Monthly water situation report: Solent and South Downs Area

Summary - March 2025

Solent and South Downs (SSD) had well below average rainfall in March, receiving 12% (8mm) of the long term average (LTA of 67mm). Monthly mean river flows across SSD ranged from notably low to notably high and the end of month groundwater levels ranged from below normal to notably high. Soils across SSD ended the month much drier than the average for March. End of month reservoir stocks were above average at Ardingly Reservoir (Ouse) and close to average at Arlington Reservoir (Cuckmere).

1.1 Rainfall

SSD had well below average rainfall in March, receiving 12% (8mm) of the LTA (67mm). The East Sussex Chalk and the Isle of Wight areal units received the highest rainfall during March both with 10mm. This represents 16% of LTA (65.1mm) for the East Sussex Chalk areal unit and 14% of LTA (67mm) for the Isle of Wight areal unit. The Arun areal unit received the lowest rainfall with only 5mm for the whole month.

Despite March being such dry month there were very few completely dry days across the area. Most of the rainfall was recorded on 23 March with the highest daily rainfall totals at the following locations:

- 9.1mm at Cowbeech (Cuckmere)
- 8.7mm at Brockenhurst (Lymington)
- 8.6mm at Vines Cross (Cuckmere)

For SSD as a whole the March totals were the fifth lowest on record. For SSD and the majority of the areal units the March totals were the lowest since 1990. For the Arun and Test Chalk areal units the March totals were the fourth lowest on record and the lowest since 1961.

Figures for the 18-month period (starting October) were the third highest total for SSD and the second highest for the East Hampshire Chalk, Isle of Wight and Test Chalk areal units. For the 24-month period (starting April) it was the fifth highest total for SSD and the highest for the Test Chalk areal unit.

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 March.

1.3 River flows

Monthly mean river flows across SSD ranged from notably low to notably high.

Flows were notably low on the:

- River Arun at Alfoldean
- River Lymington at Brockenhurst

Flows were below normal on the:

- River Wallington at North Fareham
- River Medina at Blackwater
- River Adur at Sakeham
- River Ouse at Goldbridge
- River Cuckmere at Cowbeech

Flows were normal on the:

- River Test at Chilbolton
- River Rother at Iping Mill

Flows were above normal on the:

- River Meon at Mislingford

Flows were notably high on the:

- River Test at Broadlands
- River Itchen at Allbrook and Highbridge

The monthly mean flows for March were the seventh highest on record for the River Test at Broadlands (1957) and the River Itchen at Allbrook and Highbridge (1958) and the seventh lowest on record for the River Arun at Alfoldean (1970).

1.4 Groundwater levels

End of month groundwater levels for March ranged from below normal to notably high.

Groundwater levels were below normal at:

- Carisbrooke Castle (Isle of Wight)

Groundwater levels were normal at:

- Beeding Hill (West Sussex Chalk)
- Houndean Bottom (East Sussex Chalk)
- Cornish Farm (East Sussex Chalk)
- Harting Common (Western Rother Greensand)

Groundwater levels were above normal at:

- Catherington (East Hampshire Chalk)
- Chilgrove (West Sussex Chalk)
- Youngwoods Copse (Isle of Wight)

Groundwater levels were notably high at:

- Clanville Gate (Test Chalk)
- Lopcombe Corner (Test Chalk)
- Preston Candover (East Hampshire Chalk)
- West Meon (East Hampshire Chalk)

The notably high groundwater level at Preston Candover was the fifth highest for March in a record going back to 1975.

1.5 Reservoir stocks

End of month reservoir stocks were above average at Ardingly Reservoir (Ouse) and were around average at Arlington Reservoir (Cuckmere). Ardingly Reservoir (Ouse) was at 99.6% of total capacity (LTA 97%), and Arlington Reservoir (Cuckmere) was at 98.2% of total capacity (LTA 99%).

1.6 Environmental impact

Abstraction licence restrictions:

During March there were a total of three licence restrictions in force, two cessations and one reduced abstraction rate. One cessation was in force on the River Lymington (New Forest) for all of March and the other on the River Rother was only in force during the last week. The reduced abstraction rate restriction was in force on the River Meon (East Hampshire).

Flood Alerts:

During March there were 3 groundwater flood alerts in place in Hampshire.

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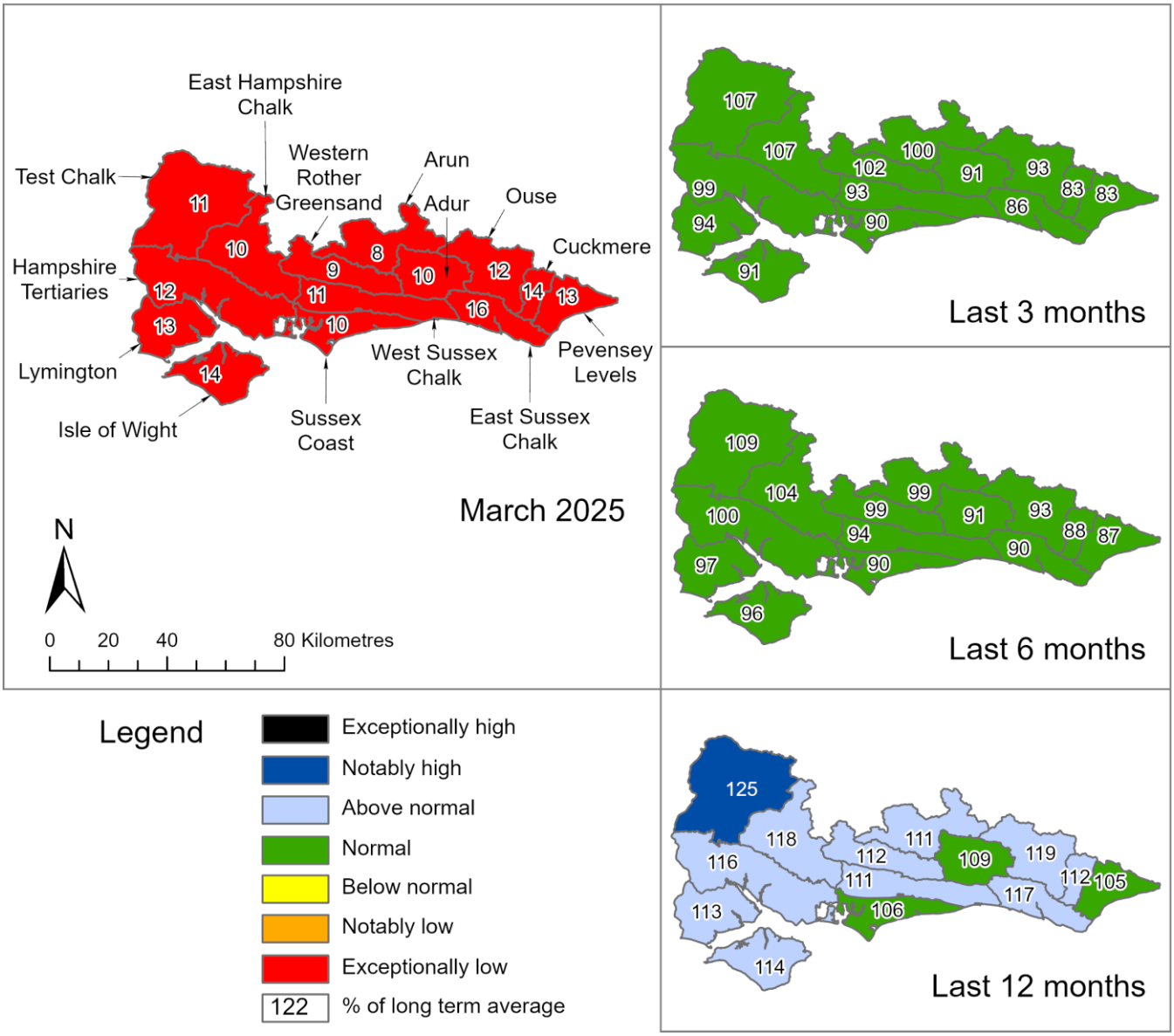
Contact Details: 03708 506 506

2. Rainfall

2.1 Rainfall map

Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 March 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.

