Monthly water situation report: Thames Area

1 Summary - May 2025

Thames area received 23mm of rainfall through May, 41% of the long term average (LTA). Over the last 3 months rainfall in Thames area was the 2nd lowest since records began in 1871. All our areal rainfall units were either notably low or below normal by the month's end, with the exception of Cotswolds West which received exceptionally low levels of precipitation. Soil moisture deficits (SMD) increased significantly across the Thames area, rising from 70mm in April to 92mm by the end of May. River flows responded to the lack of rainfall by decreasing at all our key indicator sites compared with last month. Likewise, groundwater levels declined at the majority of indicator sites in May and ranged from exceptionally low (Inferior Oolite) to notably high (Chalk), with the only exception being Frith Cottage (Lower Greensand). The Lower Thames reservoirs ended the month remaining below average for the time of year however Farmoor ended the month with a value which exceeded the LTA.

1.1 Rainfall

May was another dry month across Thames area, with only 23mm of rainfall recorded, 41% of the LTA. All our areal units received either notably low or below normal precipitation, with only Cotswolds West receiving exceptionally low precipitation, making it the 7th driest May since records began in 1871. Although normal rainfall has occurred across Thames area over the last 12 months, it was exceptionally low in all but one unit over the last 3 months. The previous 3 months has been the 2nd driest period since 1871, with it even being the driest recorded for Cotswolds East and Upper Thames.

1.2 Soil moisture deficit and recharge

Soil moisture deficits (SMD) increased significantly across Thames area, rising from 70mm in April to 92mm by the end of May. This was significantly higher than the LTA of 49mm for the time of year, indicating that soils are much drier than usual. The sharp increase reflected a sustained lack of effective rainfall, only 9% of the LTA fell during April, and this was due to a combination of low rainfall and increased sunshine hours.

1.3 River flows

Monthly mean flows decreased at all key indicator sites compared to last month, largely due to declining groundwater levels and low rainfall. The majority of sites are recording flows that are below or notably below the long-term average (LTA) for this time of year. Cassington (Evenlode) was particularly affected, reflecting the influence of low groundwater levels in the underlying Oolitic limestone geology. Other sites showing below-normal flows included

Windsor (River Thames), Bibury (River Coln), and Farmoor (River Thames). The only site recording above-normal flows was Bourne End Hedsor (Wye).

1.4 Groundwater levels

Groundwater levels decreased at the majority of our indicator sites in May and ranged from exceptionally low (Jackaments Bottom, Inferior Oolite) to notably high (Stonor Estate, Chalk). Groundwater levels of all of sites remained in the same banding as last month, with the exception of Stonor Estate dropping into the notably high banding for first time in 15 months. Overall, groundwater levels of the Chalk remained normal or above, whilst levels of the slower responding Lower Greensands remained notably high for the time of year with Frith Cottage (Lower Greensand) being the only increase in levels.

1.5 Reservoir stocks

Reservoir stocks decreased in the Lower Thames reservoirs and ended the month at 93.6%, compared to 95.3% at the end of April. Stocks in Farmoor reservoir increased from 97.2% to 99.1% during May. The Lower Thames reservoirs ended the month remaining below average for the time of year however Farmoor ended the month above the LTA.

1.6 Environmental impact

At the end of the month, 23 abstraction licences were being constrained in the area to protect water resources and the environment. There were no groundwater flood alerts in force by the end of May.

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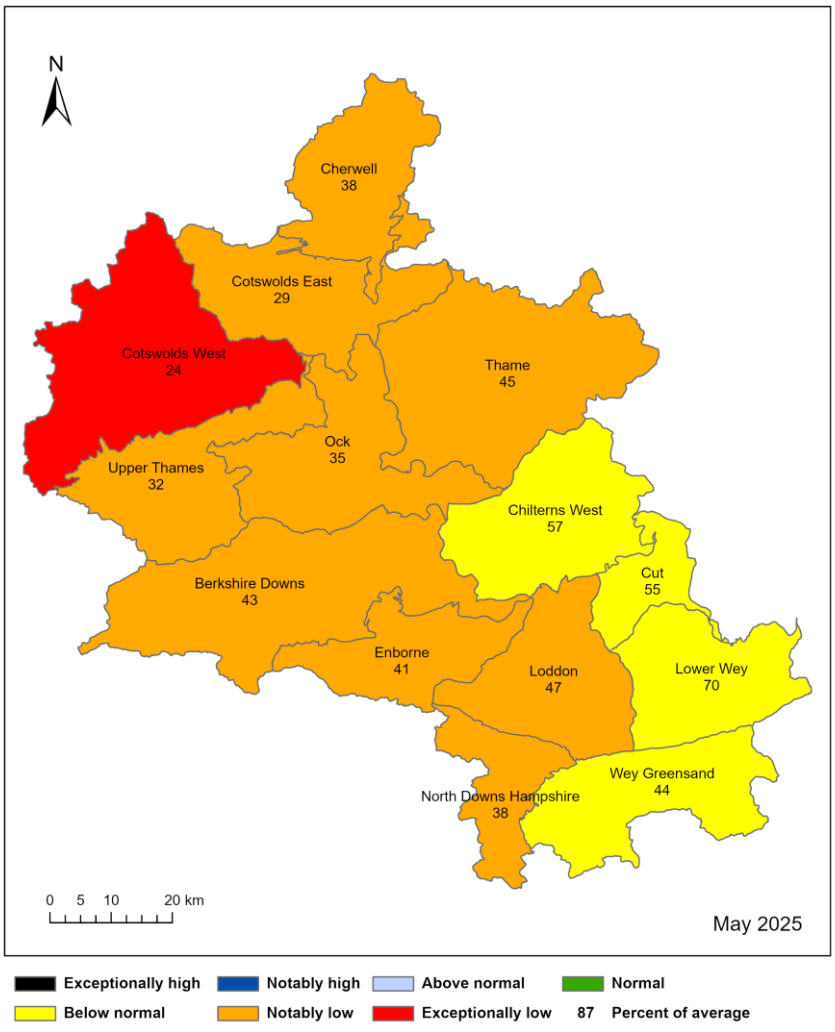
Contact Details: 030708 506 506

2 Rainfall

2.1 Rainfall map

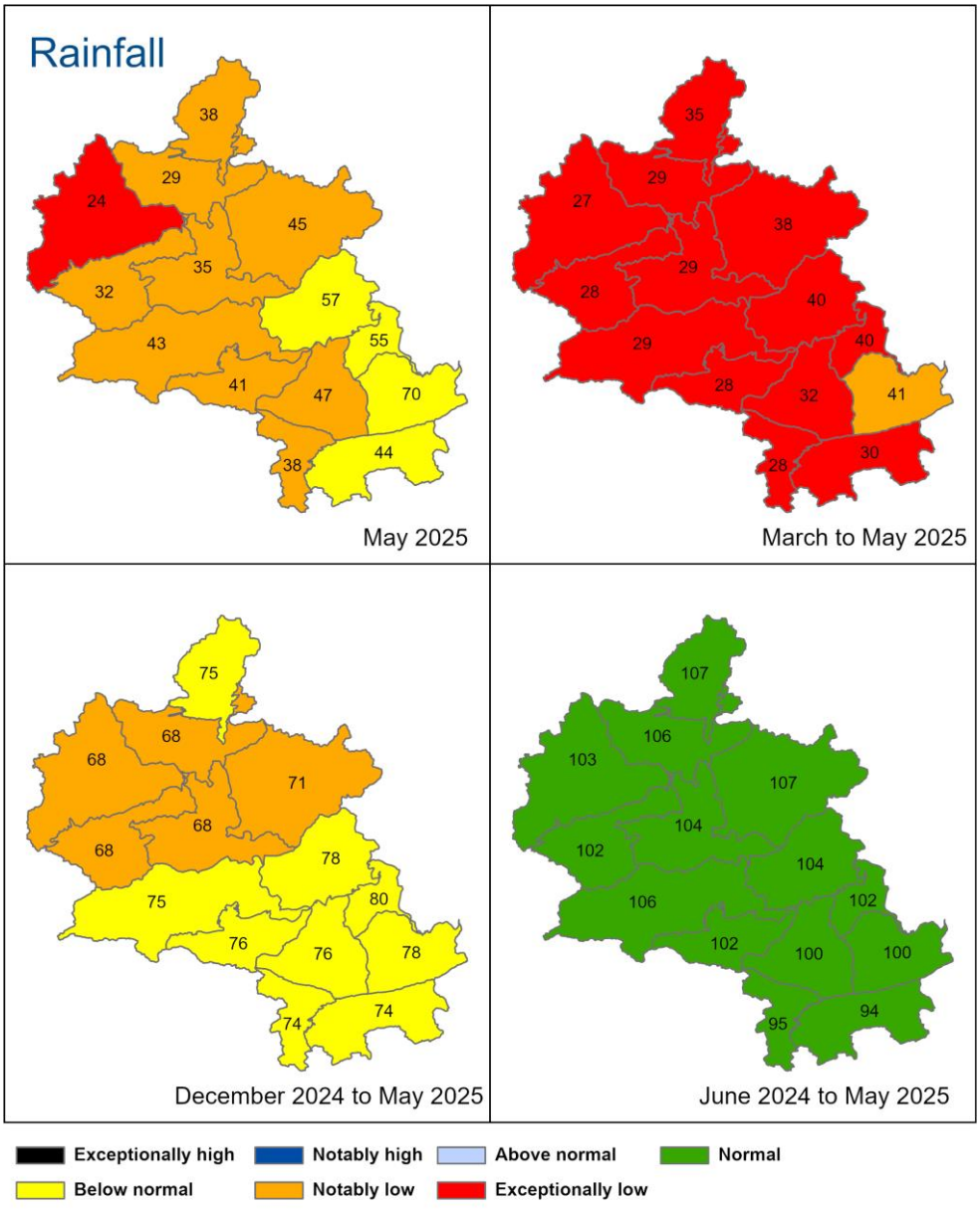
Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 May 2025), classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



Rainfall data for 2023, 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 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2025).

