

Monthly water situation report: Wessex Area

1 Summary - May 2024

May showed a small increase in rainfall compared to April. An average of 98mm of rain fell across Wessex, 160% of the long term average (LTA). While not record breaking rainfall in May alone, the last 6 months (December to May) has been the second wettest since records began in 1871 and the last 12 months (June to May) has been the wettest on record. Soil moisture deficit (SMD) largely remained close to 0mm across the month. Monthly mean river flows were normal and above normal across much of the north of Wessex but notably high and exceptionally high in the south of Wessex. Groundwater monitoring sites monitoring the Chalk recorded between normal and exceptionally high levels while those monitoring other formations recorded exceptionally high levels. Throughout May, reservoir levels for Wessex Water remained close to 100% capacity while Bristol Water reservoir levels were steady at approximately 94% capacity.

1.1 Rainfall

An average of 98mm of rain fell across Wessex in May (160% of the LTA), making it the 10th month in the last 12 to have rainfall above the LTA. May was predominantly dry at the start of the month except for heavy rainfall on 1 May (18% of the monthly total rain) and 13 May (23% of the monthly total rain). A total of 77% LTA rainfall for the whole month fell at Marshwood Lodgehouse rain gauge in Dorset on 13 May alone. May 2024 ended with a wetter period between 25 and 29 May when 28% of the total rainfall for the month fell.

In May most hydrological areas recorded either above normal or notably high amounts of rainfall. Most hydrological areas in the north of Wessex recorded above normal levels while most in the south of Wessex recorded notably high levels. The exceptions were West Somerset Streams which received normal rainfall levels and West Dorset Streams and the River Frome which both received exceptionally high levels. Over the longer term, the majority of hydrological areas recorded exceptionally high rainfall over the past 3 months with exceptions in the north and west of Wessex which recorded notably high levels. Over the past 6 and 12 month period, all hydrological areas recorded exceptionally high rainfall. As a result, this has been the fourth wettest 3 months (March to May), second wettest 6 months (December to May) and wettest 12 months (June to May) since records began in 1871.

1.2 Soil moisture

SMD remained close to 0mm across most of Wessex during May, although small areas to the east of Wessex recorded in the range of 11-40mm. This is notably lower than SMD this time last year. The majority of Wessex recorded a SMD of 26-50% lower than the LTA, with a

couple of areas to the west and east of Wessex recording a SMD between 6-25% lower than the LTA.

1.3 River flows

Sites in the north of Wessex mainly recorded normal and above normal monthly mean flows in May 2024. Sites in the south of Wessex, including those in Chalk catchments all recorded notably high and exceptionally high monthly mean flows. All sites recorded reduced flows at the end of May in comparison to the end of April. At the end of the month most daily mean flows were starting to decrease following the wet period towards the end of the month.

1.4 Groundwater levels

Groundwater sites across Wessex recorded between exceptionally high and normal levels at the end of May. Amongst sites monitoring the Chalk, 2 reported above normal levels and 2 reported notably high levels. Oakley Industrial Estate (monitoring the Chalk) reported normal levels while Kingston Russell Road was the only site monitoring the Chalk to report exceptionally high levels. The three remaining sites, Didmarton (monitoring the Inferior Oolite formation), Allington (monitoring the Great Oolite formation) and Overcompton (monitoring the Bridport Sand formation) all recorded exceptionally high levels.

1.5 Reservoir stocks

Reservoir levels in Wessex remained close to 100% capacity during May for Wessex Water, reporting at approximately 98% full which is similar to the levels recorded this time last year. Bristol Water reported approximately 94% storage capacity which has remained steady throughout the month. This is similar to levels reported at the end of May last year.

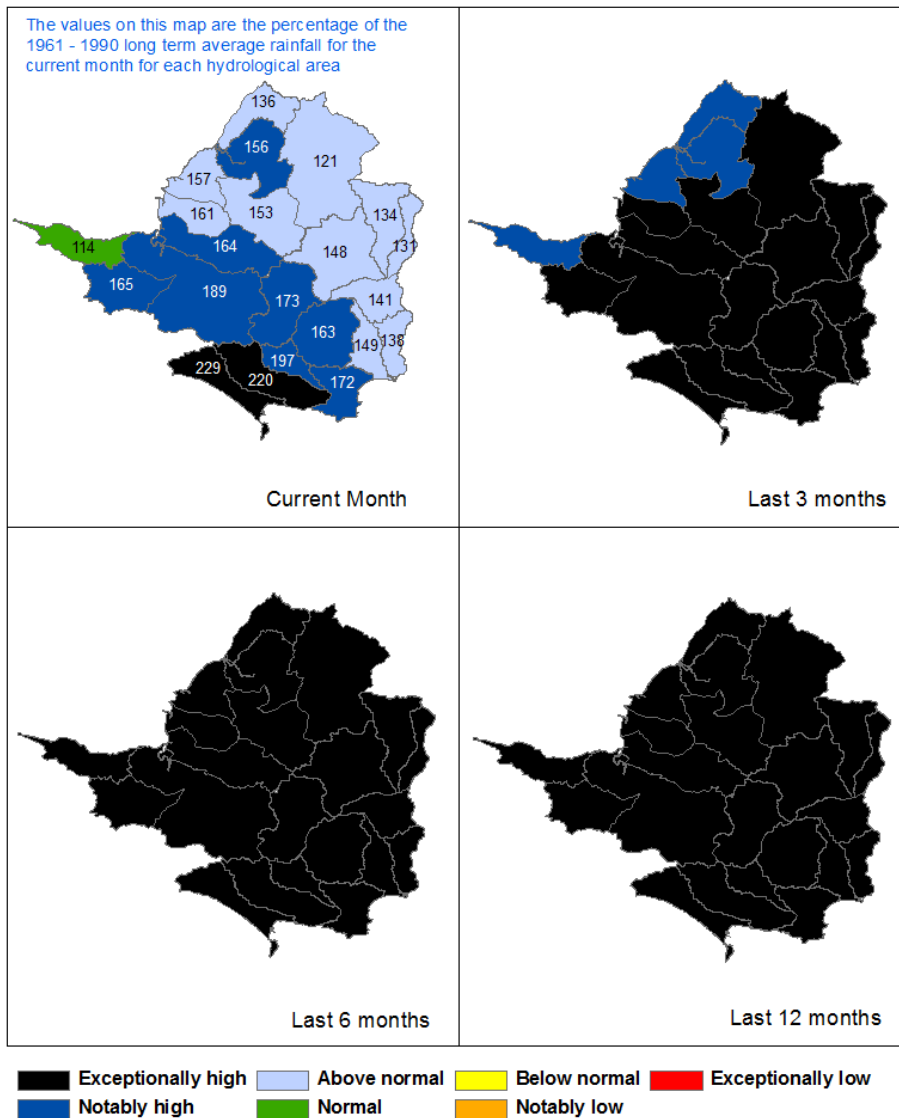
Author: Wessex Hydrology, hydrologywessex@environment-agency.gov.uk

