Monthly water situation report: Solent and South Downs Area

Summary - September 2025

Solent and South Downs (SSD) had above average rainfall in September, receiving 153% (100.9mm) of the long term average (LTA) of 66.15mm. Monthly mean river flows across SSD ranged from below normal to notably high. The end of month groundwater levels ranged from exceptionally low to above normal. Soils across SSD ended the month drier than the average for September. End of month reservoir stocks were below average at Ardingly Reservoir (Ouse) and at Arlington Reservoir (Cuckmere).

1.1 Rainfall

SSD had above average rainfall in September, receiving 153% (100.9mm) of LTA (66.15mm). The East Sussex Chalk areal unit received the highest rainfall during September with 179% (116.7mm) of LTA (65.29mm). The Arun areal unit received the lowest rainfall with 124% (81.5mm) of LTA (65.78mm).

There were two periods in September with widespread rainfall. At the start of the month over 40% of the month's rainfall fell in four days between 1 and 4 September. Then SSD received about 55% of the month's rainfall in the middle of the month between 9 to 17 September. The rest of the month was mostly dry with scattered rain.

The wettest day was 12 September, when the highest daily total of 44.4mm was recorded at Folkington RG (Cuckmere). On the same day, 36.3mm was recorded at Isfield RG, 33.4mm at Popeswood TBR and 33.0mm at Barcombe RG, all in the Ouse Catchment.

The last 7 months has been the sixth driest March– September period on record for the Test Chalk areal unit.

For the 24-month period (starting October 2023) it was the seventh 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 September.

1.3 River flows

Monthly mean river flows for September ranged from below normal to notably high across SSD.

Flows were below normal on the:

- River Meon at Mislingford

Flows were normal on the:

- River Test at Chilbolton
- River Test at Broadlands
- River Itchen at Allbrook and Highbridge
- River Lymington at Brockenhurst
- River Medina at Blackwater
- River Rother at Iping Mill
- River Ouse at Goldbridge
- River Cuckmere at Cowbeech

Flows were above normal on the:

- River Arun at Alfoldean
- River Wallington at North Fareham

Flows were notably high on the:

- River Adur at Sakeham

The notably high monthly mean flows for the River Adur at Sakeham were the eight highest on record for September since 1967.

1.4 Groundwater levels

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

Groundwater levels were exceptionally low at:

- Chilgrove (West Sussex Chalk)
- Beeding Hill (West Sussex Chalk)

Groundwater levels were below normal at:

- Carisbrooke Castle (Isle of Wight)
- Catherington (East Hampshire Chalk)
- Harting Common (Western Rother Greensand)

Groundwater levels were normal at:

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

Groundwater levels were above normal at:

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

The groundwater level at Beeding Hill (West Sussex Chalk) was the third lowest September level (dating back to 1979). Chilgrove (West Sussex Chalk) was the fourth lowest September level since 1836.

1.5 Reservoir stocks

End of month reservoir stocks were below average for both Ardingly and Arlington Reservoirs. Ardingly Reservoir (Ouse) was at 30.1% (25/09) of total capacity (LTA 68%) and Arlington Reservoir (Cuckmere) was at 52.4% (27/09) of total capacity (LTA 57.7%).

1.6 Environmental impact

1.6.1 Abstraction licence restriction

At the start of September there were 26 licence restrictions in force, which decreased to 4 licence restrictions by the middle of the month. By the end of the month 12 licence restrictions were in place. These included:

- four licences on the Arun
- one licence on the Pagham Rife
- four licences in the River Rother catchment
- two licences on the River Meon
- eight licences on the Isle of Wight
- one licence on the Lymington River
- three licences on Walkford Brook
- two licences on the River Blackwater (in Hampshire)
- one licence on the River Test (Hampshire Tertiaries)

1.6.2 Flood Warnings in Force

There was one flood alert issued in September 2025. The fluvial flood alert was issued on 3 September in the Ouse catchment.

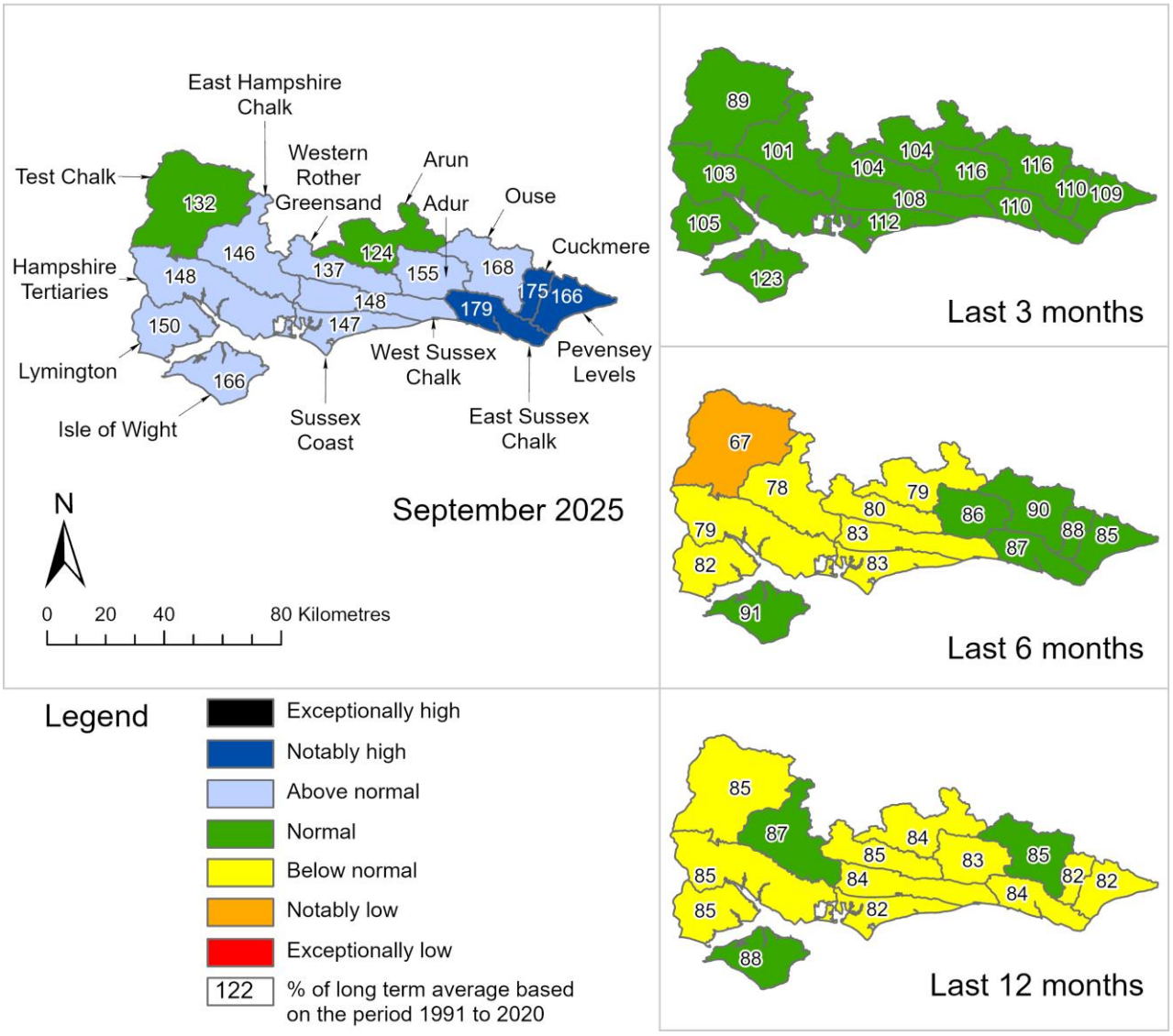
Author: HydrologySSD@environment-agency.gov.uk

Contact Details: 03708 506 506

2. Rainfall

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 30 September 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.