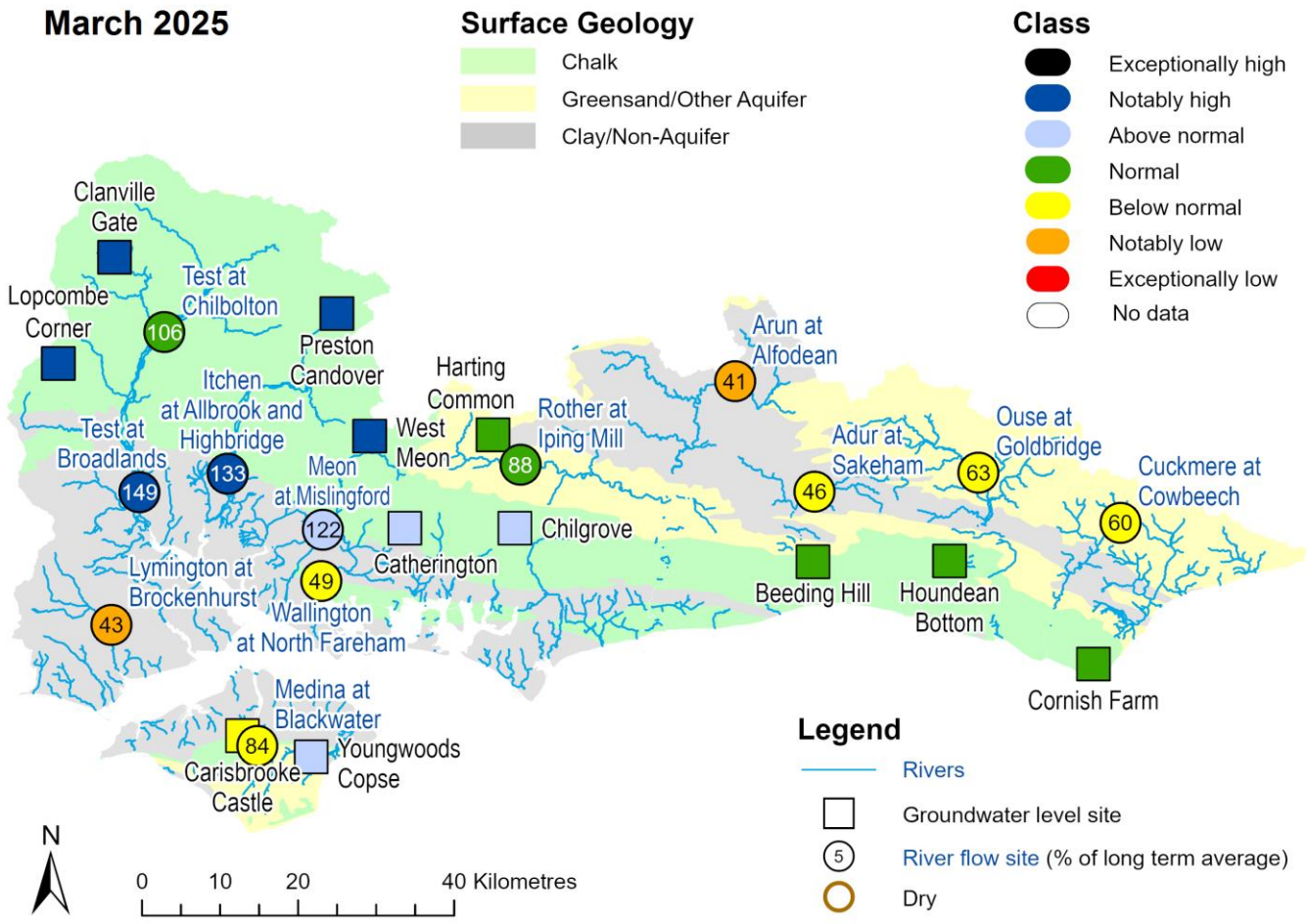


Rainfall data for October 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to October 2023, extracted from Met Office HadUK 1km gridded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

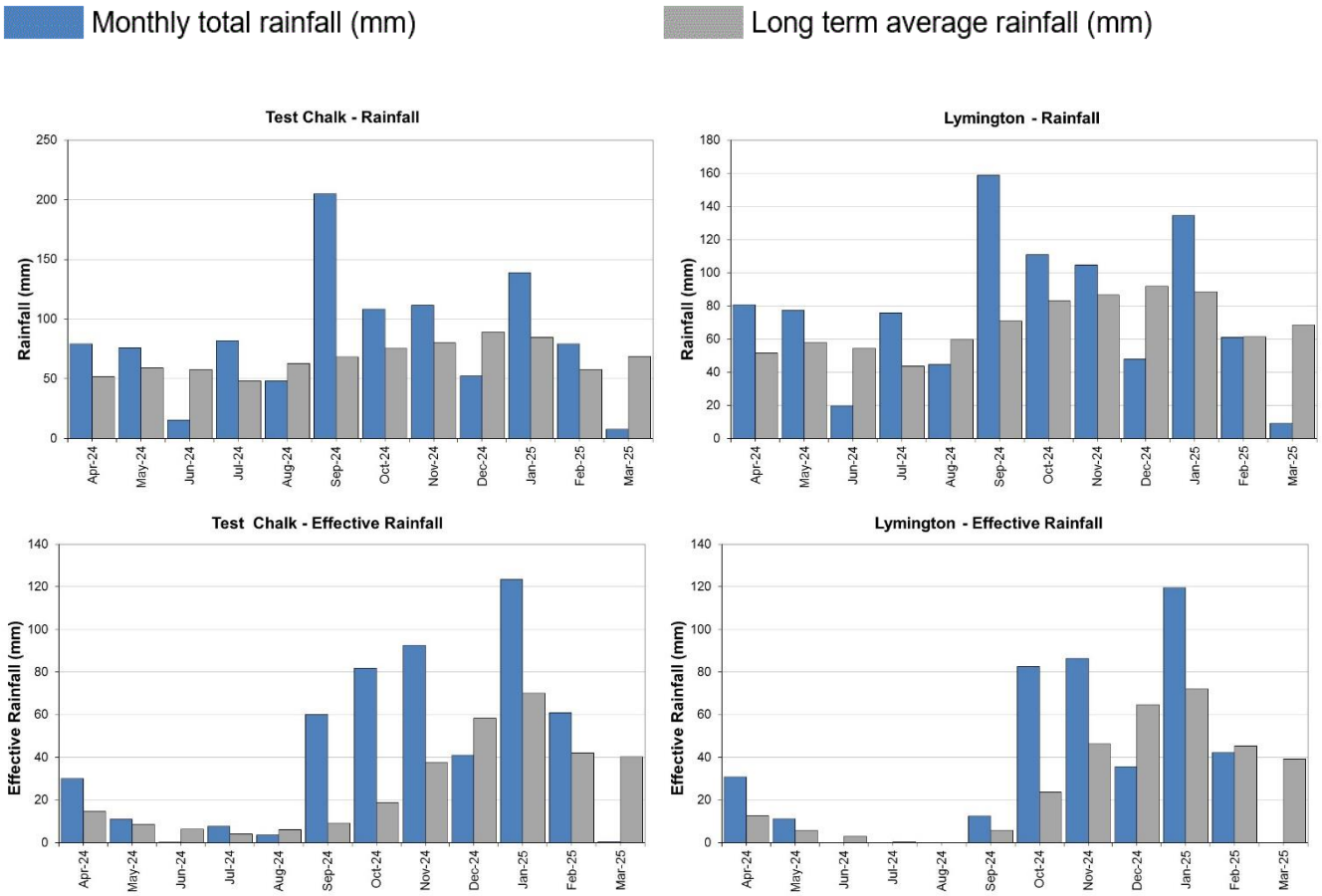


(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, 100024198, 2025. Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