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2 Rainfall

2.1 Rainfall map

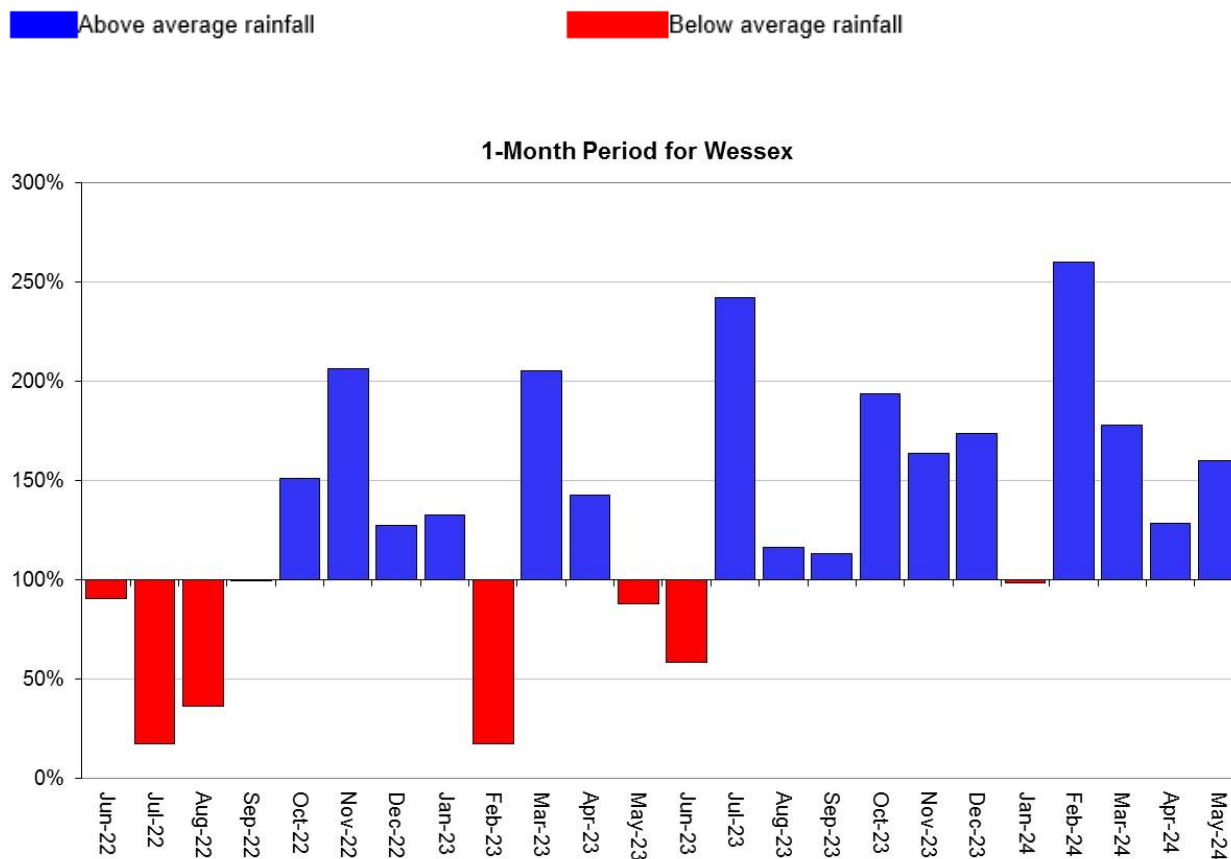
Figure 2.1: Total rainfall for hydrological areas for the current month (up to 31 May 2024), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



Rainfall data for 2023 and 2024, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2024). Rainfall data prior to 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2024).

2.2 Rainfall charts

Figure 2.2: Monthly rainfall totals for the past 24 months as a percentage of the 1961 to 1990 long term average for each region and for England.

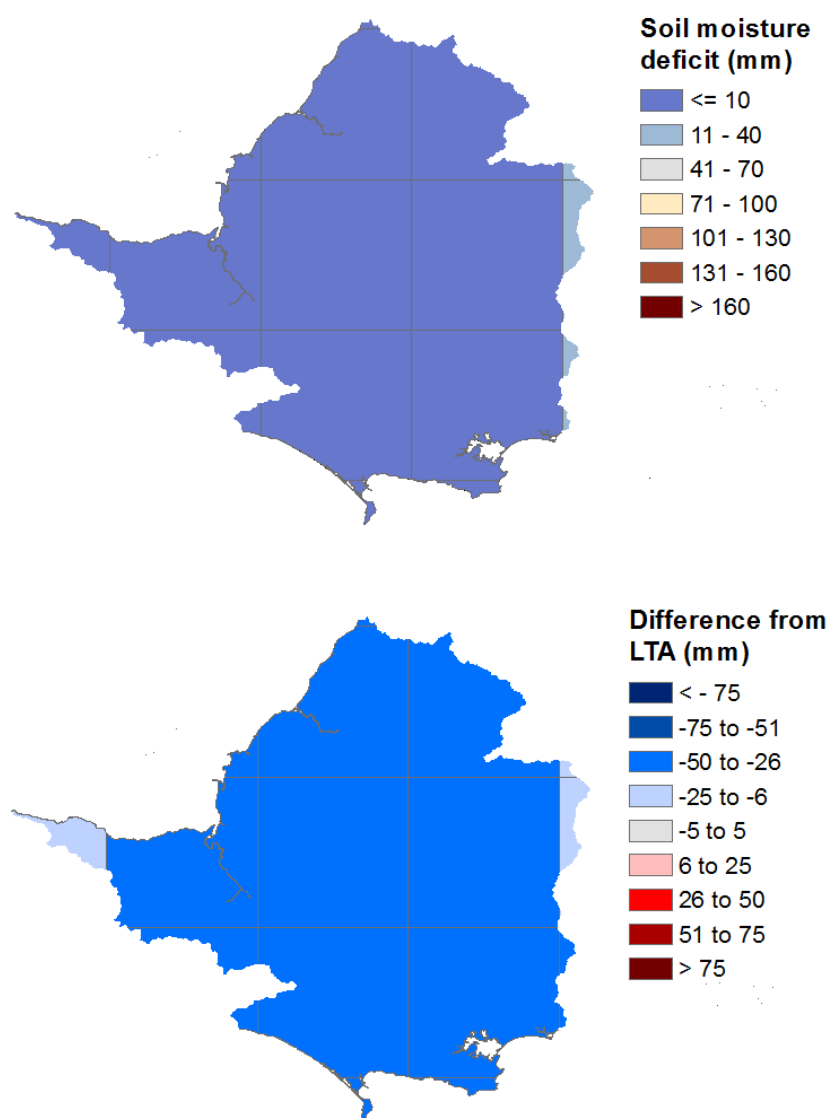


Rainfall data for 2023 and 2024, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2024). Rainfall data prior to 2023, extracted from Met Office HadUK 1km gridded rainfall dataset derived from registered rain gauges (Source: Met Office. Crown copyright, 2024).

