Monthly water situation report: Kent and South London Area

1 Summary – April 2025

The whole of the Kent and South London (KSL) area received 51% of the long-term average (LTA) rainfall during April. Rainfall received was below normal across most catchments. Soil moisture deficits (SMDs) increased in all catchments. Across the whole KSL area, on average, effective rainfall received this month was at 10% of the LTA. Monthly mean flows (MMFs) ranged from normal to below normal in April in KSL. Four out of the eleven key flow sites saw below normal MMFs and three saw notably low MMFs. Groundwater levels in the Chalk are normal for this time of year at the end of April. Groundwater levels at the Lower Greensand aquifer at Riverhead decreased but continues to register above normal levels. Levels at the end of the month at the five water company reservoirs in the area ranged from below normal to notably high.

1.1 Rainfall

The whole of the KSL area received 51% of the LTA rainfall during April. Rainfall received was below normal across most catchments. Two catchments received normal rainfall. The percentage of long-term average rainfall received ranged from 36% in the Upper Mole in the West to 69% in the Northwest Grain area in the North. In the previous three months, spanning from February to April, notably low rainfall was recorded in most catchments with below normal recorded in three catchments in the south and one exceptionally low in the East. In the previous six months, from November to April, rainfall was normal across catchments in the south and below normal in catchments in the North. In the last twelve months, rainfall ranged from above normal to notably low in KSL area. Above normal rainfall was recorded in the Medway catchment in the centre, whilst normal and below normal were recorded in the remaining area. The highest daily rainfall total of 20.8mm for April was recorded at Brede PS TBR in the Eastern Rother catchment on 22 April. The next highest daily rainfall totals were on 14, 15, 23 and 13 March and ranged from 4.2mm to 18.3mm. Eight days with less than 0.3mm of rainfall was recorded this month.

1.2 Soil moisture deficit and recharge

At the end of March, Soil moisture deficits ranged from 26 to 34mm in most catchments. At the end of April soil moisture deficits increased ranging from 41 to 130mm. In March, all catchments registered slightly higher SMDs than long-term average. SMDs increased in all

catchments due to the lack of effective rainfall in April. Across the whole area, on average, effective rainfall received this month was at 10% of the LTA. In April, the difference from LTA increased in all catchments.

1.3 River flows

MMFs ranged from normal to notably low in March in KSL. River Wandle at Connolly's Mill in the northwest, River Darent at Hawley, River Eden and Vexour/Penshurst and River Dour at Crabble Mill in the east saw normal flows. River Dour at Crabble Mill recorded the highest MMF percentage LTA of 106% for the month of April. Four out of the eleven key flow sites saw below normal MMFs. The River Medway at Teston, the River Rother at Udiam, East Stour at South Willesborough and River Stour at Horton saw below normal flows. Three out of the eleven key flow sites saw notably low MMFs. The River Mole at Dorking, the River Ravensbourne at Catford and River Teise at Stonebridge saw notably low flows. River Ravensbourne at Catford and the river Mole at Dorking recorded the lowest percentage LTA of 39%. The fall in MMFs is consistent with the effective rainfall of 10% of the LTA and the SMDs registered by the end of April.

1.4 Groundwater levels

At the end of April, groundwater levels in the Chalk were normal for this time of year. Groundwater levels at the Lower Greensand aquifer at Riverhead have continued to decrease but remain above normal. Groundwater levels in the Chalk are continuing to fall since the end of last month or are now starting to decrease in all key monitoring points. The fall in groundwater levels is consistent with the effective rainfall of 10% of the LTA and the SMDs registered by the end of April.

1.5 Reservoir stocks

Throughout April, water levels in all the water company reservoirs declined somewhat marginally.

At the end of April, reservoir levels were:

- Below normal at Darwell at 92% full.
- Normal at Bewl with 94% full and Weir Wood with 100% full.
- Above normal at Powdermill at 100% full.
- Notably high at Bough Beech at 100% full. Weir Wood reservoir remained offline during April.

1.6 Environmental impact

On 3 April, widespread constraints were applied to abstractors in the Medway catchment, with licences linked to Teston gauging station, and these persisted throughout the month. Similarly,

on 28 April, constraints were imposed on abstractors in the Stour catchment, with licences linked to Wye gauging station, and these remained in effect for the rest of the month.

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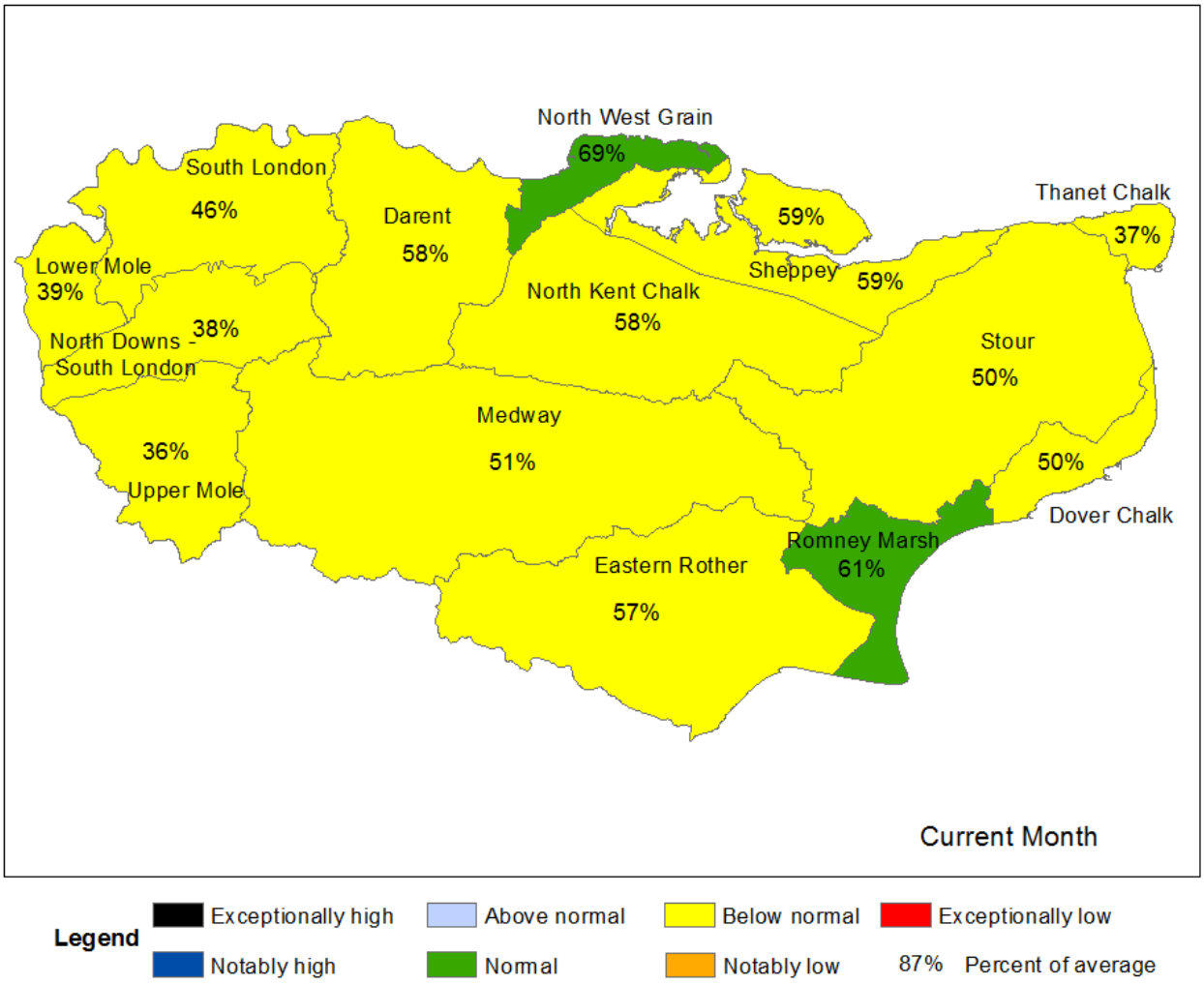
2 Rainfall

