Monthly water situation report: Solent and South Downs Area

Summary – July 2025

Solent and South Downs (SSD) had average rainfall total in July, receiving 109% (60.1mm) of the long term average (LTA) of 55.3mm. Monthly mean river flows across SSD ranged from notably low to above normal. The end of month groundwater levels ranged from exceptionally low to above normal. Soils across SSD ended the month much drier than the average for July. End of month reservoir stocks were below average at Ardingly Reservoir (Ouse) and at Arlington Reservoir (Cuckmere).

1.1 Rainfall

SSD had average rainfall total in July, receiving 109% (60.1mm) of LTA (55.3mm). The Ouse and the Pevensey Levels areal units on the east received the highest rainfalls during July. The Ouse areal unit received 137% (78.4mm) of LTA (57.4mm) and Pevensey Levels areal unit received 133% (75mm) of LTA (55mm). The Test Chalk and the Lymington areal units on the west received the lowest rainfall with 41.8mm for both areas. This represents 73% of LTA (57.5mm) for the Test Chalk and 82% of LTA (51.2mm) for the Lymington areal unit.

There were only six days with widespread rain: 5, 6, 18, 19, 20 and 31 July, and over 80 % of the month's total rainfall fell on these days. The rest of July was mostly dry.

The wettest day was the 31 July, and the large rainfall totals recorded on this day boosted the monthly totals. The highest daily total of 53.0mm was recorded on 31 July at Warnford RG (East Hampshire Chalk). On the same day, 40.6mm was recorded at Cowes W WKS RG and 38.4mm at Calbourne RG both on the Isle of Wight.

The last 5 months has been the sixth driest March–July period on record for SSD. It was the third driest 5-month period on record for the Test Chalk areal unit, only the March-July period for 1976 and 1921 were drier. For the Sussex Coast it was the fourth driest 5-month period; only the March-July periods for 1976, 1921 and 1938 received less rainfall.

For longer time periods the running totals remains high. For the 24-month period (starting August 2023) it was the sixth highest total for SSD.

All these statistics are based on records going back to 1871.

1.2 Soil moisture deficit and recharge

Soils across SSD ended the month much drier than the LTA for July.

1.3 River flows

Monthly mean river flows for July ranged from notably low to above normal across SSD.

Flows were notably low on the:

- River Lymington at Brockenhurst

Flows were below normal on the:

- River Meon at Mislingford
- River Arun at Alfoldean

Flows were normal on the:

- River Test at Broadlands
- River Test at Chilbolton
- River Itchen at Allbrook and Highbridge
- River Wallington at North Fareham
- River Medina at Blackwater
- River Rother at Iping Mill
- River Cuckmere at Cowbeech

Flows were above normal on the:

- River Adur at Sakeham
- River Ouse at Goldbridge

The notably low monthly mean flows for the River Lymington at Brockenhurst were the fifth lowest on record for July since 1960.

1.4 Groundwater levels

End of month groundwater levels for July ranged from exceptionally low to above normal across SSD.

Groundwater levels were exceptionally low at:

- Carisbrooke Castle (Isle of Wight)
- Beeding Hill (West Sussex Chalk)

Groundwater levels were below normal at:

- Harting Common (Western Rother Greensand)
- Catherington (East Hampshire Chalk)
- Chilgrove (West Sussex Chalk)
- Houndean Bottom (East Sussex Chalk)

Groundwater levels were normal at:

- Clanville Gate (Test Chalk)
- Lopcombe Corner (Test Chalk)
- West Meon (East Hampshire Chalk)
- Cornish Farm (East Sussex Chalk)

Groundwater levels were above normal at:

- Preston Candover (East Hampshire Chalk)
- Youngwoods Copse (Isle of Wight)

The exceptionally low groundwater level at Carisbrooke Castle (Isle of Wight) is the second lowest July level since 1977. Beeding Hill (West Sussex Chalk) is the third lowest July level on it record that dates back to 1979.

1.5 Reservoir stocks

End of month reservoir stocks were both below average. Ardingly Reservoir (Ouse) was at 51.71% of total capacity (LTA 82%) and Arlington Reservoir (Cuckmere) was at 66.1% of total capacity (LTA 73.35%).

1.6 Environmental impact

1.6.1 Abstraction licence restriction

At the start of July there were 13 licence restrictions in force, which increased to 25 licence restrictions by the middle of the month. By the end of the month 20 licence restrictions were in place. These included:

Cessation of abstraction for:

- three licences on the Arun and one licence on the Loxwood Stream (Arun),
- one licences on the Pagham Rife (Sussex Coast),
- three licences on the River Rother and one licence on the River Lod (Western Rother Greensand),
- one on the River Meon (East Hampshire Chalk),
- four on the River Medina and three licences on the Shepherds Chine (Isle of Wight),
- one on the Lymington River and three on Walkford Brook (Lymington),
- one on the River Blackwater (Hampshire Tertiaries).

Restrictions on abstraction rates for:

- one on the River Meon (East Hampshire Chalk),
- one on the Calbourne (Isle of Wight),
- one on the River Blackwater (Hampshire Tertiaries).

1.6.2 Flood Warnings in Force

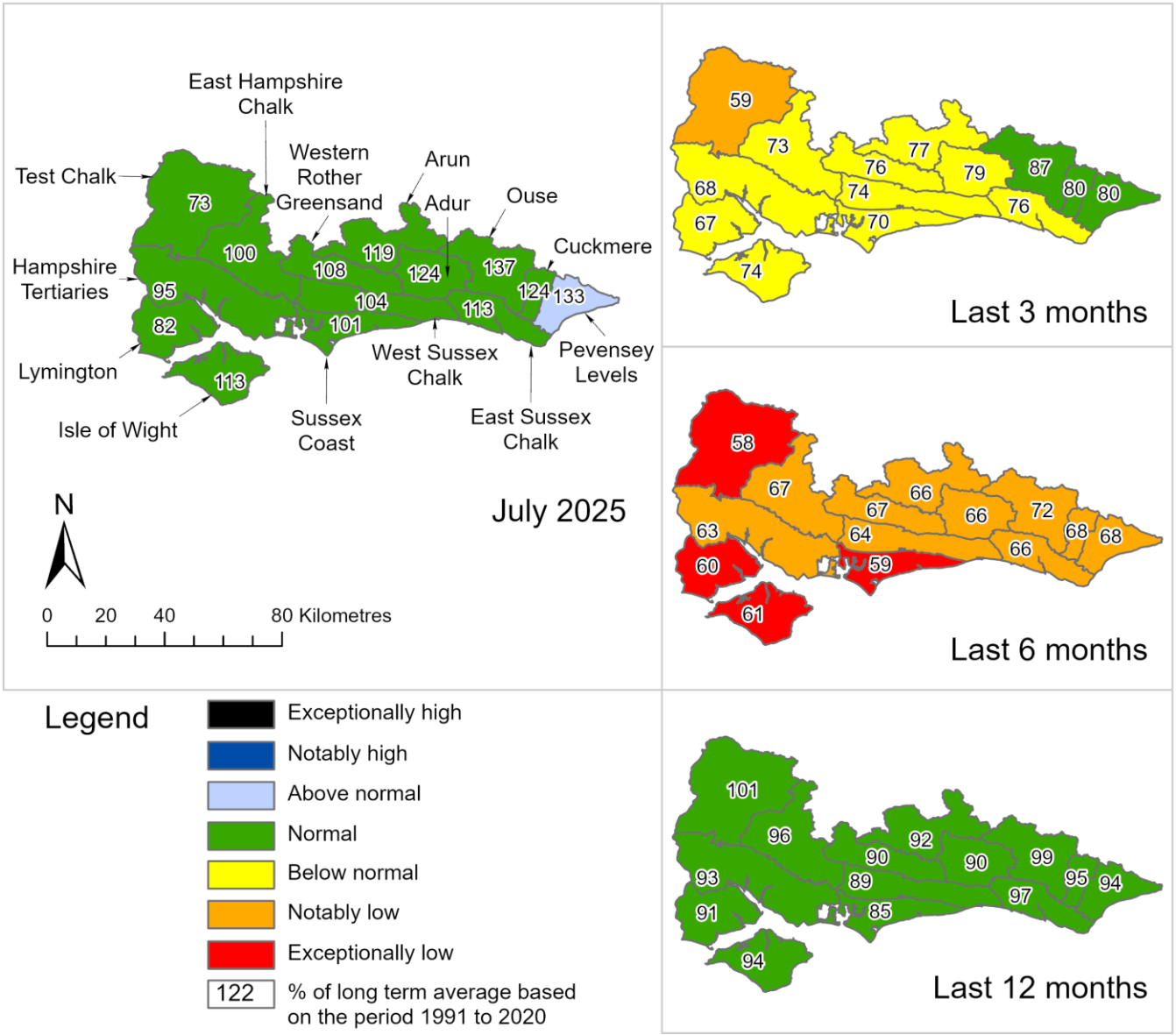
There were no flood warnings issued in July 2025, but eight fluvial flood alerts were issued. Six flood alerts were issued in East Sussex, one in West Sussex, and one in Hampshire.