2.2 Rainfall map (2)

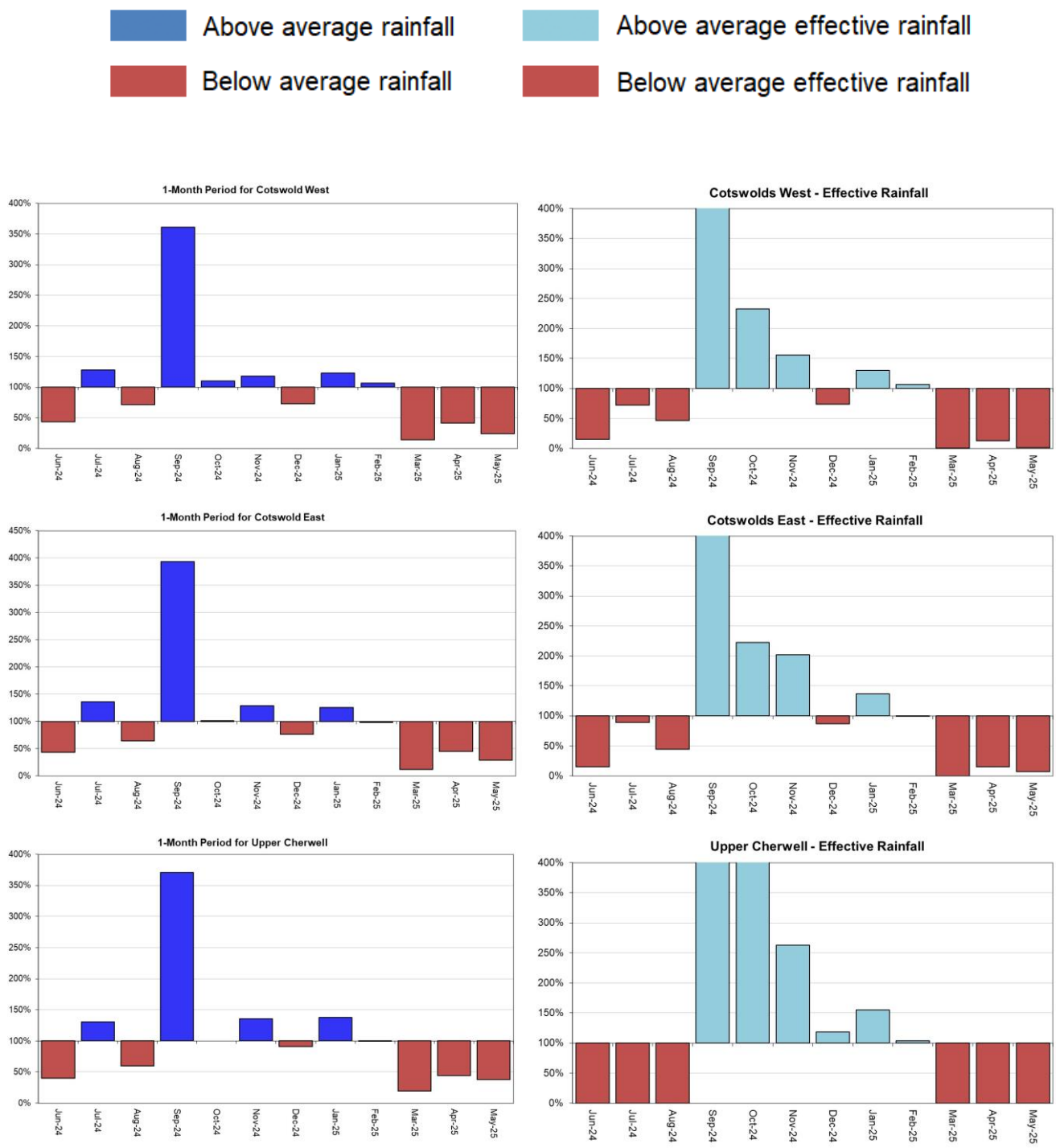
Figure 2.2: Total rainfall for hydrological areas for the current month (up to 31 May 2025), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.

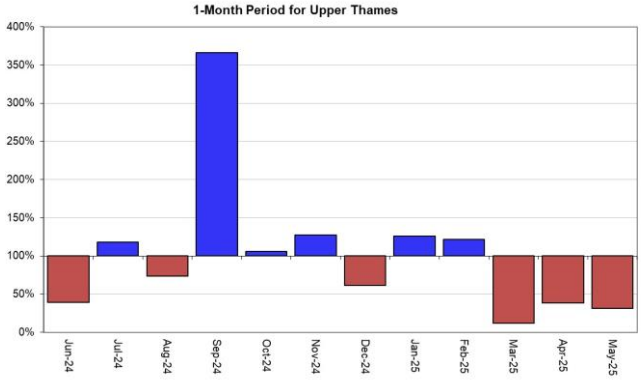


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

2.3 Rainfall charts

Figure 2.3: Monthly rainfall totals for the past 12 months as a percentage of the 1991 to 2020 long term average for each areal unit.




