

Monthly water situation report: Solent and South Downs Area

Summary - May 2025

Solent and South Downs (SSD) had below average rainfall in May, receiving 47% (24.4mm) of the long term average (LTA of 52mm). Monthly mean river flows across SSD ranged from exceptionally low to normal. The end of month groundwater levels ranged from exceptionally low to notably high. Soils across SSD ended the month much drier than the average for May. End of month reservoir stocks were below average at Ardingly Reservoir (Ouse) and at Arlington Reservoir (Cuckmere).

1.1 Rainfall

SSD had below average rainfall in May, receiving 47% (24.4mm) of LTA (52mm). Rainfall distribution was similar to April with higher totals in the east when compared to the west of the area. The East Sussex Chalk areal unit received the most rainfall during May with 63% (32.1mm) of LTA (51.2mm). The lowest monthly rainfall totals were recorded in the Lymington and Hampshire Tertiaries areal units with 18mm which represents 36% of LTA.

The highest daily totals were recorded on 11 May with 14.9mm at Ardingly (Ouse) and on 21 May with 14.3mm at Warnford (East Hampshire Chalk).

There were only five days with widespread rain, 11, 13, 21, 23 and 27 May. The rest of May was mostly dry.

The last 3 months has been the fourth driest March–May period on record for SSD. Only the March-May periods for 1893, 2011 and 1976 were drier. It was the second driest March-May period on record for the East Hampshire Chalk, Hampshire Tertiaries and the Test Chalk areal units. Only the March-May period for 1893 received less rainfall.

For longer time periods the running totals remains high. For the 24-month period (starting June 2023) it was the sixth highest total for SSD. For the 36-month period (starting June 2022) it was the 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 May.

1.3 River flows

Monthly mean river flows for May ranged from exceptionally low to normal across SSD.

Flows were exceptionally low on the:

- River Lymington at Brockenhurst
- River Arun at Alfoldean

Flows were notably low on the:

- River Wallington at North Fareham

Flows were below normal on the:

- River Meon at Mislingford
- River Rother at Iping Mill
- River Adur at Sakeham
- River Ouse at Goldbridge
- River Cuckmere at Cowbeech

Flows were normal on the:

- River Medina at Blackwater
- River Itchen at Allbrook and Highbridge
- River Test at Broadlands
- River Test at Chilbolton

The exceptionally low monthly mean flows for the River Arun at Alfoldean were the fifth lowest on record for May in a record going back to 1970.

1.4 Groundwater levels

End of month groundwater levels for May ranged from exceptionally low to notably high across SSD.

Groundwater levels were exceptionally low at:

- Carisbrooke Castle (Isle of Wight)

Groundwater levels were notably low at:

- Beeding Hill (West Sussex Chalk)

Groundwater levels were below normal at:

- Houndean Bottom (East Sussex Chalk)

Groundwater levels were normal at:

- Lopcombe Corner (Test Chalk)
- Clanville Gate (Test Chalk)
- West Meon (East Hampshire Chalk)
- Catherington (East Hampshire Chalk)
- Harting Common (Western Rother Greensand)

- Chilgrove (West Sussex Chalk)
- Cornish Farm (East Sussex Chalk)

Groundwater levels were notably high at:

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

The notably high groundwater level at Preston Candover (East Hampshire Chalk) was the fifth highest on record for May since 1975. In contrast, the exceptionally low groundwater level at Carisbrooke Castle (Isle of Wight) was the fourth lowest for May in a record going back to 1977.

1.5 Reservoir stocks

End of month reservoir stocks were below average at Ardingly Reservoir (Ouse) and at Arlington Reservoir (Cuckmere).

Ardingly Reservoir (Ouse) was at 89% of total capacity (LTA 97%) and Arlington Reservoir (Cuckmere) was at 85.1% of total capacity (LTA 93.2%).

1.6 Environmental impact

Abstraction licence restrictions:

At the start of May there were two licence restrictions in force. The reduced abstraction rate restriction on the River Meon (East Hampshire) and a cessation on the Loxwood Stream (Arun and Western Streams). By the end of May there was an additional licence restriction in the Arun and Western Streams on the Pagham Rife. There were also three cessations on the Walkford Brook (New Forest).

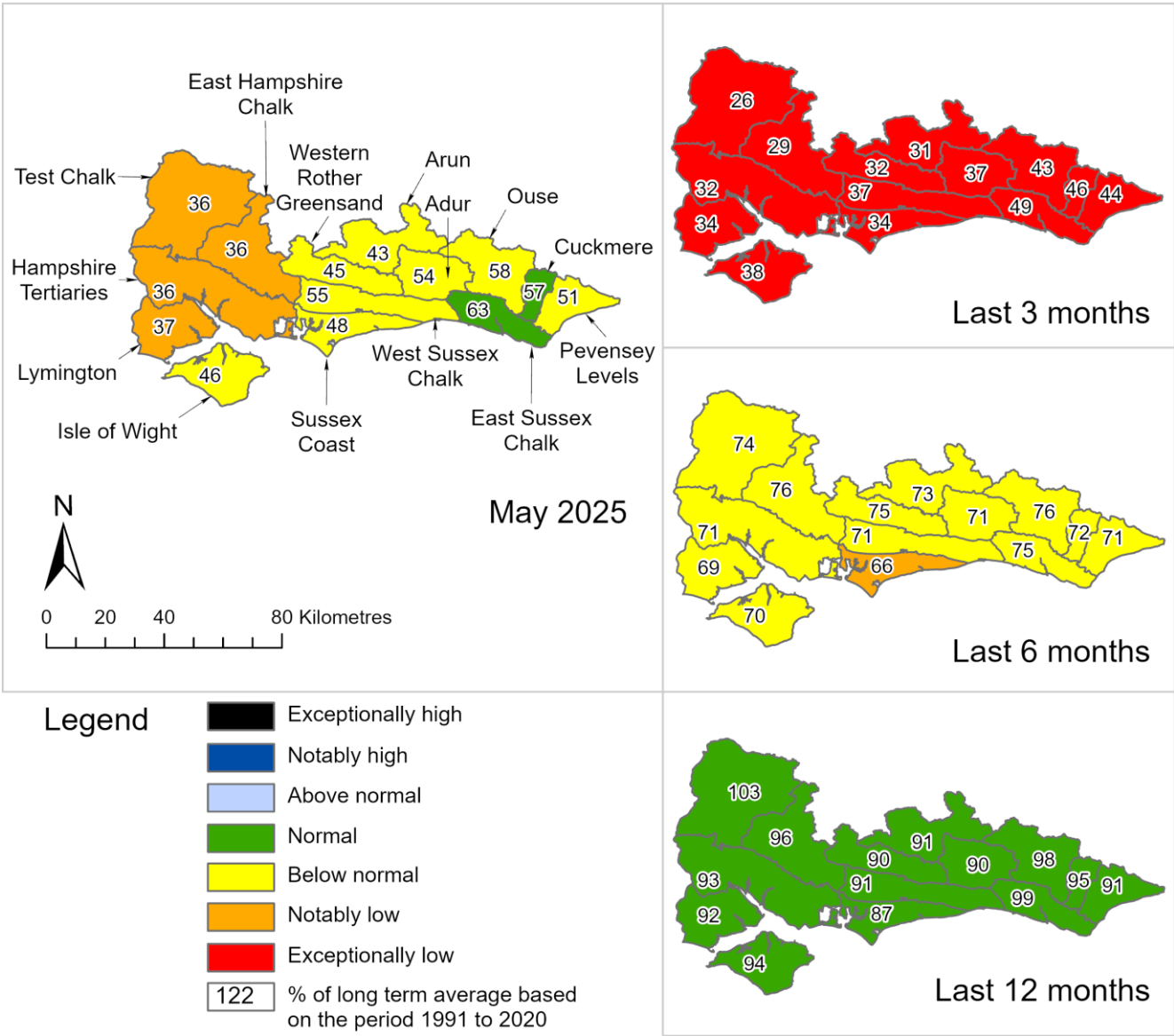
Author: HydrologySSD@Environment-agency.gov.uk