Author: HydrologySSD@Environment-agency.gov.uk

2. Rainfall

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 July 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

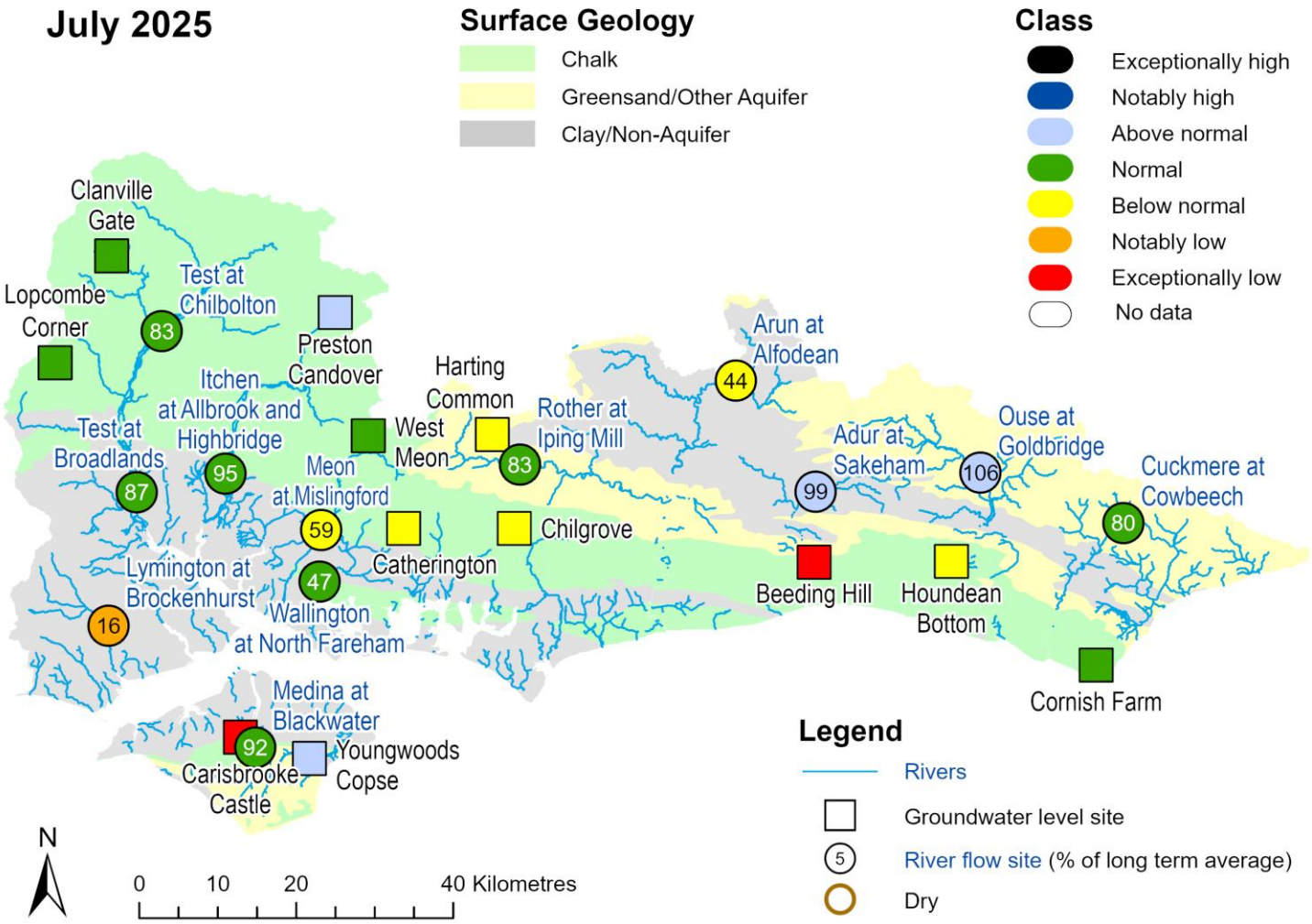


Rainfall data for October 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to October 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2025).

3 River flows and Groundwater levels

3.1 River flows and Groundwater level map

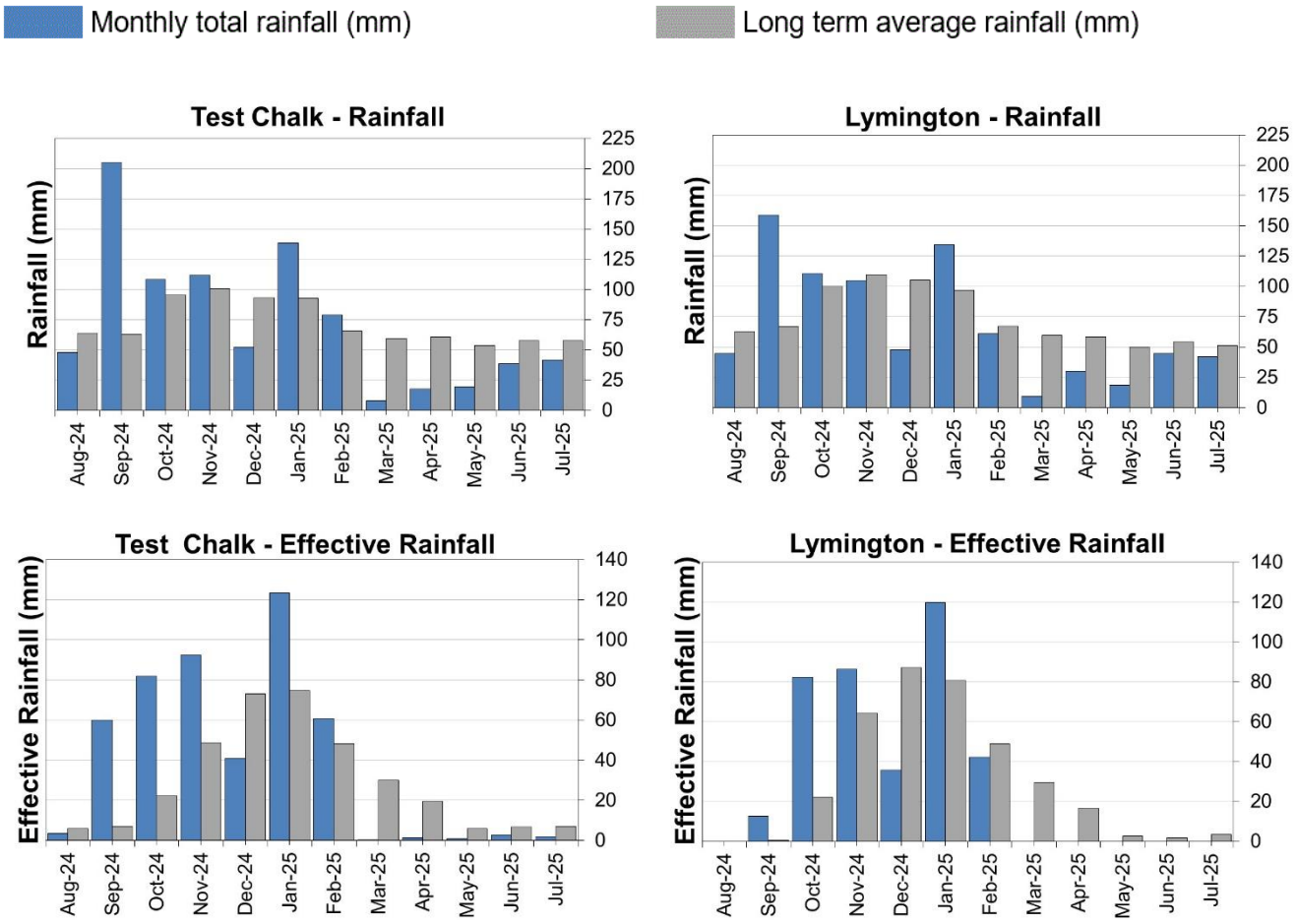
Figure 3.1: Monthly mean river flow and groundwater levels at our indicator sites for July 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic January monthly means. Table available in the appendices with detailed information.