1-Month Period for Upper Thames
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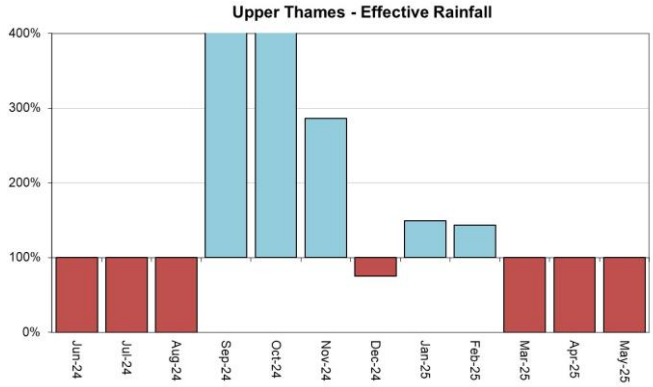
Upper Thames - Effective Rainfall
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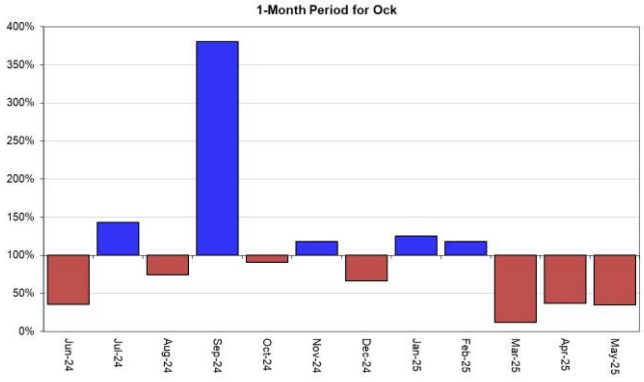
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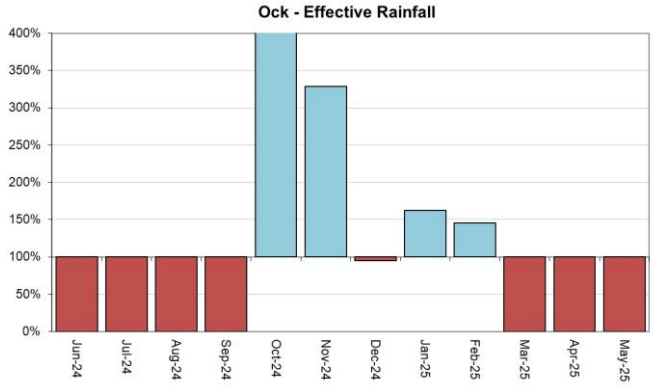
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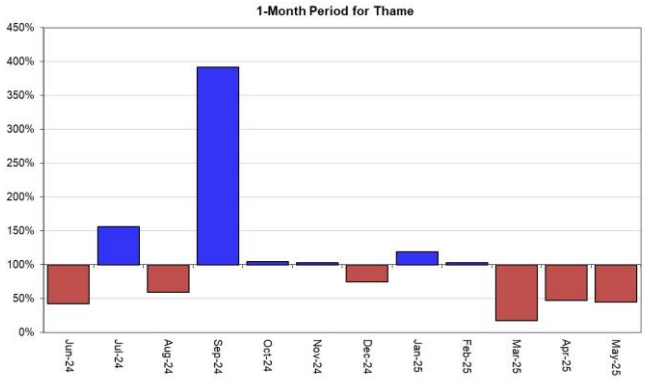
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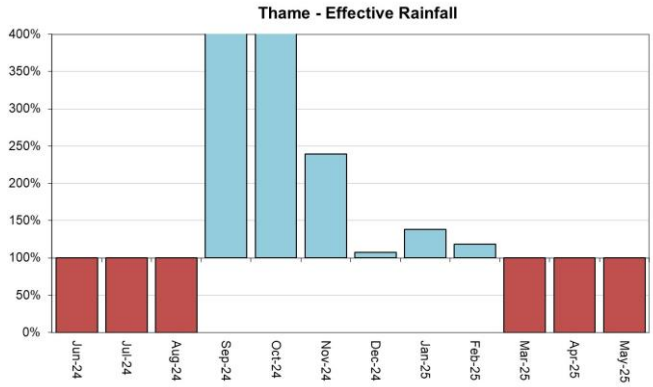
Thame - Effective Rainfall
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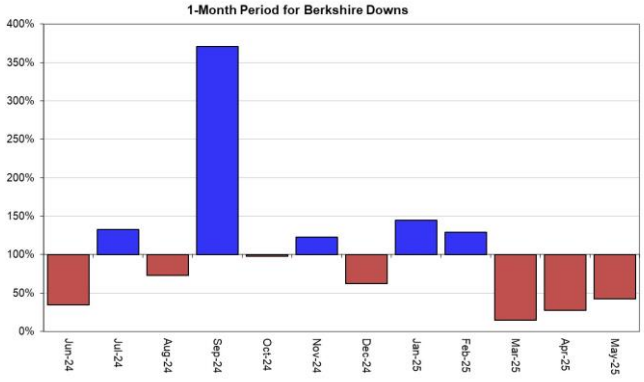
1-Month Period for Berkshire Downs
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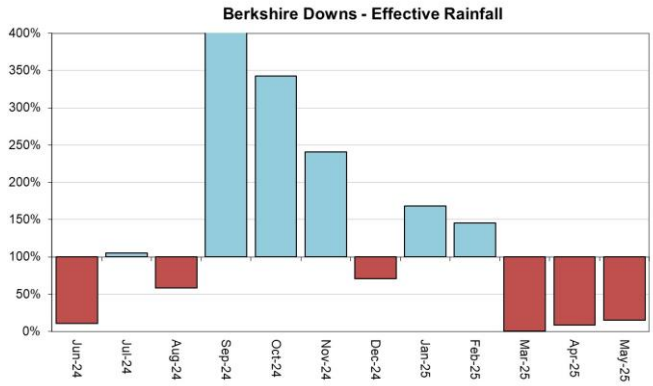
Berkshire Downs - Effective Rainfall
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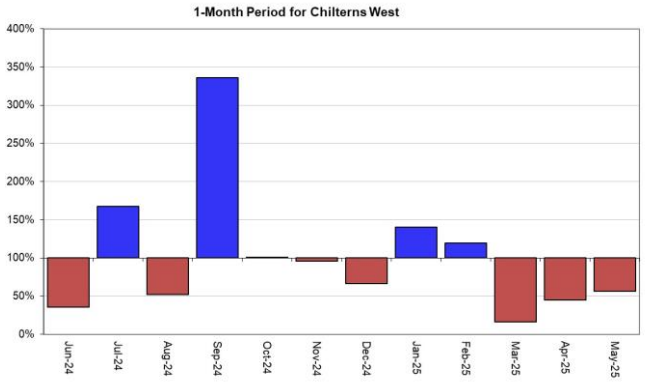
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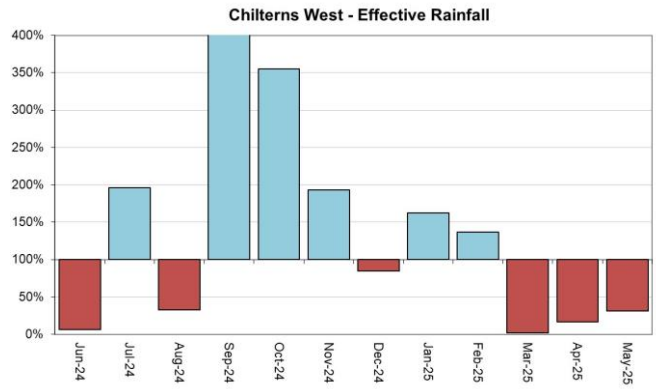
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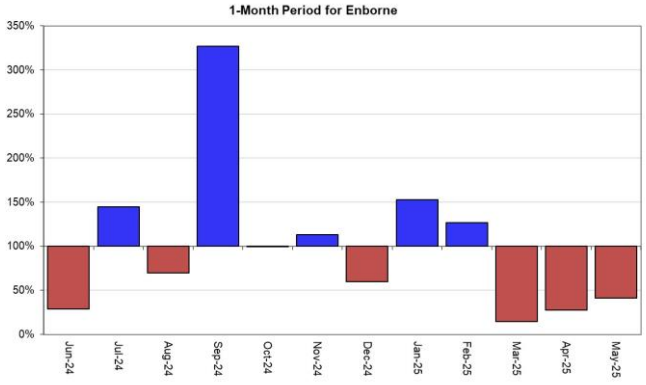
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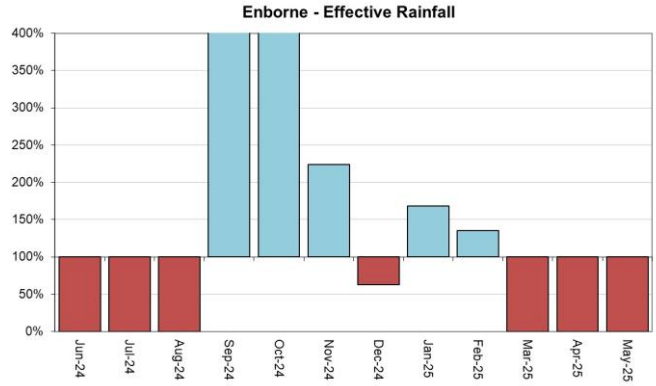
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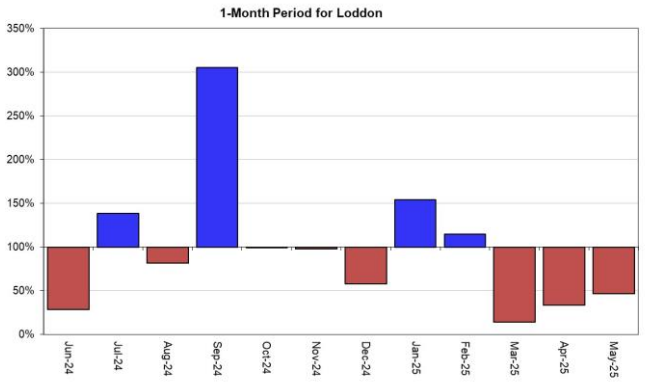
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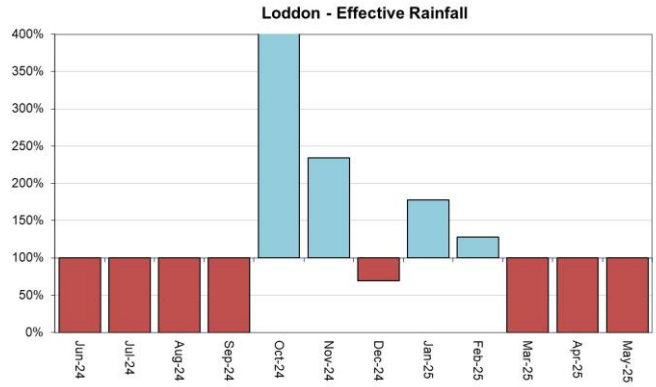
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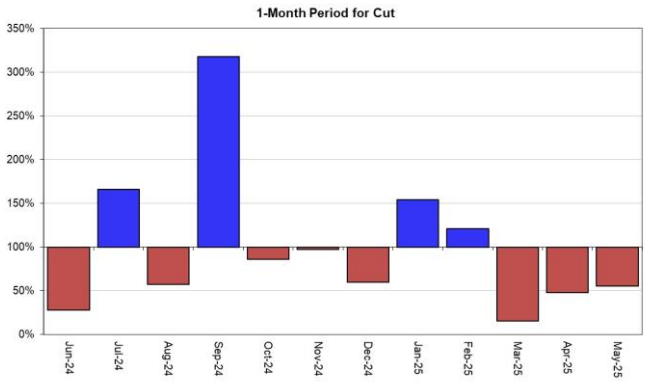
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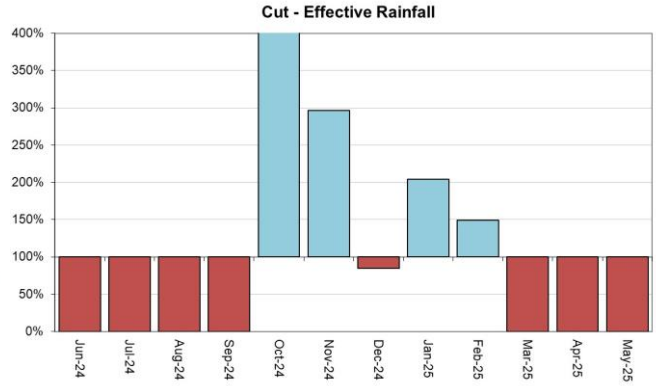
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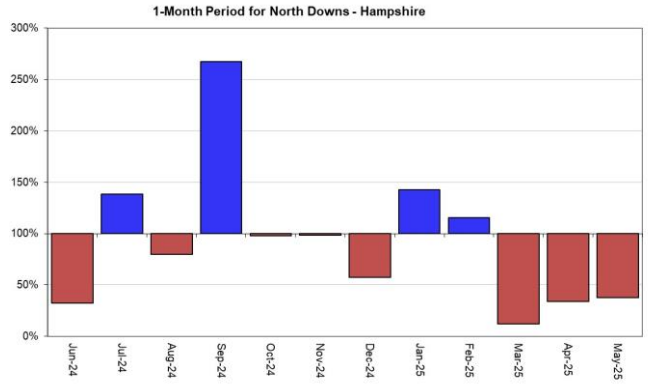
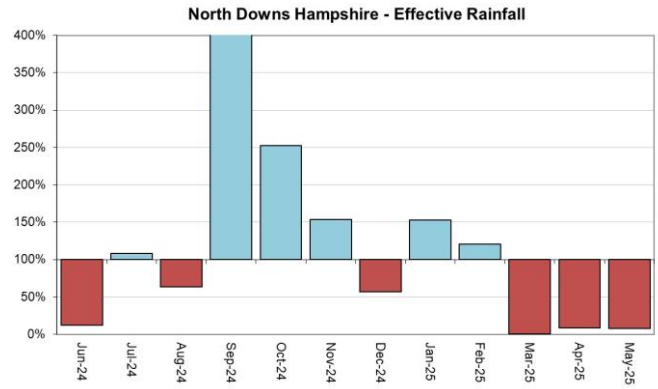
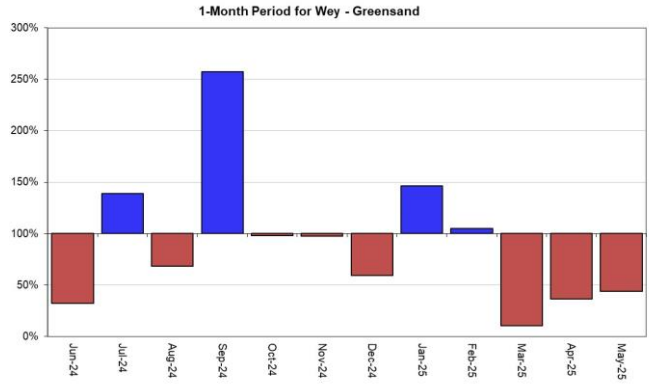
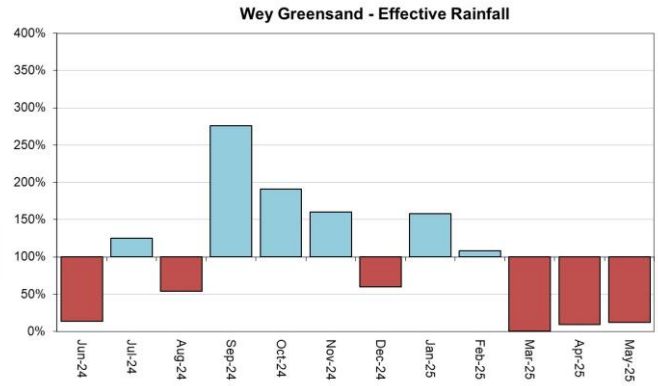
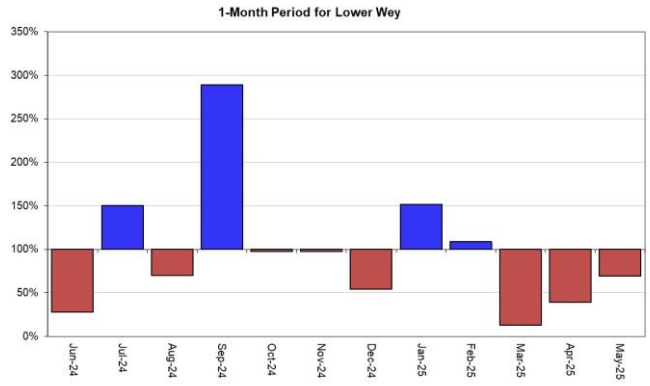
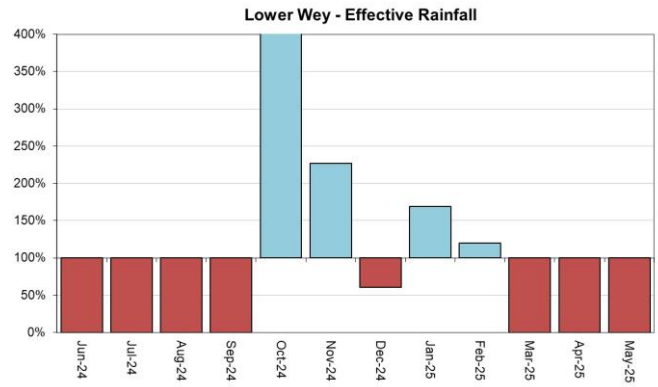