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2. Rainfall

2.1 Rainfall map

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

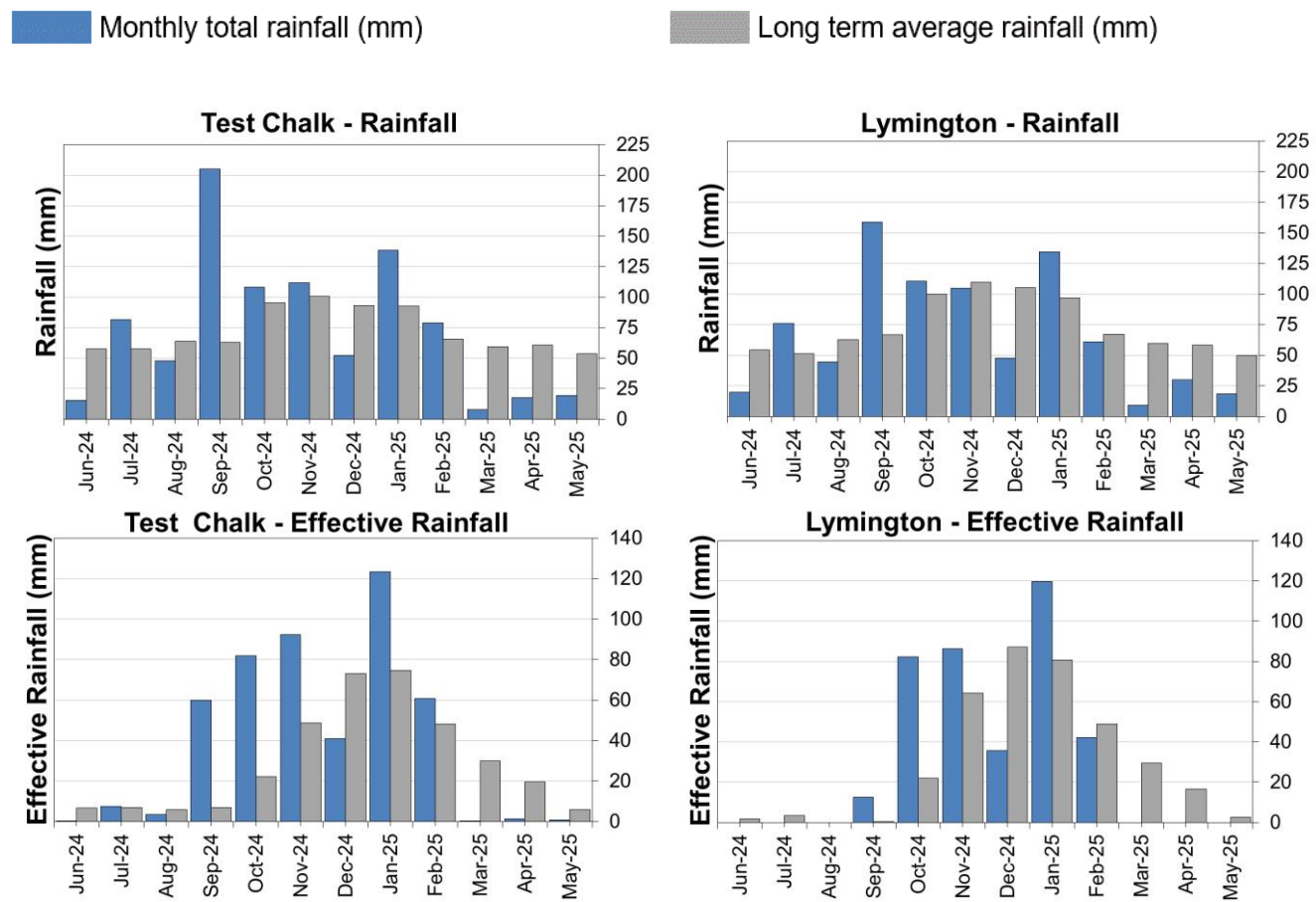


Rainfall data for October 2023 onwards, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2025). Rainfall data prior to October 2023, extracted from Met Office HadUK 1km gridded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