4 West Hampshire

4.1 West Hampshire Rainfall and effective rainfall charts

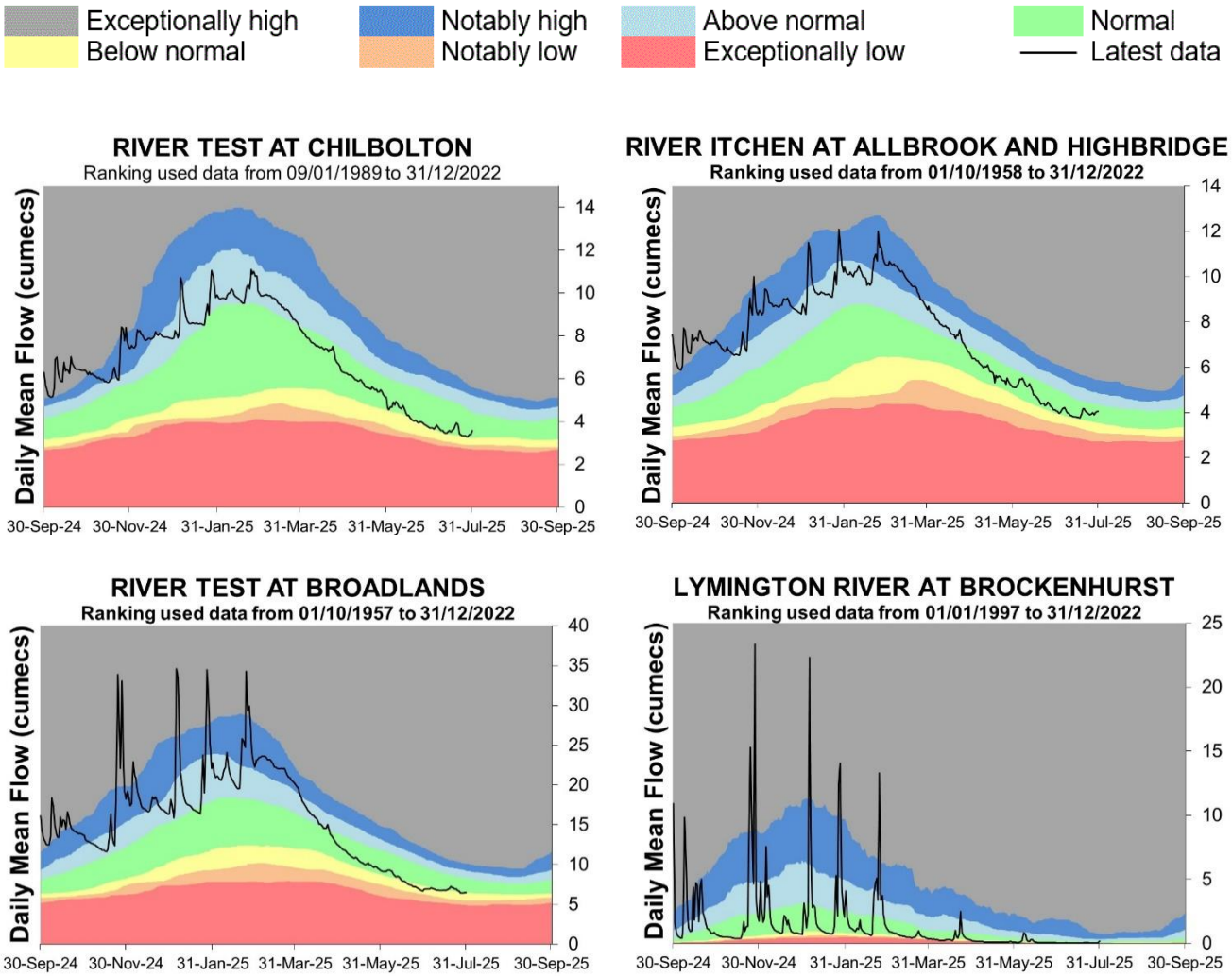
Figure 4.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

4.2 West Hampshire River flow charts

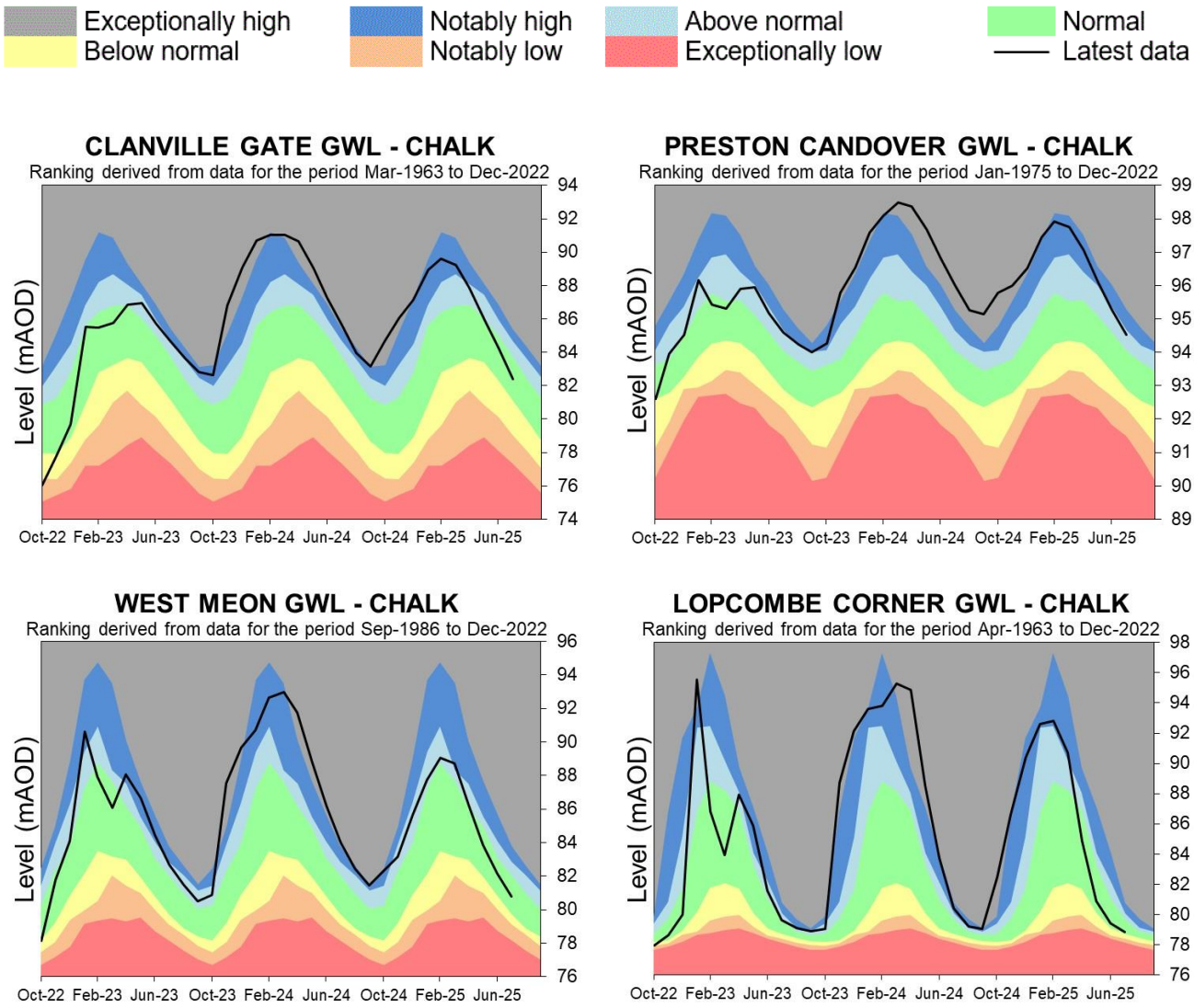
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