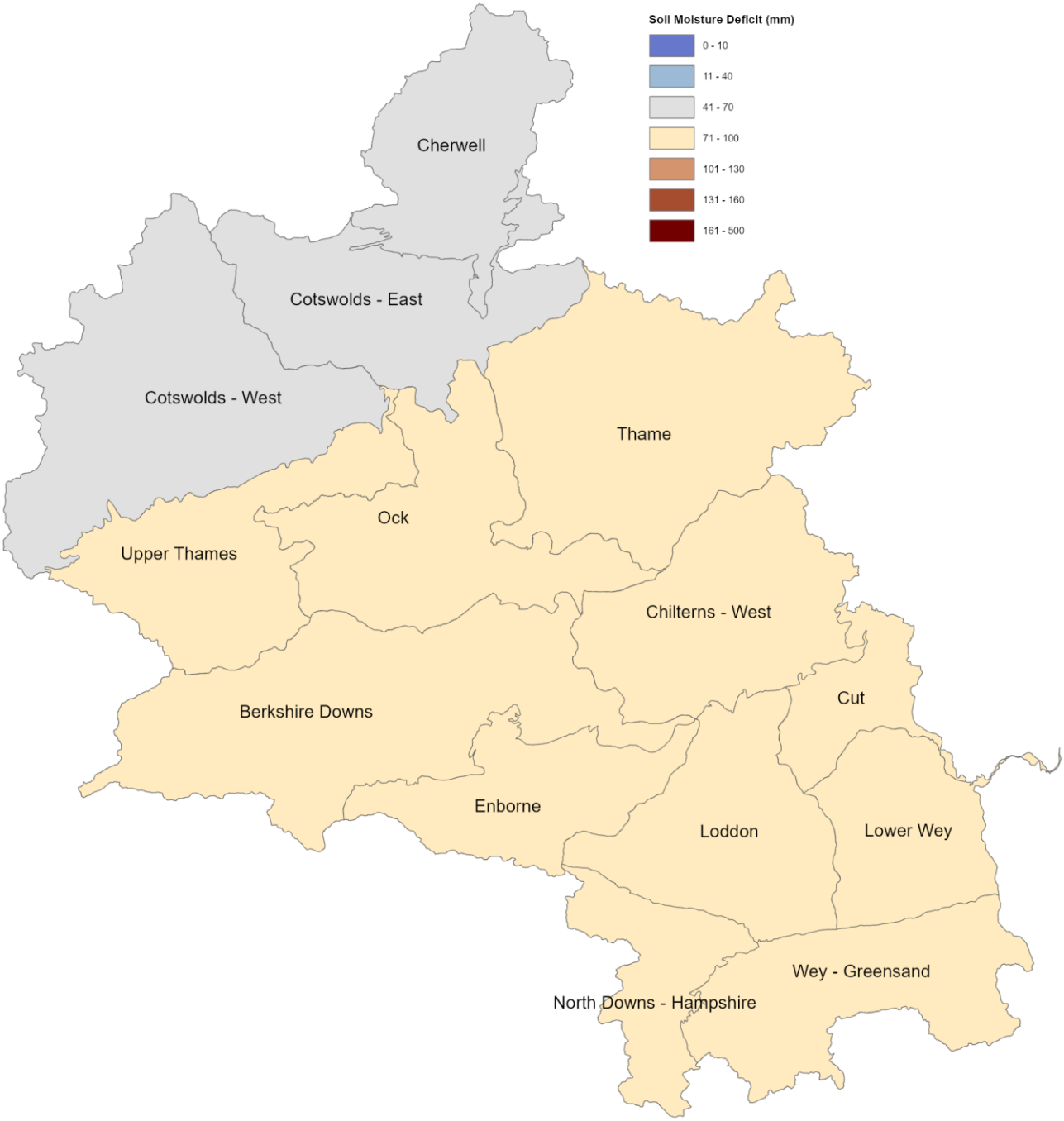
HadUK rainfall data. (Source: Met Office. Crown copyright, 2025).

EA effective rainfall data (Source: EA Soil Moisture Model)