2.1 Rainfall map one

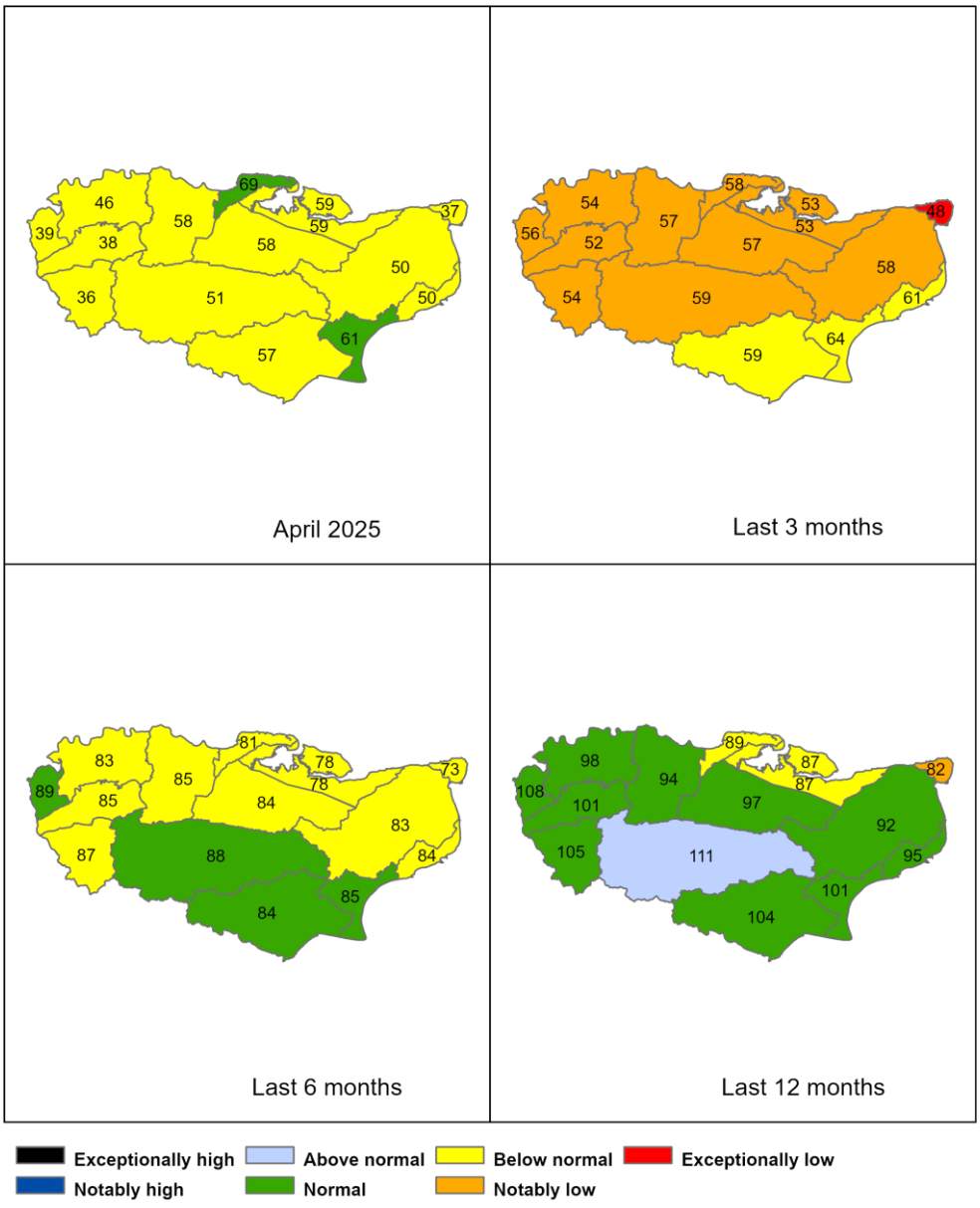
Figure 2.1: Total rainfall for hydrological areas across Kent and South London for the current month (up to30 April 2025), classed relative to an analysis of respective historic totals. Table available in appendices with more detailed information



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

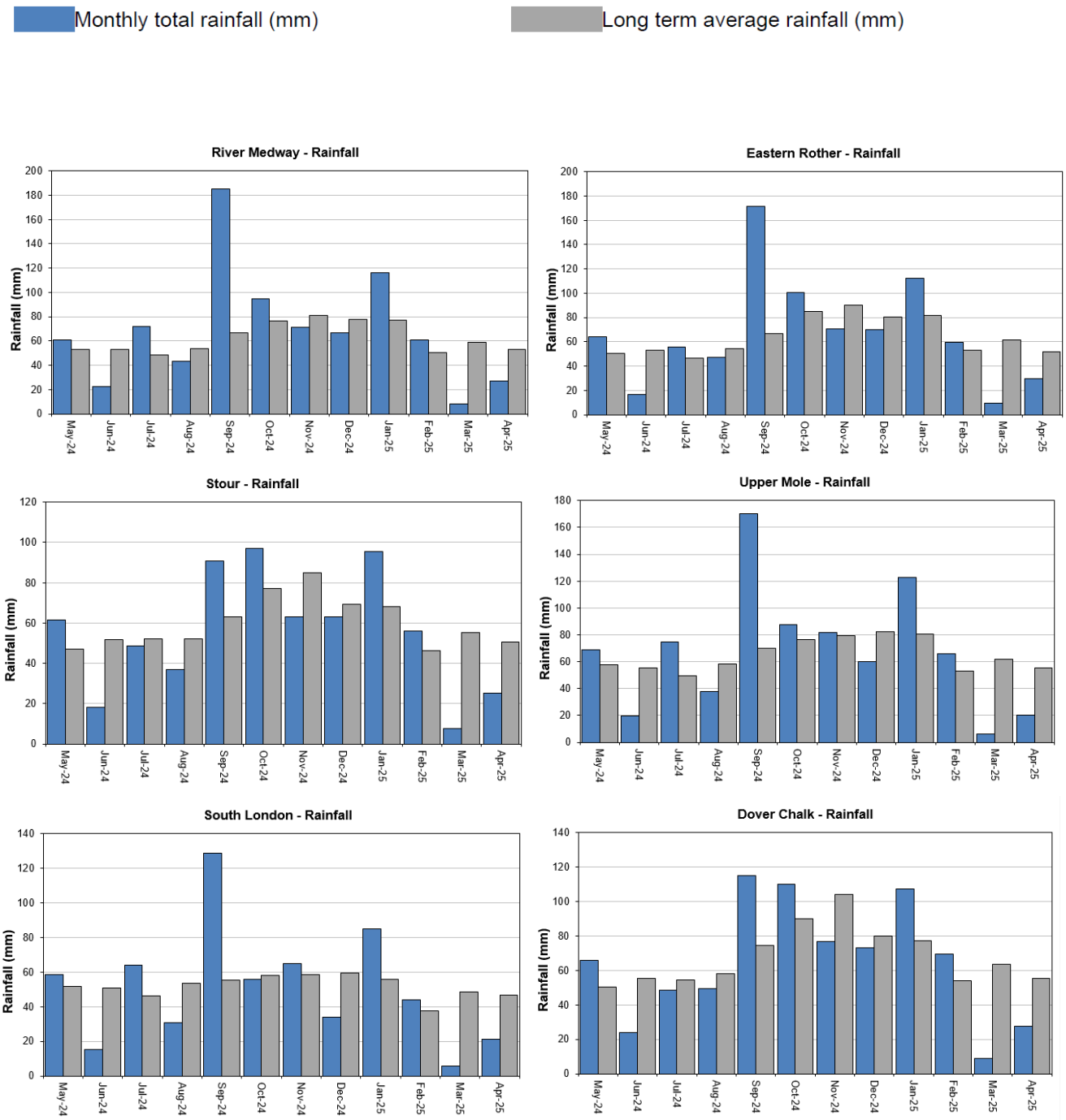
Figure 2.2: Total rainfall for hydrological areas for the current month (up to 30 April 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