4 West Hampshire

4.1 West Hampshire Rainfall and effective rainfall charts

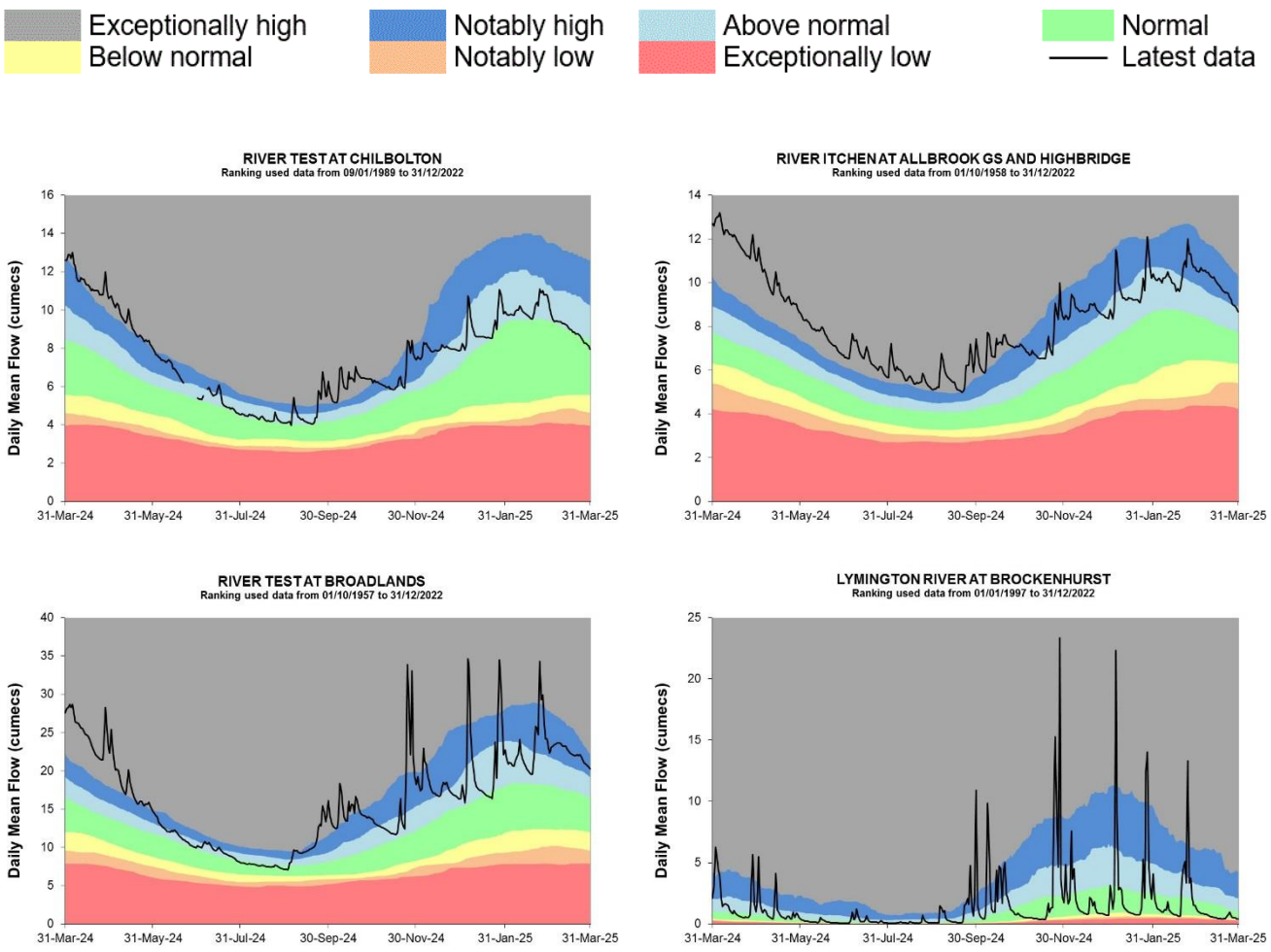
Figure 4.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1961 to 1990 long term average.



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

4.2 West Hampshire River flow charts

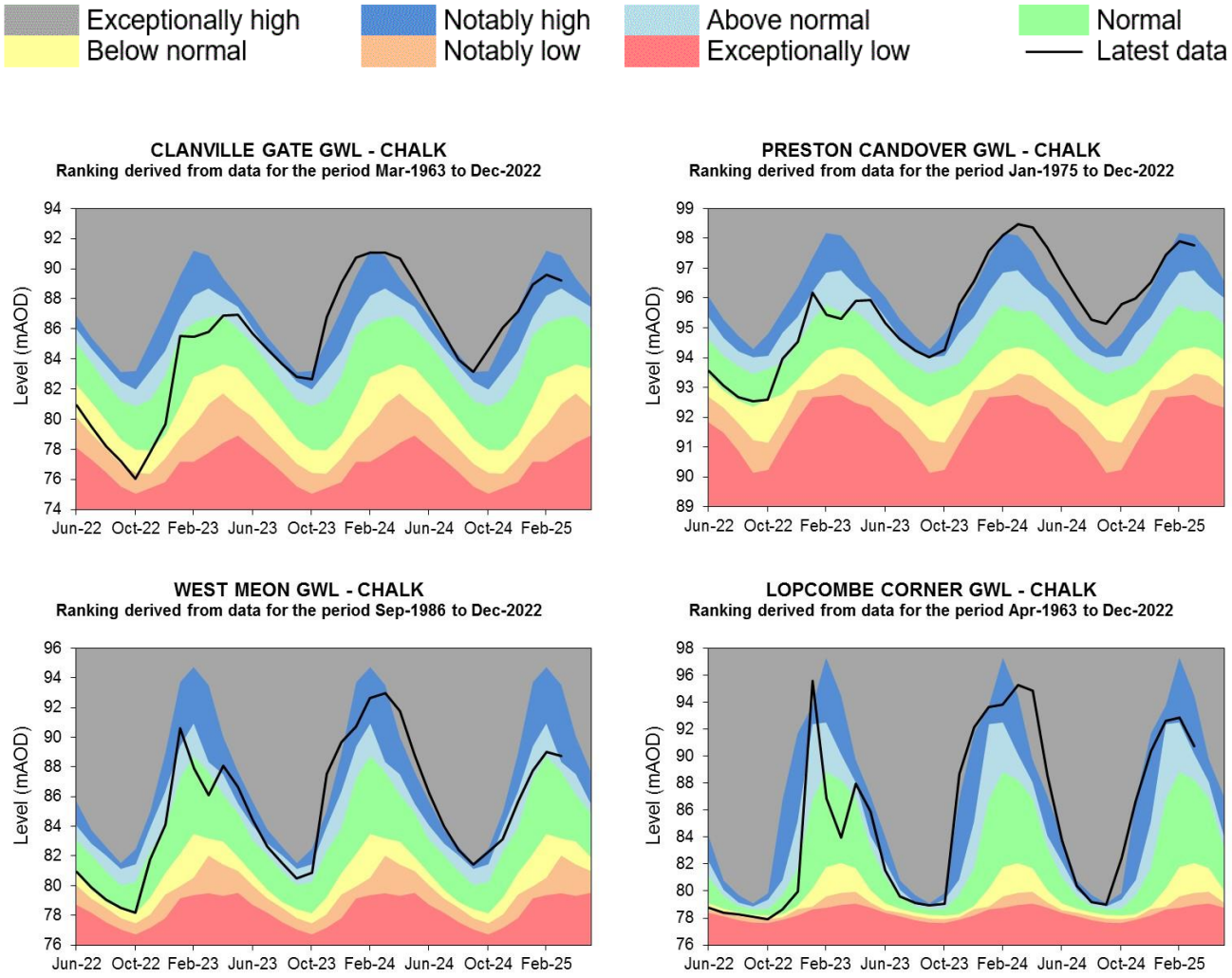
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