3 Soil moisture deficit

3.1 Soil moisture deficit map

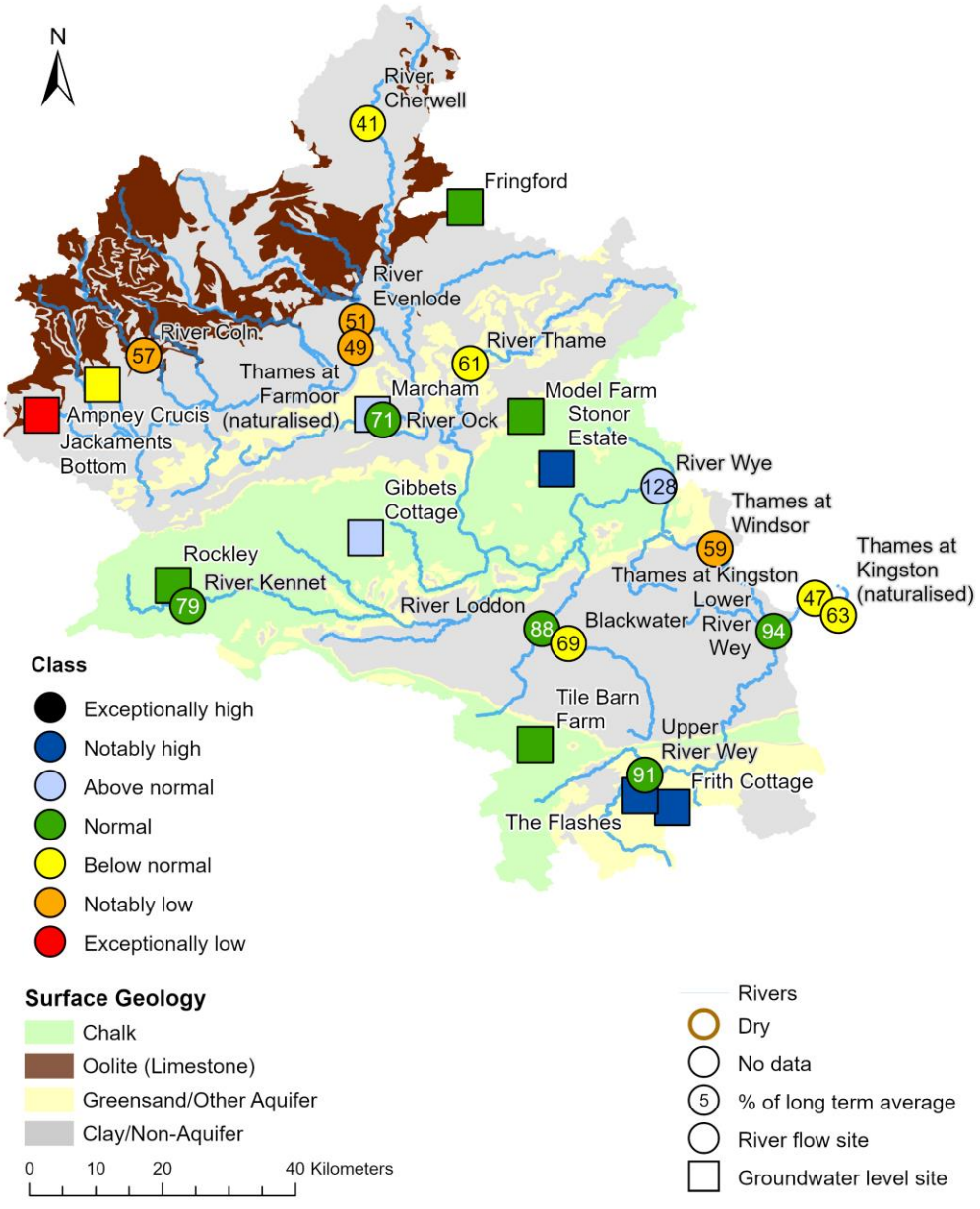
Figure 3.1: Soil moisture deficits for the week ending 31 May 2025. Shows the areal SMD estimate in millimetres.



4 River Flow and Groundwater Status

4.1 River flow and groundwater level map

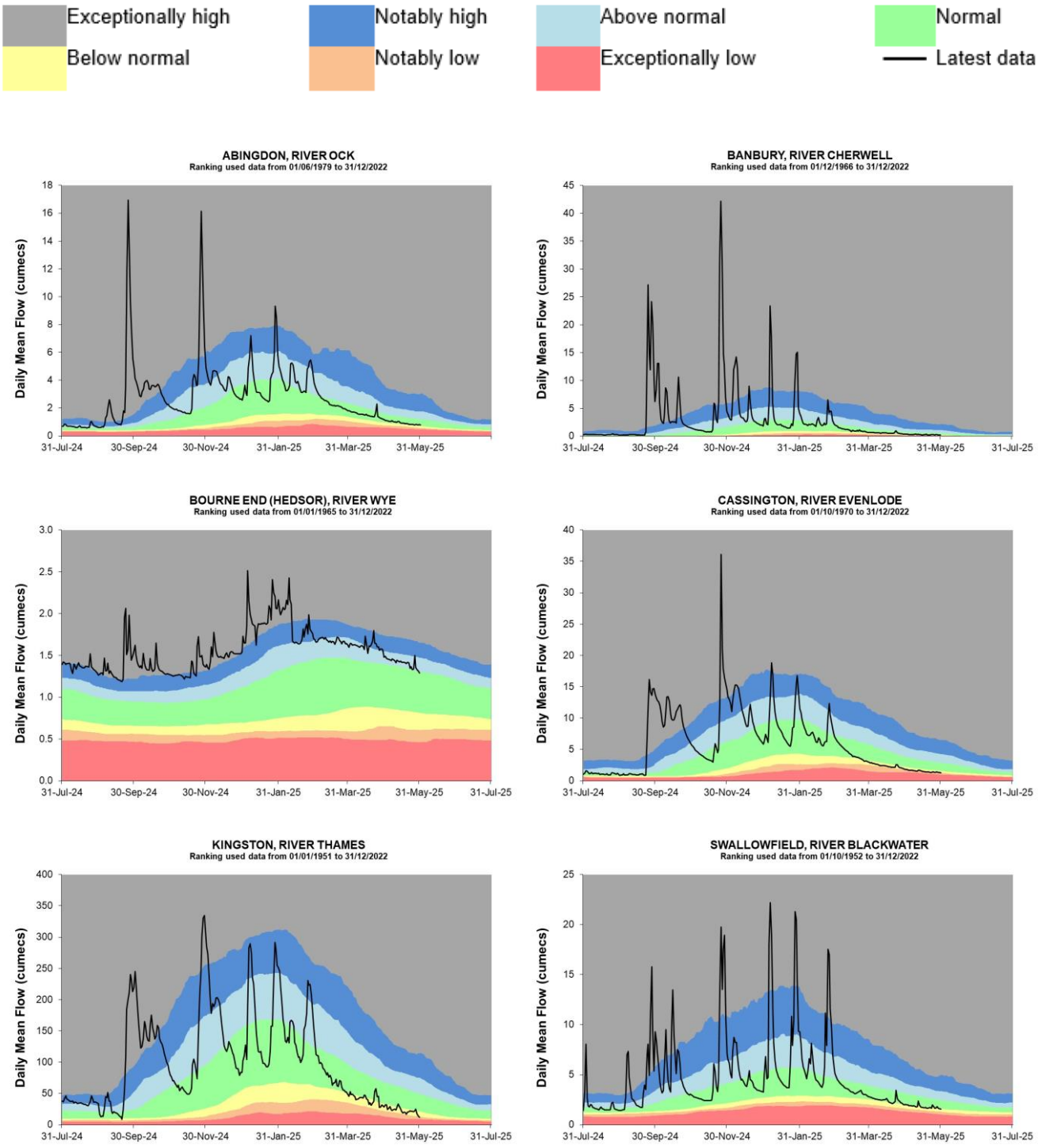
Figure 4.1: Monthly mean river flow for indicator sites and end of month groundwater levels for indicator sites for May 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic May means.



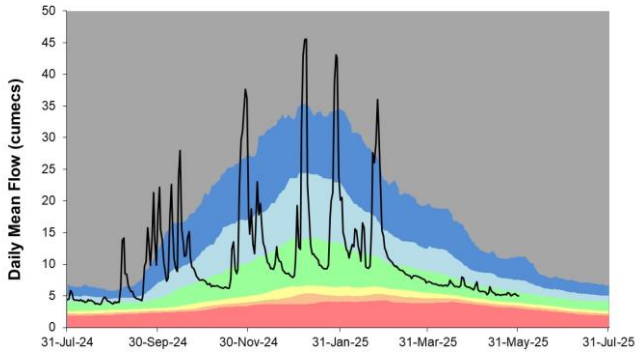
5 River flows

5.1 River flow charts

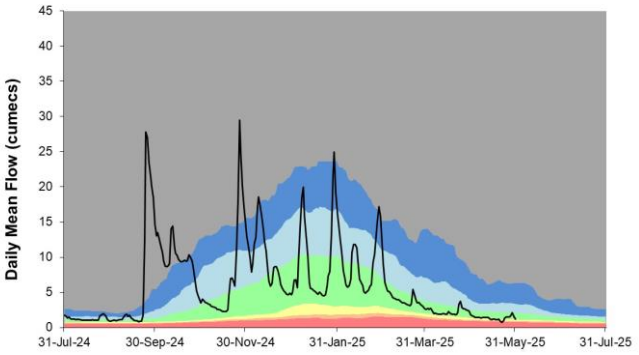
Figure 5.1: Daily mean river flows for indicator sites compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



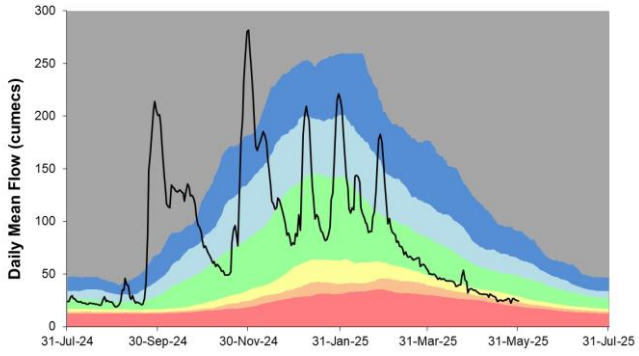
WEYBRIDGE, RIVER WEY
Ranking used data from 01/04/1979 to 31/12/2022



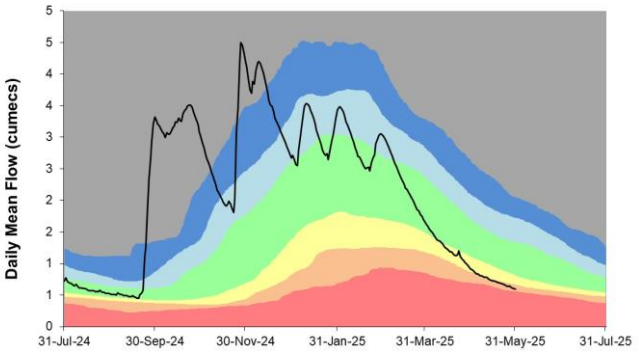
WHEATLEY, RIVER THAME
Ranking used data from 01/01/1990 to 31/12/2022