4 West Hampshire

4.1 West Hampshire Rainfall and effective rainfall charts

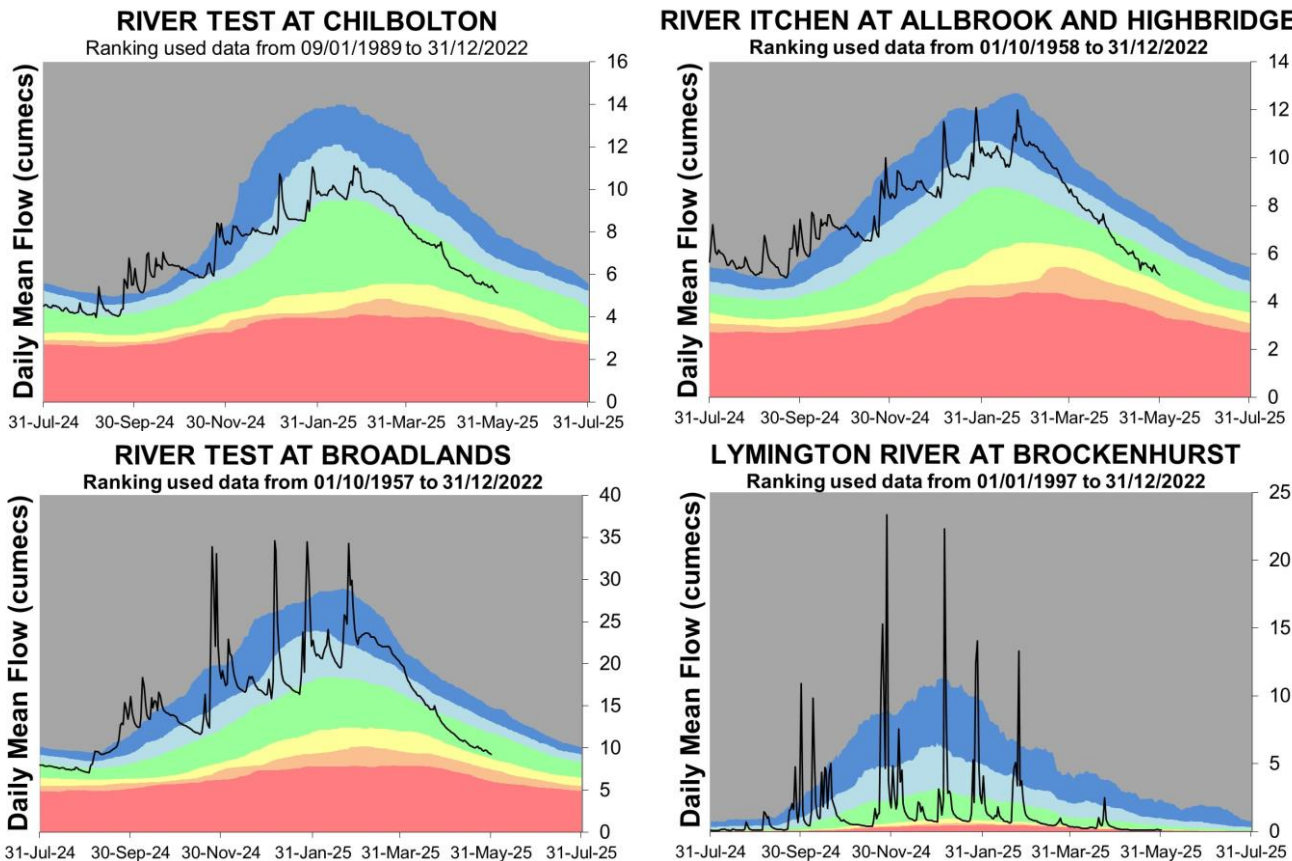
Figure 4.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

4.2 West Hampshire River flow charts

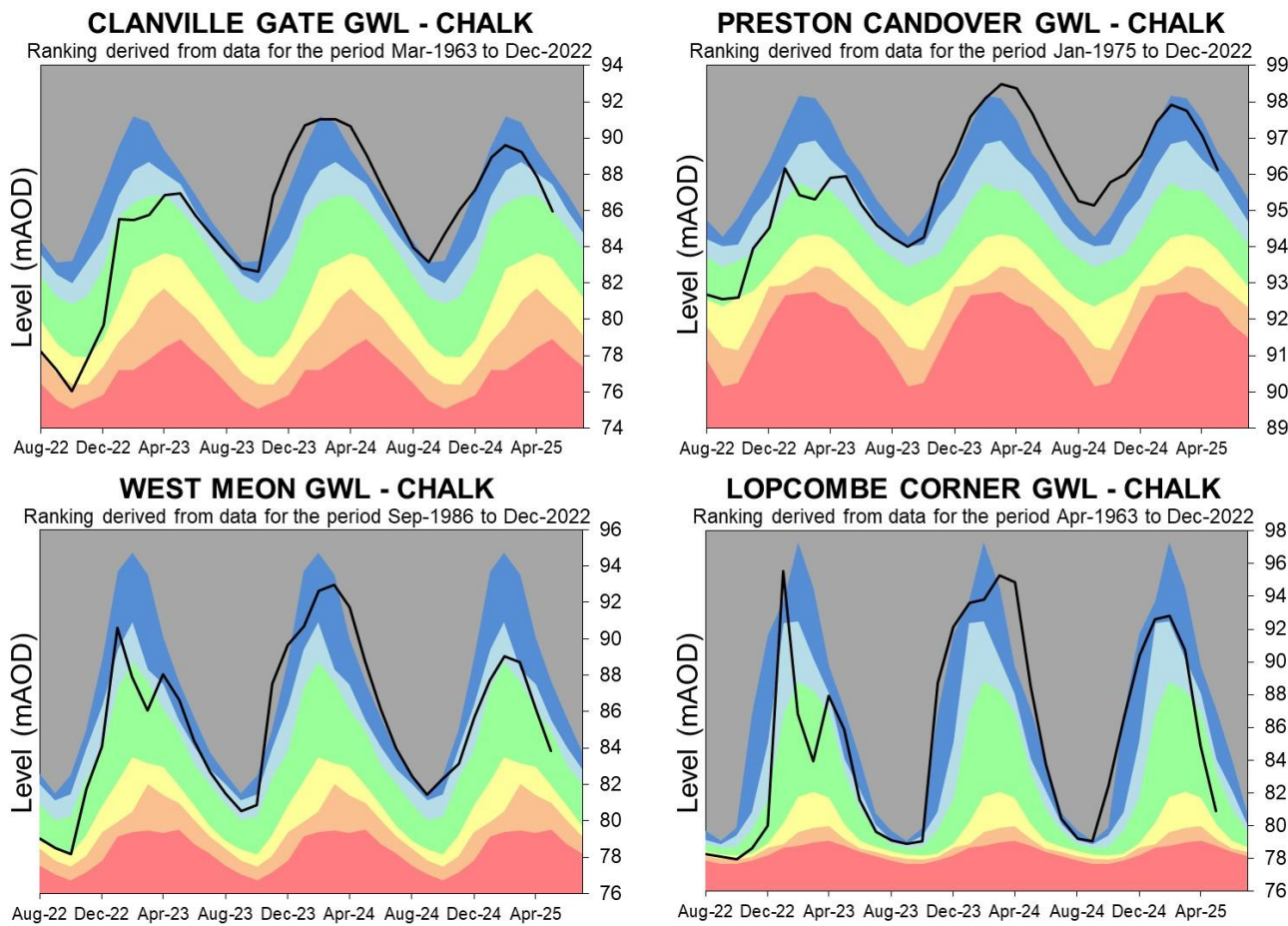
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