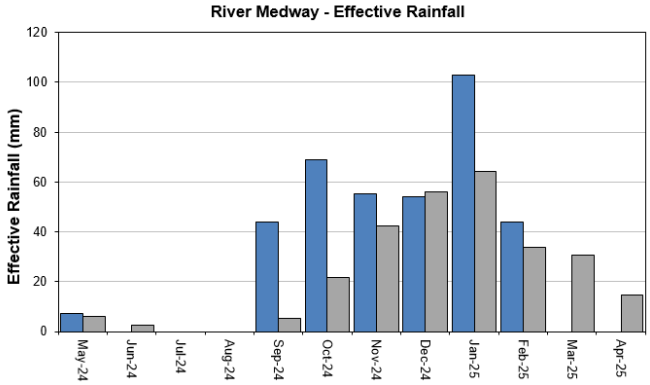


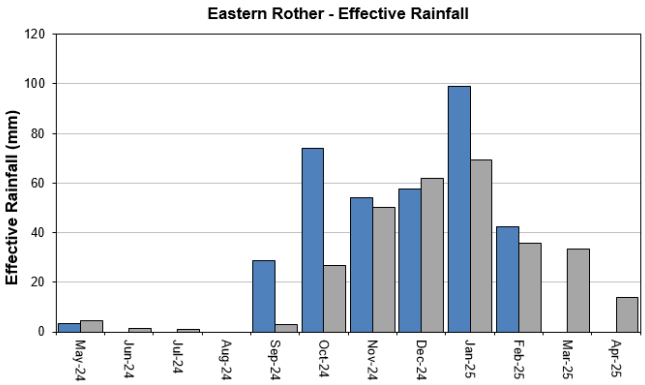
HadUK data for October 2023 onwards, based the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Includes material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

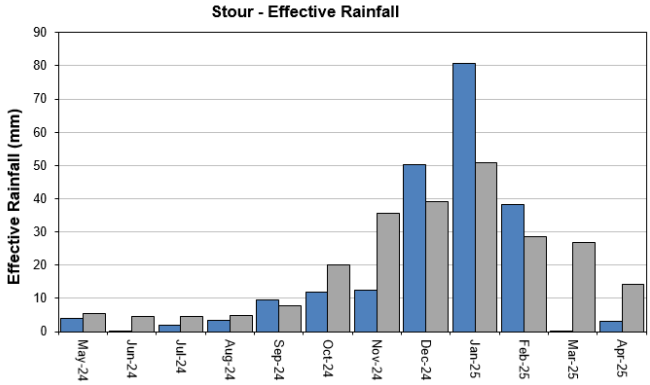
2.3 Rainfall and effective rainfall charts

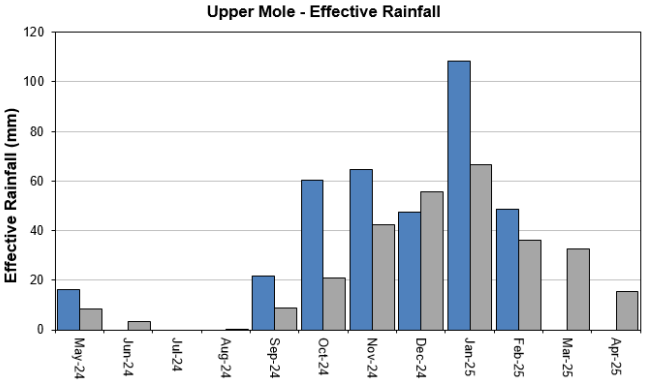
Figure 2.3: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1961 to 1990 long term average (LTA) for a selection of areal units. HadUK rainfall data. (Source: Met Office. Crown copyright, 2025). EA effective rainfall data (Source EA Soil Moisture Model).

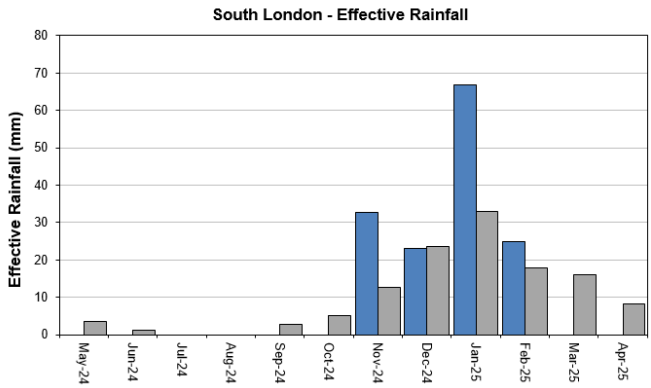


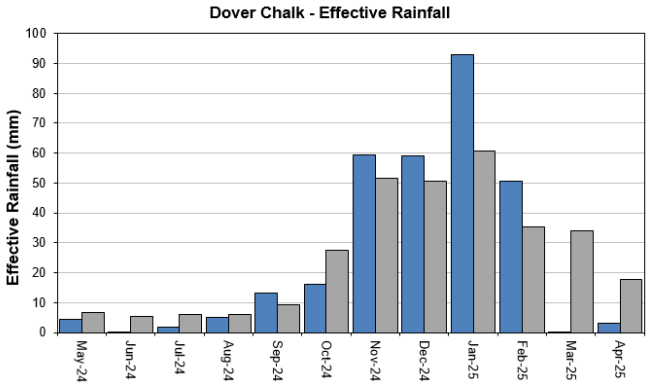

River Medway - Effective Rainfall
Effective Rainfall (mm)
0
20
40
60
80
100
120
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25