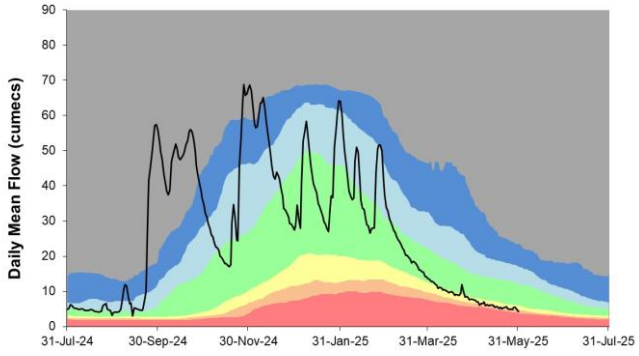
WINDSOR, RIVER THAMES
Ranking used data from 01/08/1979 to 31/12/2022



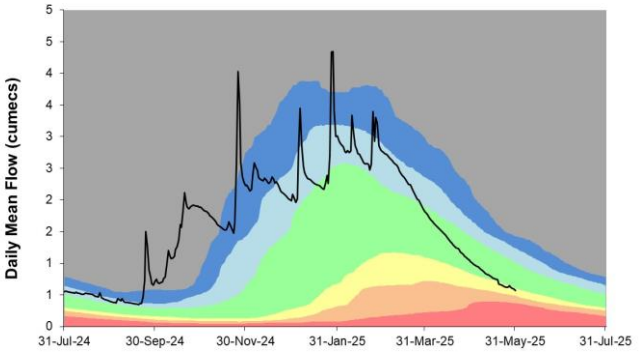
BIBURY, RIVER COLN
Ranking used data from 01/10/1963 to 31/12/2022

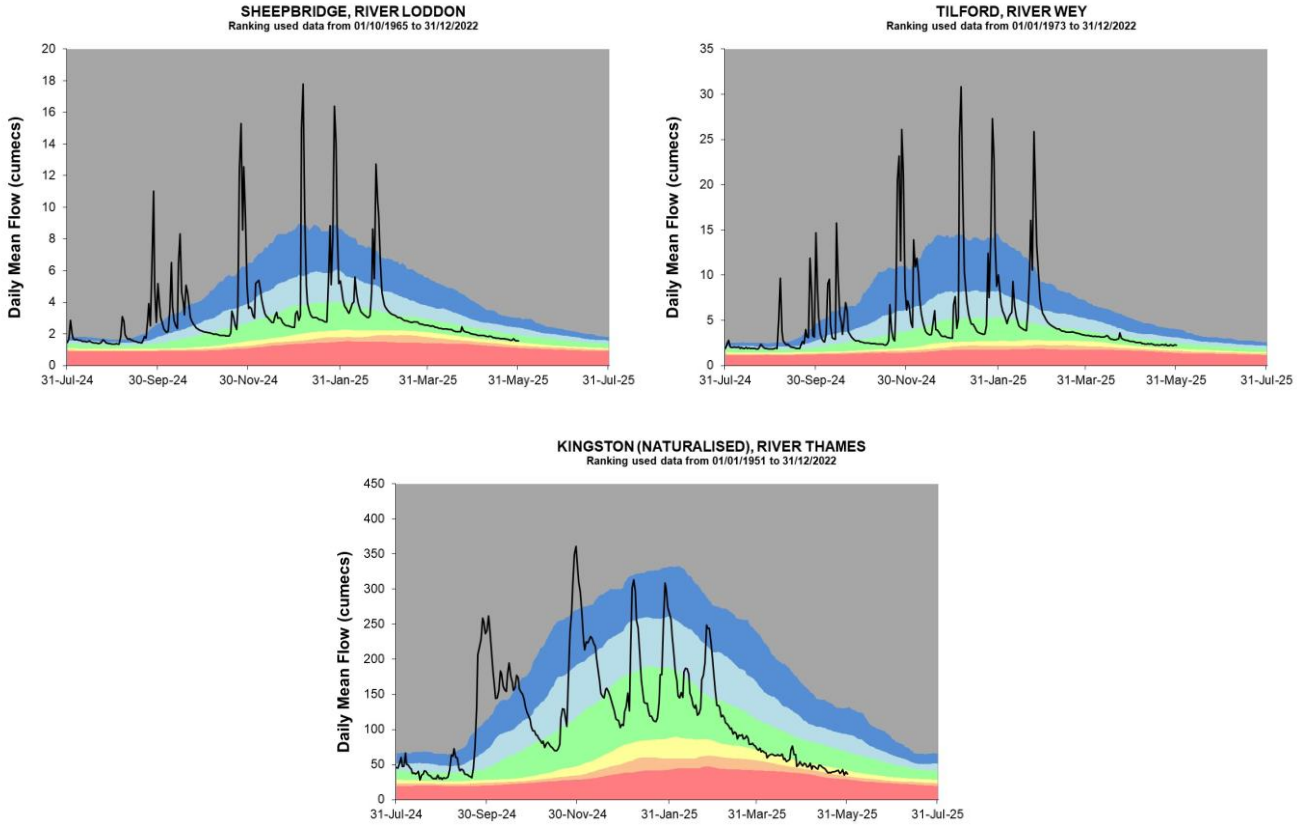


FARMOOR (NATURALISED), RIVER THAMES
Ranking used data from 01/10/1992 to 31/12/2022



