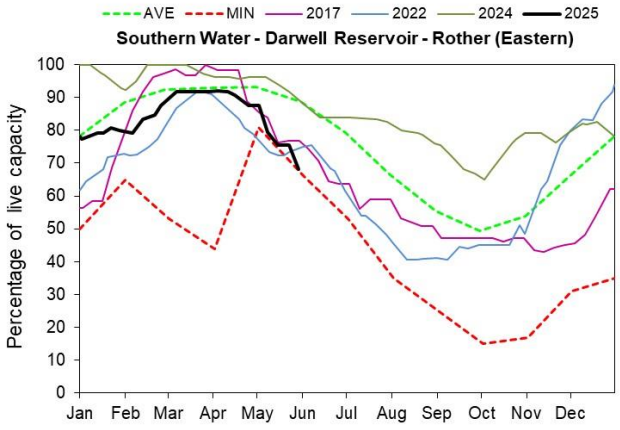
6 Reservoir stocks

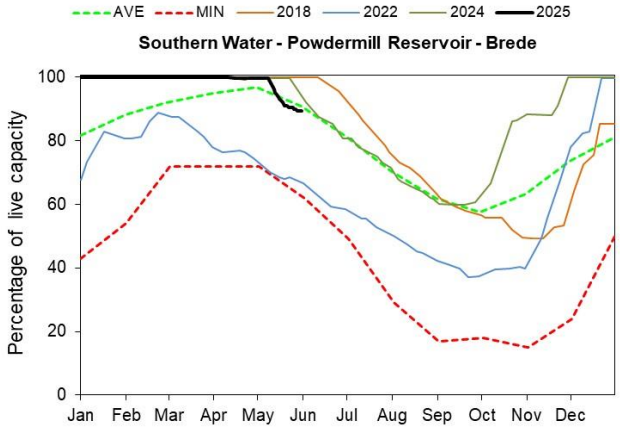
6.1 Reservoir stocks charts

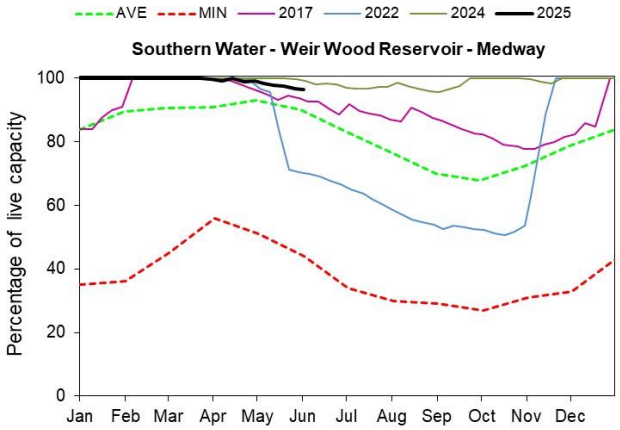
Figure 7.1: End of month regional reservoir stocks compared to long term maximum, minimum and average stocks. (Source: Water Companies). Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.











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 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).

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	May 2025 rainfall % of long term average 1991 to 2020	May 2025 band	Mar 2025 to May cumulative band	Dec 2024 to May cumulative band	Jun 2024 to May cumulative band
North Downs - South London	42	Notably Low	Exceptionally low	Below normal	Normal
Upper Mole	47	Below Normal	Exceptionally low	Below normal	Normal
South London	39	Notably Low	Exceptionally low	Notably low	Normal
River Darent	33	Notably Low	Exceptionally low	Notably low	Below normal
North Kent Chalk	36	Notably Low	Exceptionally low	Below normal	Normal
Stour	31	Notably Low	Exceptionally low	Below normal	Below normal
Dover Chalk	35	Notably Low	Exceptionally low	Below normal	Below normal
Thanet Chalk	22	Notably Low	Exceptionally low	Exceptionally low	Exceptionally low
River Medway	37	Notably Low	Exceptionally low	Below normal	Normal

Eastern Rother	43	Below Normal	Exceptionally low	Below normal	Normal
Romney Marsh	39	Notably Low	Exceptionally low	Below normal	Normal
North West Grain	28	Notably Low	Exceptionally low	Notably low	Notably low
Sheppey	28	Notably Low	Exceptionally low	Notably low	Notably low

8.2 River flows table

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

8.3 Groundwater table

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