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


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


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


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


Dover Chalk - Effective Rainfall
Effective Rainfall (mm)
0
10
20
30
40
50
60
70
80
90
100
May-24
Jun-24
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-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) 30 day Total	April % LTA	Effective Rainfall (mm) 30 day Total	April % LTA
6230TH	North Downs - South London (W)	21	37%	2	11%
6505TH	Upper Mole	20	36%	0	0%
6508TH	South London	21	45%	0	0%
6706So	Darent	30	58%	3	22%
6707So	North Kent Chalk	30	58%	4	23%
6708So	Stour	25	49%	3	21%
6709So	Dover Chalk	28	50%	3	18%
6710So	Thanet Chalk	15	37%	1	24%
6809So	Medway	27	51%	0	0%
6810So	Eastern Rother	29	56%	0	0%

6811So	Romney Marsh	29	60%	0	0%
6812So	North West Grain	29	68%	0	0%
6813So	Sheppey	25	58%	0	0%
	Kent & South London Average	25	51%	1	10%

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 30/04/2025

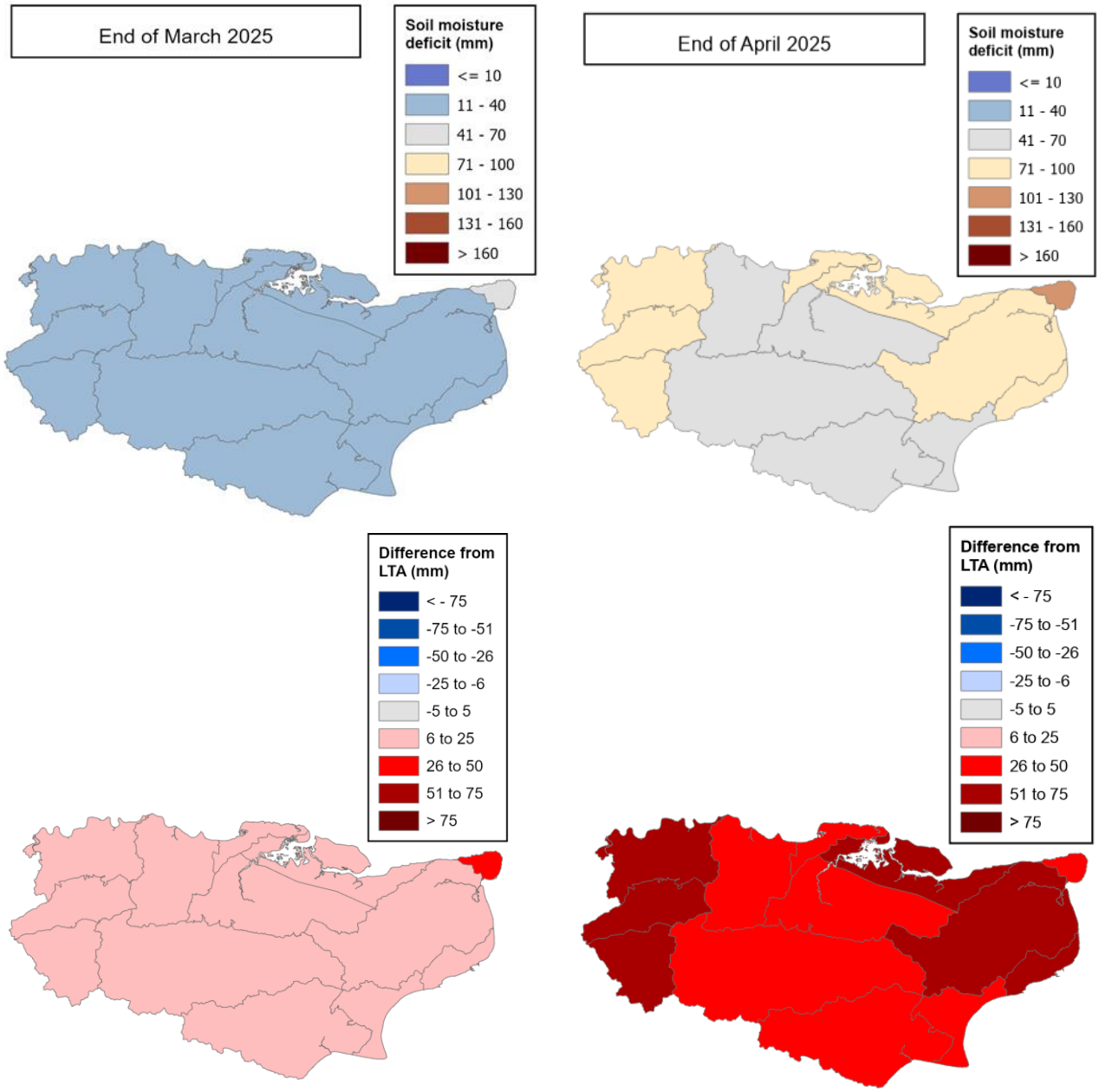
Number	Hydrological Area	Seasonal Rainfall (mm) Total	% LTA	Seasonal Effective Rainfall (mm) Total	% LTA
6230TH	North Downs - South London (W)	21	37%	2	11%
6505TH	Upper Mole	20	36%	0	0%
6508TH	South London	21	45%	0	0%
6706So	Darent	30	58%	3	22%
6707So	North Kent Chalk	30	58%	4	23%
6708So	Stour	25	49%	3	21%
6709So	Dover Chalk	28	50%	3	18%
6710So	Thanet Chalk	15	37%	1	24%
6809So	Medway	27	51%	0	0%
6810So	Eastern Rother	29	56%	0	0%

6811So	Romney Marsh	29	60%	0	0%
6812So	North West Grain	29	68%	0	0%
6813So	Sheppey	25	58%	0	0%
	Kent & South London Average	25	51%	1	10%