3 Soil moisture deficit

3.1 Soil moisture deficit map

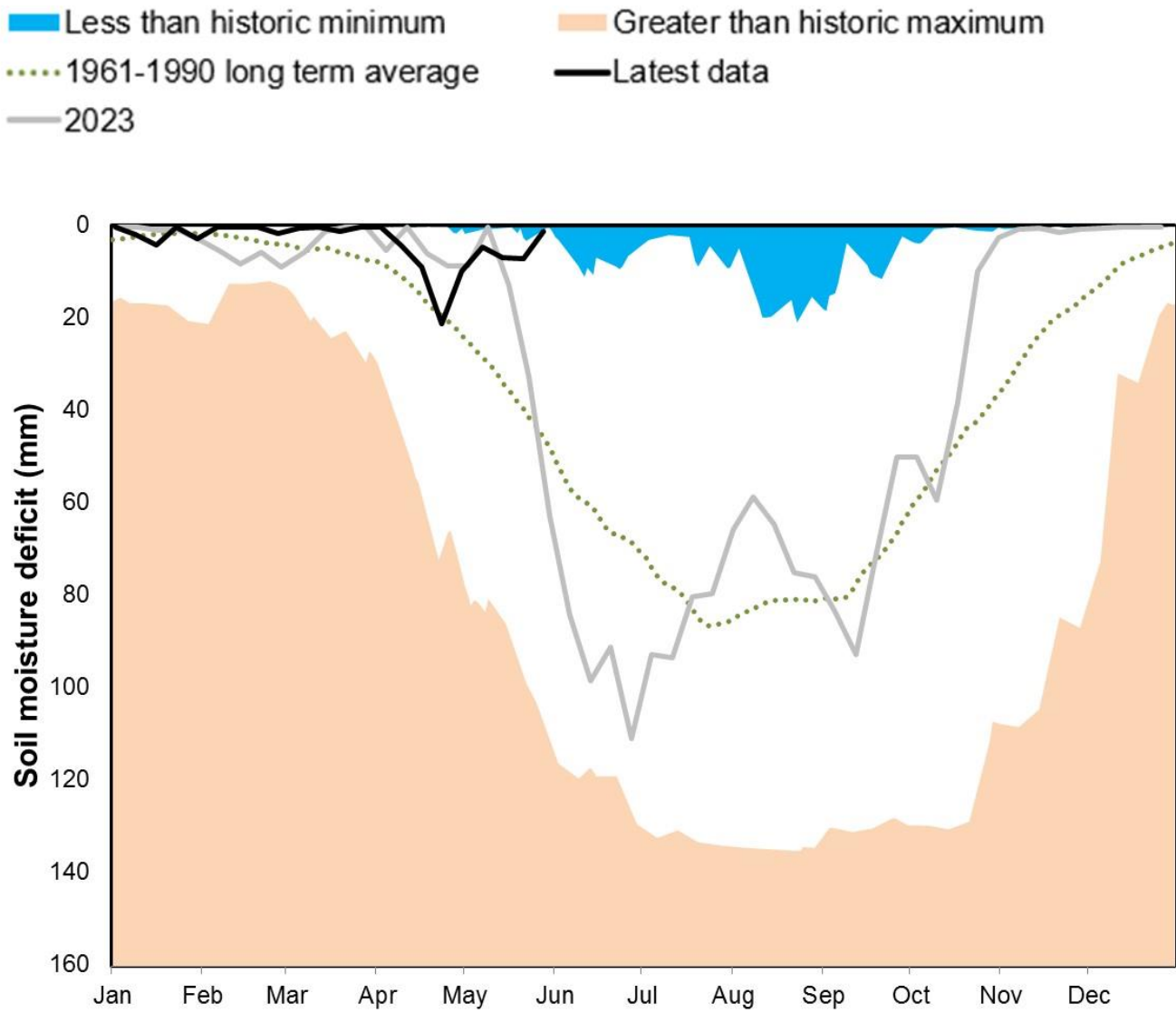
Figure 3.1: Soil moisture deficits for weeks ending 31 May 2024. Shows the difference (mm) of the actual soil moisture deficit from the 1961 to 1990 long term average soil moisture deficits. MORECS data for real land use.



(Source: Met Office. Crown copyright, 2024). All rights reserved. Environment Agency, 100024198, 2024.

3.2 Soil moisture deficit charts

Figure 3.2: Latest soil moisture deficit compared to previous year, maximum, minimum, and 1961 to 1990 long term average. Weekly MORECS data for real land use.