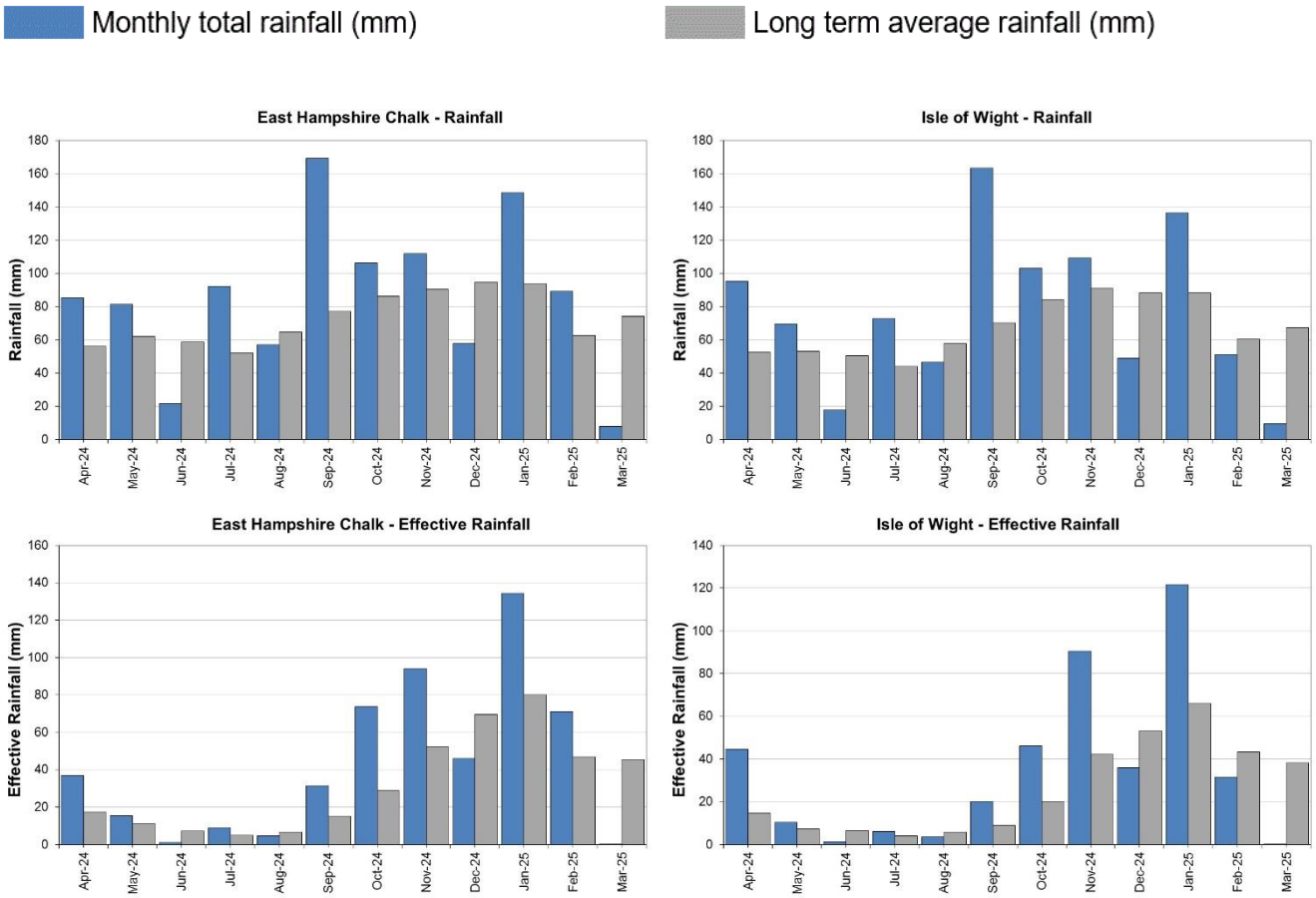


Source: Environment Agency, 2025.

5 East Hampshire and Isle of Wight

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

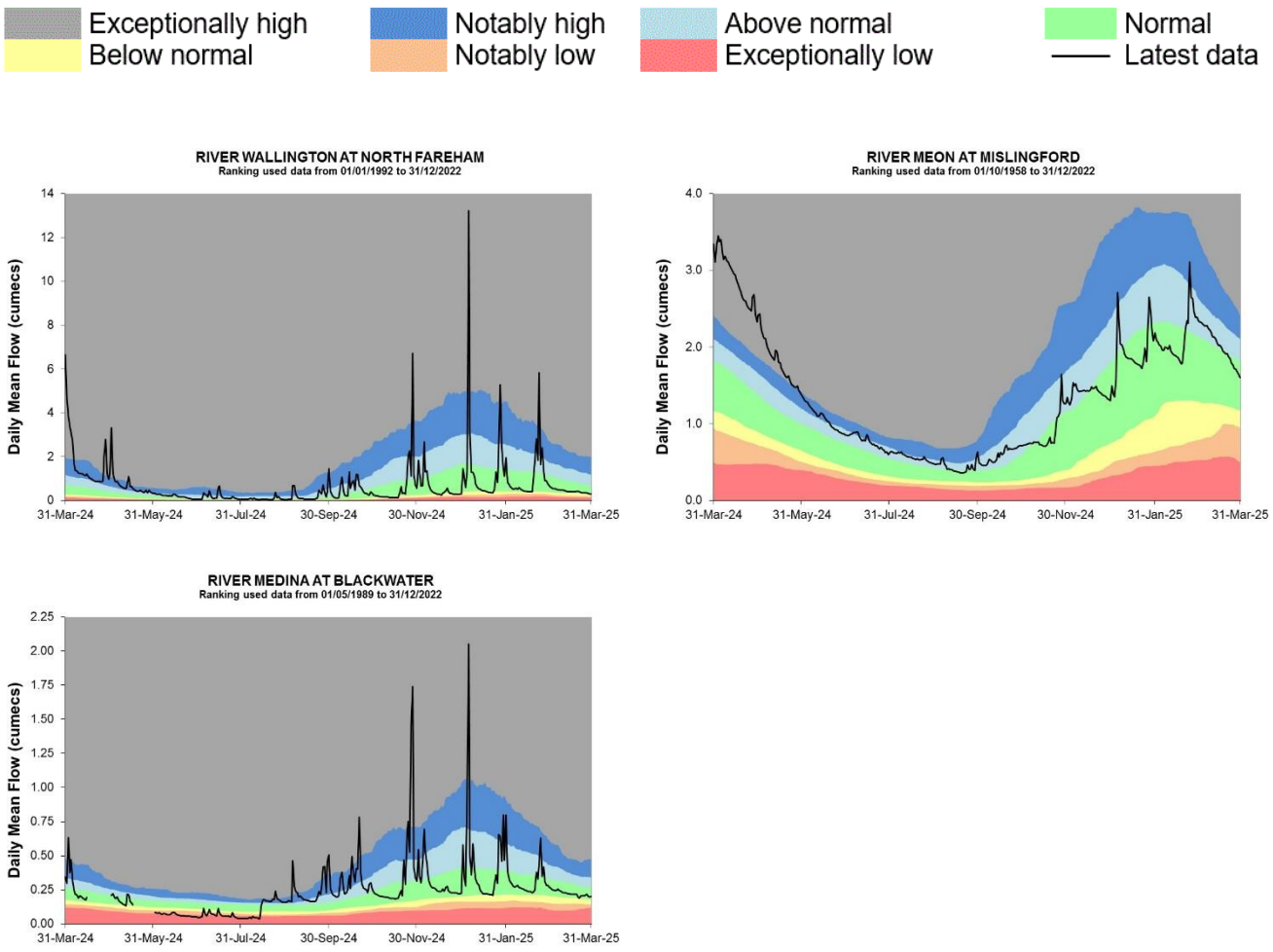
Figure 5.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1961 to 1990 long term average.