3 Soil moisture deficit

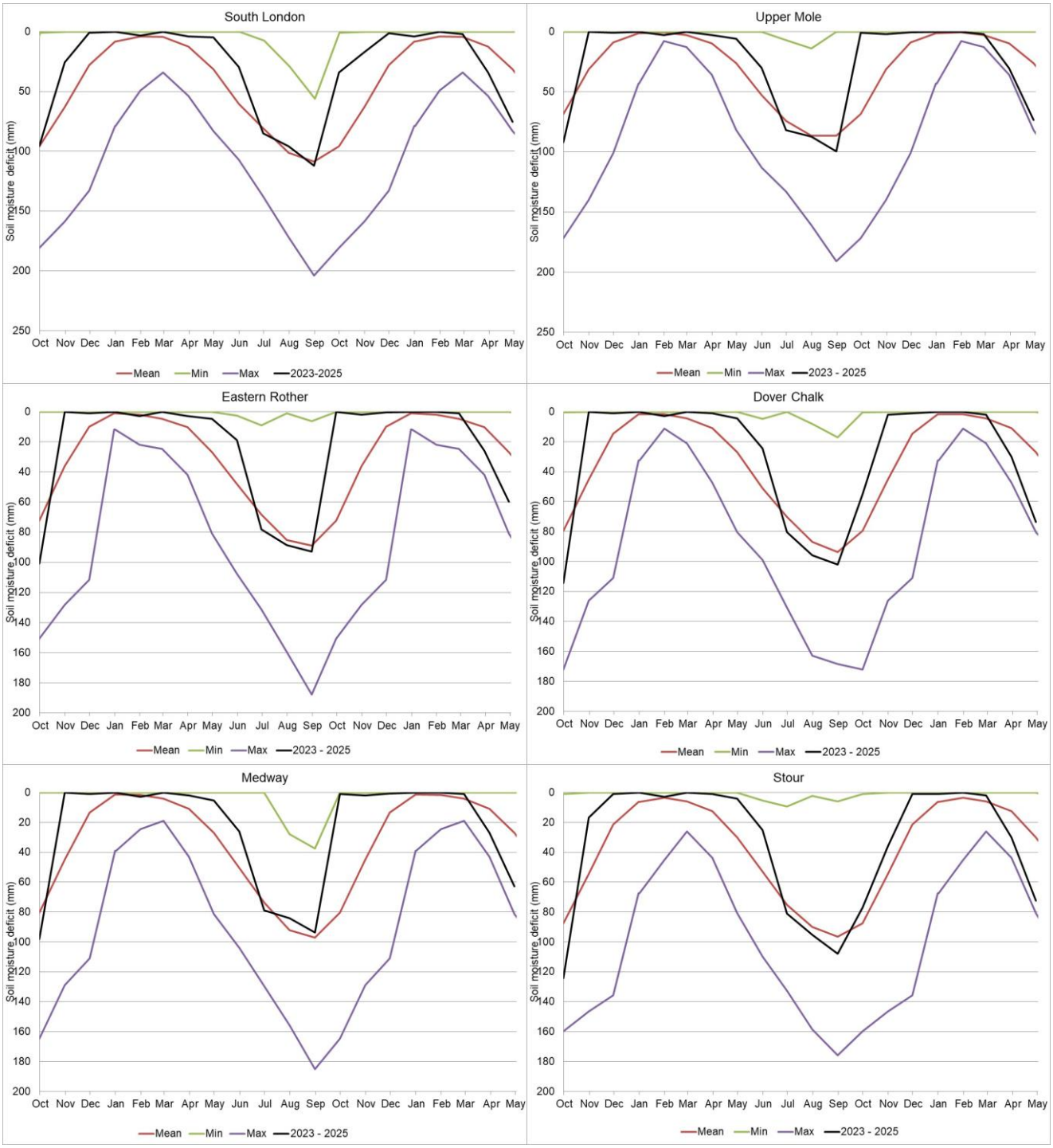
3.1 Soil moisture deficit map

Figure 3.1: Soil moisture deficits for weeks ending 31 March (left panel) and 30 April 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).



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

3.3 Soil moisture deficit table

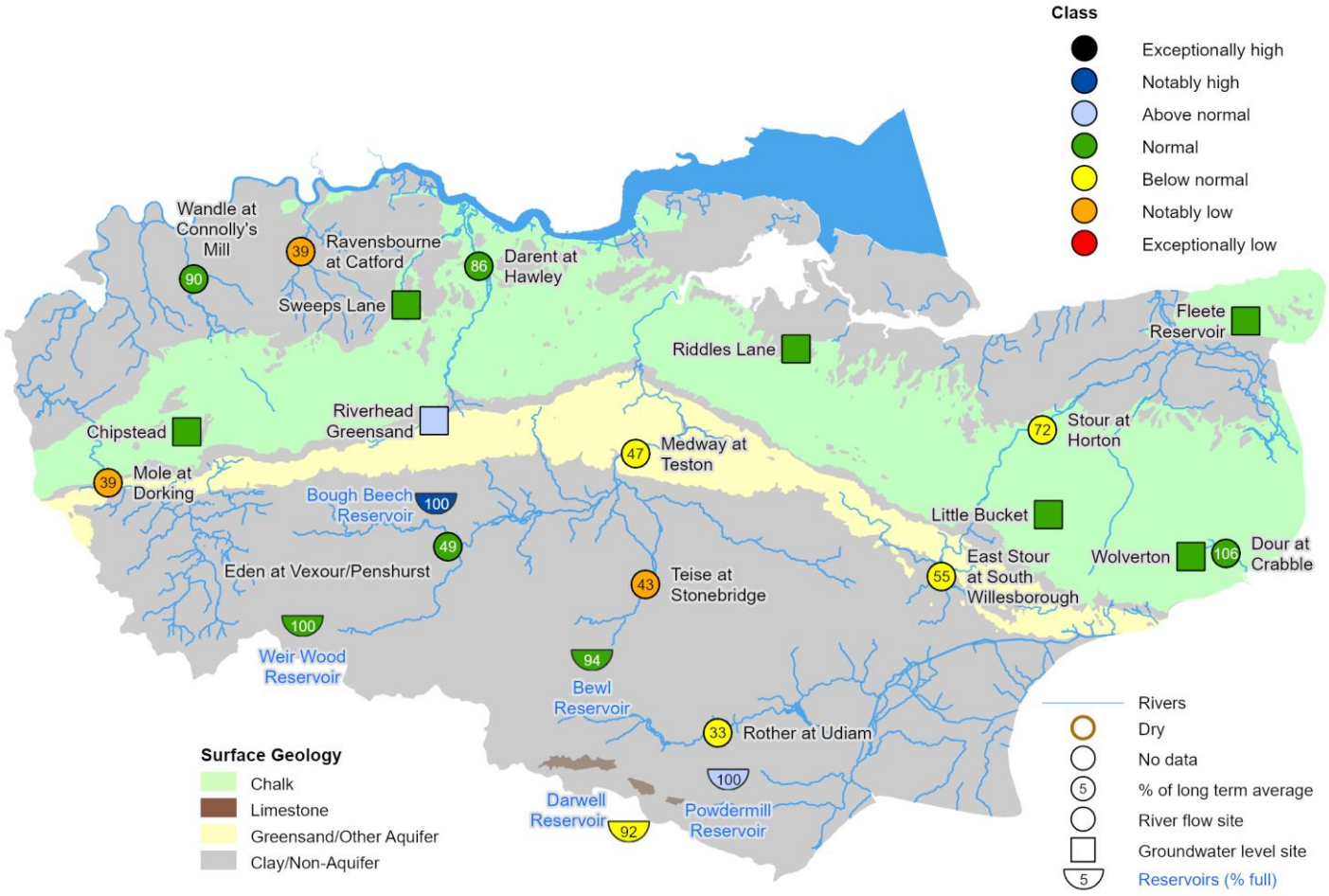
Figure 3.3: This is a second estimate of soil moisture deficit for the hydrological areas across the Kent and South London area. There may be significant variation within each area which must be considered when interpreting these data. EA soil moisture deficit data (Source EA Soil Moisture Model).