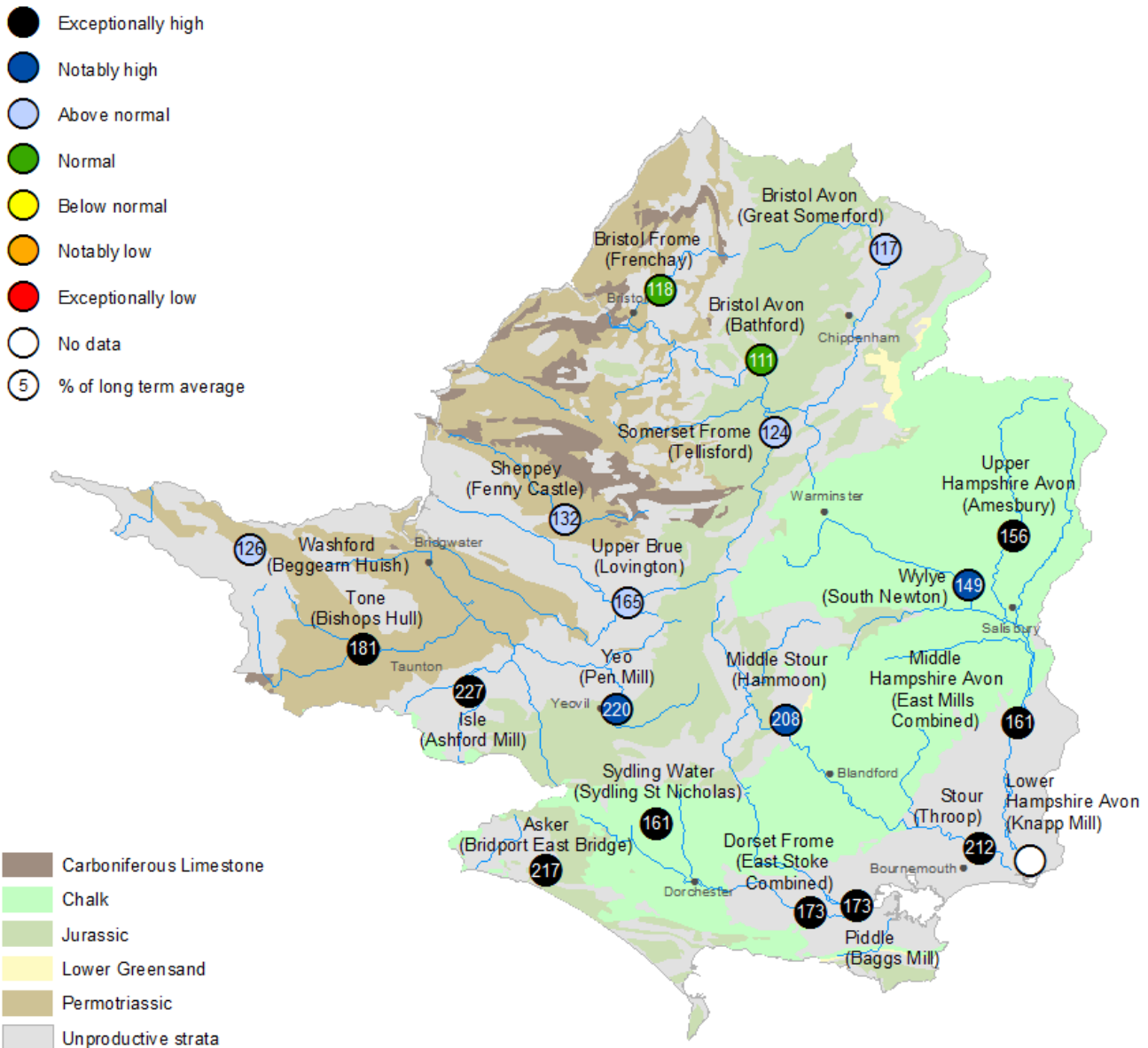


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4 River flows

4.1 River flows map

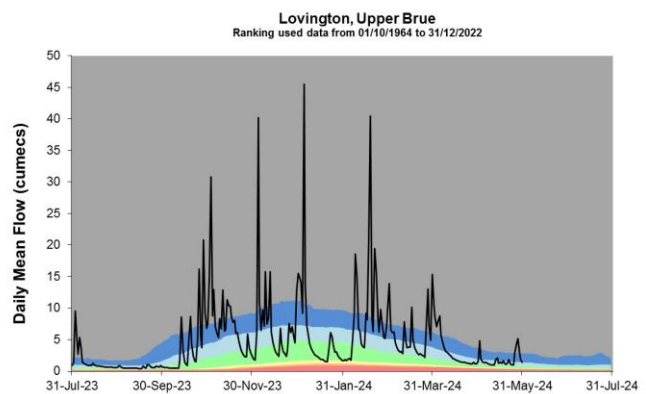
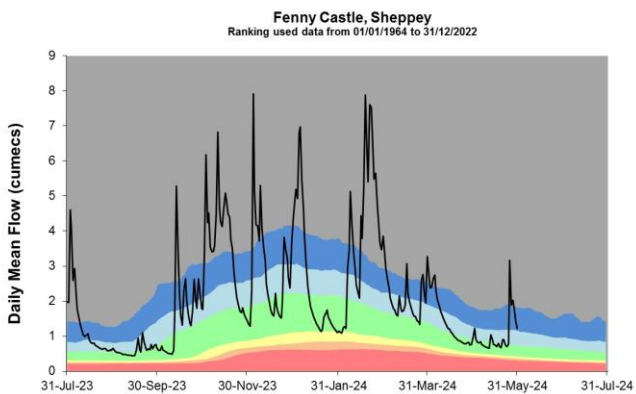
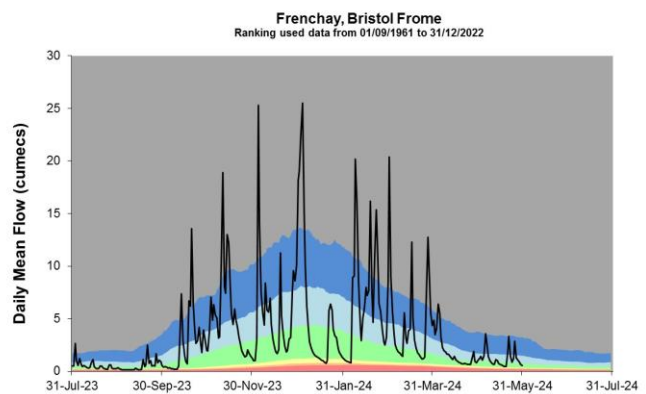
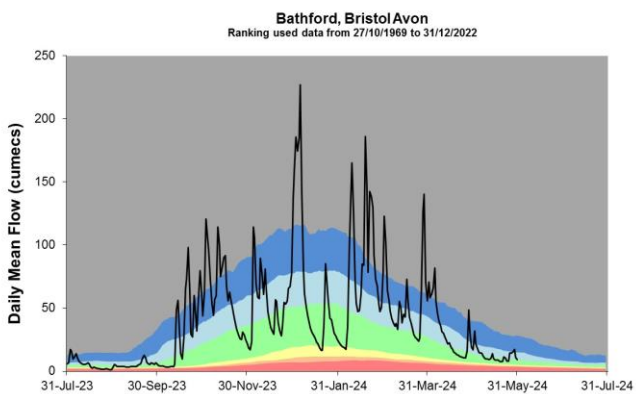
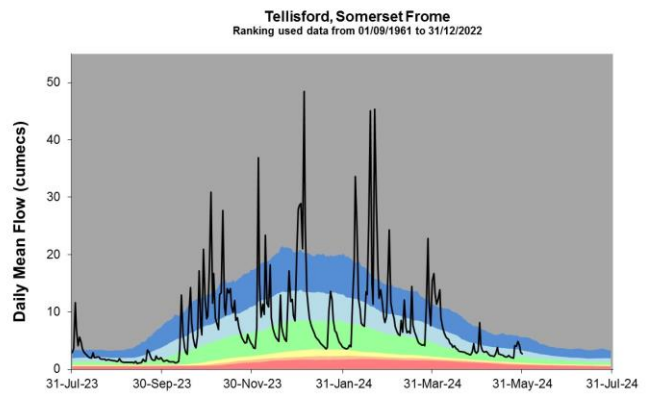
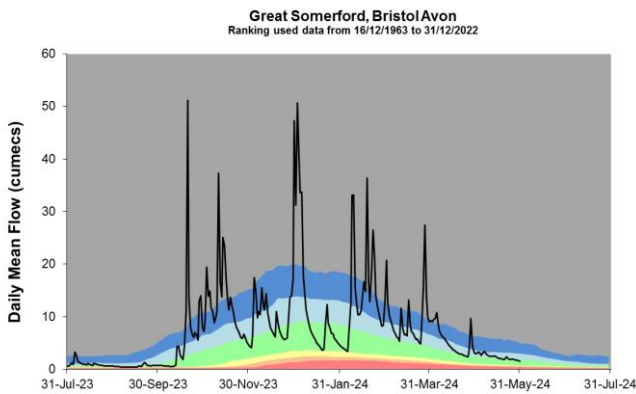
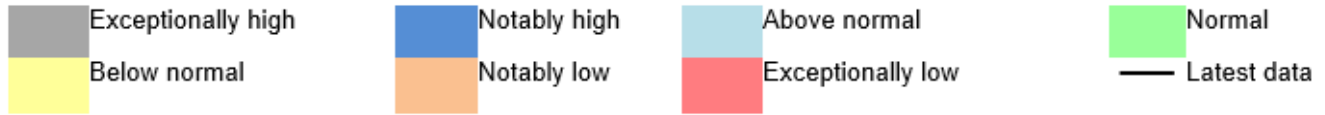
Figure 4.1: Monthly mean river flow for indicator sites for May 2024, expressed as a percentage of the respective long term average and classed relative to an analysis of historic May monthly means Table available in the appendices with detailed information.