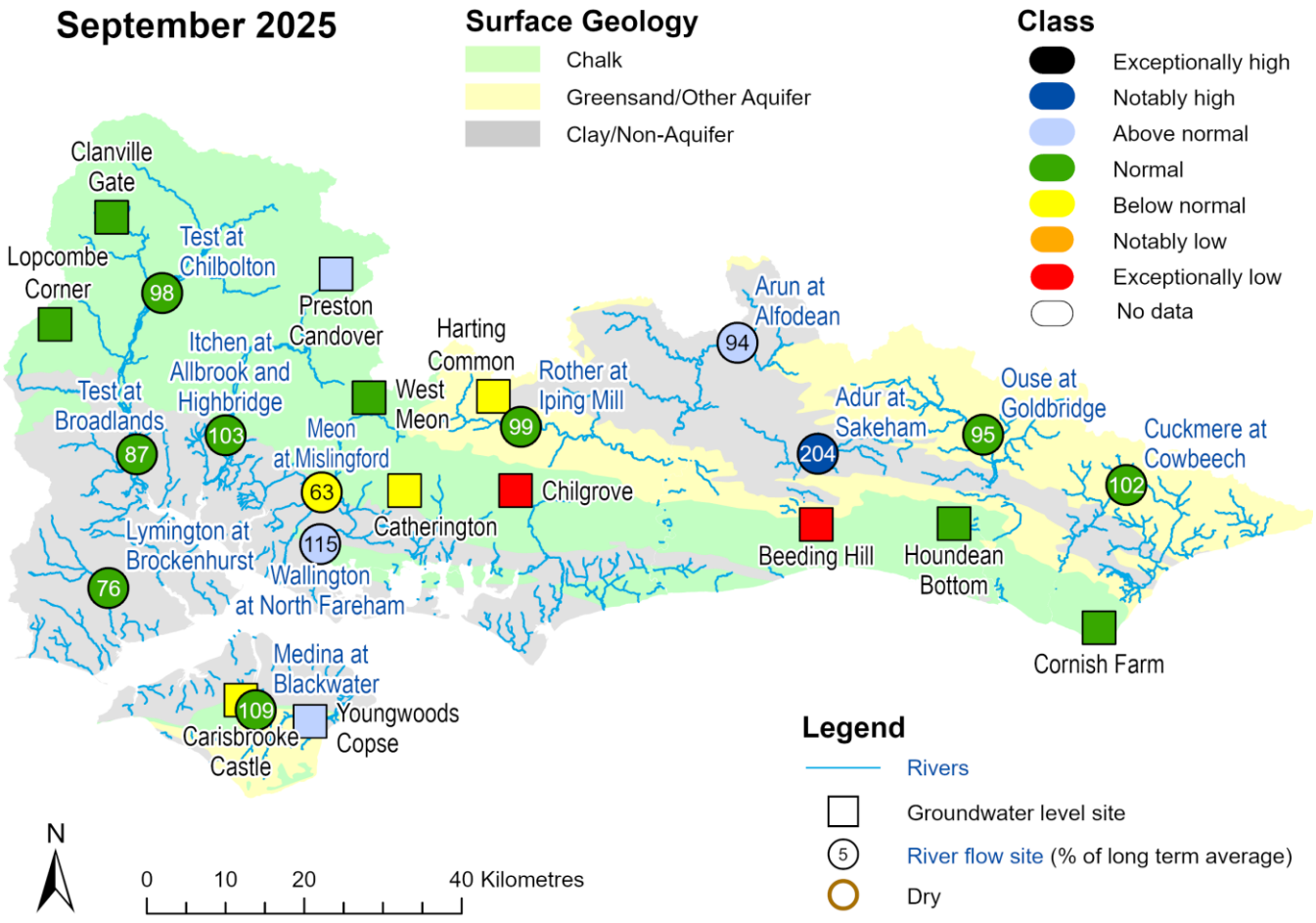


Rainfall data for October 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to October 2023, extracted from Met Office HadUK 1km gridded 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 September 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic September monthly means. Table available in the appendices with detailed information.

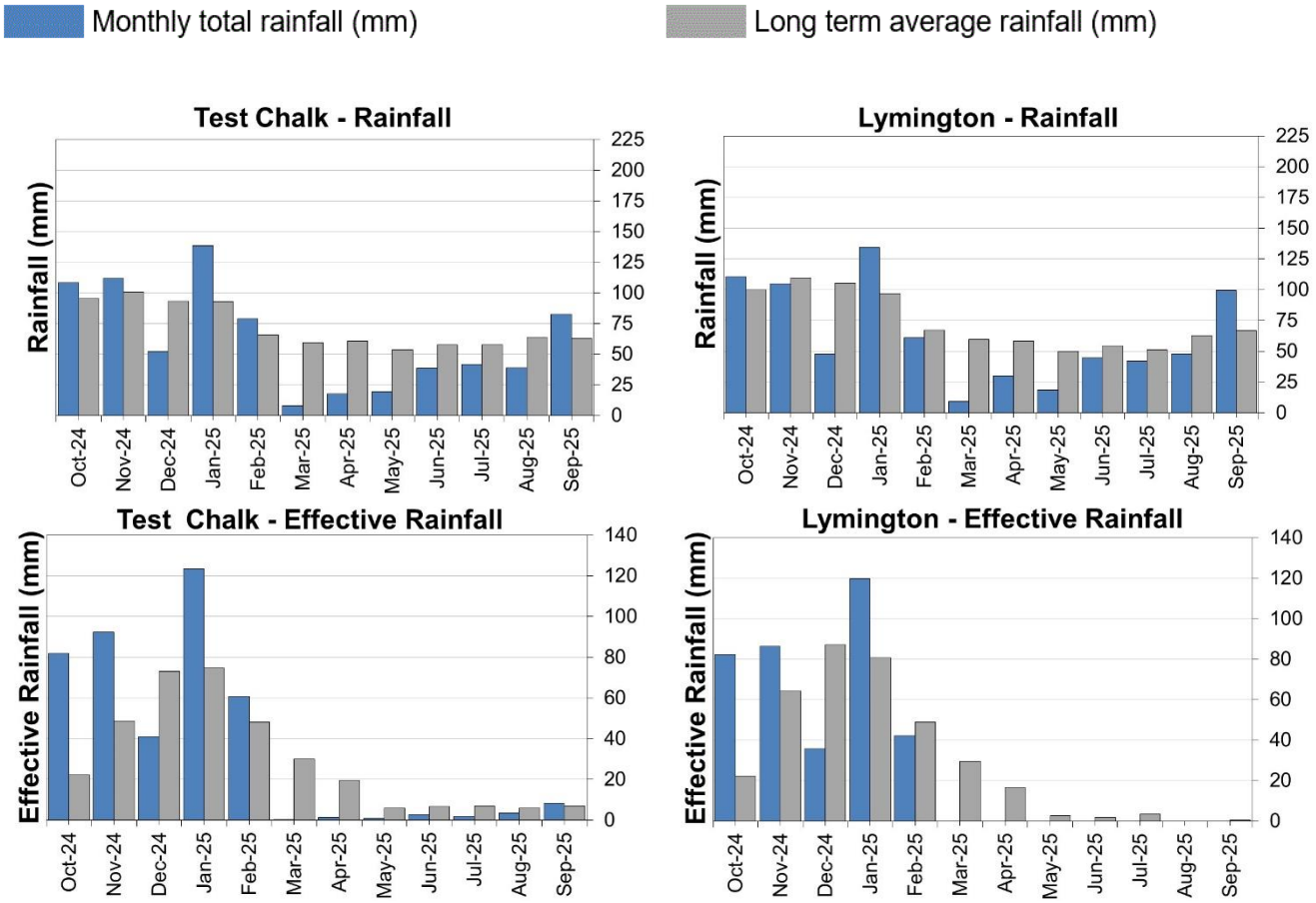


Due to fish pass works at North Fareham GS, no data is available after the 22 September. The monthly mean river flow for Wallington at North Fareham GS was calculated using modelled data from 22/09.