Number	Hydrological Area	SMD (mm) Day 30	End April LTA
6230TH	North Downs - South London (W)	75	17
6505TH	Upper Mole	74	16
6508TH	South London	75	24
6706So	Darent	69	19
6707So	North Kent Chalk	66	18
6708So	Stour	72	18
6709So	Dover Chalk	74	17
6710So	Thanet Chalk	102	54
6809So	Medway	63	16
6810So	Eastern Rother	60	16
6811So	Romney Marsh	65	18
6812So	North West Grain	72	25
6813So	Sheppey	76	25
	Kent & South London Average	73	22

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

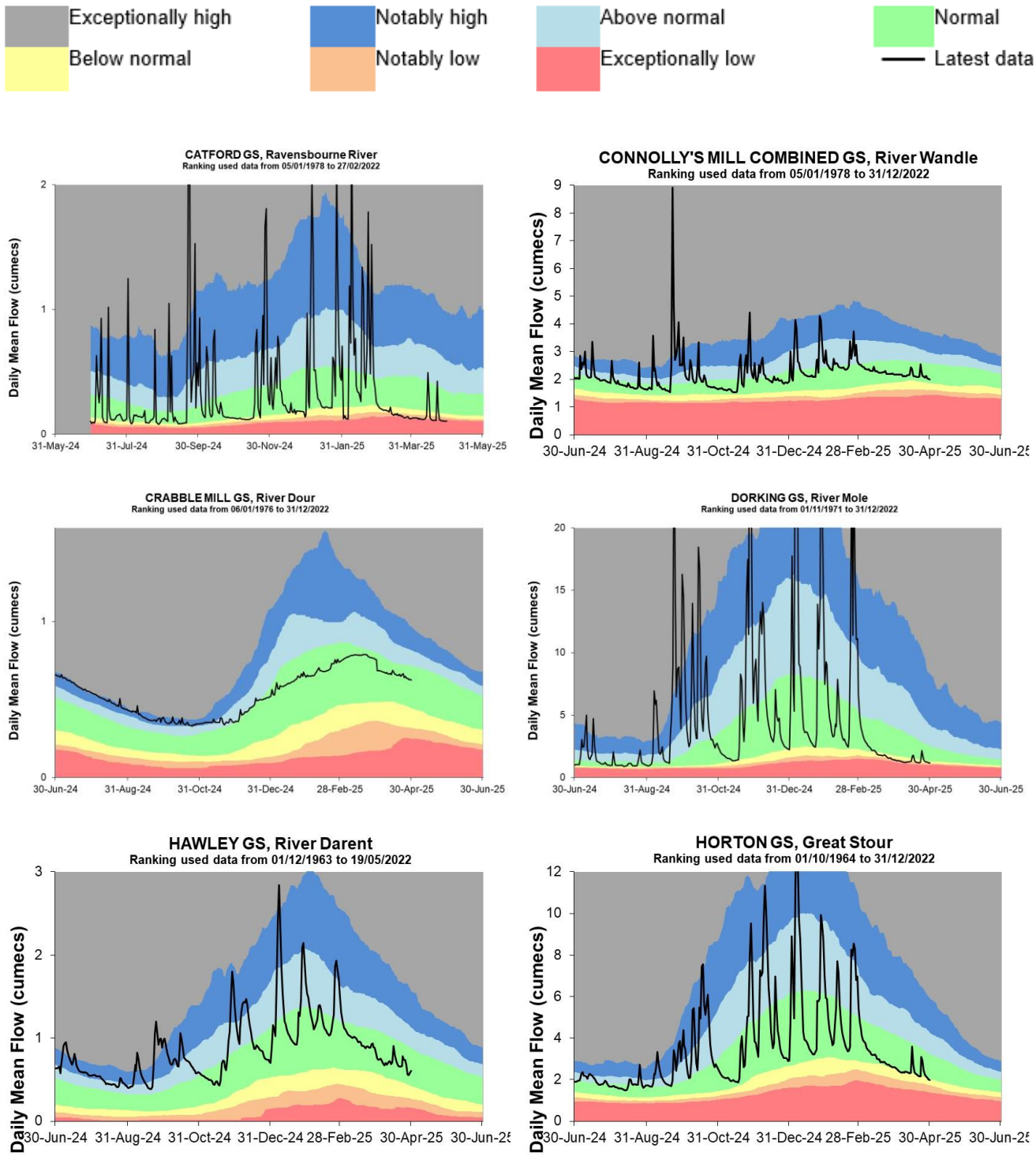


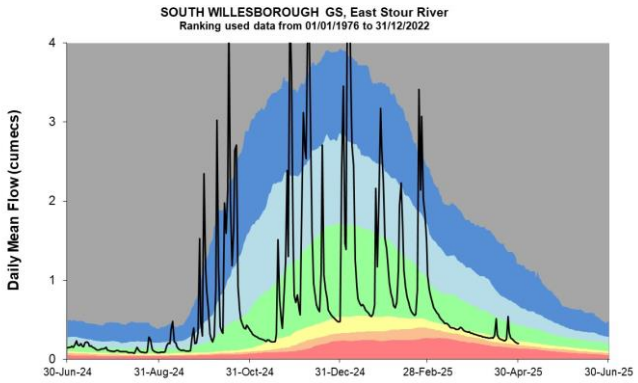
* Weir wood reservoir is currently offline

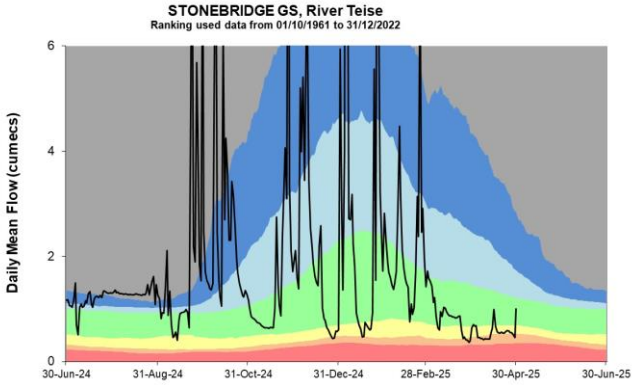
**Flows at gauging stations in the Medway might be affected by upstream reservoir releases

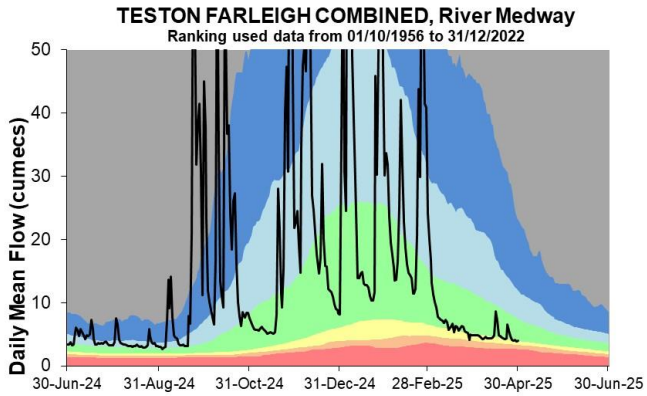
4.2 River flow charts

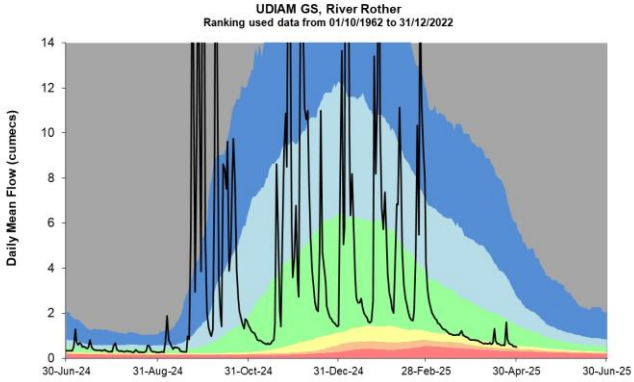
Figure 4.1: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.