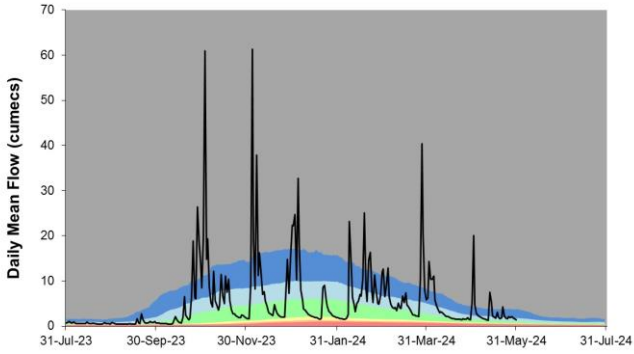
(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, 100024198, 2024. Lower Hampshire Avon at Knapp Mill has been omitted due to ongoing data quality issues. The Stour at Throop, the Dorset Frome at East Stoke Combined and the Isle at Ashford Mill should be used with caution due to ongoing data issues.

4.2 River flow charts

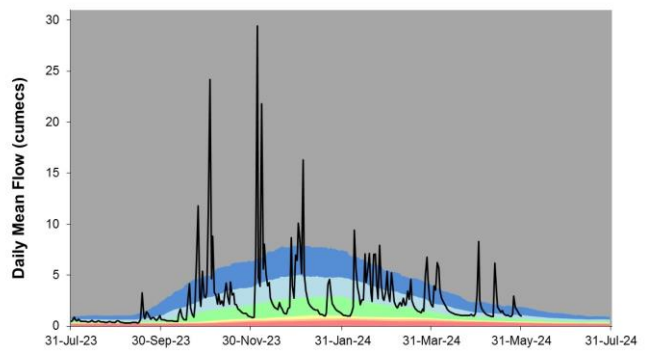
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows.



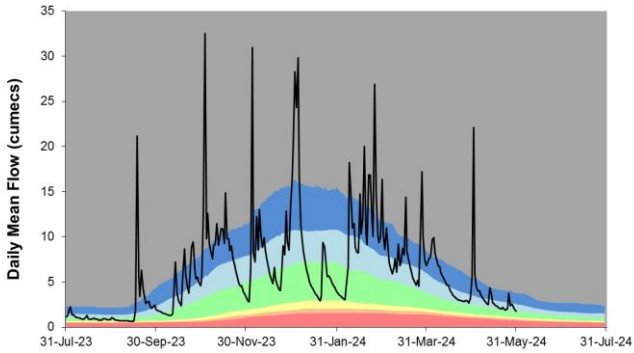
Pen Mill, Somerset Yeo
Ranking used data from 31/10/1963 to 31/12/2022



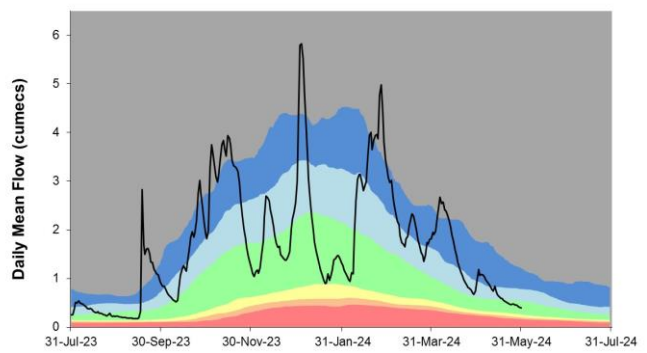
Ashford Mill, River Isle
Ranking used data from 01/10/1962 to 31/12/2022



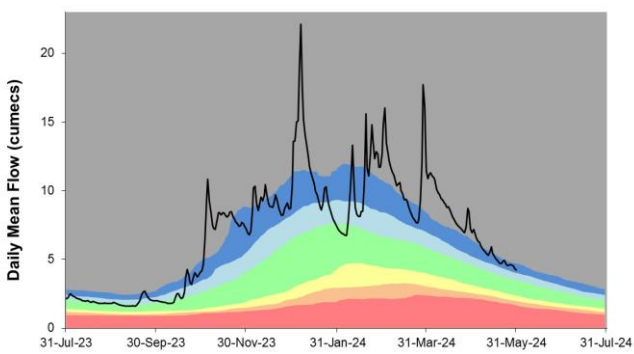
Bishops Hull, River Tone
Ranking used data from 01/02/1961 to 31/12/2022



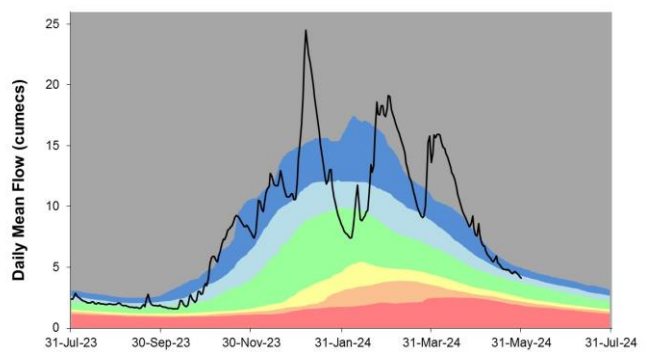
Beggearn Huish, Washford River
Ranking used data from 01/01/1967 to 31/12/2022



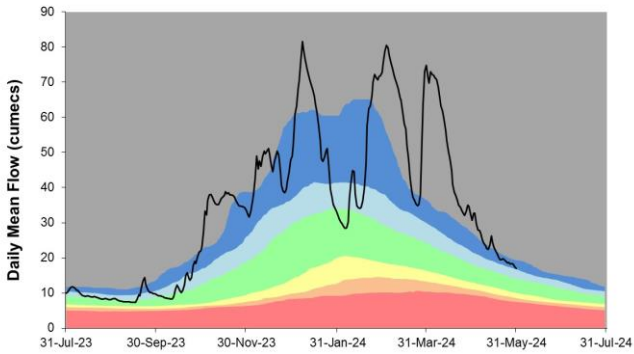
Amesbury, Upper Hampshire Avon
Ranking used data from 01/02/1965 to 31/12/2022



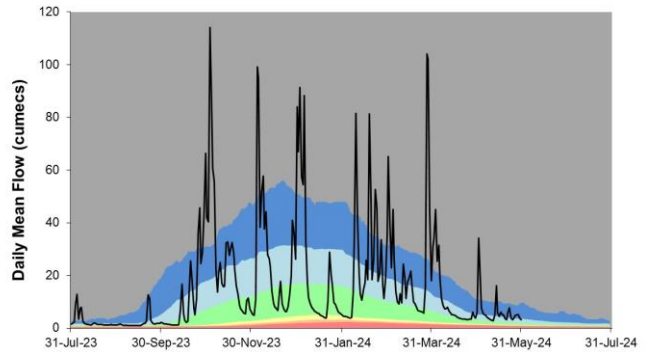
South Newton, River Wylfe
Ranking used data from 01/01/1967 to 31/12/2022