4 West Hampshire

4.1 West Hampshire Rainfall and effective rainfall charts

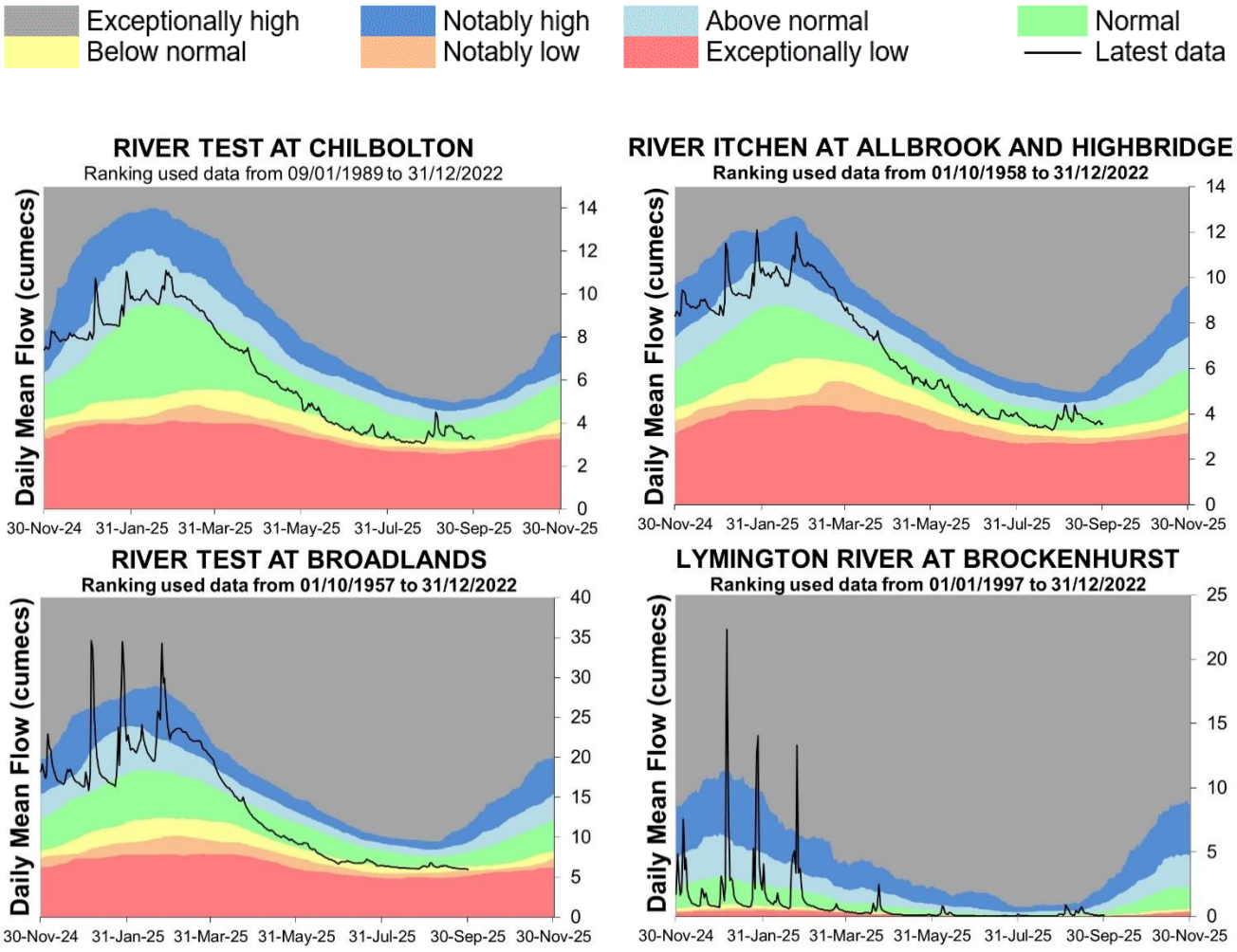
Figure 4.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

4.2 West Hampshire River flow charts

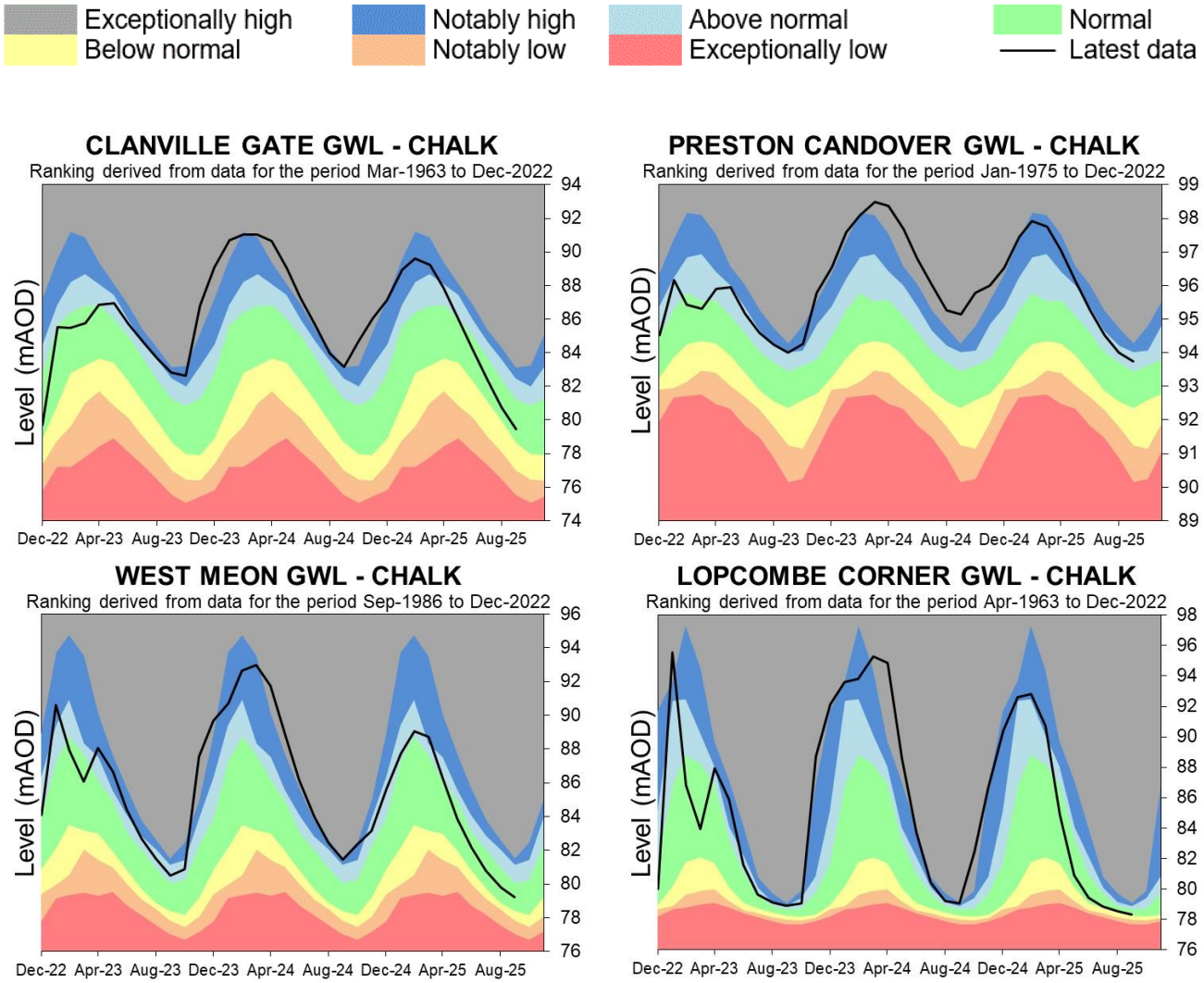
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