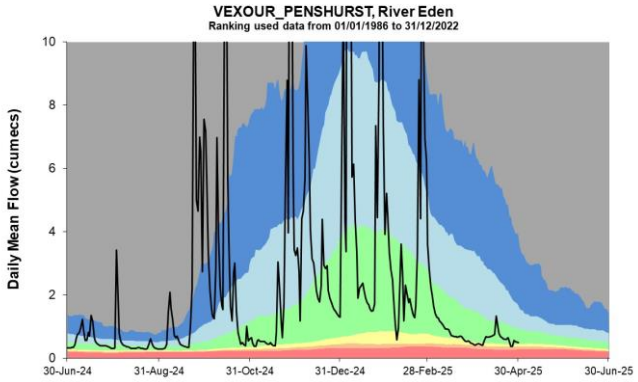










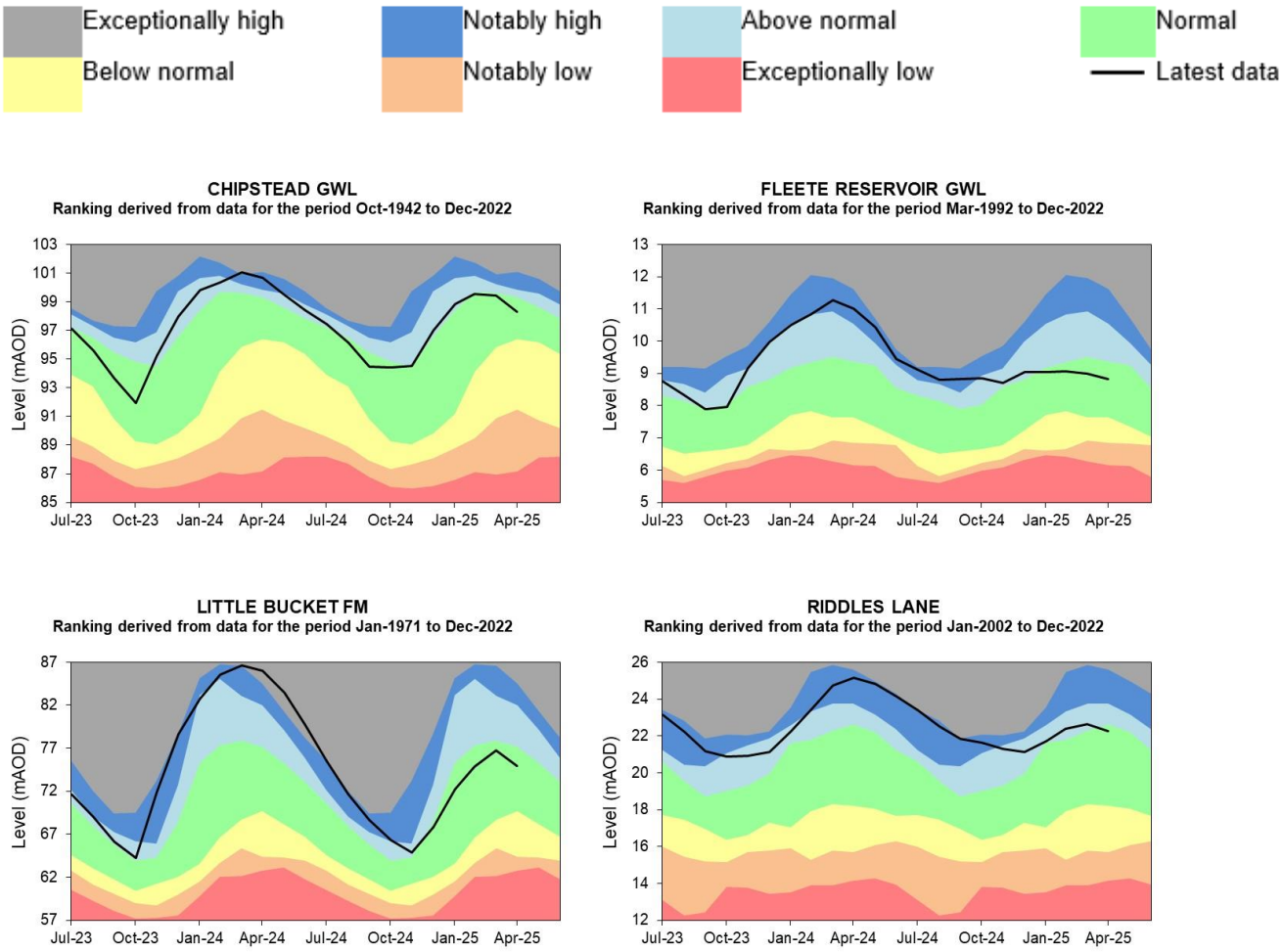


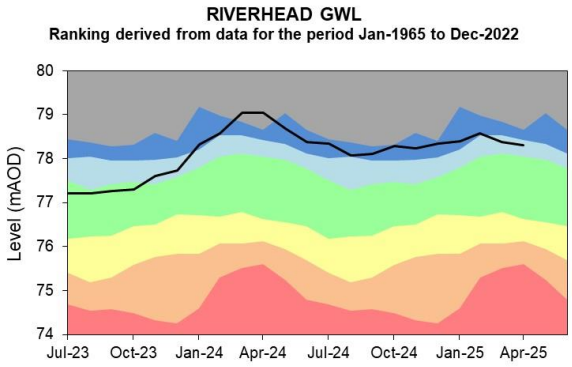
Source: Environment Agency.

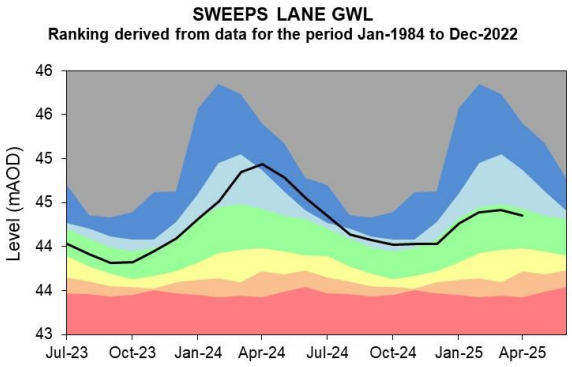
5 Groundwater levels

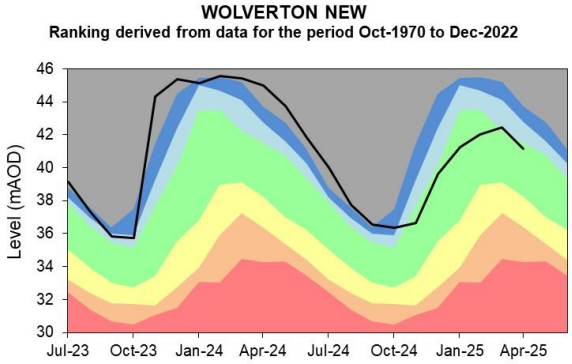
5.1 Groundwater level charts

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.