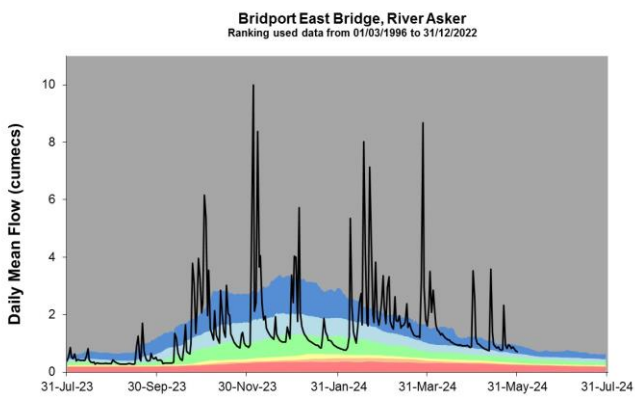
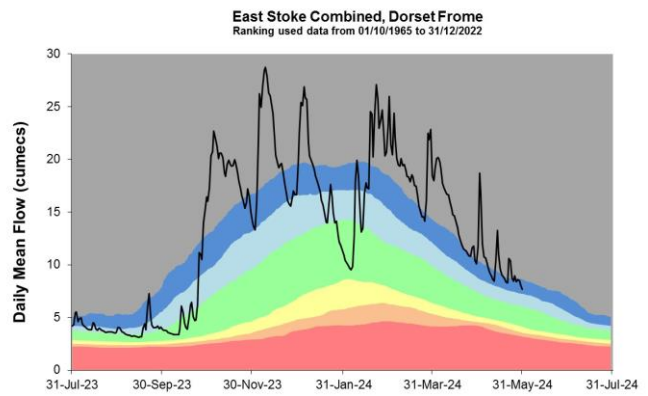
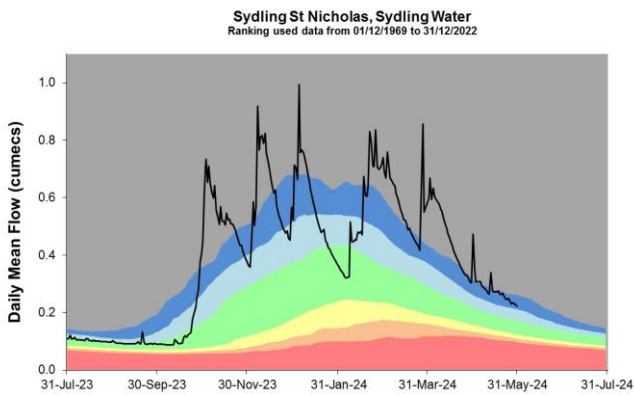
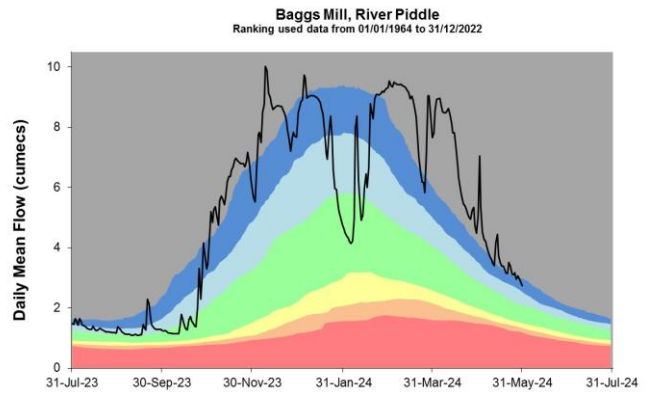
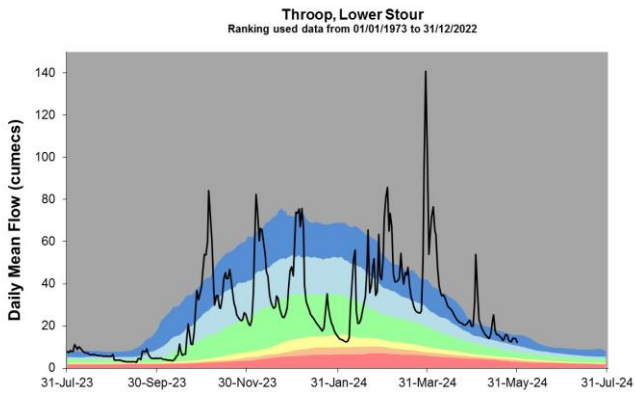


East Mills Combined, Middle Hampshire Avon
Ranking used data from 01/11/1965 to 31/12/2022