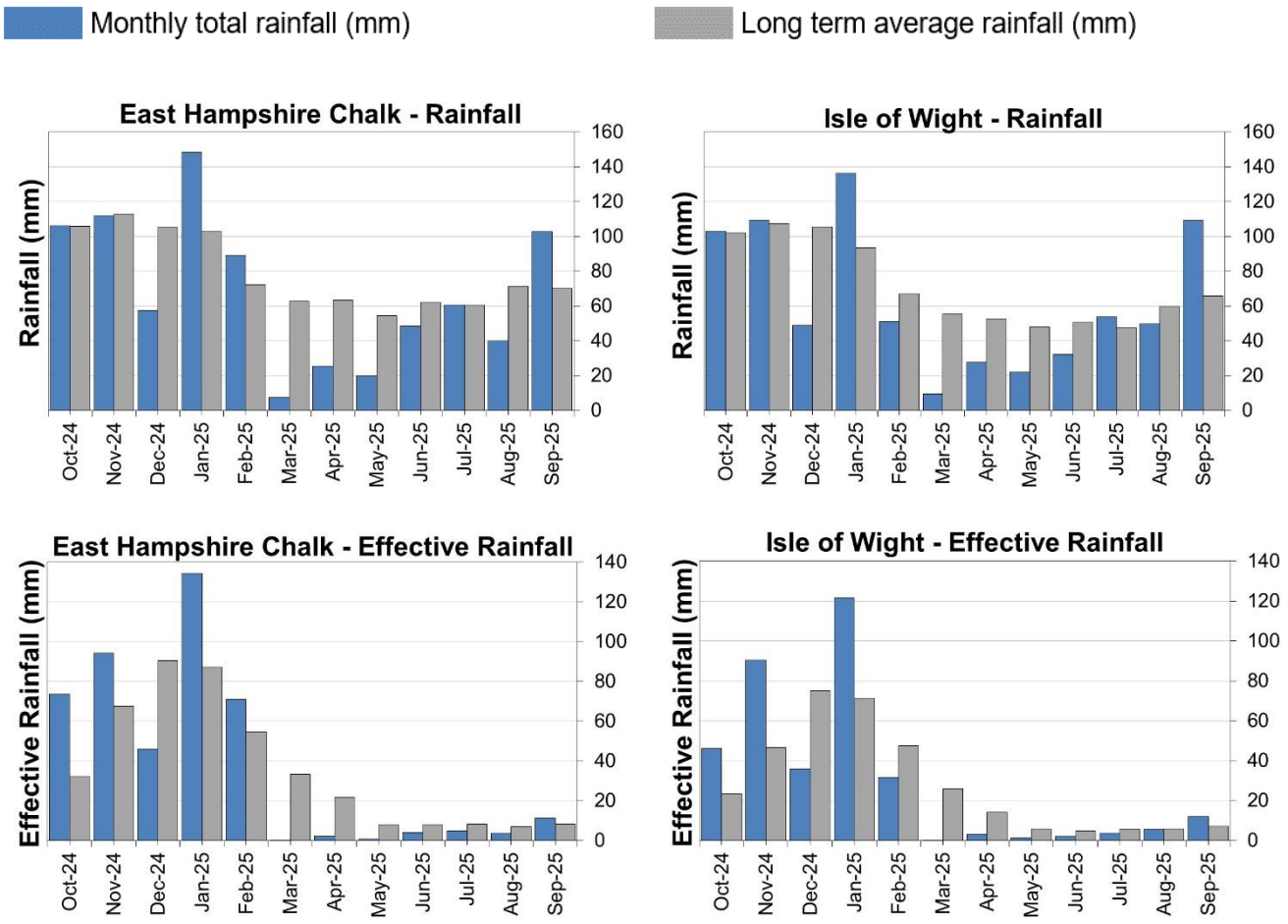


Source: Environment Agency, 2025.

5 East Hampshire and Isle of Wight

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

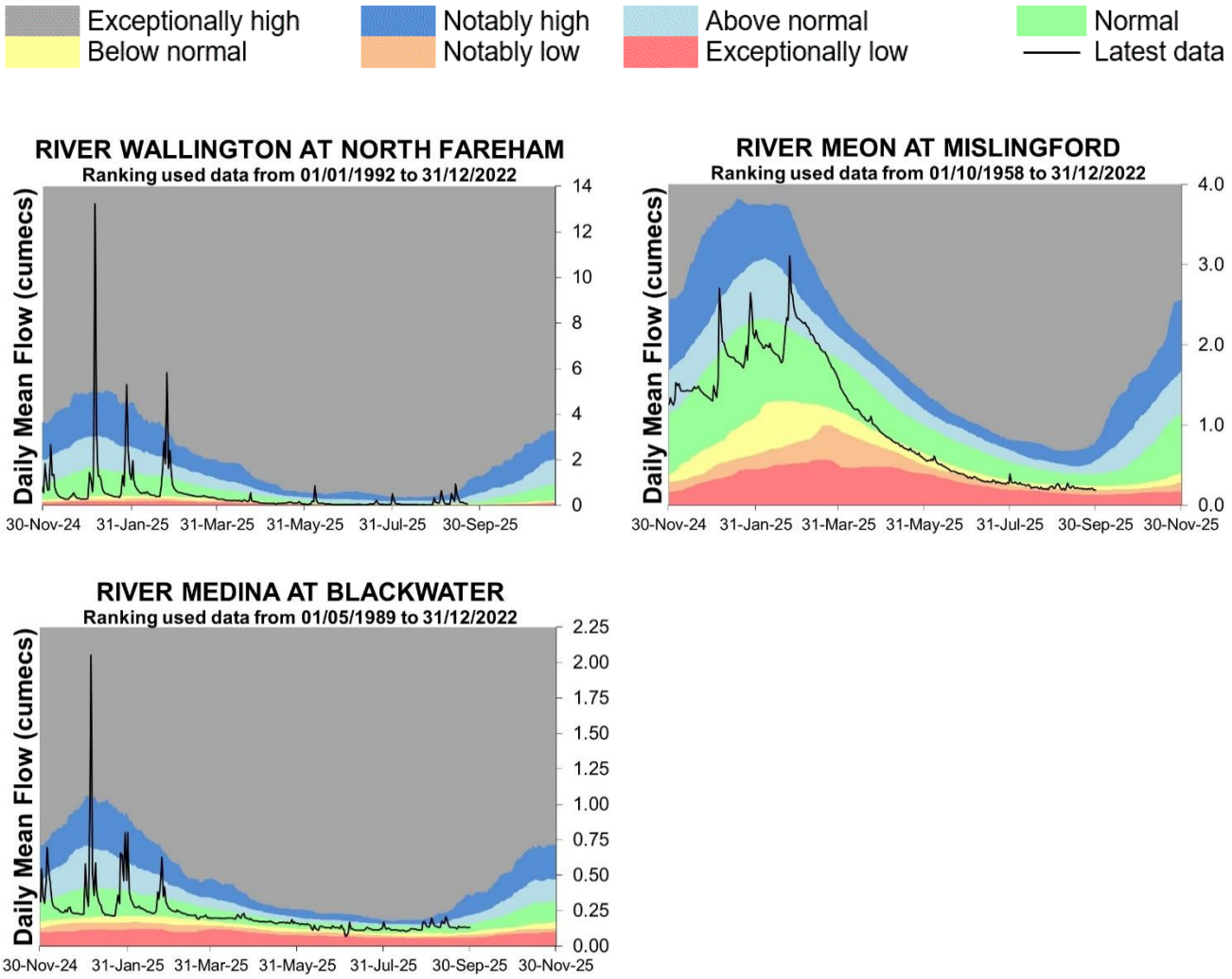
Figure 5.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