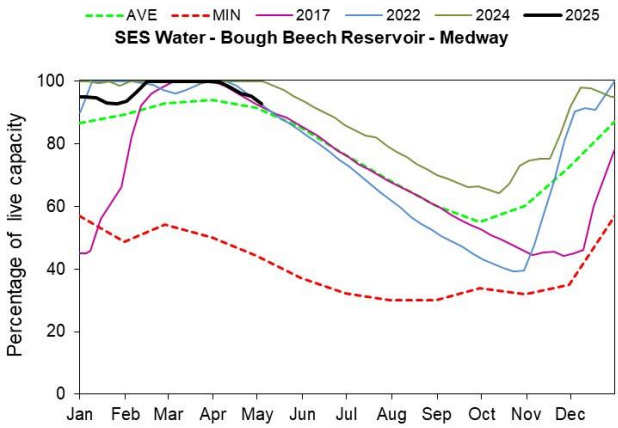


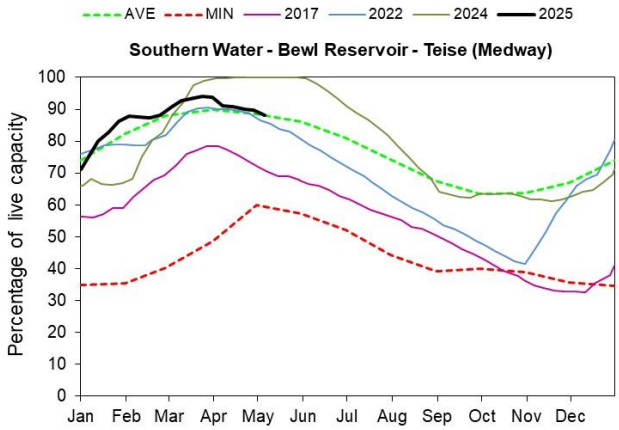
Source: Environment Agency, 2025.

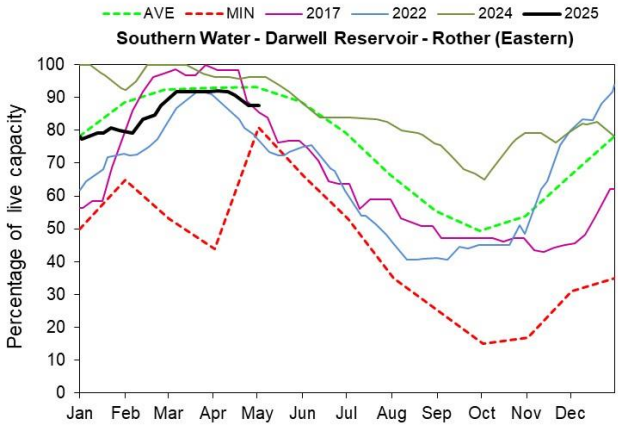
6 Reservoir stocks

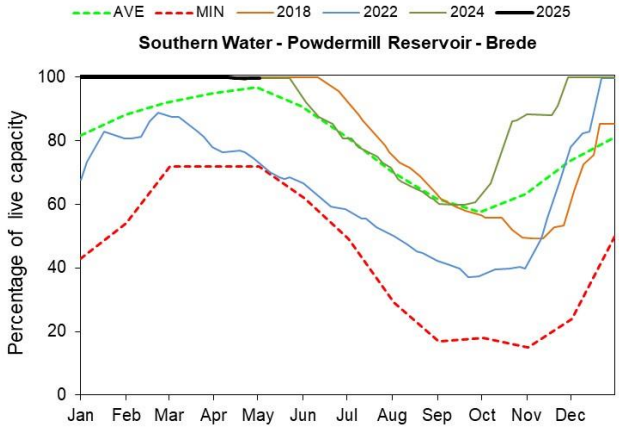
6.1 Reservoir stocks charts

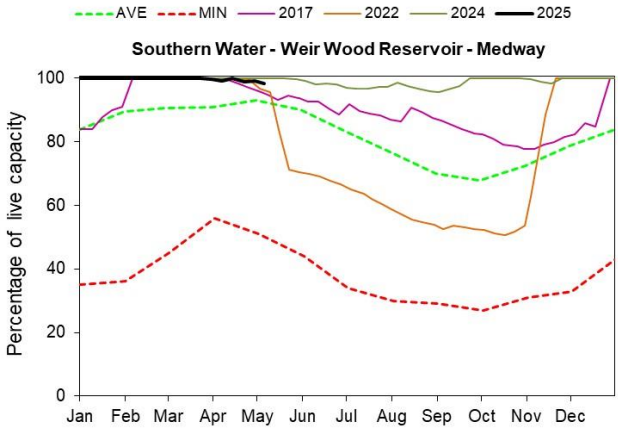
Figure 7.1: End of month regional reservoir stocks compared to long term maximum, minimum and average stocks. (Source: Water Companies). Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.











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	Apr 2025 rainfall % of long term average 1961 to 1990	Apr 2025 band	Feb 2025 to April cumulative band	Nov 2024 to April cumulative band	May 2024 to April cumulative band
North Downs - South London	38	Below Normal	Notably low	Below normal	Normal
Upper Mole	36	Below Normal	Notably low	Below normal	Normal
South London	46	Below Normal	Notably low	Below normal	Normal
River Darent	58	Below Normal	Notably low	Below normal	Normal
North Kent Chalk	58	Below Normal	Notably low	Below normal	Normal
Stour	50	Below Normal	Notably low	Below normal	Normal
Dover Chalk	50	Below Normal	Below normal	Below normal	Normal
Thanet Chalk	37	Below Normal	Exceptionally low	Below normal	Notably low
River Medway	51	Below Normal	Notably low	Normal	Above normal

Eastern Rother	57	Below Normal	Below normal	Normal	Normal
Romney Marsh	61	Normal	Below normal	Normal	Normal
North West Grain	69	Normal	Notably low	Below normal	Below normal
Sheppy	59	Below Normal	Notably low	Below normal	Below normal

8.2 River flows table

Site name	River	Catchment	April 2025 band	March 2025 band
Catford Gs	River Ravensbourne	Ravensbourne	Notably low	Exceptionally 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	Below normal	Below normal
Stonebridge Gs	River Teise	Teise	Notably low	Below normal
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)	Normal	Below normal

8.3 Groundwater table

Site name	Aquifer	End of Apr 2025 band	End of Mar 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	Above normal
Riverhead Gwl	Kent Greensand	Above normal	Above normal
Sweeps Lane Gwl	West Kent Chalk	Normal	Normal
Wolverton New	East Kent Chalk - Stour	Normal	Above normal