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

5.2 East Hampshire and Isle of Wight River flow charts

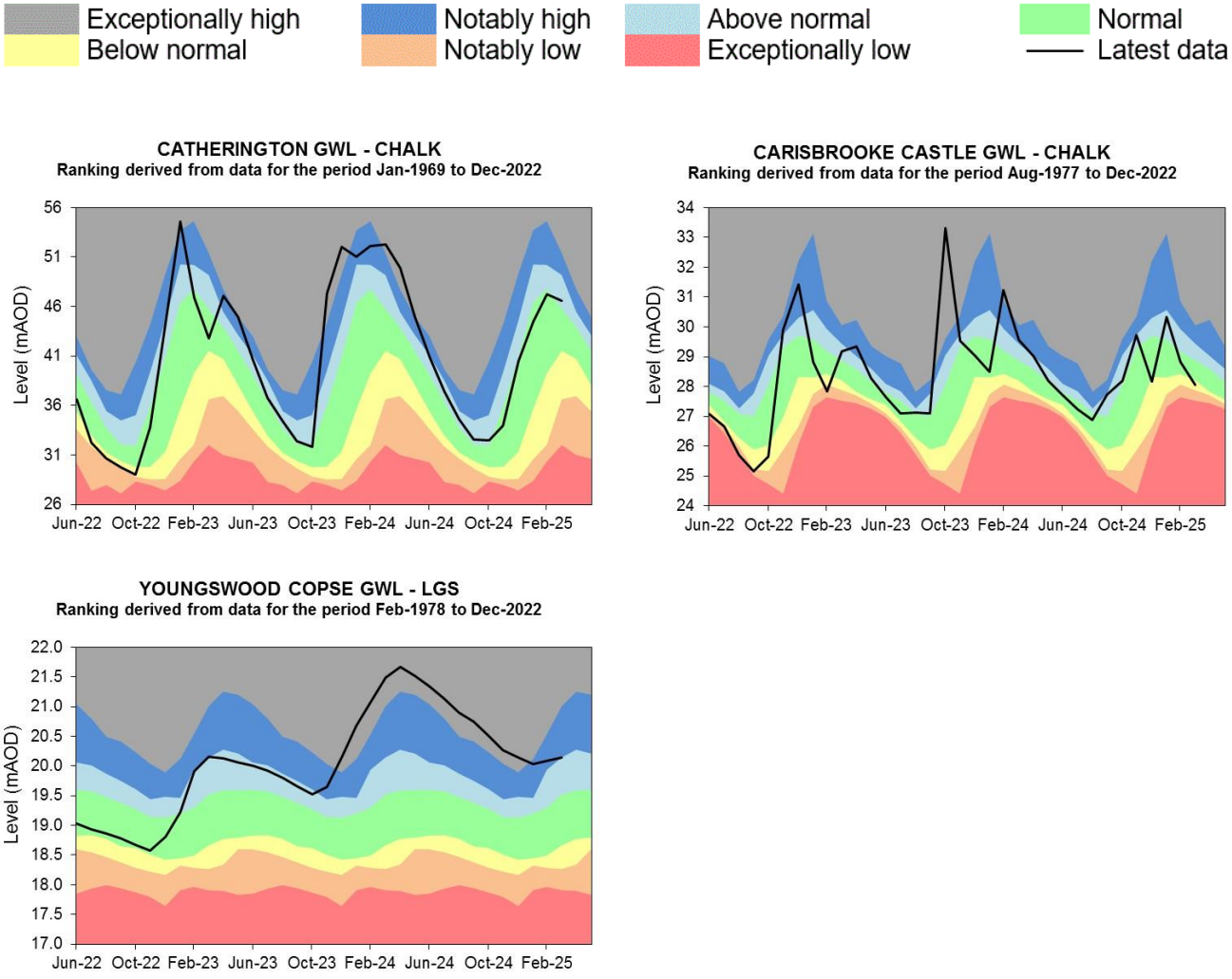
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

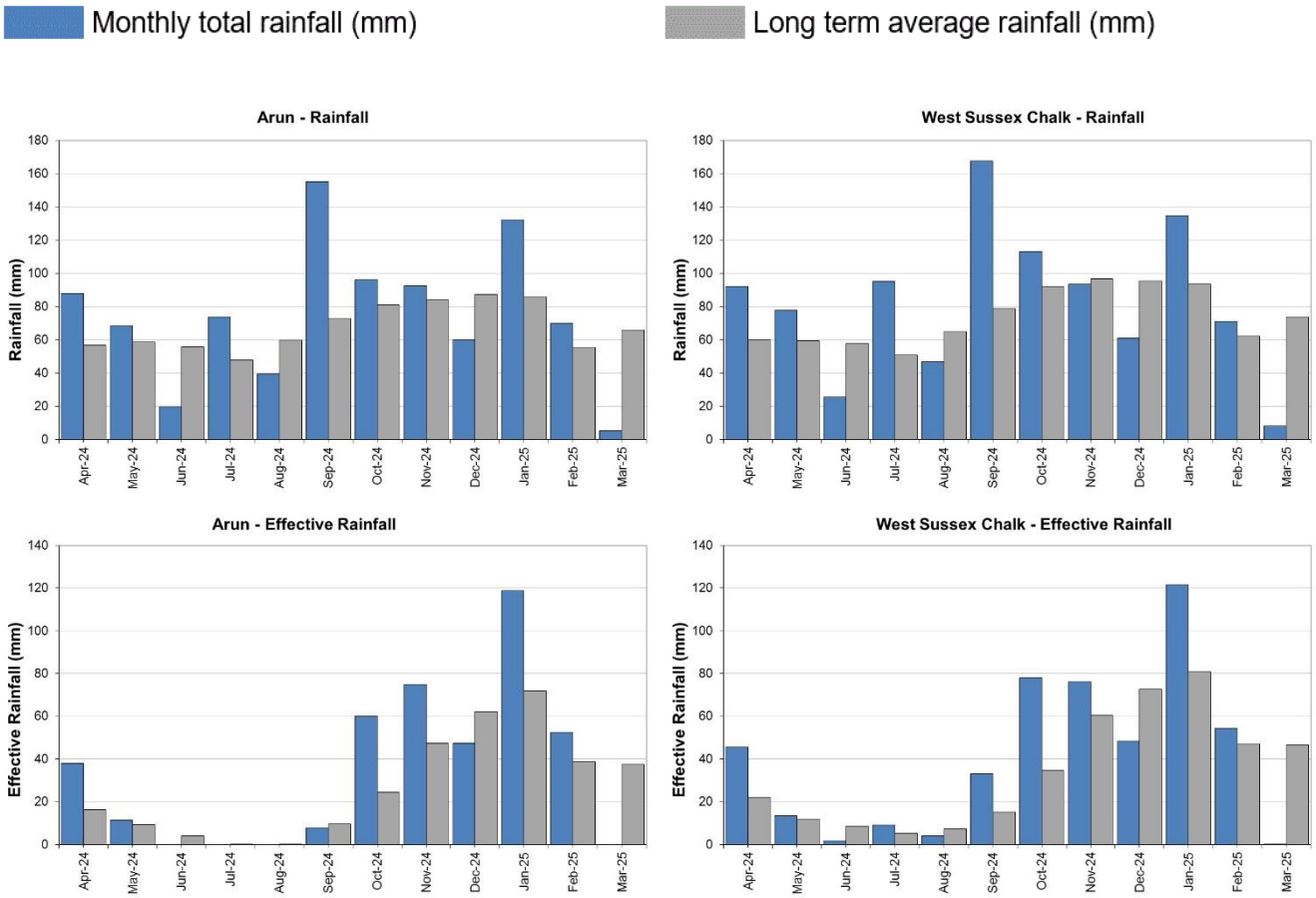


Source: Environment Agency, 2025.