5.2 East Hampshire and Isle of Wight River flow charts

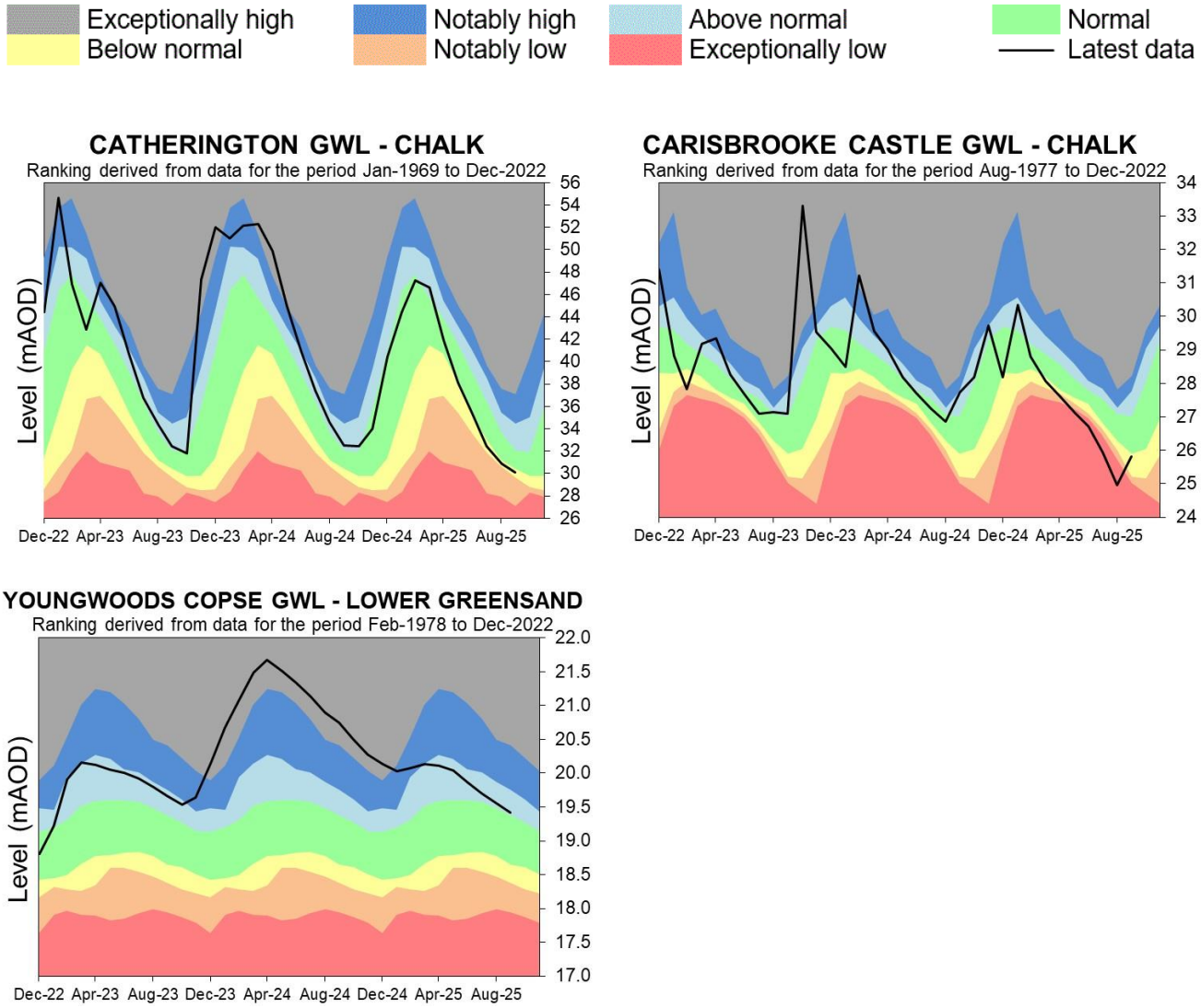
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

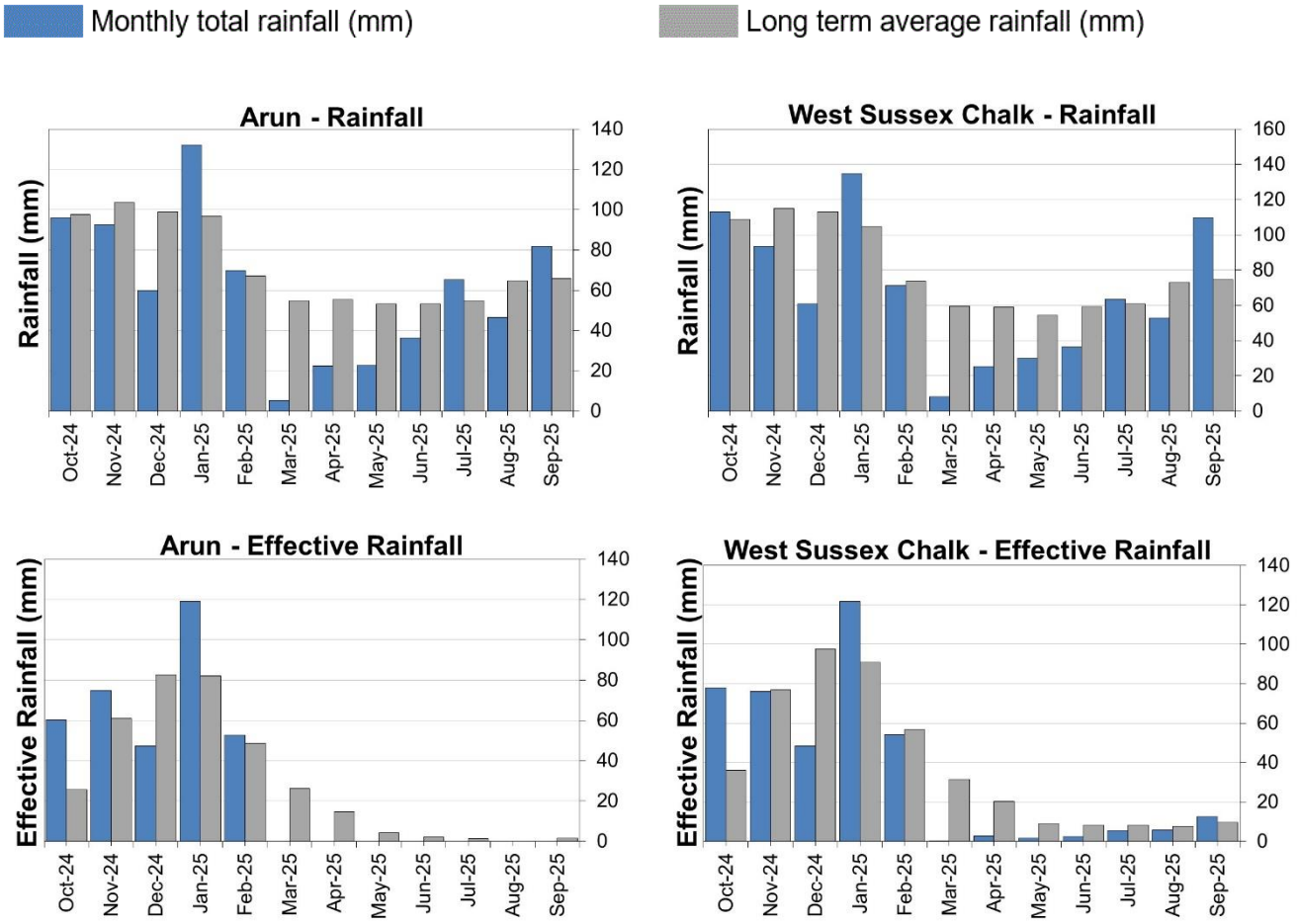


Source: Environment Agency, 2025.