4.3 West Hampshire Groundwater level charts

Figure 4.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

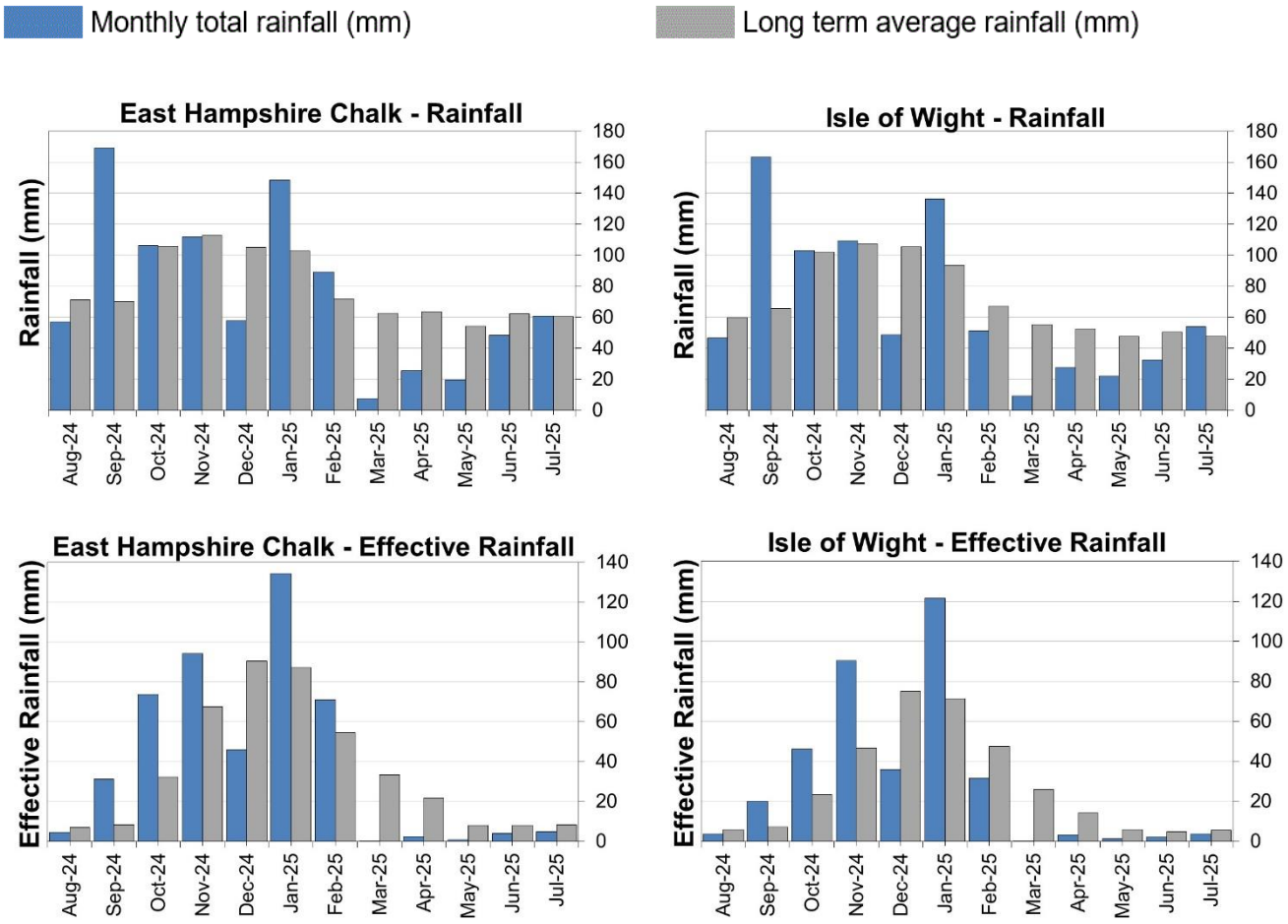


Source: Environment Agency, 2025.

5 East Hampshire and Isle of Wight

5.1 East Hampshire and Isle of Wight Rainfall and Effective rainfall charts

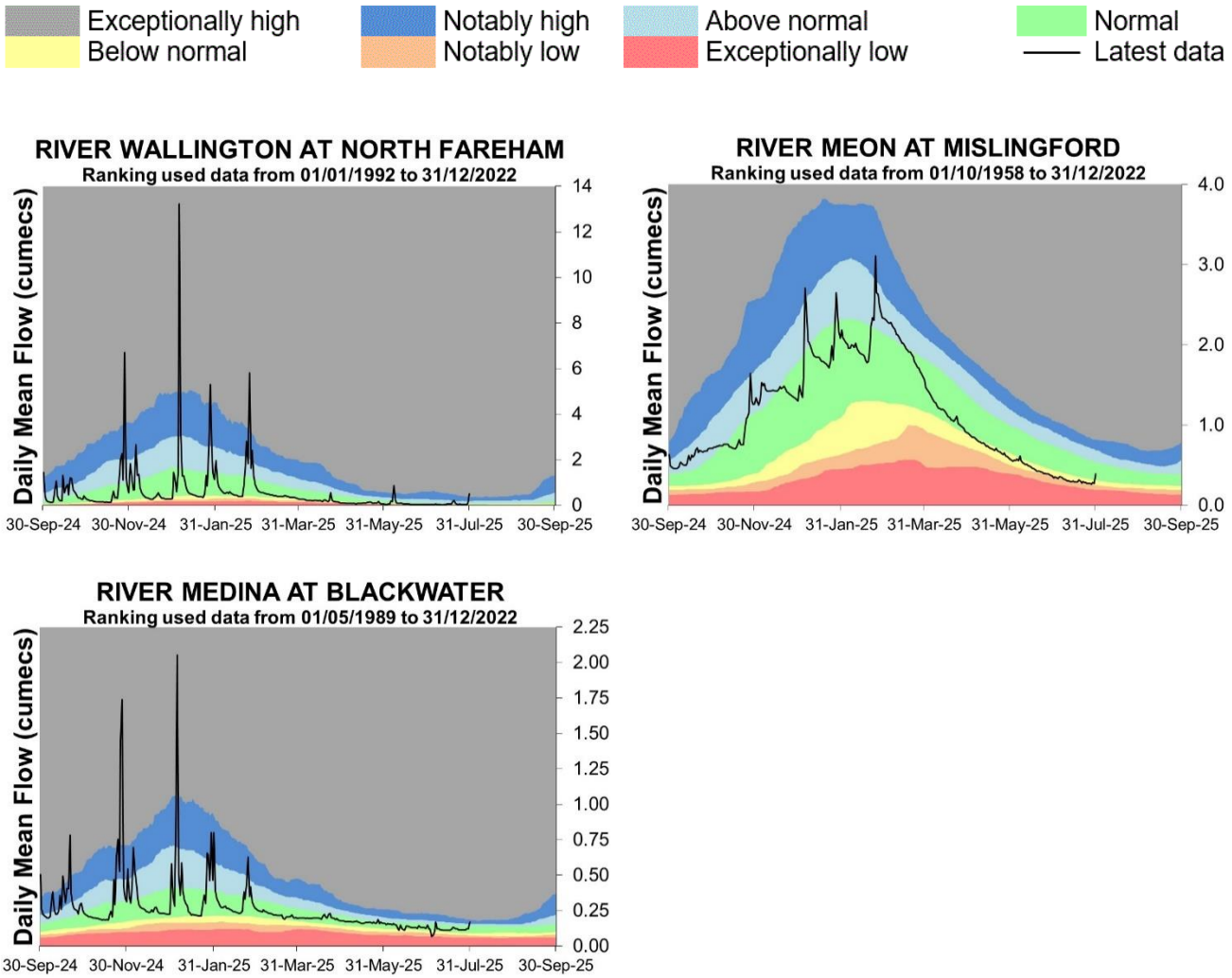
Figure 5.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