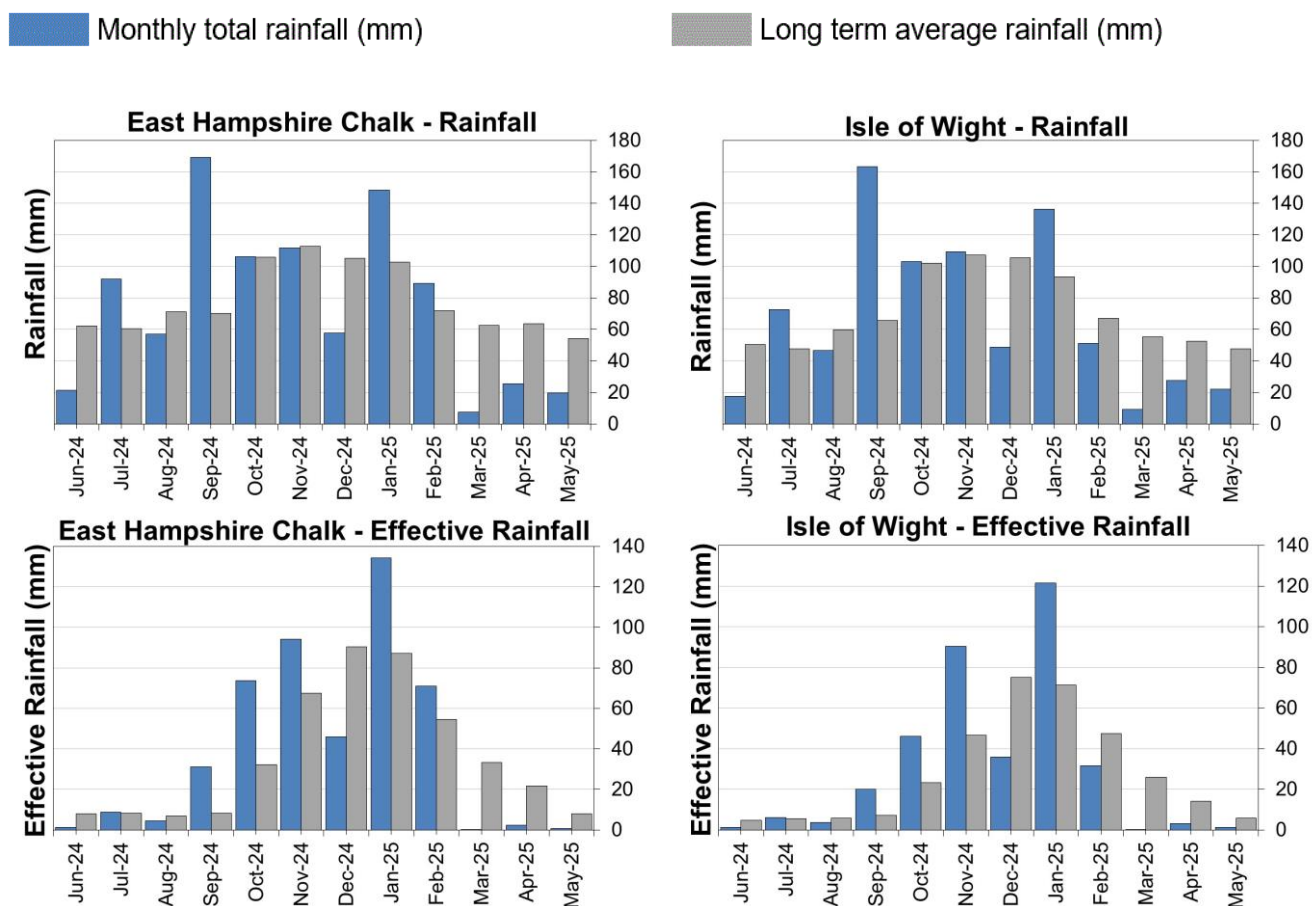


Source: Environment Agency, 2025.

5 East Hampshire and Isle of Wight

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

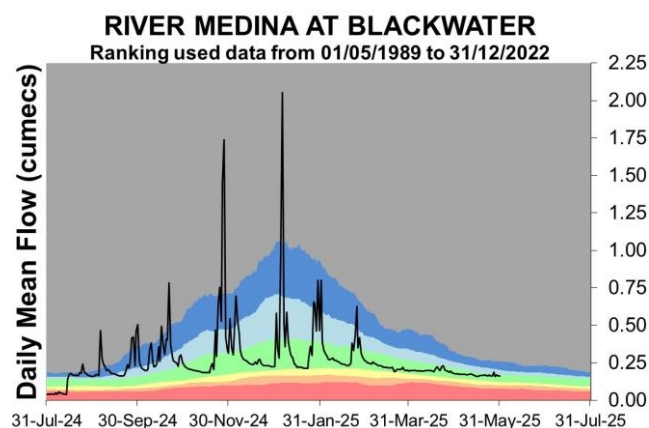
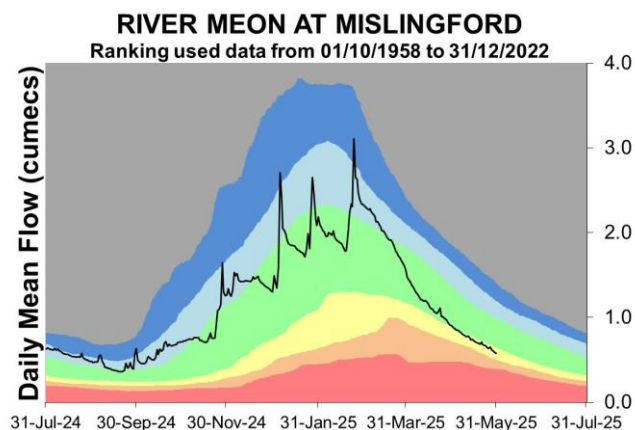
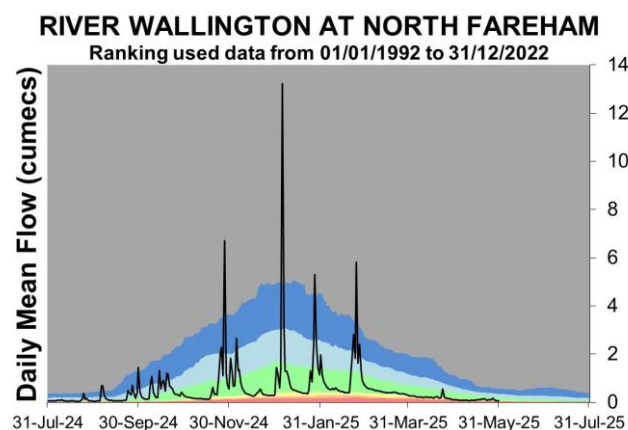
Figure 5.1: Monthly rainfall and effective rainfall totals for the past 12 months compared to the 1991 to 2020 long term average.