Hammoo, Middle Stour
Ranking used data from 01/03/1968 to 31/12/2022



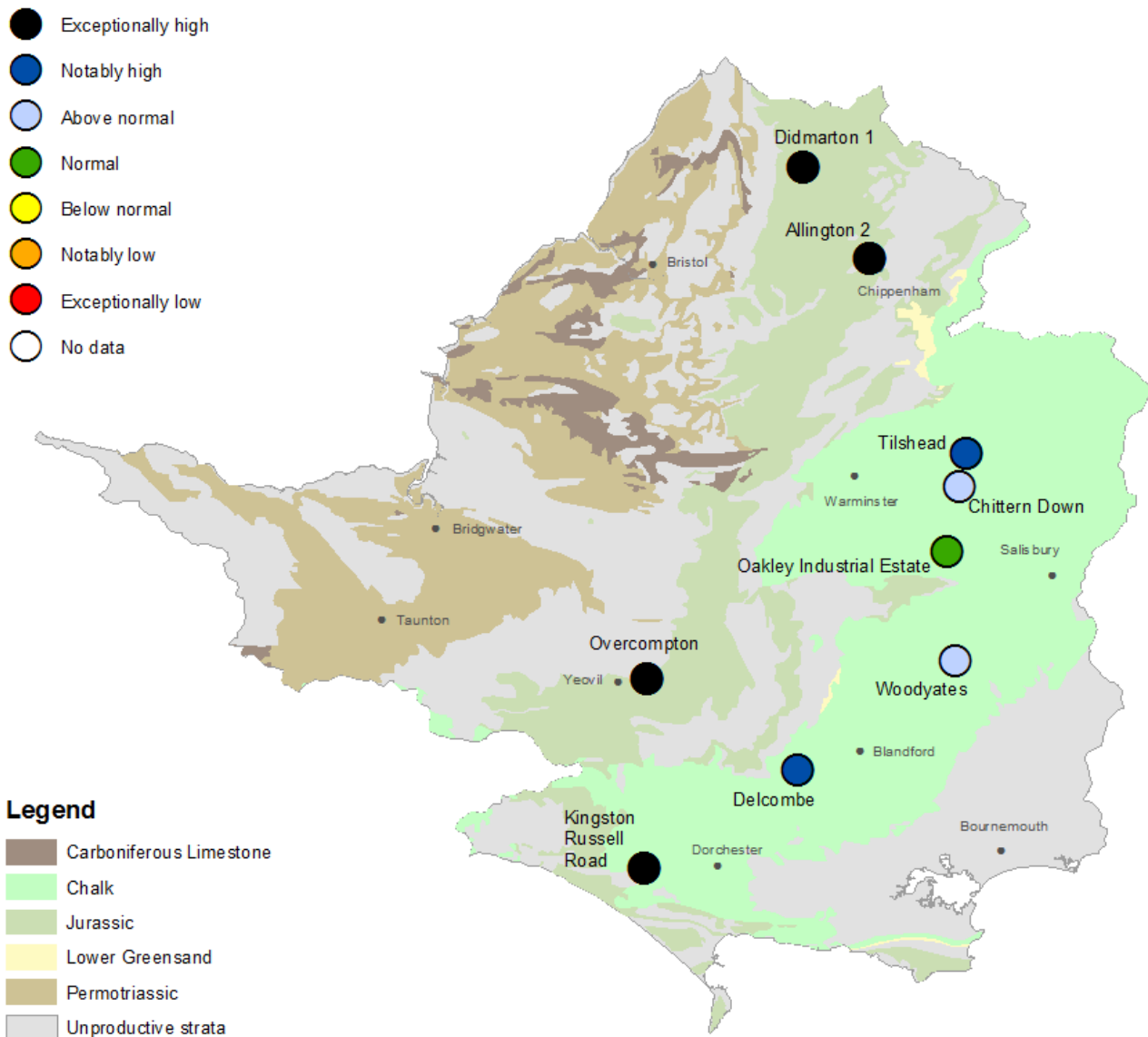


Source: Environment Agency, 2024. The Stour at Throop, the Dorset Frome at East Stoke Combined and the Isle at Ashford Mill should be used with caution due to ongoing data issues.

5 Groundwater levels

5.1 Groundwater levels map

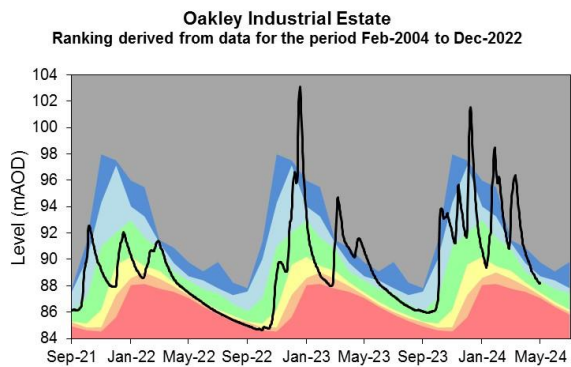
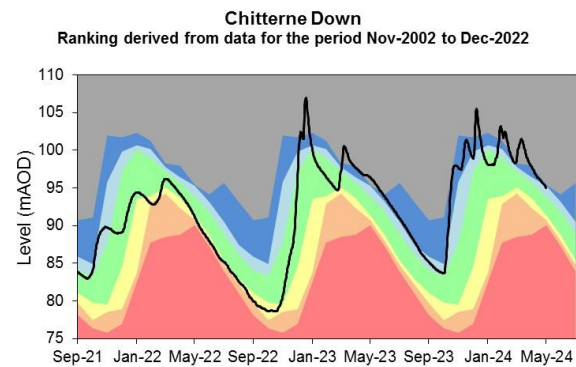
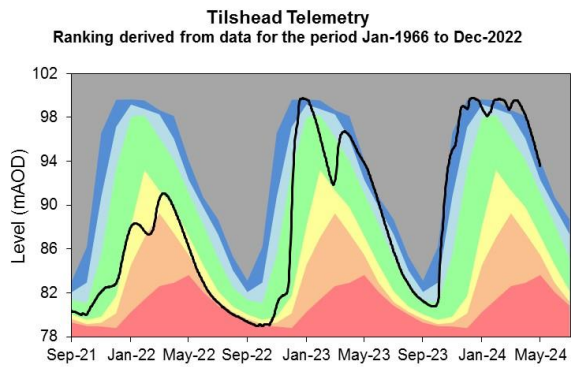
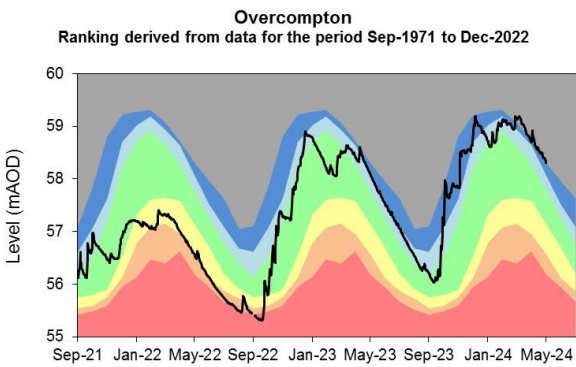
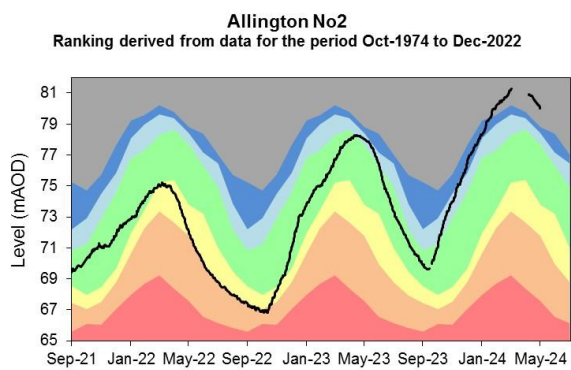
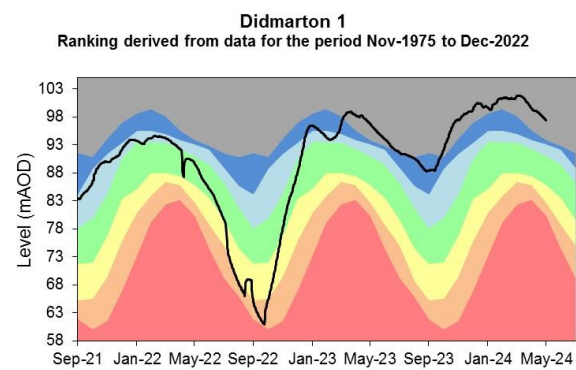
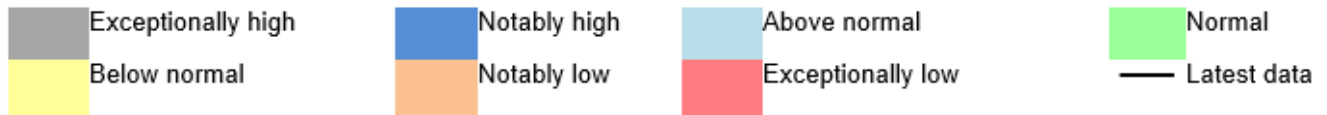
Figure 5.1: Groundwater levels for indicator sites at the end of May 2024, classed relative to an analysis of respective historic May levels. Table available in the appendices with detailed information.