5.2 East Hampshire and Isle of Wight River flow charts

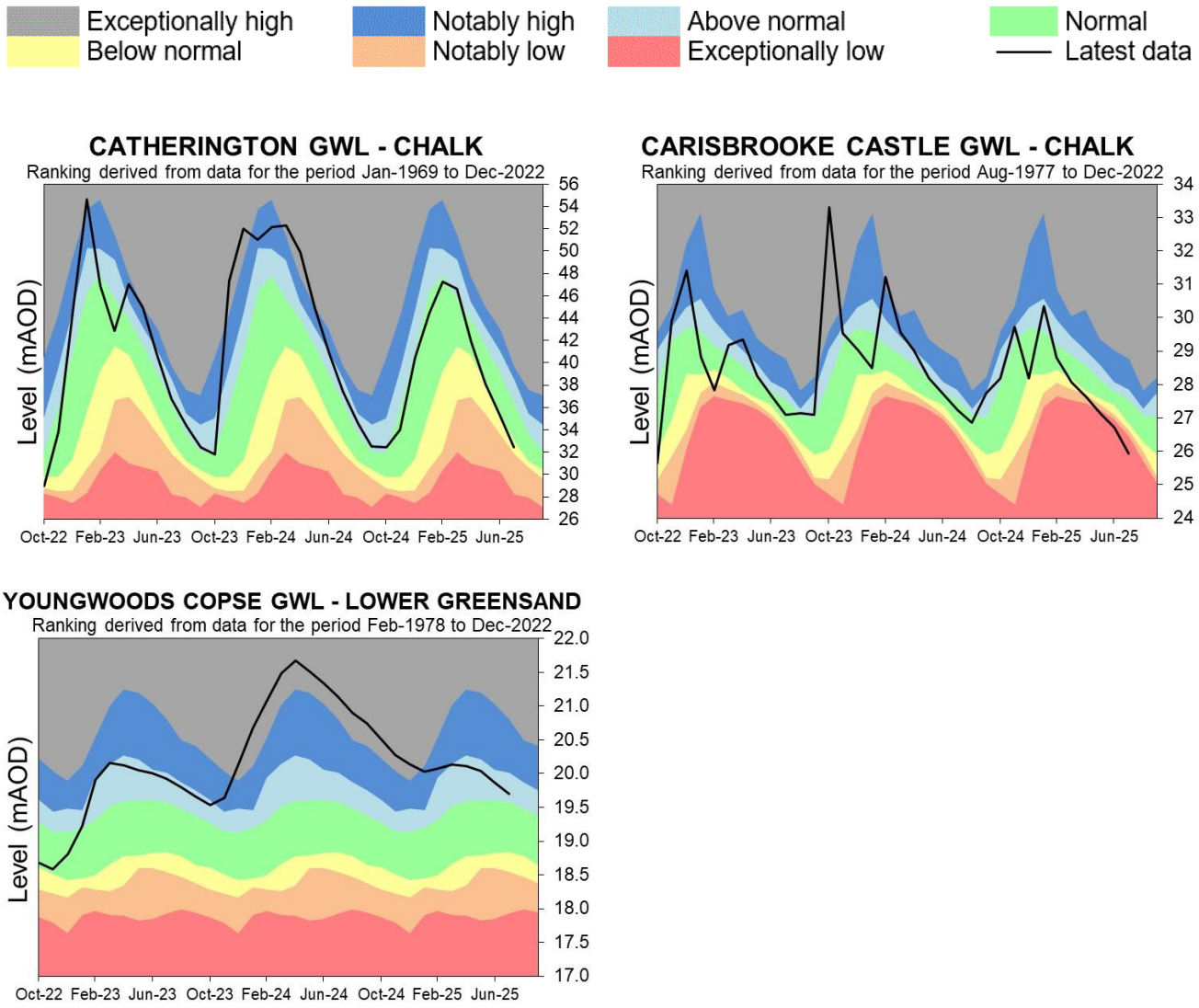
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

5.3 East Hampshire and Isle of Wight Groundwater level charts

Figure 5.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

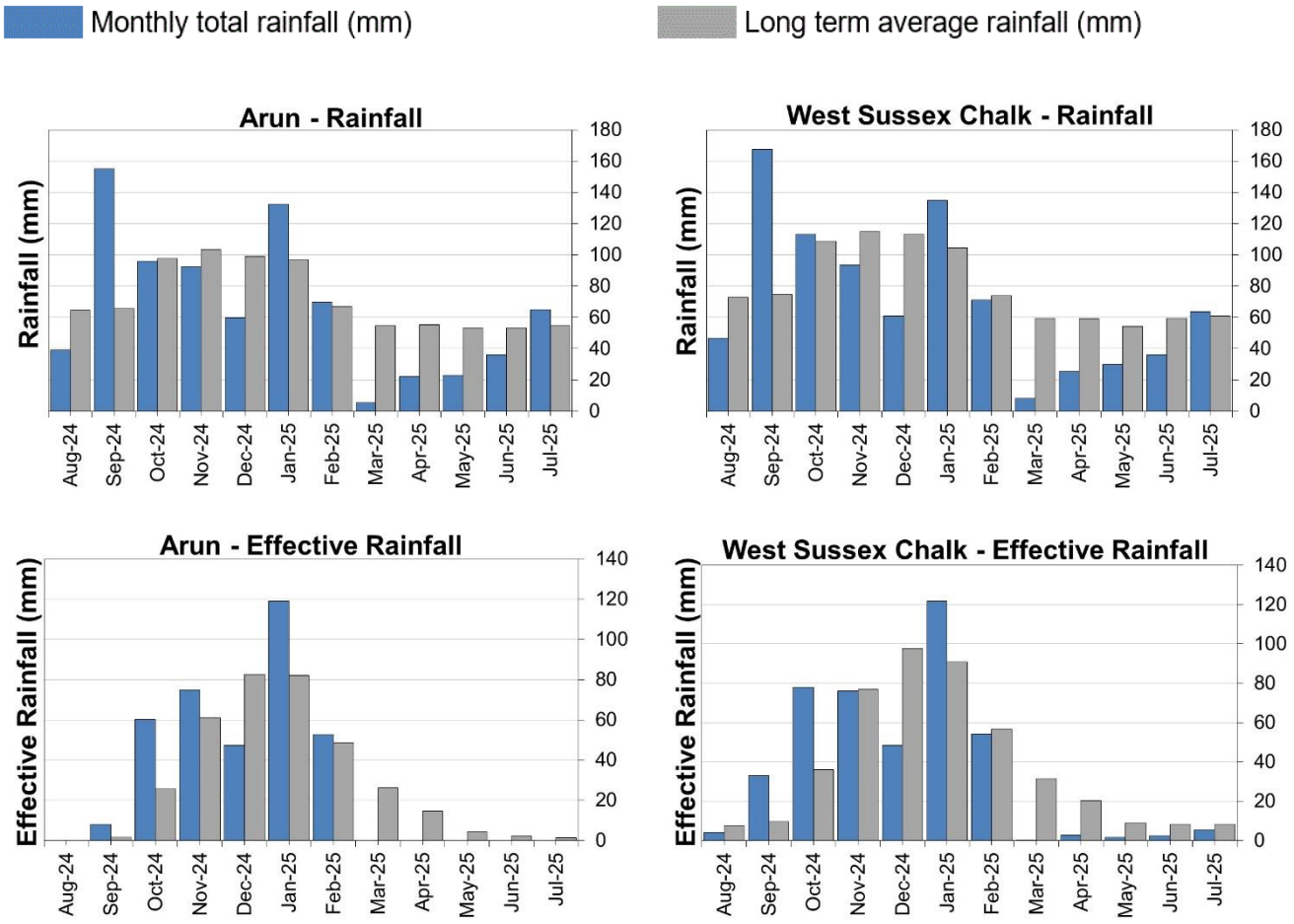


Source: Environment Agency, 2025.

6 West Sussex

6.1 West Sussex Rainfall and Effective Rainfall charts

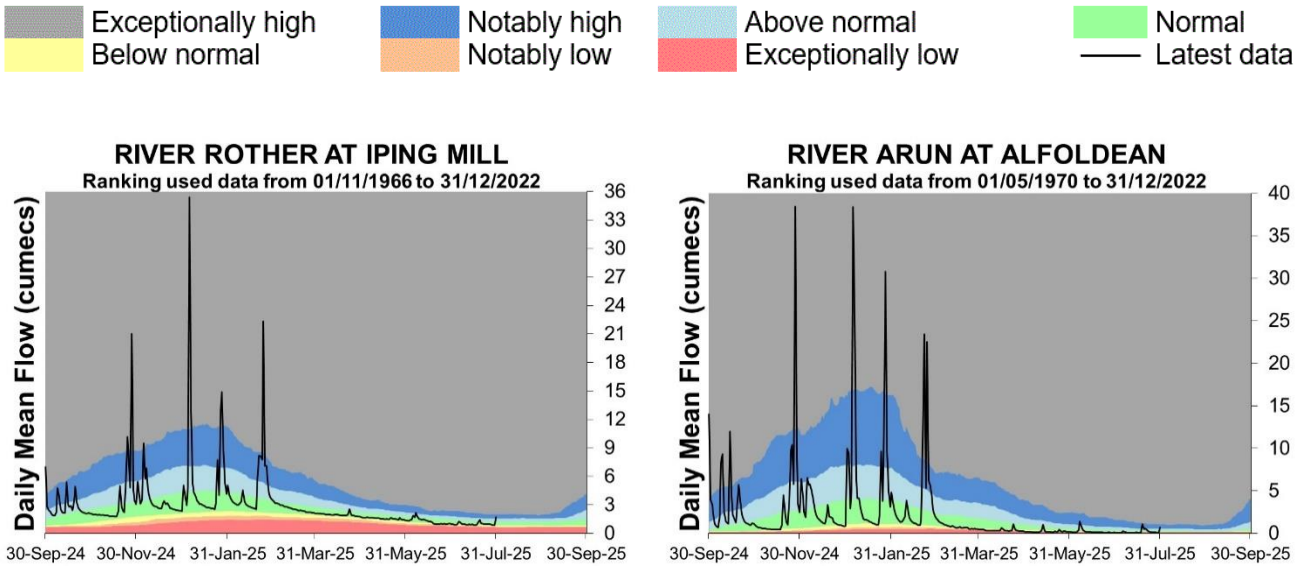
Figure 6.1: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average.