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

5.2 East Hampshire and Isle of Wight River flow charts

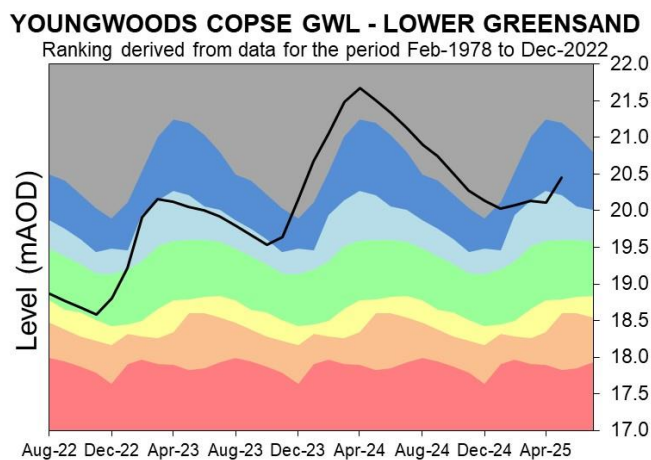
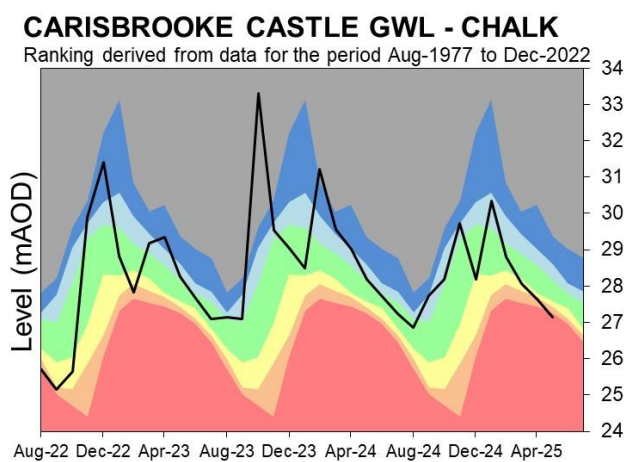
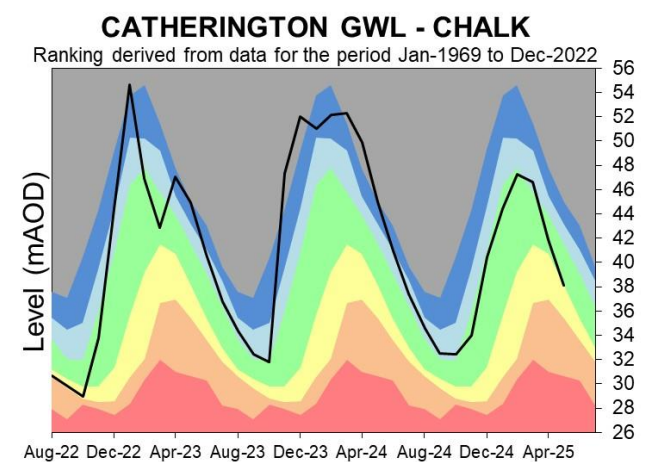
Figure 5.2 Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

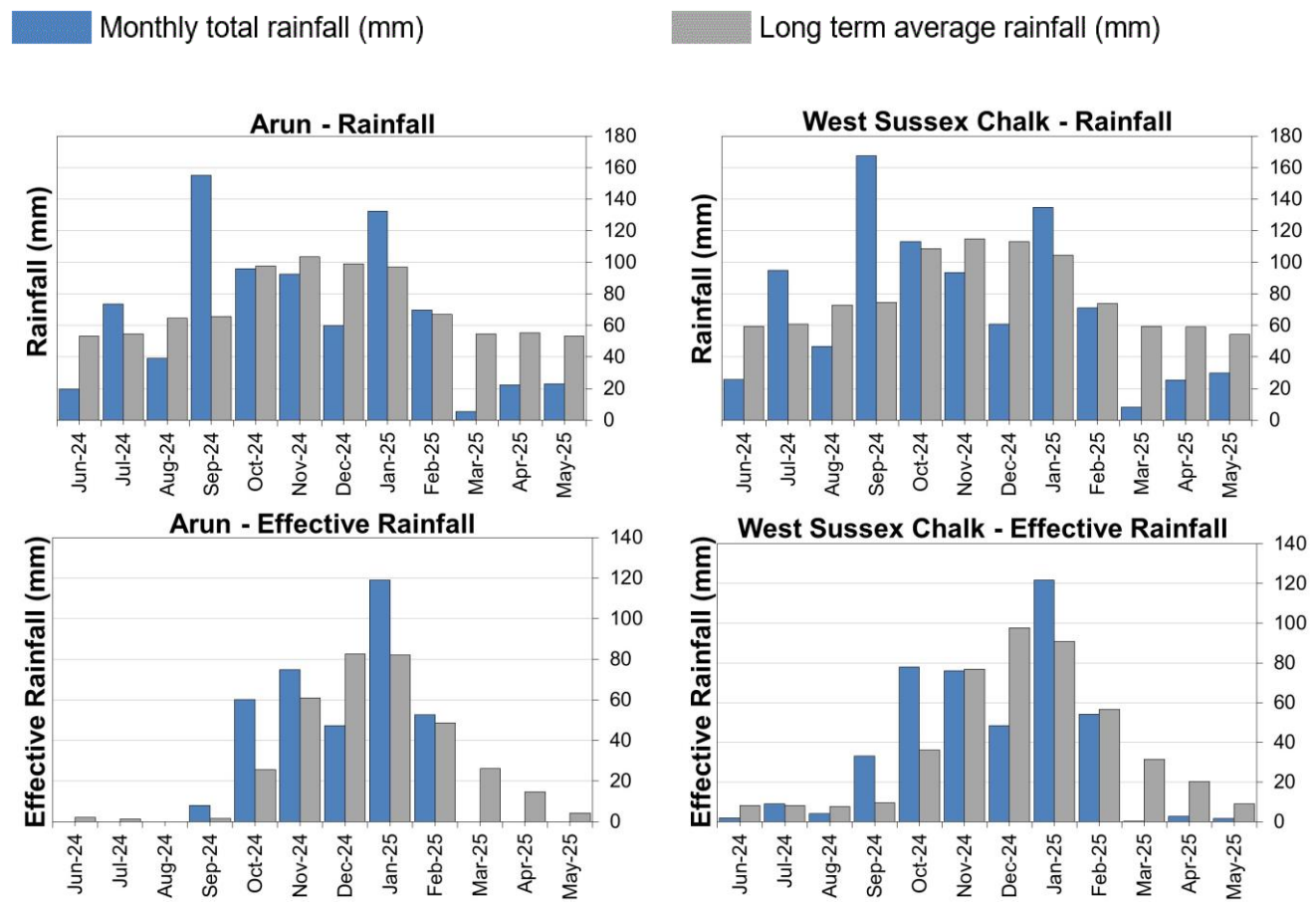


Source: Environment Agency, 2025.