MARLBOROUGH, RIVER KENNET
Ranking used data from 01/02/1972 to 31/12/2022



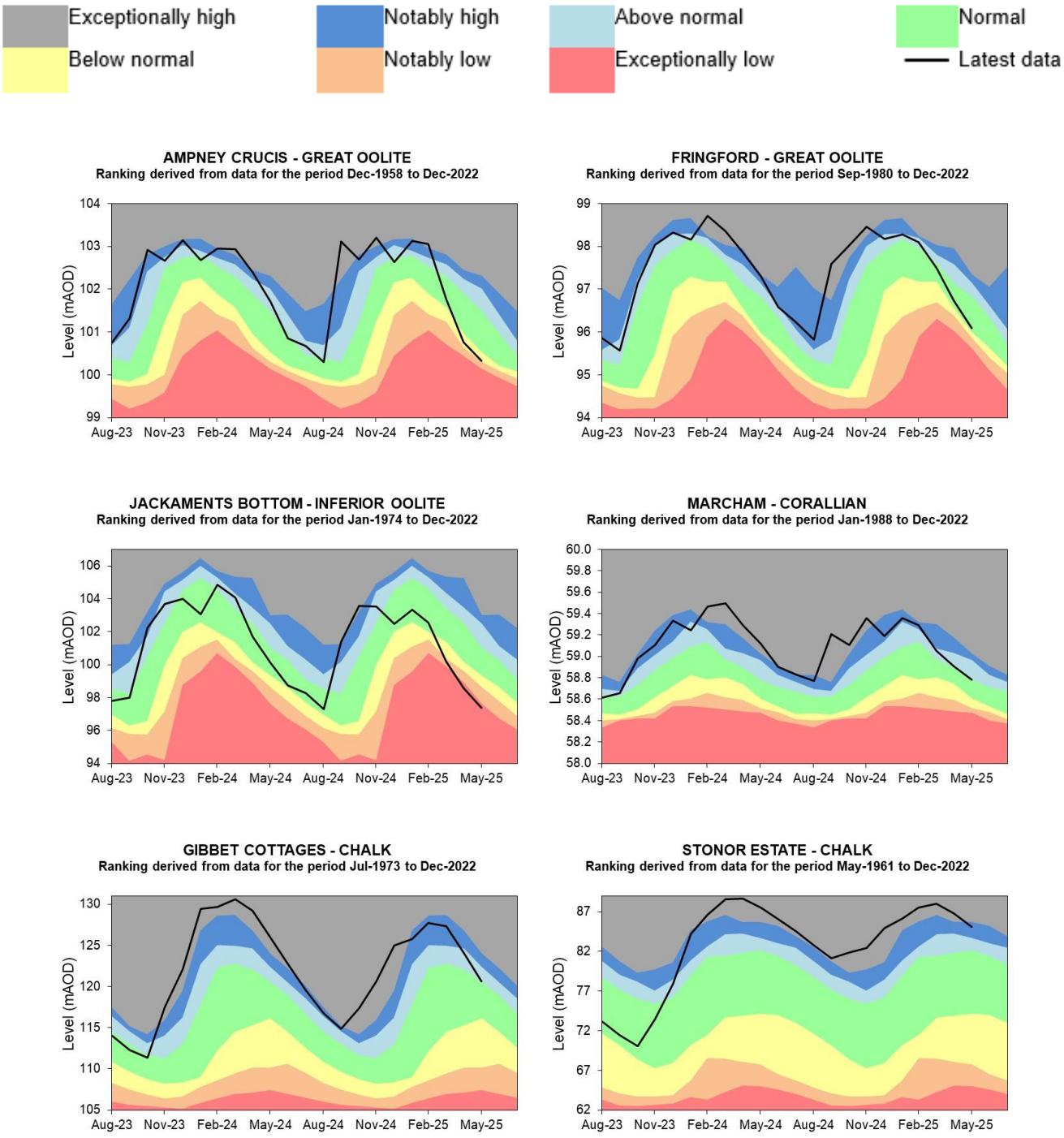


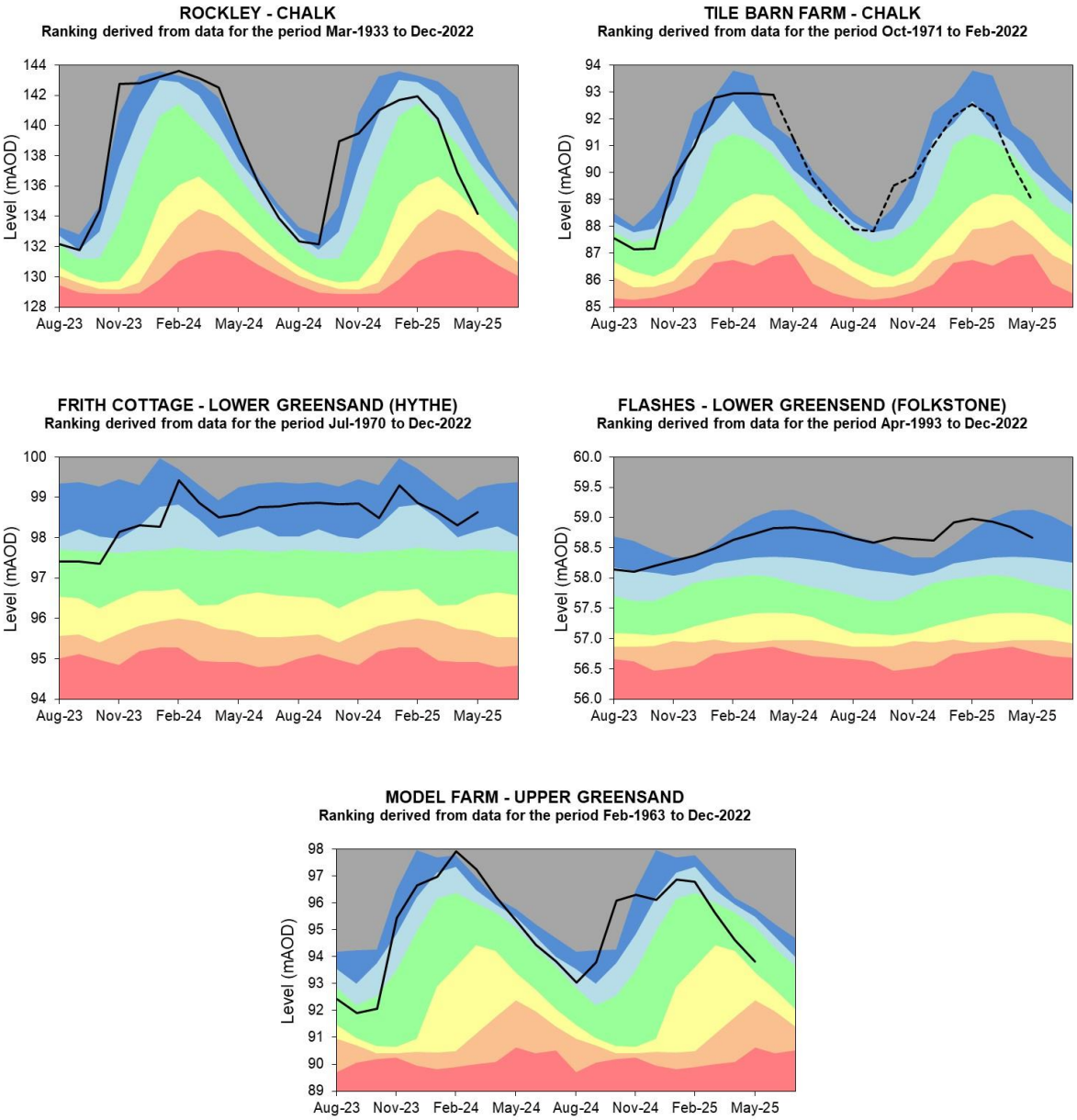
Source: Environment Agency.

6 Groundwater levels

6.1 Groundwater level charts

Figure 6.1: End of month groundwater levels for indicator sites, compared to an analysis of historic end of month levels, and long term maximum and minimum levels.



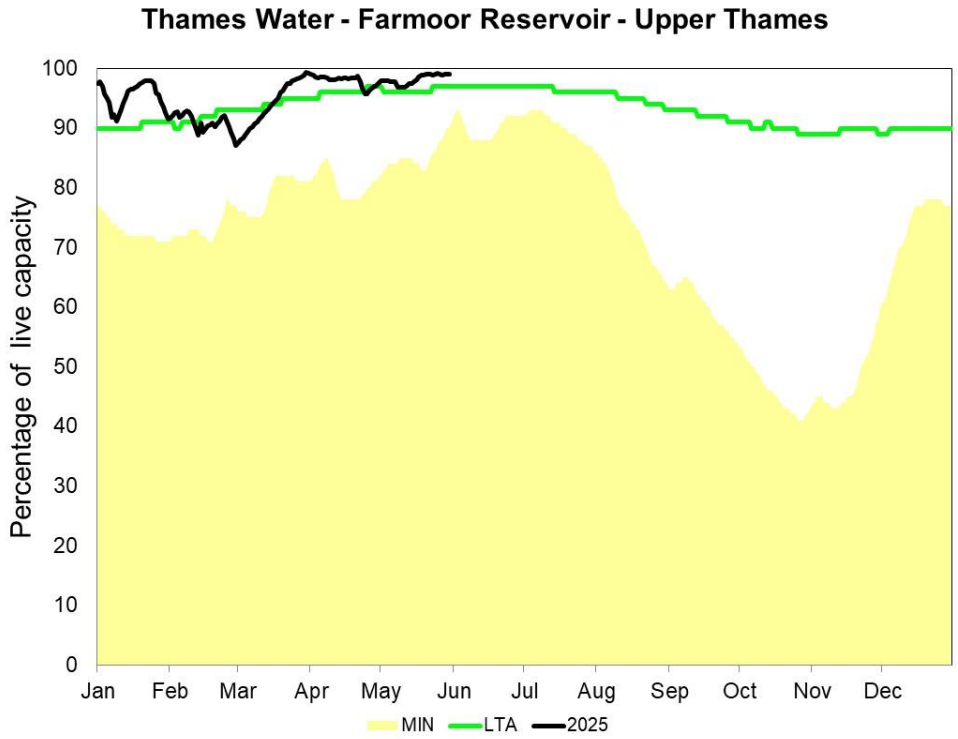


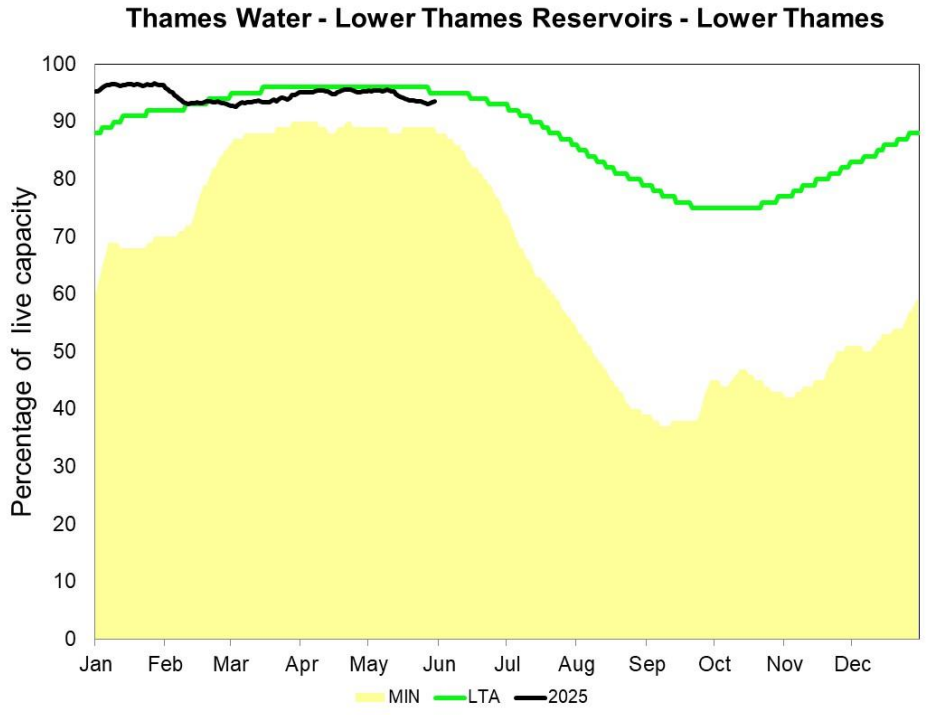
*Tile Barn Farm data has been estimated from two local sites since April 2022. A replacement is planned

Source: Environment Agency, 2025.

7 Reservoir stocks

Figure 7.1: End of month regional reservoir stocks compared to minimum and average stocks.