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

6.2 West Sussex River flow charts

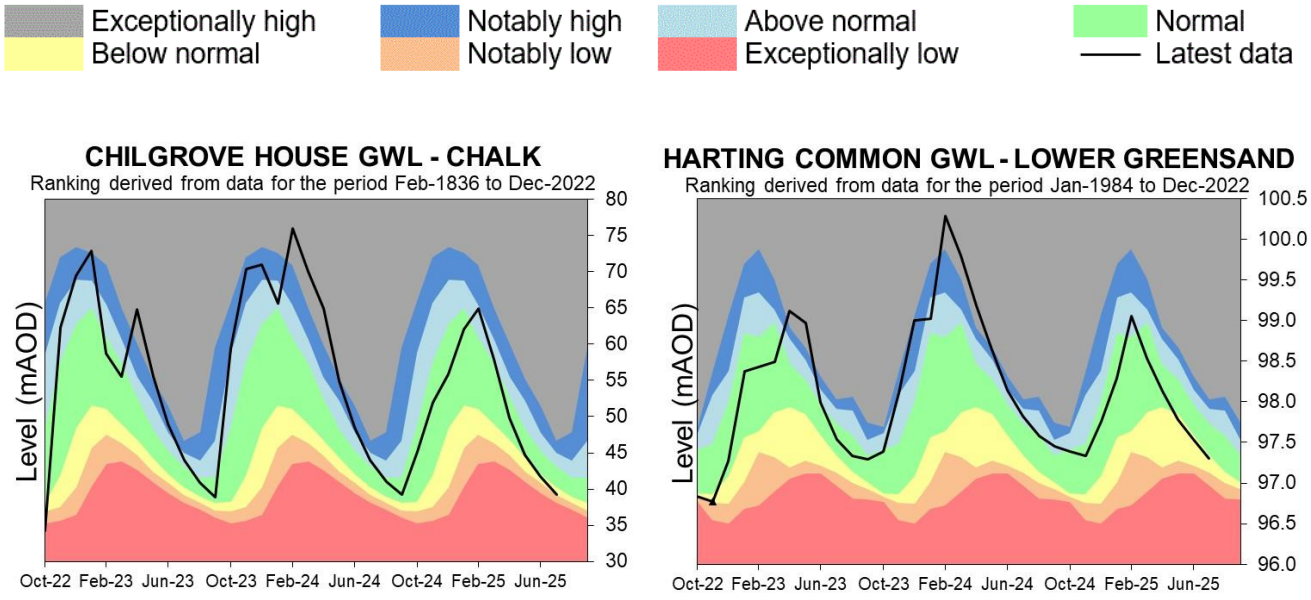
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

6.3 West Sussex Groundwater level charts

Figure 6.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

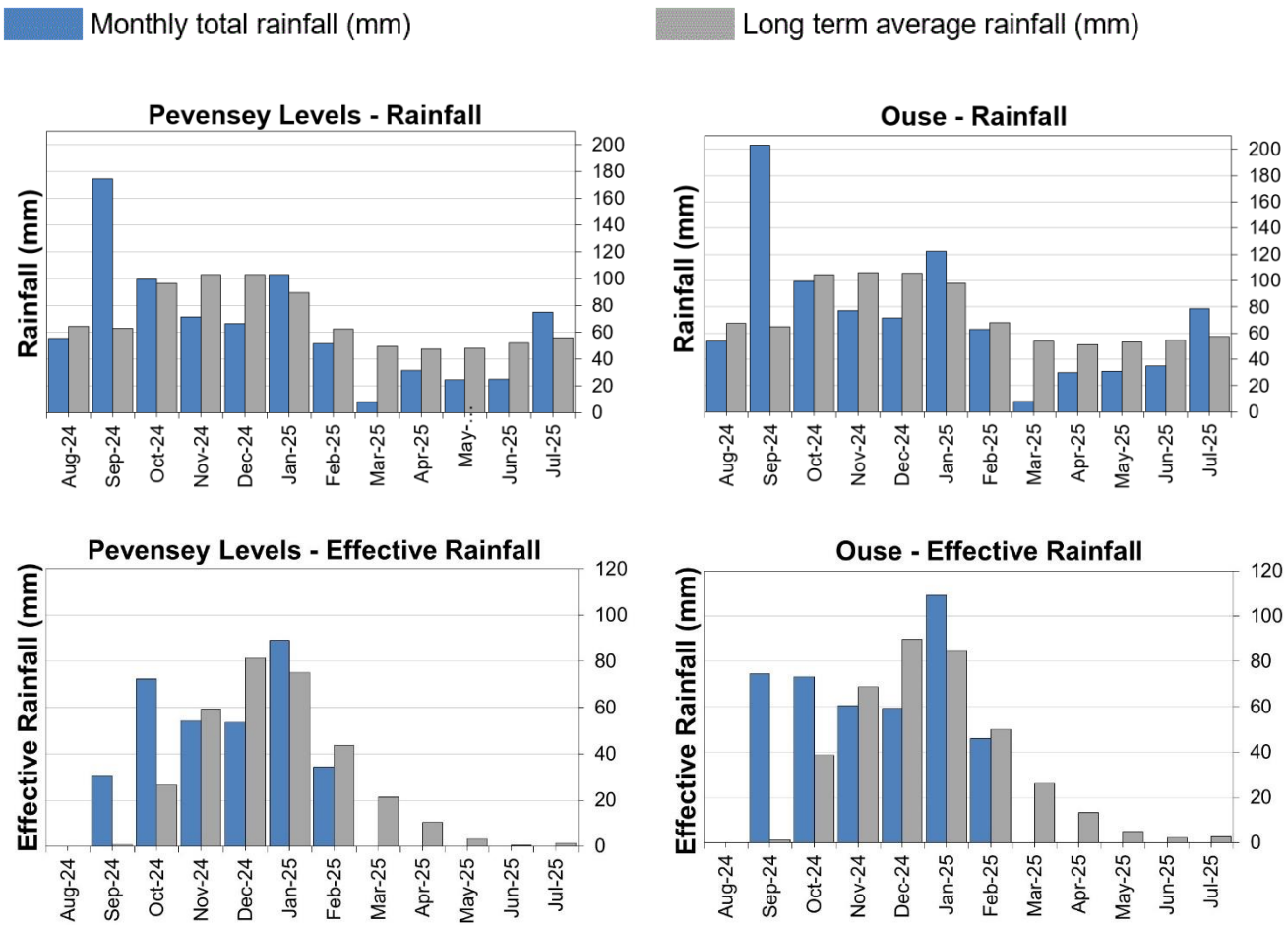


Source: Environment Agency, 2025.