6 West Sussex

6.1 West Sussex Rainfall and Effective Rainfall charts

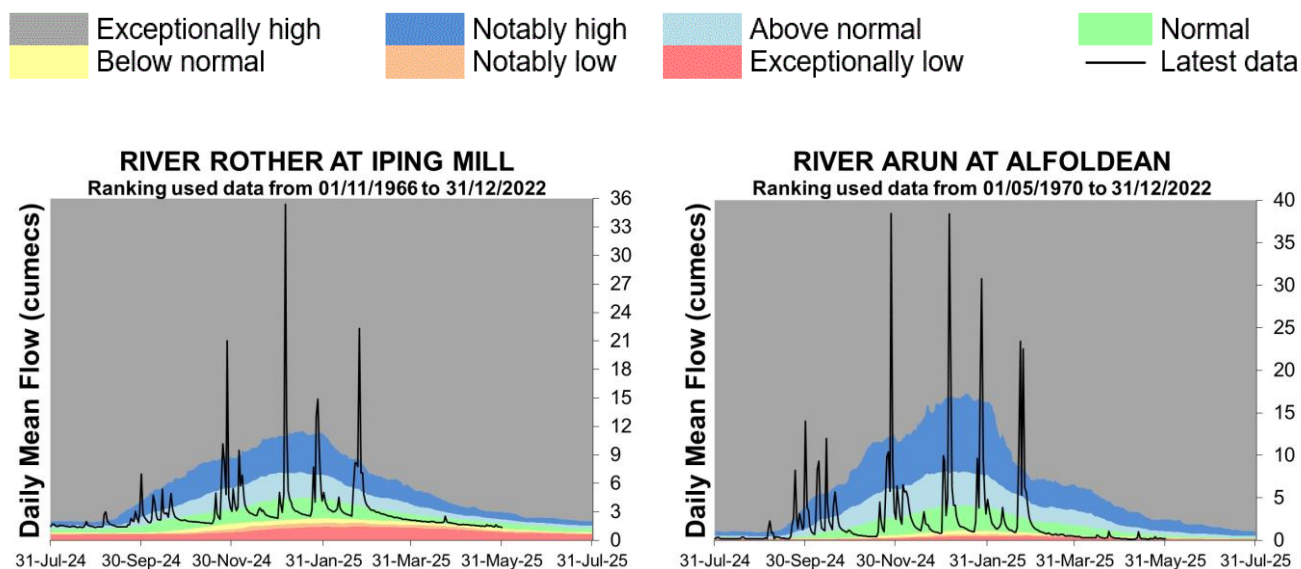
Figure 6.1: Monthly rainfall and effective rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average.



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

6.2 West Sussex River flow charts

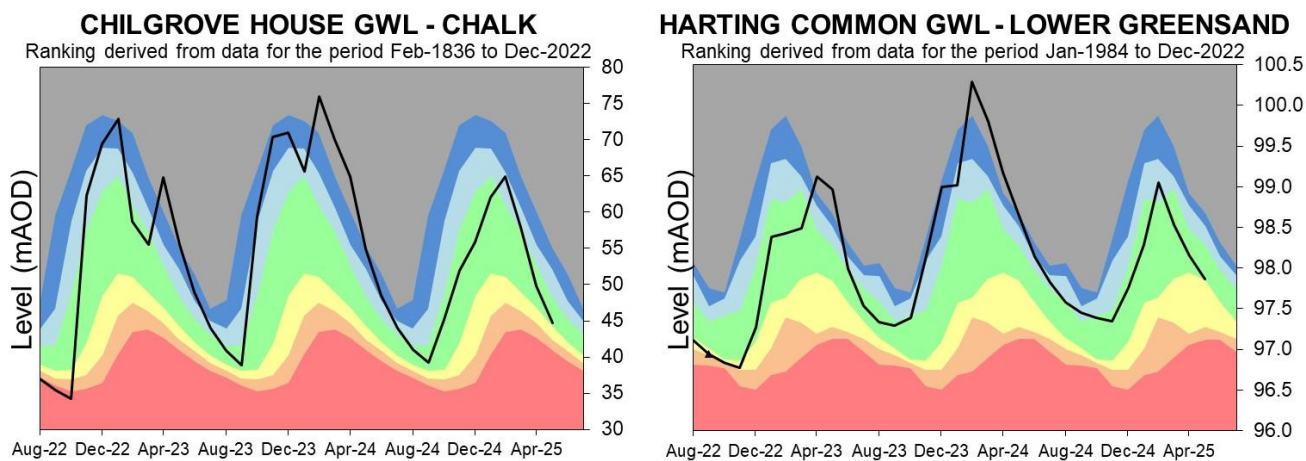
Figure 6.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



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.

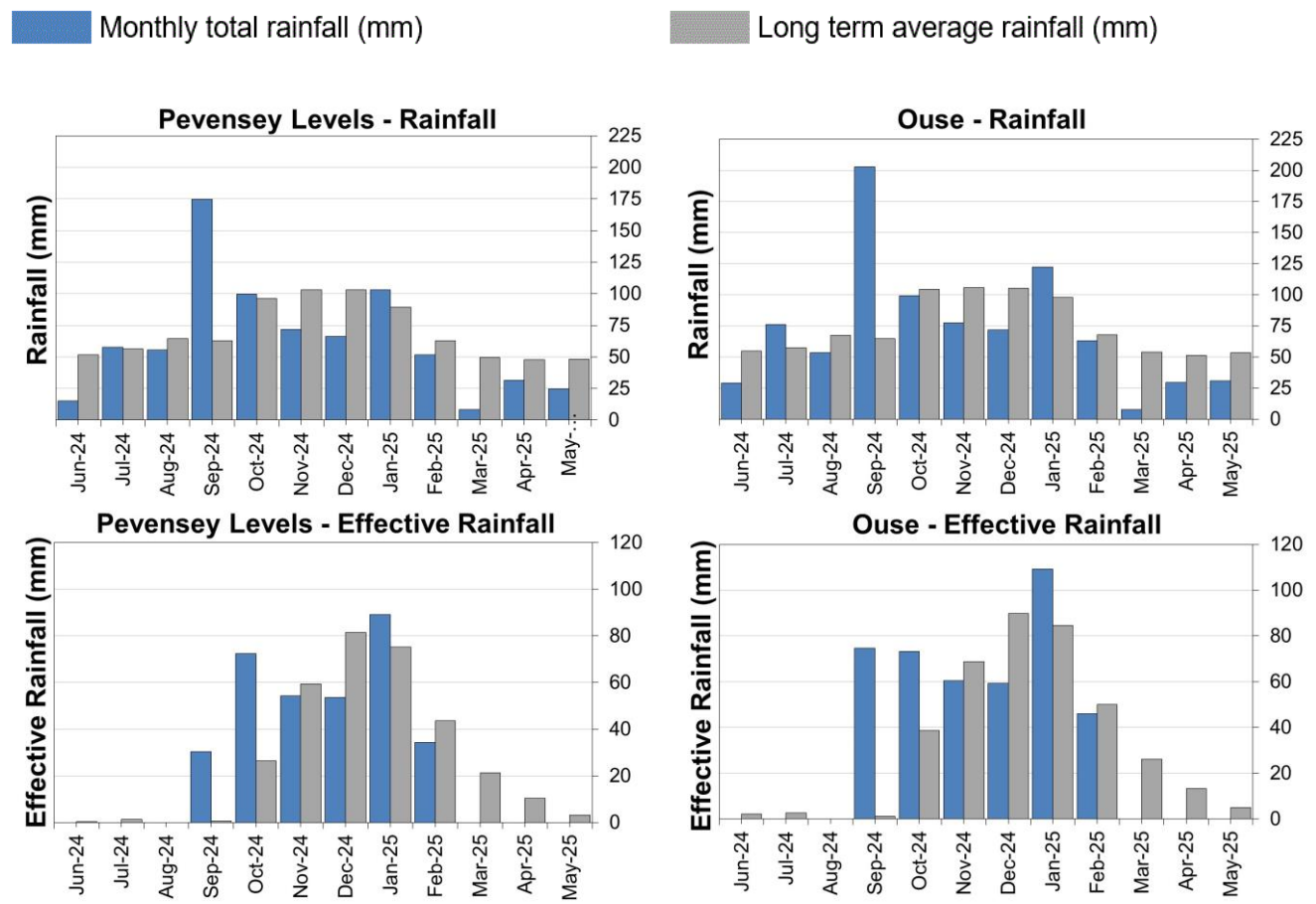


Source: Environment Agency, 2025.