6 West Sussex

6.1 West Sussex Rainfall and Effective Rainfall charts

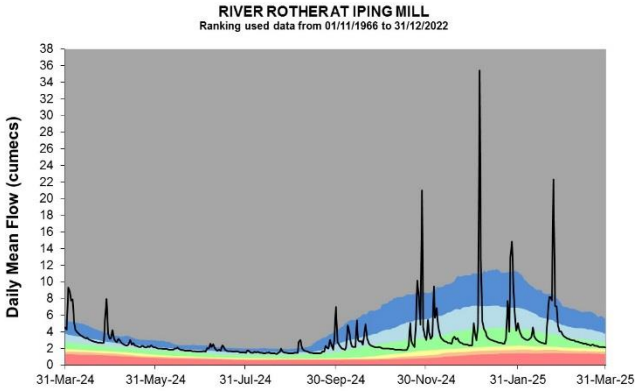
Figure 6.1: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1961 to 1990 long term average.

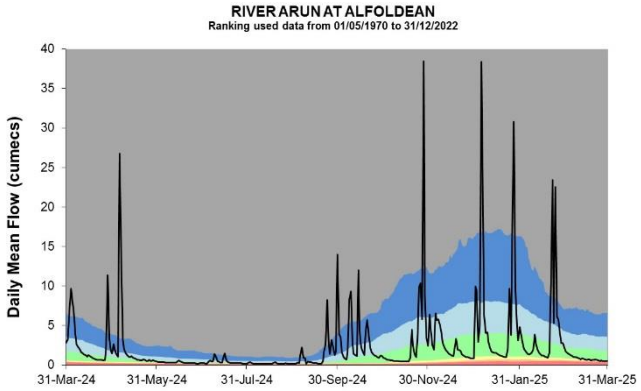


HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

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.

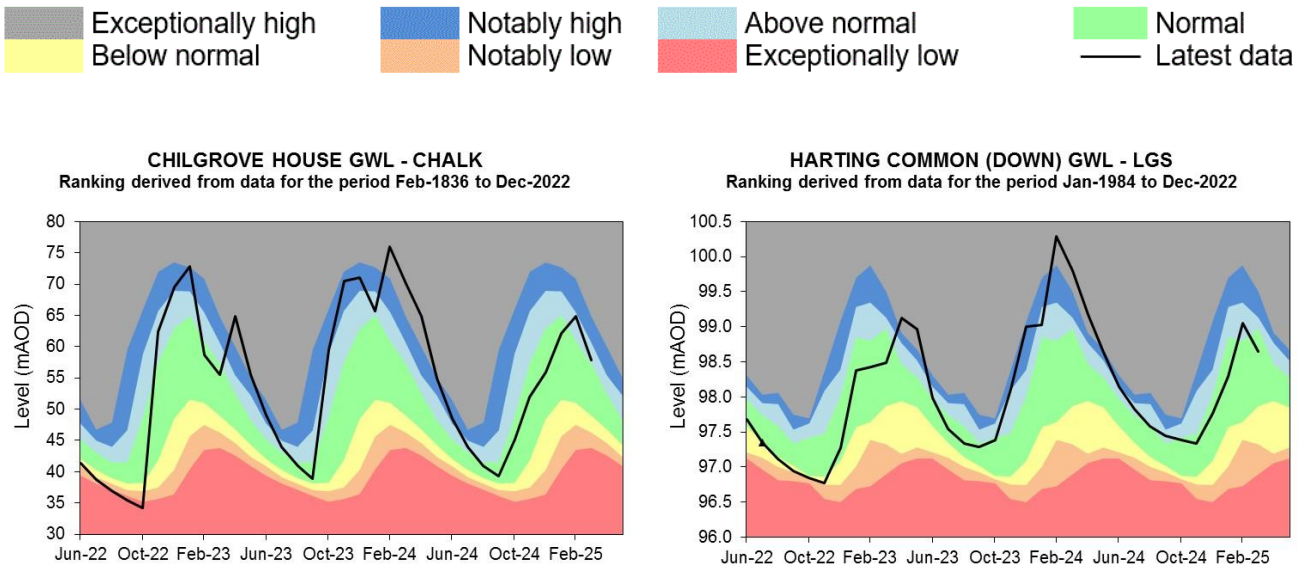




Source: Environment Agency, 2025.

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.

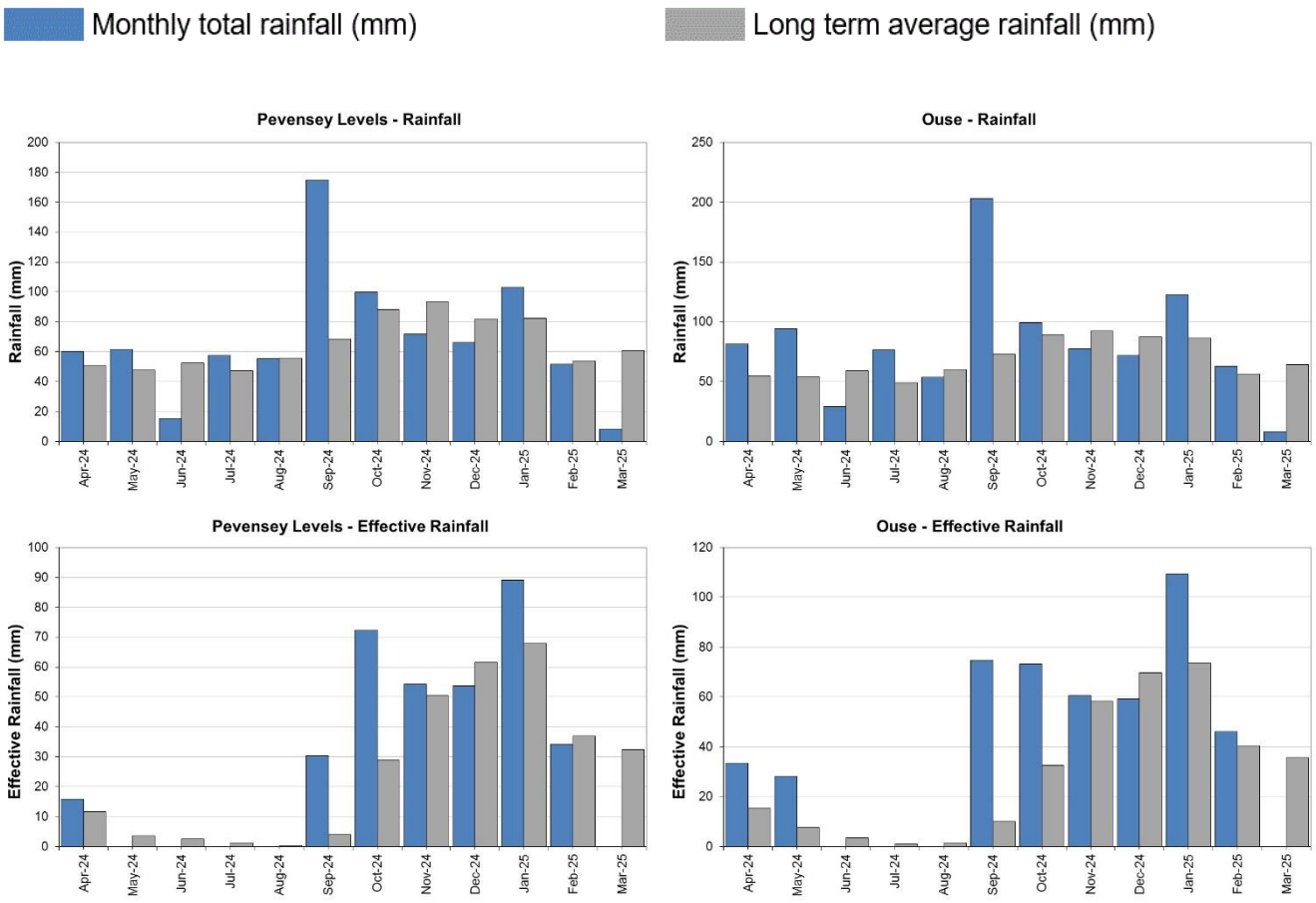


Source: Environment Agency, 2025.