7 East Sussex

7.1 East Sussex Rainfall and Effective Rainfall charts

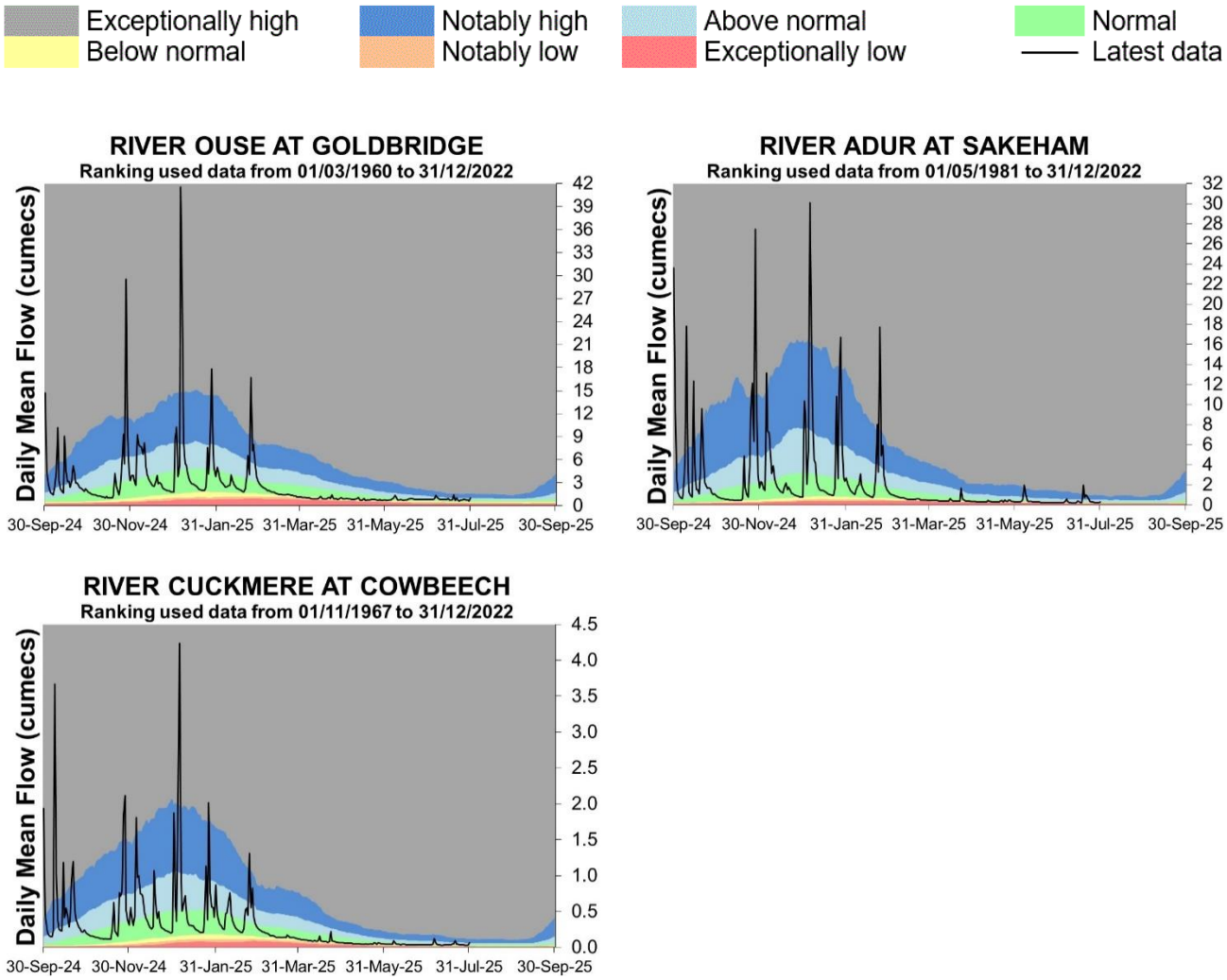
Figure 7.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

7.2 East Sussex River flow charts

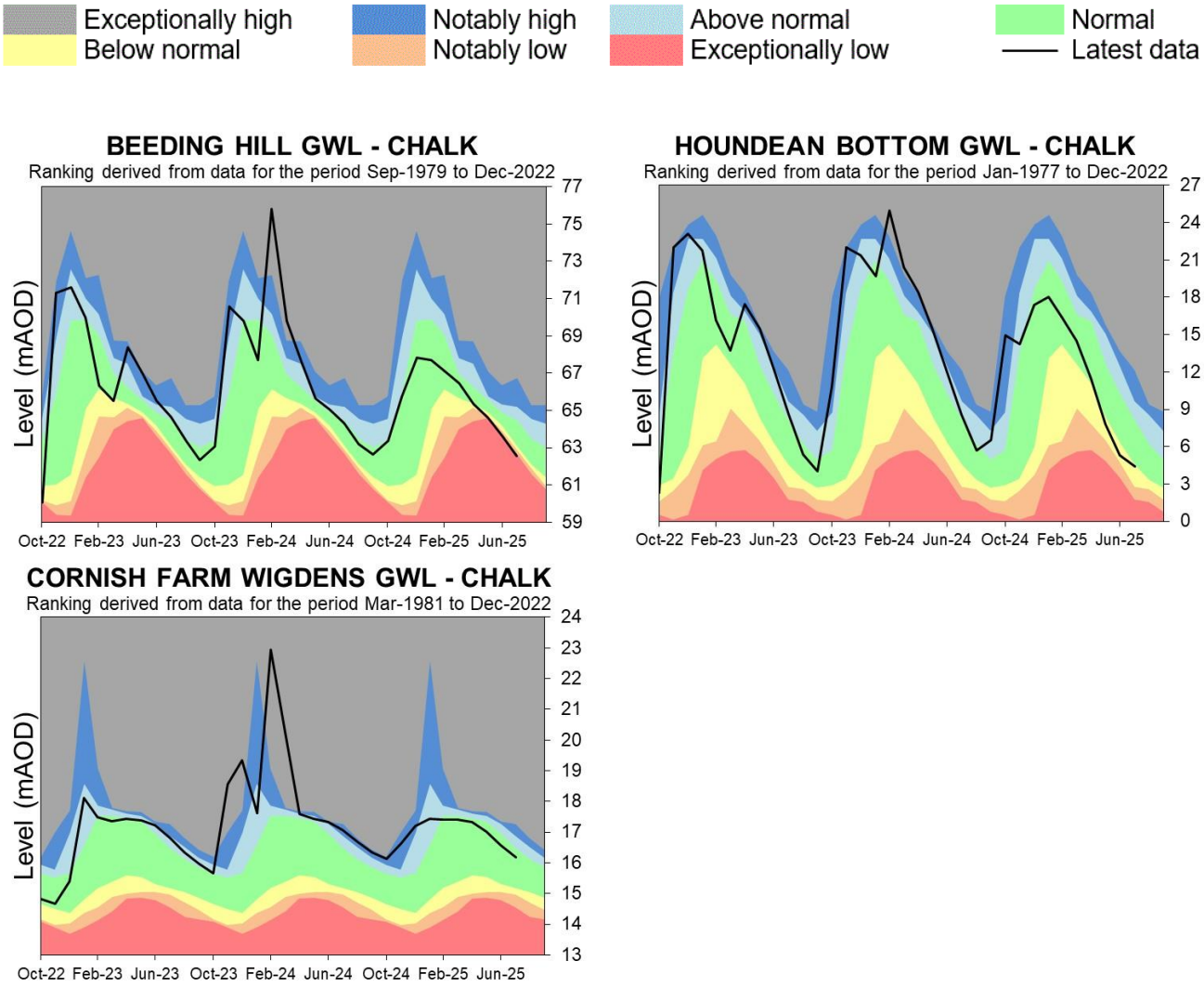
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

7.3 East Sussex Groundwater level charts

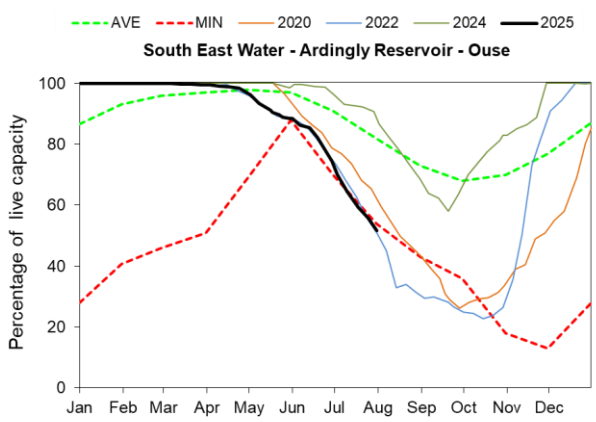
Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

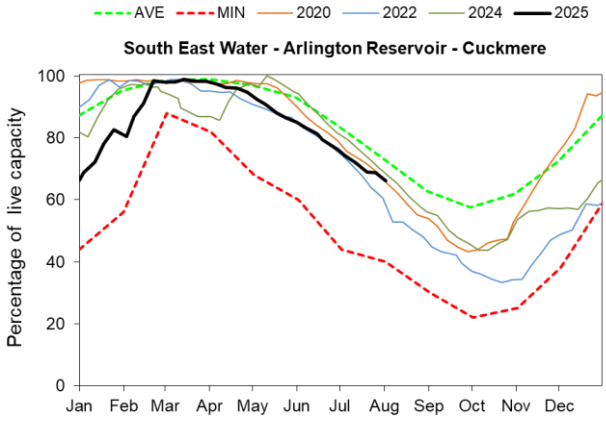


Source: Environment Agency, 2025.