7 East Sussex

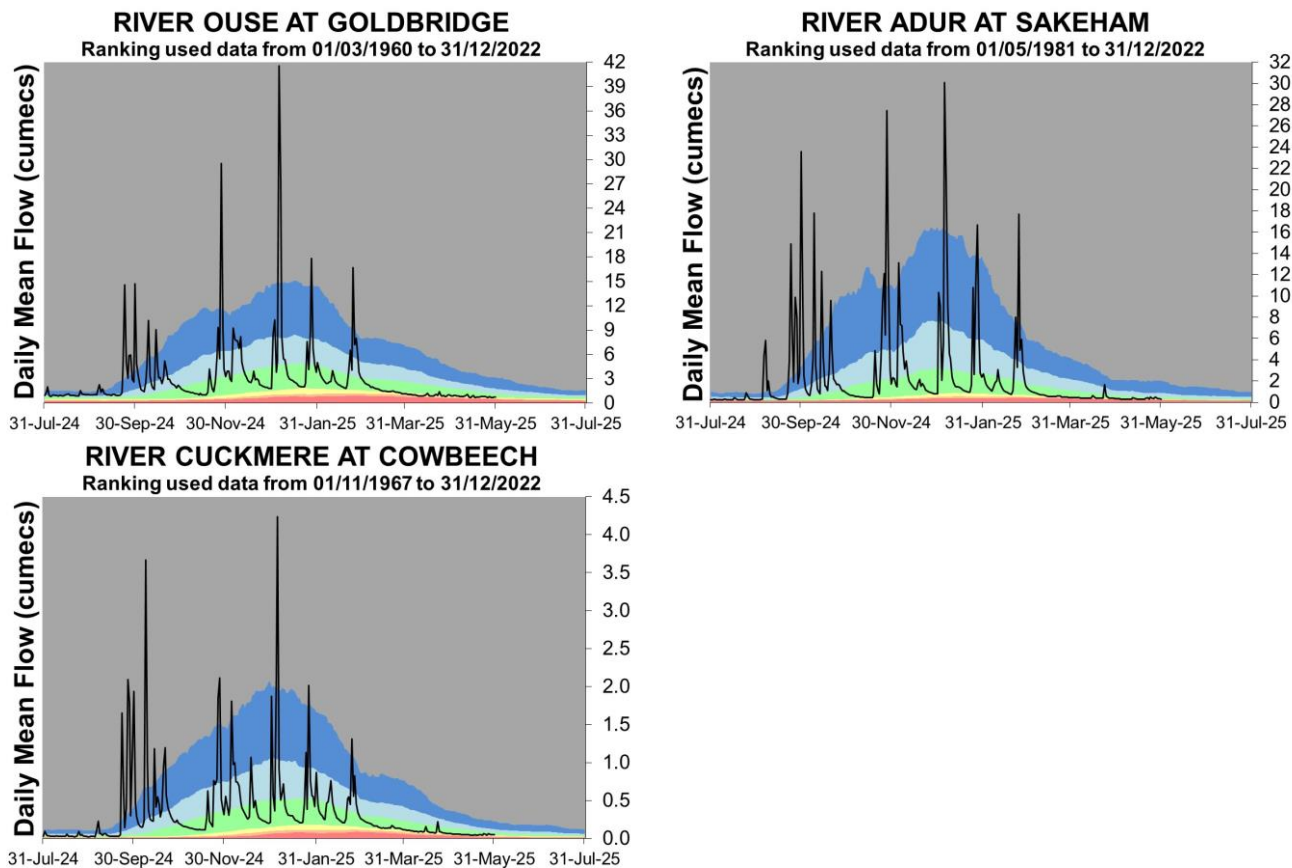
7.1 East Sussex Rainfall and Effective Rainfall charts

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



7.2 East Sussex River flow charts

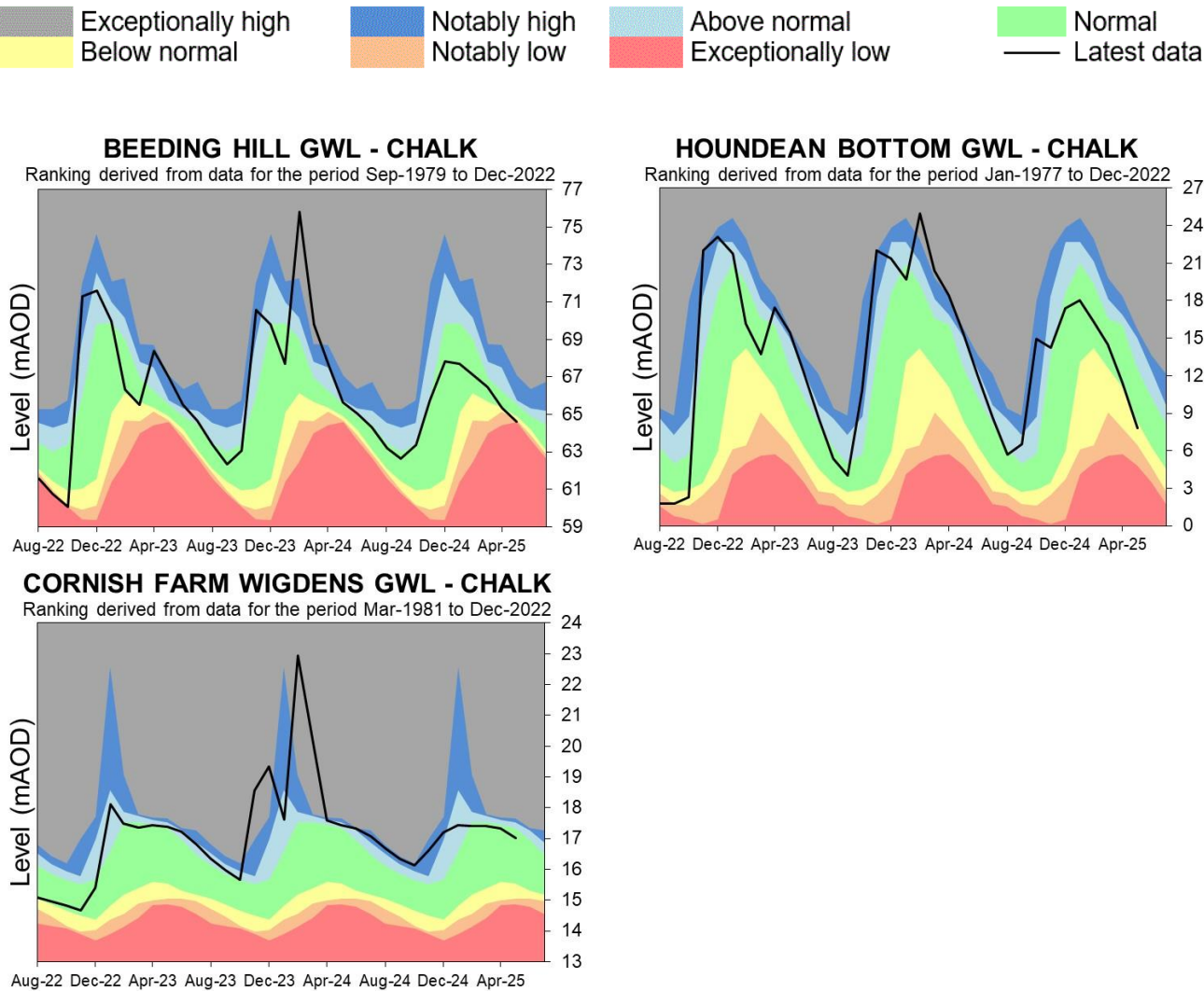
Figure 7.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