6 West Sussex

6.1 West Sussex Rainfall and Effective Rainfall charts

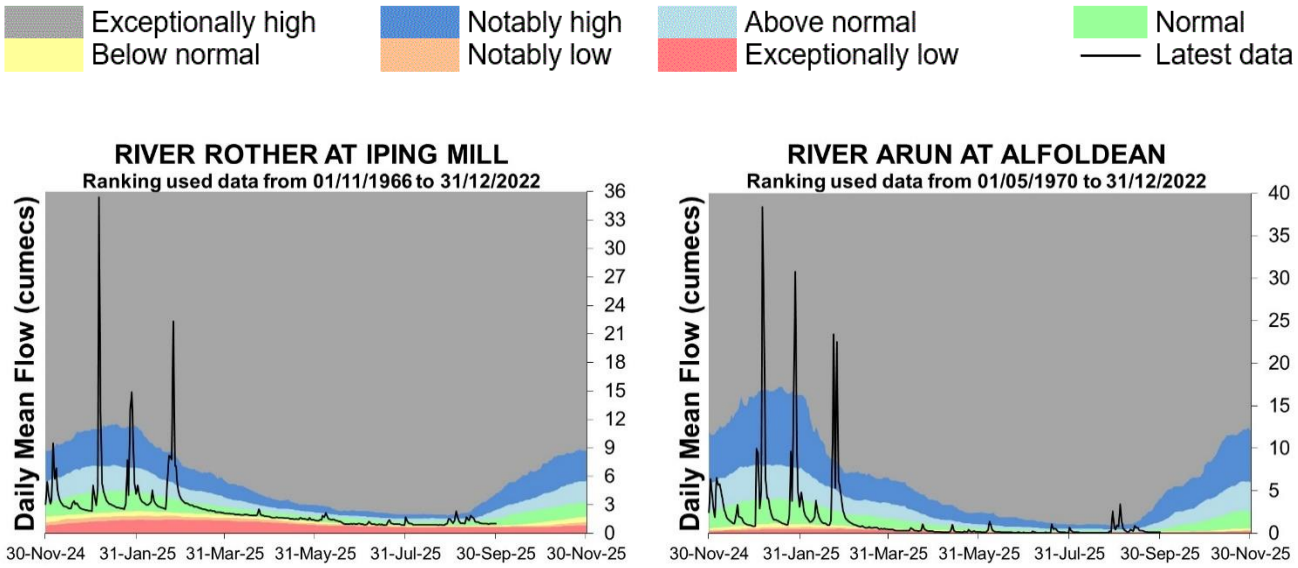
Figure 6.1: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average.



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

6.2 West Sussex River flow charts

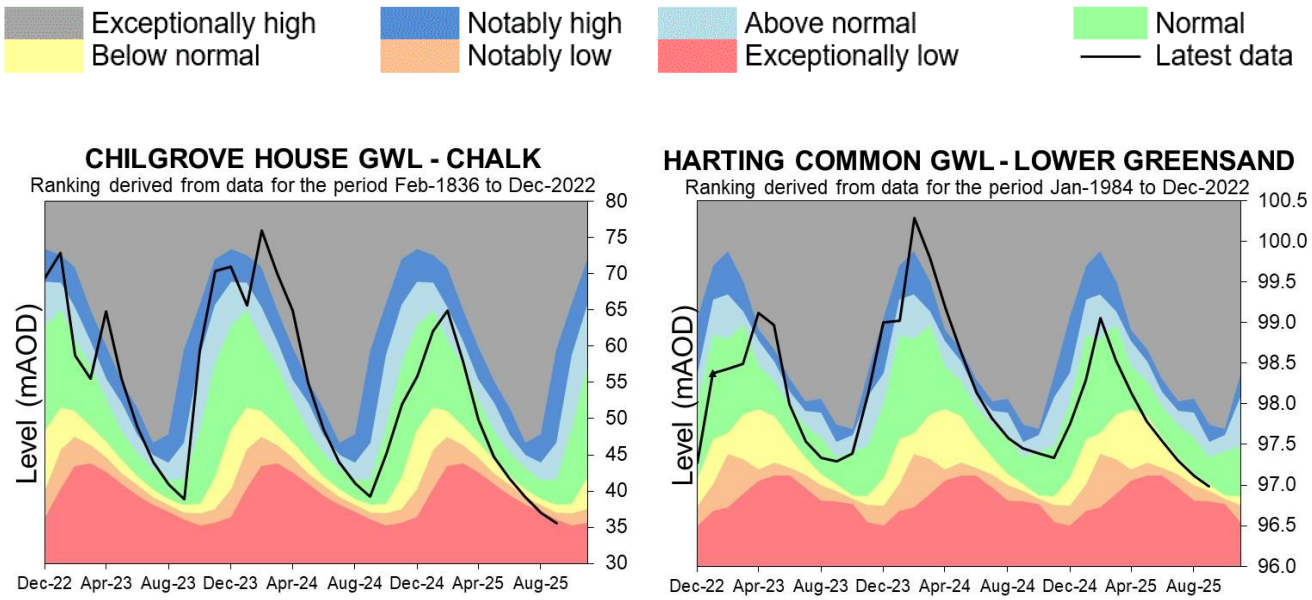
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