7 East Sussex

7.1 East Sussex Rainfall and Effective Rainfall charts

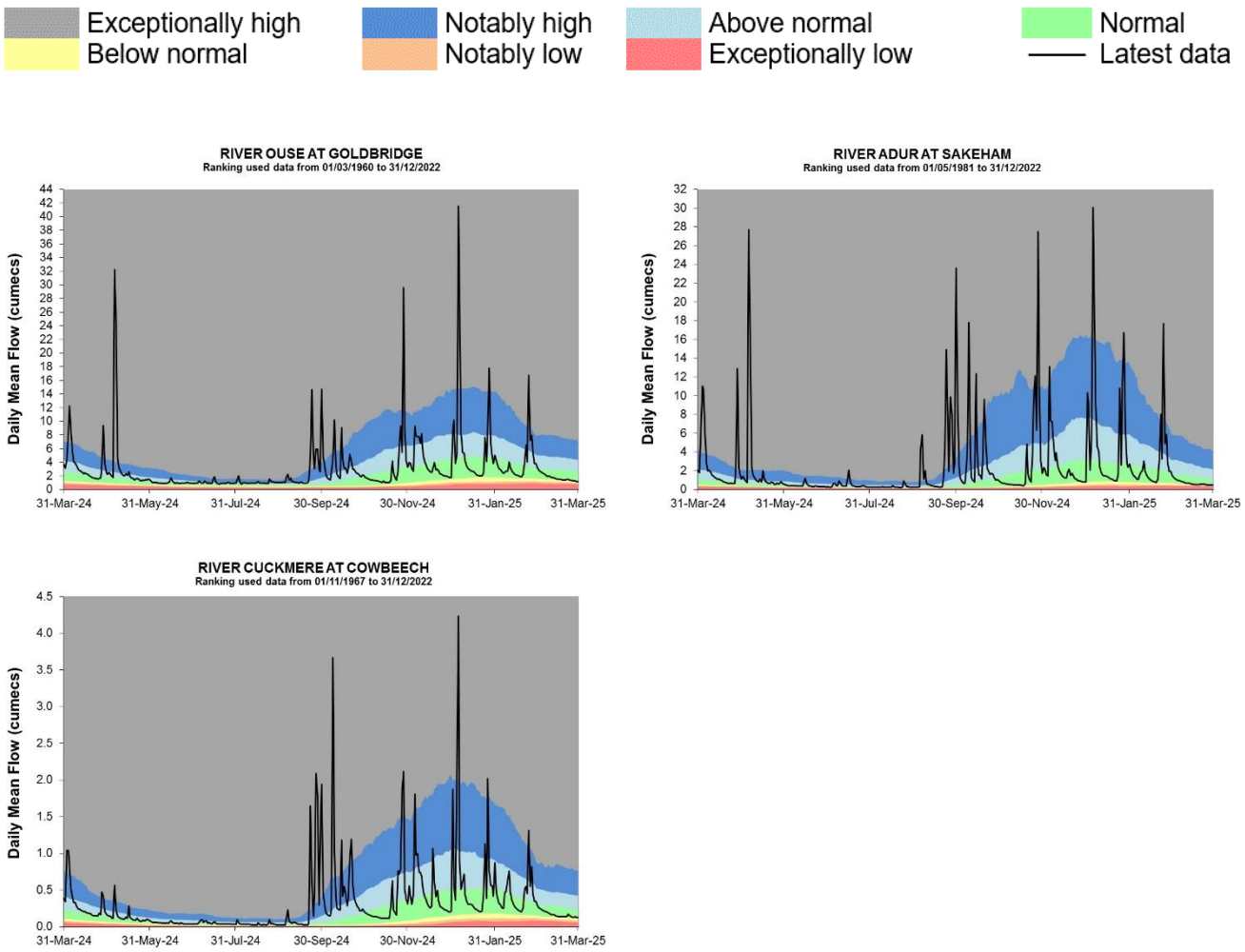
Figure 7.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1961 to 1990 long term average.



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

7.2 East Sussex River flow charts

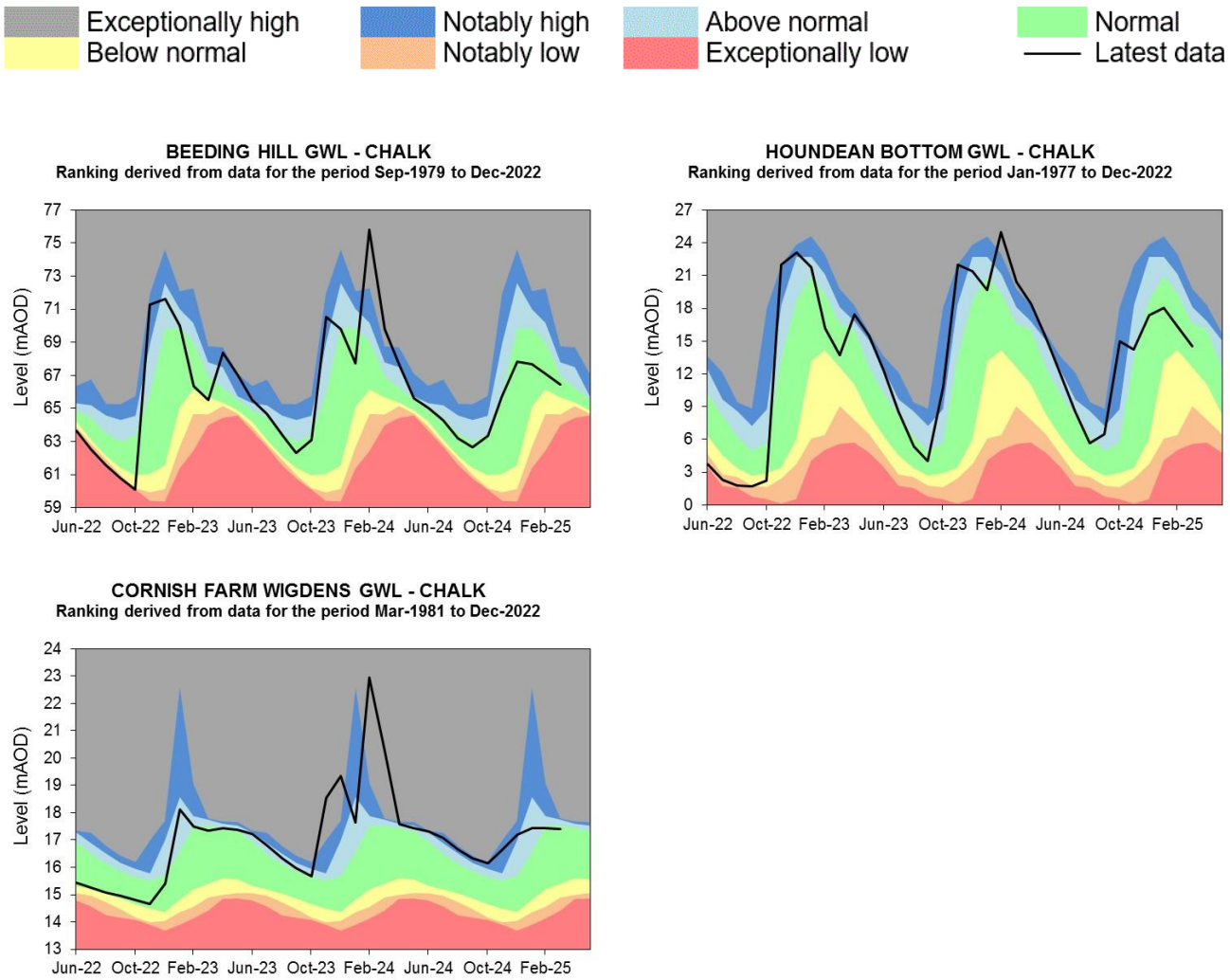
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