Source: Environment Agency, 2025.

7.3 East Sussex Groundwater level charts

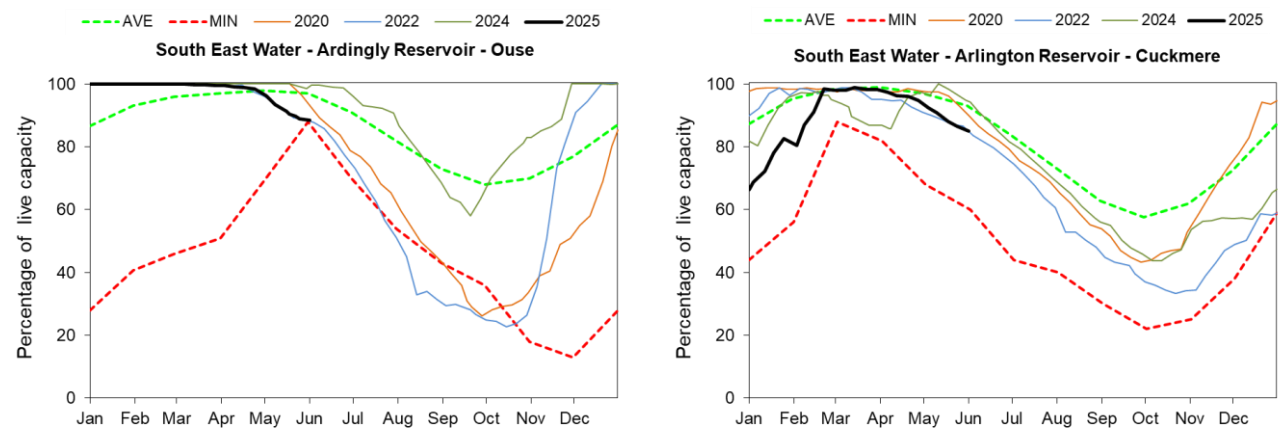
Figure 7.3: End of month groundwater levels at index groundwater level sites for major aquifers. 34 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



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

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

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 May as %LTA	Effective Rainfall (mm) 31 day Total	Effective Rainfall May as %LTA	Soil Moisture Deficit (SMD) Day 31	SMD End of May LTA
Test Chalk	19	36%	1	12%	99	50
East Hampshire Chalk	20	36%	1	10%	96	50
West Sussex Chalk	30	55%	2	20%	92	49
East Sussex Chalk	32	63%	2	25%	90	53
Isle of Wight	22	46%	1	20%	97	55
Western Rother Greensand	26	45%	1	13%	94	49
Hampshire Tertiaries	18	36%	0	0%	98	52
Lymington	18	36%	0	0%	95	50
Sussex Coast	22	48%	0	0%	99	56
Arun	23	43%	0	0%	95	49
Adur	29	53%	0	0%	92	48
Ouse	31	57%	0	0%	88	48
Cuckmere	28	57%	0	0%	87	50
Pevensey Levels	24	51%	0	0%	91	53
SSD Average	24	47%	1	10%	94	51

10.2 Seasonal summary table of rainfall and effective rainfall

Summer season: 01/04/2025 to 31/05/2025

Hydrological Area	Seasonal Rainfall (mm) Total	Seasonal Rainfall as % LTA	Seasonal Effective Rainfall (mm) Total	Seasonal Effective Rainfall as % LTA
Test Chalk	37	32%	2	7%
East Hampshire Chalk	45	38%	3	10%
West Sussex Chalk	55	49%	4	15%
East Sussex Chalk	65	65%	6	26%
Isle of Wight	49	49%	4	21%
Western Rother Greensand	51	43%	4	11%
Hampshire Tertiaries	45	42%	0	0%
Lymington	48	44%	0	0%
Sussex Coast	42	44%	0	0%
Arun	45	42%	0	0%
Adur	52	49%	0	0%
Ouse	60	58%	0	0%
Cuckmere	60	61%	0	0%
Pevensey Levels	56	58%	0	0%
SSD Average	51	48%	2	8%

10.3 Rainfall banding table

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

10.4 River flows table

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

10.5 Groundwater table

Site name	Aquifer	End of May 2025 band	End of April 2025 band
Carisbrooke Castle	Isle Of Wight Central Downs Chalk	Exceptionally low	Notably low
Youngwoods Copse	Isle of Wight Lower Greensand	Notably high	Above normal
Clanville Gate Gwl	River Test Chalk	Normal	Above normal
Lopcombe Corner Gwl	River Test Chalk	Normal	Normal
Preston Candover	River Itchen Chalk	Notably high	Notably high
West Meon Hut Gwl	River Itchen Chalk	Normal	Above normal
Catherington	River Meon Chalk	Normal	Normal
Chilgrove House Gwl	Chichester- Worthing- Portsdown Chalk	Normal	Normal
Beeding Hill Gwl	Brighton Chalk Block	Notably low	Below normal
Houndean Bottom Gwl	Brighton Chalk Block	Below normal	Normal
Harting Common Down	Western Rother Lower Greensand	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 6 May 2025	Number of flow constraints in force between 7 to 13 May 2025	Number of flow constraints in force between 14 to 20 May 2025	Number of flow constraints in force between 21 to 31 May 2025
2	3	4	6

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