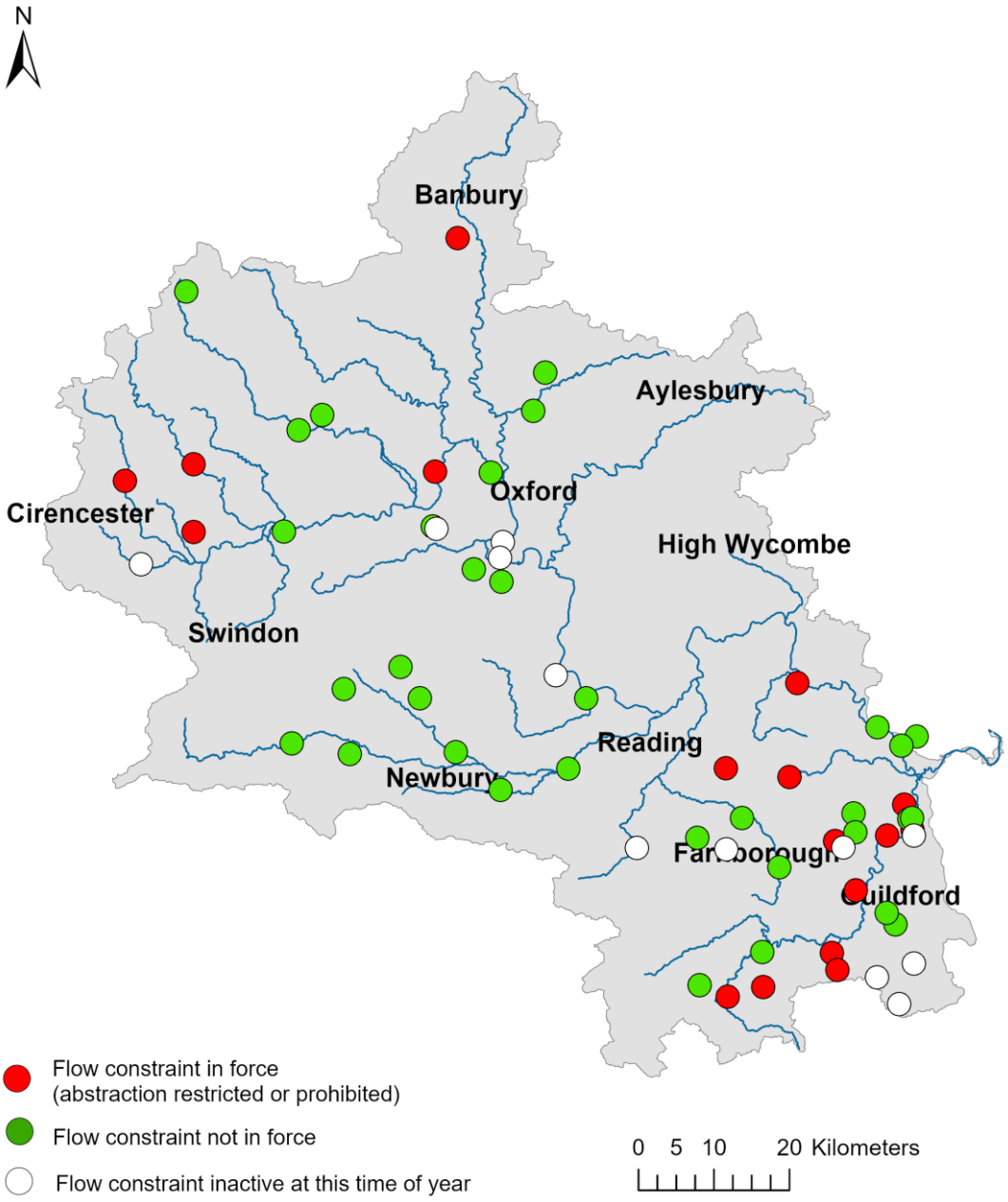




(Source: water companies).

8 Flow Constraints

8.1 Figure 8.1: End of month flow constraints in Thames Area.



8.2 Summary of flow constraints

Week ending	04/05/25	11/05/25	18/05/25	25/05/25	01/06/25
Constraint	5	7	19	9	23

9 Summary of rainfall, effective rainfall and soil moisture deficit

9.1 Rainfall and effective rainfall

Area	Rainfall (mm) 31 day Total	Rainfall (mm) May LTA	Rainfall (mm) % LTA	Effective Rainfall (mm) 31 day total	Effective Rainfall (mm) May LTA	Effective Rainfall (mm) % LTA
Cotswolds - West	16	66	24	0	9	1
Cotswolds - East	18	62	28	1	7	7
Berkshire Downs	25	58	43	1	6	15
Chilterns - West	30	54	56	2	5	31
North Downs - Hampshire	20	55	37	1	7	8
Wey - Greensand	24	54	44	1	7	12
Upper Thames	18	58	32	0	1	0
Cherwell	22	59	38	0	2	0
Thame	24	54	45	0	1	0
Loddon	22	47	46	0	1	0
Lower Wey	33	47	70	0	1	0
Ock	19	54	35	0	0	0
Enborne	21	52	41	0	1	0
Cut	25	46	55	0	1	0
Thames Area	**23**	**55**	**41**	**0**	**4**	**9**

HadUK rainfall data (Source: Met Office Crown copyright 2023)
EA effective rainfall data (Source: EA Soil Moisture Model)

9.2 Soil moisture deficit

Area	SMD (mm) Day 31	SMD (mm) LTA
Cotswolds - West	66	30
Cotswolds - East	66	31
Berkshire Downs	97	49
Chilterns - West	93	52
North Downs - Hampshire	98	51
Wey - Greensand	96	52
Upper Thames	100	52
Cherwell	94	46
Thame	94	50
Loddon	99	55
Lower Wey	94	54
Ock	100	56
Enborne	99	50
Cut	97	60
Thames Area	**92**	**49**

HadUK rainfall data (Source: Met Office Crown copyright 2023)
EA effective rainfall data (Source: EA Soil Moisture Model)

9.3 Winter rainfall and effective rainfall

Summer period: 01/04/2025 to 31/05/2025						
Area	Rainfall (mm) Total	Rainfall (mm) LTA	Rainfall (mm) % LTA	Effective Rainfall (mm) Total	Effective Rainfall (mm) LTA	Effective Rainfall (mm) % LTA
Cotswolds - West	40	125	32	2	27	8
Cotswolds - East	42	115	36	3	23	12
Berkshire Downs	41	117	35	2	23	10
Chilterns - West	55	108	50	4	19	20
North Downs - Hampshire	42	117	35	2	28	7
Wey - Greensand	45	113	40	3	26	9
Upper Thames	37	108	35	0	10	0
Cherwell	46	111	41	0	14	0
Thame	47	103	46	0	9	0
Loddon	39	98	40	0	10	0
Lower Wey	52	95	54	0	10	0
Ock	36	102	36	0	7	0
Enborne	37	109	34	0	15	0
Cut	48	93	51	0	7	0
Thames Area	**43**	**108**	**40**	**1**	**16**	**7**

HadUK rainfall data (Source: Met Office Crown copyright 2023)
EA effective rainfall data (Source: EA Soil Moisture Model)

10 Glossary

10.1 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).

10.2 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.

11 Appendices

11.1 Rainfall table

Hydrological area	May 2025 rainfall % of long term average 1991 to 2020	May 2025 band	Mar 2025 to May cumulative band	Dec 2024 to May cumulative band	Jun 2024 to May cumulative band
Berkshire Downs	43	Notably Low	Exceptionally low	Below normal	Normal
Chilterns West	57	Below Normal	Exceptionally low	Below normal	Normal
Cotswold East	29	Notably Low	Exceptionally low	Notably low	Normal
Cotswold West	24	Exceptionally Low	Exceptionally low	Notably low	Normal
Cut	55	Below Normal	Exceptionally low	Below normal	Normal
Enborne	41	Notably Low	Exceptionally low	Below normal	Normal
Loddon	47	Notably Low	Exceptionally low	Below normal	Normal
Lower Wey	70	Below Normal	Notably low	Below normal	Normal
North Downs - Hampshire	38	Notably Low	Exceptionally low	Below normal	Normal
Ock	35	Notably Low	Exceptionally low	Notably low	Normal
Thame	45	Notably Low	Exceptionally low	Notably low	Normal
Upper Cherwell	38	Notably Low	Exceptionally low	Below normal	Normal
Upper Thames	32	Notably Low	Exceptionally low	Notably low	Normal
Wey - Greensand	44	Below Normal	Exceptionally low	Below normal	Normal

11.2 River flows table

Site name	River	Catchment	May 2025 band	Apr 2025 band
Abingdon	River Ock	Ock	Normal	Normal
Banbury	River Cherwell	Cherwell Upper	Below normal	Normal
Bibury	River Coln	Cotswolds West	Notably Low	Below Normal
Bourne End (hedsor)	River Wye	Wye Bucks	Above normal	Above normal
Cassington	River Evenlode	Evenlode	Notably low	Notably low
Farmoor (naturalised)	River Thames	Thames	Notably low	Below normal
Kingston	River Thames	Thames North Bank	Below normal	Below normal
Marlborough	River Kennet	Kennet	Normal	Normal
Sheepbridge	River Loddon	Loddon	Normal	Normal
Swallowfield	River Blackwater	Loddon	Below normal	Below normal
Tilford	River Wey	Wey Addleston Bourne	Normal	Normal
Weybridge	River Wey	Wey Addleston Bourne	Normal	Normal
Wheatley	River Thame	Thame	Below normal	Normal
Windsor	River Thames	Thames	Notably low	Below normal
Kingston (naturalised)	River Thames	Thames North Bank	Below normal	Below normal

11.3 Groundwater table

Site name	Aquifer	End of May 2025 band	End of Apr 2025 band
Ampney Crucis Obh	Burford Oolitic Limestone (great)	Below normal	Below normal
Frith Cottage	Godalming Lower Greensand	Notably high	Notably high
Gibbet Cottages Obh	Berkshire Downs Chalk	Above normal	Above normal
Jackaments Bottom Obh	Burford Oolitic Limestone (inferior)	Exceptionally low	Exceptionally low
Marcham Obh	Shrivenham Corallian	Above normal	Above normal
Model Farm	Chiltern Upper Greensand	Normal	Normal
Rockley Obh	Berkshire Downs Chalk	Normal	Normal
Stonor Estate	South-west Chilterns Chalk	Notably high	Exceptionally high
The Flashes Obh	Godalming Lower Greensand	Notably high	Notably high
Tile Barn Farm	Basingstoke Chalk	Normal	Normal
Fringford P.s.	Upper Bedford Ouse Oolitic Limestone (great)	Normal	Normal