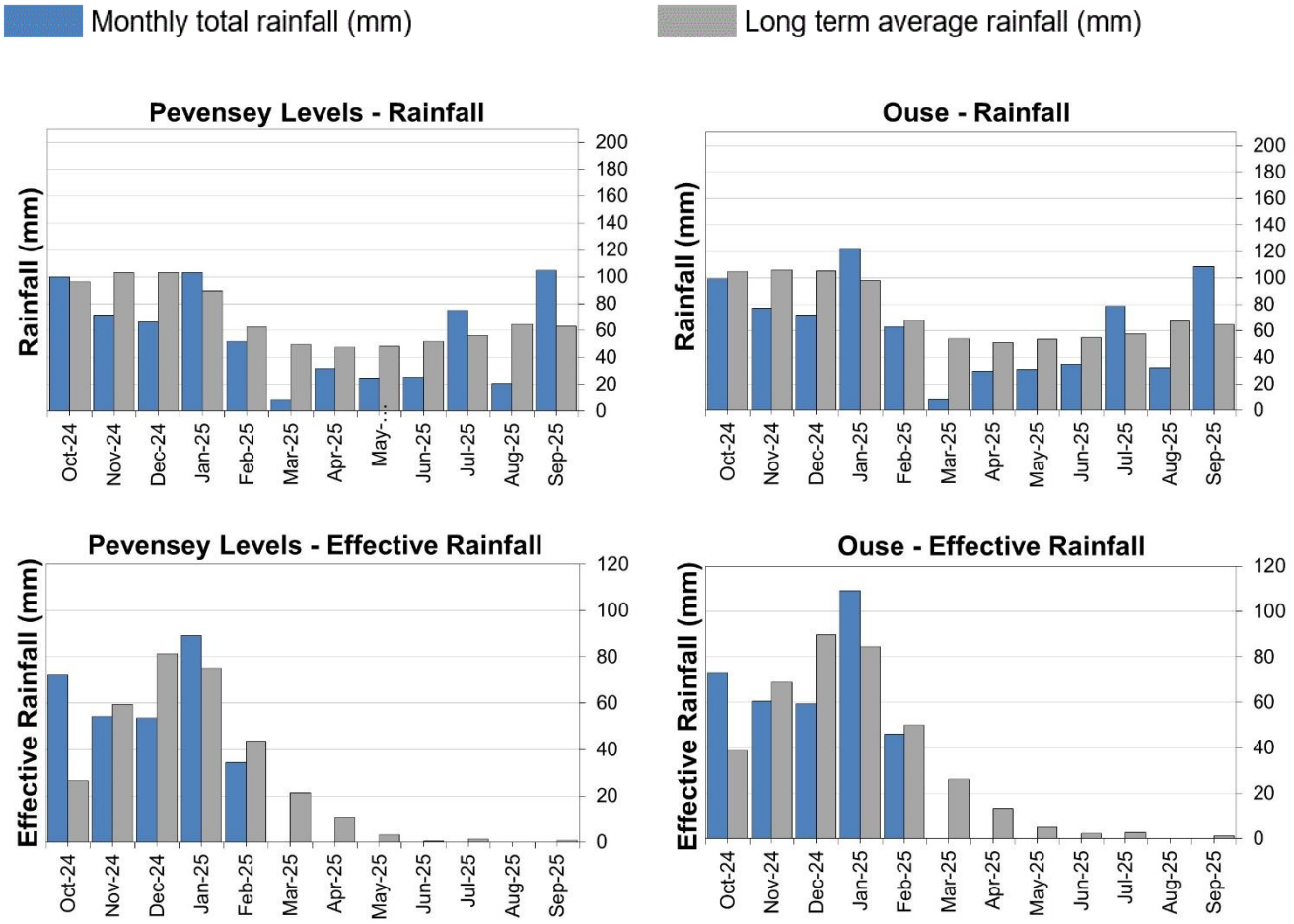


Source: Environment Agency, 2025.

7 East Sussex

7.1 East Sussex Rainfall and Effective Rainfall charts

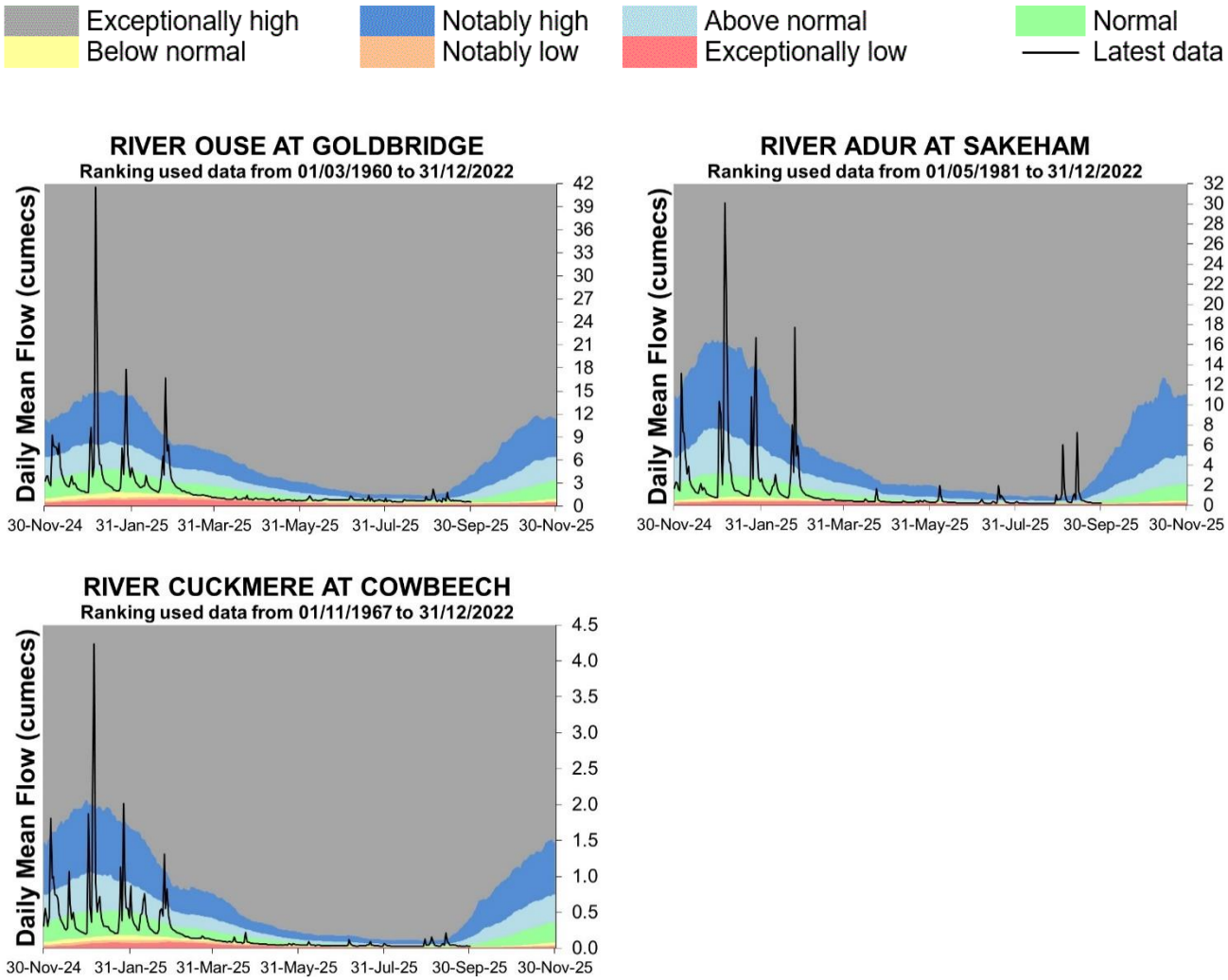
Figure 7.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