8 Reservoir stocks

Figure 8.1: End of month reservoir stocks compared to long term maximum, minimum and average stocks. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.





(Source: water companies).

9 Glossary

9.1 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).

9.2 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.

10 Appendices

10.1 Rainfall, effective rainfall and soil moisture deficit table

Figure 10.1: This is areal rainfall, effective rainfall (percolation or runoff) and soil moisture deficit for the hydrological areas across the SSD. 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 10.2

Hydrological Area	Rainfall (mm) 30 day Total	Rainfall July as %LTA	Effective Rainfall (mm) 30 day Total	Effective Rainfall July as %LTA	Soil Moisture Deficit (SMD) Day 30	SMD End of July LTA
Test Chalk	41.8	73%	2	27%	154	87
East Hampshire Chalk	60.8	101%	5	60%	135	84
West Sussex Chalk	63.5	104%	5	66%	133	83
East Sussex Chalk	65.0	113%	5	74%	136	86
Isle of Wight	53.8	113%	4	64%	138	94
Western Rother Greensand	62.4	108%	5	77%	134	84
Hampshire Tertiaries	48.5	95%	0	0%	144	88
Lymington	41.8	82%	0	0%	140	84
Sussex Coast	49.1	100%	0	0%	146	93
Arun	65.1	121%	0	0%	136	84
Adur	66.7	125%	0	0%	136	83
Ouse	78.4	137%	0	0%	124	80
Cuckmere	70.1	124%	0	0%	127	80
Pevensey Levels	75.0	133%	0	0%	133	85
SSD Average	60.1	109%	2	44%	137	85

10.2 Seasonal summary table of rainfall and effective rainfall

Summer season: 01/04/2025 to 30/09/2025

Hydrological Area	Seasonal Rainfall (mm) Total	Seasonal Rainfall as % LTA	Seasonal Effective Rainfall (mm) Total	Seasonal Effective Rainfall as % LTA
Test Chalk	117	51%	6	16%
East Hampshire Chalk	155	65%	12	26%
West Sussex Chalk	155	66%	13	27%
East Sussex Chalk	158	74%	13	37%
Isle of Wight	136	68%	10	33%
Western Rother Greensand	157	66%	13	27%
Hampshire Tertiaries	135	63%	0	0%
Lymington	135	63%	0	0%
Sussex Coast	122	63%	0	0%
Arun	146	68%	0	0%
Adur	151	71%	0	0%
Ouse	174	80%	0	0%
Cuckmere	163	77%	0	0%
Pevensey Levels	156	77%	0	0%
SSD Average	147	68%	5	16%

10.3 Rainfall banding table

Hydrological area	July 2025 band	May 2025 to July 2025 cumulative band	February 2025 to July 2025 cumulative band	June 2024 to July 2025 cumulative band
Test Chalk	Normal	Notably low	Exceptionally low	Normal
East Hampshire Chalk	Normal	Below normal	Notably low	Normal
West Sussex Chalk	Normal	Below normal	Notably low	Normal
East Sussex Chalk	Normal	Below normal	Notably low	Normal
Isle of Wight	Normal	Below normal	Exceptionally low	Normal
Western Rother Greensand	Normal	Below normal	Notably low	Normal
Hampshire Tertiaries	Normal	Below normal	Notably low	Normal
Lymington	Normal	Below normal	Exceptionally low	Normal
Sussex Coast	Normal	Below normal	Exceptionally low	Normal
Arun	Normal	Below normal	Notably low	Normal
Adur	Normal	Below normal	Notably low	Normal
Ouse	Normal	Normal	Notably low	Normal
Cuckmere	Normal	Normal	Notably low	Normal
Pevensey Levels	Above normal	Normal	Notably low	Normal

10.4 River flows table

Site name	River	Catchment	July 2025 band	June 2025 band
Alfoldean GS	Arun	Arun	Below normal	Exceptionally low
Allbrook GS+ Highbridge	Itchen (so)	Itchen	Normal	Normal
Blackwater	Medina	Isle of Wight	Normal	Normal
Broadlands	Test	Test Lower	Normal	Below normal
Brockenhurst GS	Lymington	New Forest	Notably low	Below normal
Chilbolton GS	Test	Test Upper	Normal	Normal
Cowbeech GS	Cuckmere	Cuckmere	Normal	Normal
Goldbridge GS	Ouse [so]	Ouse Sussex	Above normal	Normal
Iping Mill GS	Rother	West Rother	Normal	Normal
Mislingford GS	Meon	Meon	Below normal	Below normal
North Fareham GS	Wallington	Wallington	Normal	Normal
Sakeham GS	Adur	Adur	Above normal	Normal

10.5 Groundwater table

Site name	Aquifer	End of July 2025 band	End of June 2025 band
Carisbrooke Castle	Isle Of Wight Central Downs Chalk	Exceptionally low	Exceptionally low
Youngwoods Copse	Isle of Wight Lower Greensand	Above normal	Above normal
Clanville Gate Gwl	River Test Chalk	Normal	Normal
Lopcombe Corner Gwl	River Test Chalk	Normal	Normal
Preston Candover	River Itchen Chalk	Above normal	Above normal
West Meon Hut Gwl	River Itchen Chalk	Normal	Normal
Catherington	River Meon Chalk	Below normal	Below normal
Chilgrove House Gwl	Chichester-Worthing-Portsdown Chalk	Below normal	Below normal
Beeding Hill Gwl	Brighton Chalk Block	Exceptionally low	Exceptionally low
Houndean Bottom Gwl	Brighton Chalk Block	Below normal	Below normal
Harting Common Down	Western Rother Lower Greensand	Below normal	Normal
Cornish Wigdens Gwtr	Eastbourne Chalk Block	Normal	Normal

10.6 Abstraction licence flow constraints

Number of flow constraints in force between 1 to 7 July 2025	Number of flow constraints in force between 8 to 14 July 2025	Number of flow constraints in force between 15 to 21 July 2025	Number of flow constraints in force between 21 to 28 July 2025	Number of flow constraints in force between 29 to 31 July 2025
13	13	25	15	19

10.7 Solent and South Downs Areal Rainfall Units Map

10.8 SSD Areal Rainfall Monthly Long Term Averages

Hydrological Area	Jan LTA mm	Feb LTA mm	Mar LTA mm	Apr LTA mm	May LTA mm	Jun LTA mm	Jul LTA mm	Aug LTA mm	Sep LTA mm	Oct LTA mm	Nov LTA mm	Dec LTA mm
Test Chalk	92.6	65.7	59.4	60.5	53.7	57.8	57.5	63.8	62.8	95.3	100.9	93.1
East Hampshire Chalk	102.7	72.1	62.7	63.5	54.4	62.1	60.5	71.4	70.2	105.8	112.8	105.3
West Sussex Chalk	104.6	73.7	59.5	59.1	54.4	59.4	60.9	73.0	74.4	108.8	114.8	113.2
East Sussex Chalk	96.4	66.9	53.8	49.9	51.2	55.6	57.3	67.6	65.3	101.2	110.6	106.9
Isle of Wight	93.5	66.9	55.4	52.6	47.9	50.6	47.8	59.7	65.9	102.2	107.4	105.6
Western Rother Greensand	110.6	77.5	61.9	64.1	56.4	59.6	57.9	73.1	73.7	111.7	118.1	115.1
Hampshire Tertiaries	95.4	66.7	58.1	57.8	49.8	56.3	51.2	64.7	65.2	97.3	105.1	99.4
Lymington	96.7	67.4	59.6	58.2	50.1	54.5	51.2	62.9	66.6	100.1	109.5	105.3
Sussex Coast	86.8	59.1	48.5	49.6	45.3	50.6	48.8	59.3	59.9	89.3	95.3	93.3
Arun	96.8	67.1	54.7	55.3	53.2	53.3	54.7	64.6	65.8	97.7	103.4	98.9
Adur	94.7	65.6	52.7	52.8	53.5	52.5	53.8	65.1	63.5	99.4	102.9	100.2
Ouse	97.7	67.7	53.9	51.2	53.4	54.9	57.5	67.4	64.7	104.6	105.9	105.4
Cuckmere	94.4	65.8	51.0	49.0	50.5	55.8	56.8	68.7	65.4	101.9	106.8	105.5
Pevensey Levels	89.5	62.7	49.5	47.6	48.1	51.8	56.3	64.6	62.9	96.3	103.0	102.9
SSD Average	96.8	67.7	56.9	56.5	52.0	56.0	55.3	66.0	66.2	100.5	106.6	102.4