7.3 East Sussex Groundwater level charts

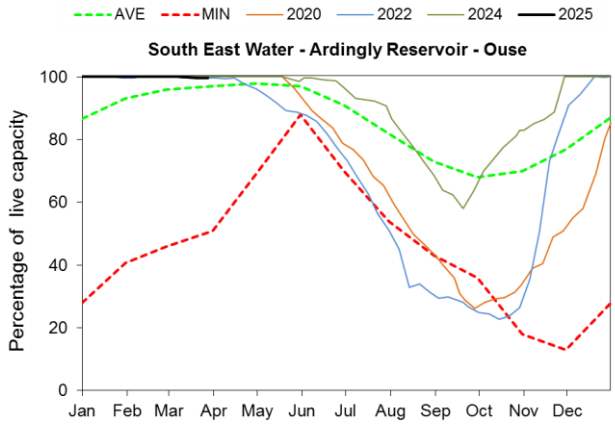
Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.

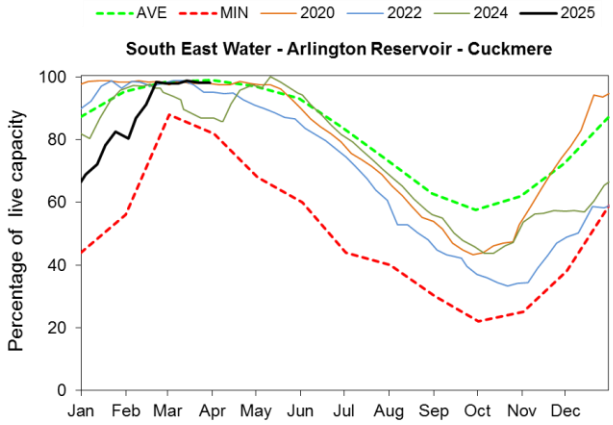


Source: Environment Agency, 2025.

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 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).

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) 31 day Total	Rainfall March as %LTA	Effective Rainfall (mm) 31 day Total	Effective Rainfall March as %LTA	Soil Moisture Deficit (SMD) Day 31	SMD End of March LTA
Test Chalk	8	11%	0	1%	30	7
East Hampshire Chalk	8	10%	0	1%	29	6
West Sussex Chalk	8	11%	0	0%	28	6
East Sussex Chalk	10	16%	1	1%	26	7
Isle of Wight	10	14%	0	1%	30	8
Western Rother Greensand	7	9%	0	0%	30	6
Hampshire Tertiaries	8	11%	0	0%	32	7
Lymington	9	13%	0	0%	29	7
Sussex Coast	6	10%	0	0%	33	8
Arun	5	7%	0	0%	31	6
Adur	6	10%	0	0%	29	6
Ouse	8	12%	0	0%	27	6
Cuckmere	9	14%	0	0%	26	6
Pevensey Levels	8	14%	0	0%	28	7
SSD Average	8	12%	0	0%	29	7

10.2 Seasonal summary table of rainfall and effective rainfall

Winter season: 01/10/2025 to 31/03/2025

Hydrological Area	Seasonal Rainfall (mm) Total	Seasonal Rainfall as % LTA	Seasonal Effective Rainfall (mm) Total	Seasonal Effective Rainfall as % LTA
Test Chalk	497	109%	400	150%
East Hampshire Chalk	521	104%	420	130%
West Sussex Chalk	481	94%	379	111%
East Sussex Chalk	440	90%	343	114%
Isle of Wight	457	95%	326	124%
Western Rother Greensand	520	99%	404	116%
Hampshire Tertiaries	461	100%	359	135%
Lymington	467	97%	367	126%
Sussex Coast	384	90%	239	109%
Arun	455	99%	354	125%
Adur	420	90%	327	111%
Ouse	441	93%	348	112%
Cuckmere	413	88%	320	103%
Pevensey Levels	400	87%	304	109%
SSD Average	454	95%	349	119%

10.3 Rainfall banding table

Hydrological area	March 2025 band	January 2025 to March 2025 cumulative band	October2024 to March 2025 cumulative band	April 2024 to March 2025 cumulative band
Test Chalk	Exceptionally low	Normal	Normal	Notably high
East Hampshire Chalk	Exceptionally low	Normal	Normal	Above normal
West Sussex Chalk	Exceptionally low	Normal	Normal	Above normal
East Sussex Chalk	Exceptionally low	Normal	Normal	Above normal
Isle of Wight	Exceptionally low	Normal	Normal	Above normal
Western Rother Greensand	Exceptionally low	Normal	Normal	Above normal
Hampshire Tertiaries	Exceptionally low	Normal	Normal	Above normal
Lymington	Exceptionally low	Normal	Normal	Above normal
Sussex Coast	Exceptionally low	Normal	Normal	Normal
Arun	Exceptionally low	Normal	Normal	Above normal
Adur	Exceptionally low	Normal	Normal	Normal
Ouse	Exceptionally low	Normal	Normal	Above normal
Cuckmere	Exceptionally low	Normal	Normal	Above normal
Pevensey Levels	Exceptionally low	Normal	Normal	Normal

10.4 River flows table

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

10.5 Groundwater table

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

10.6 Abstraction licence flow constraints

Number of flow constraints in force between 1 to 25 March 2025	Number of flow constraints in force between 26 to 31 March 2025
1	3

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	84.8	57.9	68.7	51.7	59.0	57.3	47.9	62.5	67.9	75.4	79.9	89.1
East Hampshire Chalk	93.8	62.5	73.9	56.2	61.9	58.7	51.7	64.6	77.0	86.2	90.5	94.8
West Sussex Chalk	93.5	62.5	73.9	60.2	59.5	57.6	50.7	64.8	78.5	92.0	97.0	95.5
East Sussex Chalk	87.1	56.9	65.1	53.5	51.5	57.4	48.9	60.3	72.7	92.9	97.9	88.7
Isle of Wight	88.2	60.4	67.0	52.3	53.2	50.2	44.1	57.4	70.2	84.3	91.2	88.1
Western Rother Greensand	99.5	64.5	75.5	60.6	62.6	57.3	50.4	65.6	78.8	90.8	94.7	99.7
Hampshire Tertiaries	86.1	59.2	67.0	50.4	56.8	52.8	44.5	58.7	69.6	78.8	83.4	88.7
Lymington	88.5	61.2	68.5	51.5	57.9	54.3	43.4	59.3	71.0	83.0	86.8	91.8
Sussex Coast	76.6	51.3	60.7	50.2	50.2	47.7	41.9	53.0	63.7	77.2	80.8	78.9
Arun	85.5	55.1	65.5	56.5	58.5	55.6	47.2	59.4	72.4	80.5	83.9	86.9
Adur	84.8	55.1	63.8	55.3	56.2	55.6	46.0	59.6	71.5	85.7	88.8	86.0
Ouse	86.6	56.4	64.0	54.4	54.0	58.6	48.7	60.0	72.5	89.1	92.9	87.6
Cuckmere	84.8	55.2	61.8	51.2	50.1	57.5	48.5	59.8	71.5	90.8	93.7	85.0
Pevensey Levels	82.2	54.0	60.9	50.6	47.5	52.2	47.3	55.6	68.5	88.1	93.6	82.0
SSD Average	**87.3**	**58.0**	**66.9**	**53.9**	**55.6**	**55.2**	**47.2**	**60.0**	**71.8**	**85.3**	**89.6**	**88.8**