7.2 East Sussex River flow charts

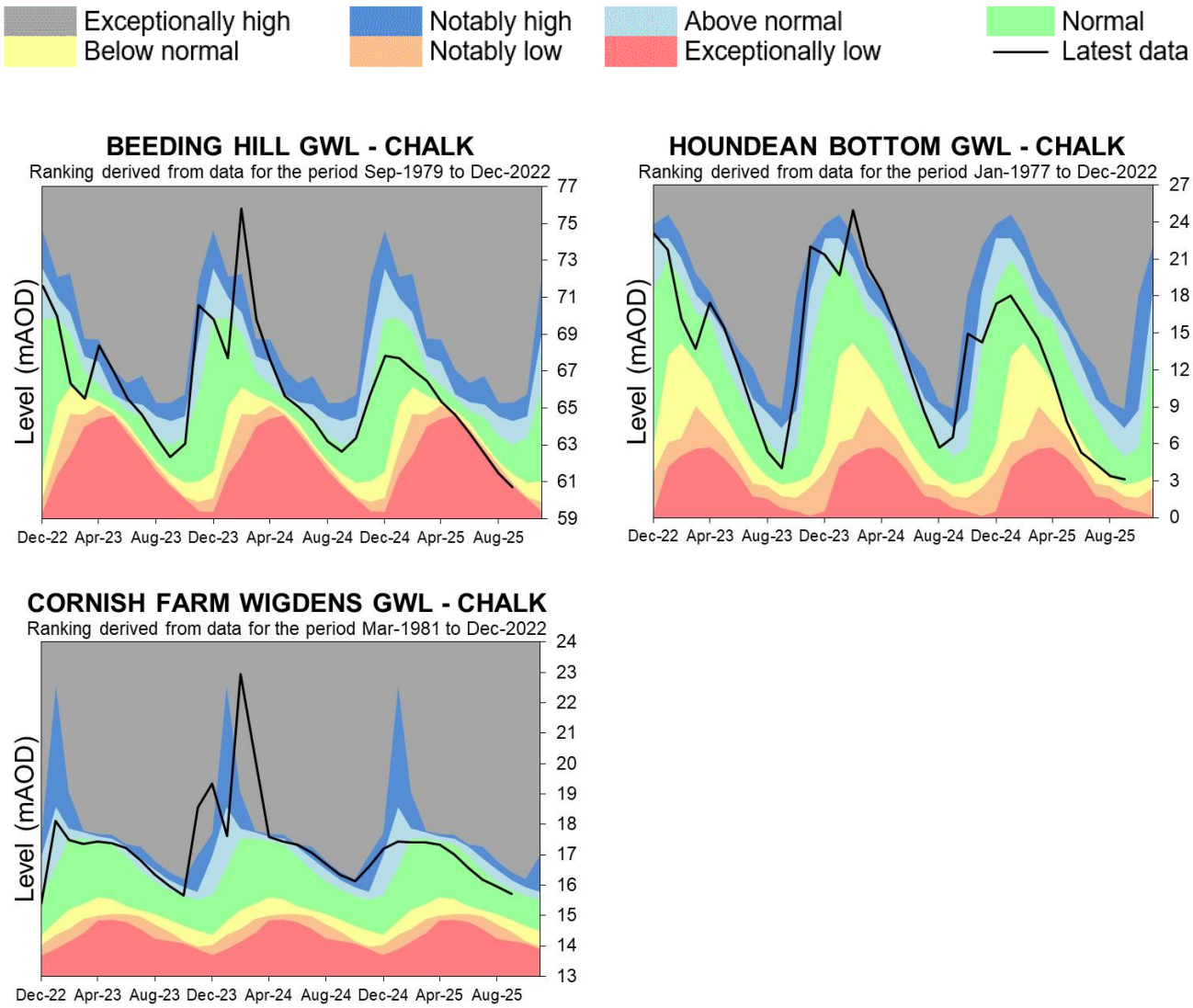
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

7.3 East Sussex Groundwater level charts

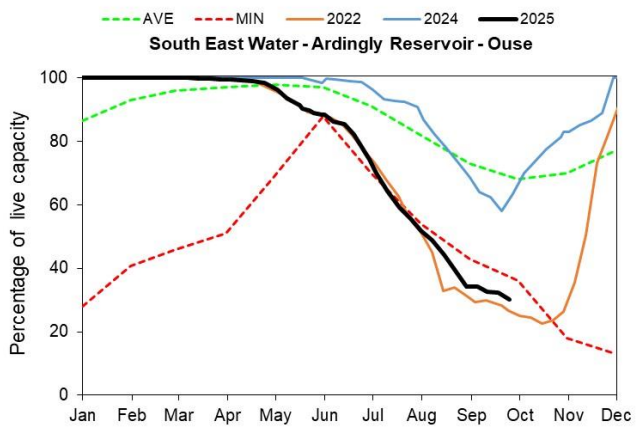
Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

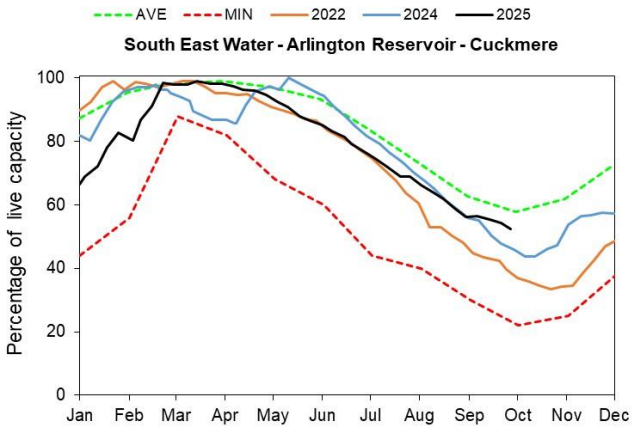


Source: Environment Agency, 2025.

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 September as %LTA	Effective Rainfall (mm) 30 day Total	Effective Rainfall September as %LTA	Soil Moisture Deficit (SMD) Day 30	SMD End of September LTA
Test Chalk	82.8	132%	8	122%	151	100
East Hampshire Chalk	102.7	147%	11	135%	121	91
West Sussex Chalk	109.7	147%	13	130%	97	86
East Sussex Chalk	116.7	179%	14	183%	106	96
Isle of Wight	109.0	165%	12	163%	108	109
Western Rother Greensand	100.7	137%	11	119%	111	89
Hampshire Tertiaries	96.2	148%	0	-	120	97
Lymington	99.4	149%	0	0%	105	91
Sussex Coast	88.2	147%	0	-	120	108
Arun	81.5	124%	0	0%	117	90
Adur	98.4	155%	0	0%	93	87
Ouse	108.2	167%	0	0%	85	82
Cuckmere	114.0	176%	0	0%	85	79
Pevensey Levels	104.4	166%	0	0%	104	89
SSD Average	100.9	153%	5	124%	109	92

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	239	67%	19	36%
East Hampshire Chalk	297	78%	27	44%
West Sussex Chalk	318	83%	31	50%
East Sussex Chalk	301	87%	29	60%
Isle of Wight	295	91%	28	64%
Western Rother Greensand	309	80%	29	45%
Hampshire Tertiaries	273	79%	0	0%
Lymington	282	82%	0	0%
Sussex Coast	260	83%	0	0%
Arun	274	79%	0	0%
Adur	295	86%	0	0%
Ouse	314	90%	0	0%
Cuckmere	303	88%	0	0%
Pevensey Levels	282	85%	0	0%
SSD Average	289	83%	12	32%

10.3 Rainfall banding table

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

10.4 River flows table

Site name	River	Catchment	September 2025 band	August 2025 band
Alfoldean Gs	Arun	Arun	Above normal	Below normal
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	Normal	Notably low
Chilbolton GS	Test	Test Upper	Normal	Below normal
Cowbeech Gs	Cuckmere	Cuckmere	Normal	Normal
Goldbridge Gs	Ouse [so]	Ouse Sussex	Normal	Normal
Iping Mill Gs	Rother	West Rother	Normal	Normal
Mislingford GS	Meon	Meon	Below normal	Notably low
North Fareham GS	Wallington	Wallington	Above normal	Normal
Sakeham GS	Adur	Adur	Notably high	Normal

10.5 Groundwater table

Site name	Aquifer	End of September 2025 band	End of August 2025 band
Carisbrooke Castle	Isle Of Wight Central Downs Chalk	Below normal	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	Exceptionally low	Exceptionally low
Beeding Hill Gwl	Brighton Chalk Block	Exceptionally low	Exceptionally low
Houndean Bottom Gwl	Brighton Chalk Block	Normal	Below normal
Harting Common Down	Western Rother Lower Greensand	Below normal	Below normal
Cornish Wigdens Gwtr	Eastbourne Chalk Block	Normal	Normal

10.6 Abstraction licence flow constraints

Number of flow constraints in force between 1 September 2025	Number of flow constraints in force between 2 to 8 September 2025	Number of flow constraints in force between 9 to 15 September 2025	Number of flow constraints in force between 16 to 22 September 2025	Number of flow constraints in force between 23 to 30 September 2025
26	19	15	4	14

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