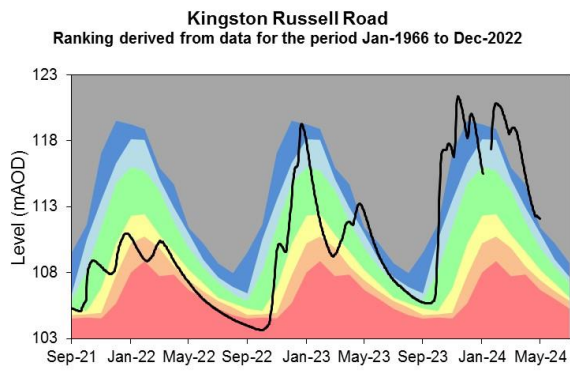
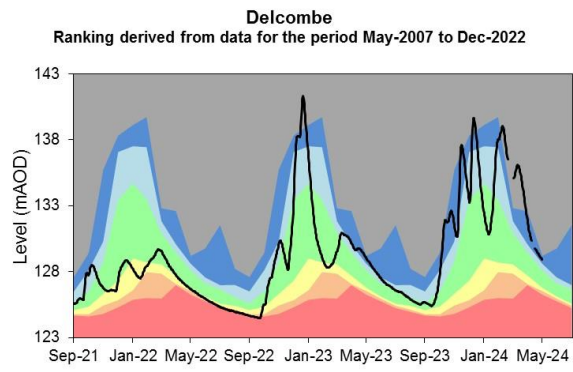
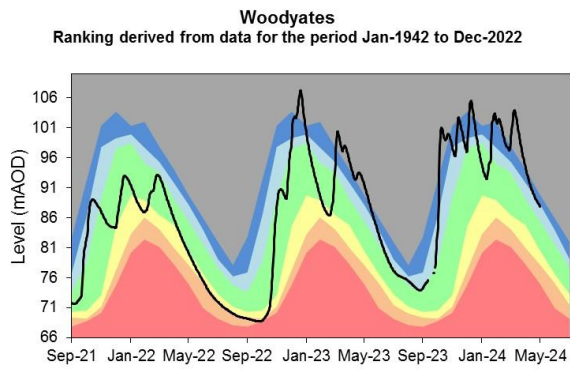


(Source: Environment Agency). Oakley Industrial Estate, Delcombe and Allington 2 should be used with caution due to ongoing data issues. Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2024.

5.2 Groundwater level charts

Figure 5.2: 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.

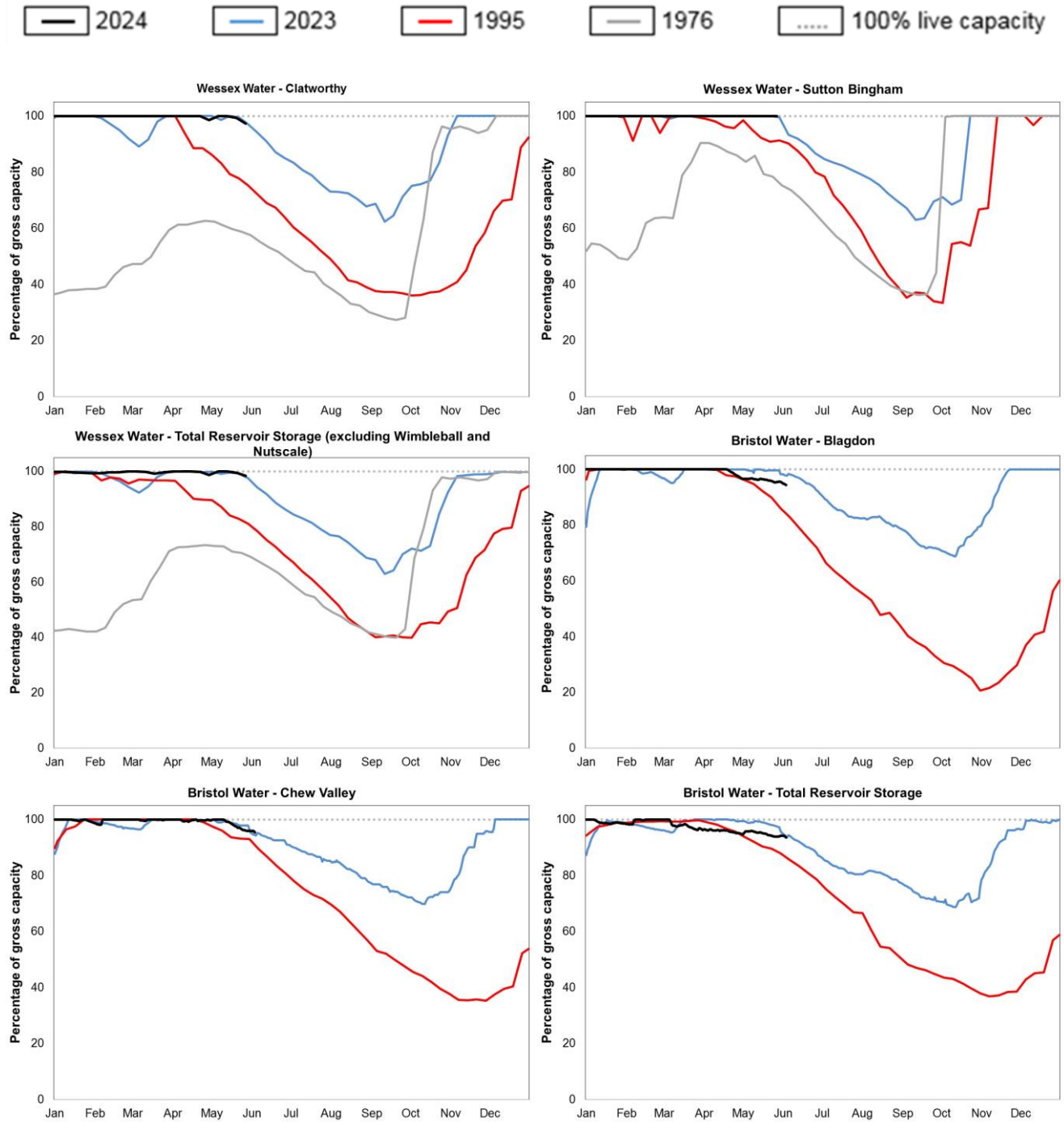




Source: Environment Agency, 2024. Oakley Industrial Estate, Delcombe and Allington 2 should be used with caution due to ongoing data issues.

6 Reservoir stocks

Figure 6.1: End of month regional reservoir stocks compared to the previous year, and if available, also a comparison to reservoir stocks in 1995 and 1976.



(Source: Wessex Water and Bristol Water).

7 Flood alerts and warnings

7.1 Flood alerts

Table 1: Fluvial, coastal and groundwater flood alerts issued during May

Area	Number of fluvial flood alerts in May	Number of coastal flood alerts in May	Number of groundwater flood alerts in May
North Wessex	13	0	0
South Wessex	7	0	0

7.2 Flood warnings

Table 2: Fluvial, coastal and groundwater flood warnings issued during May

Area	Number of fluvial flood warnings in May	Number of coastal flood warnings in May	Number of groundwater flood warnings in May
North Wessex	0	0	0
South Wessex	1	0	0

7.3 Severe flood warnings

Table 3: Fluvial, coastal and groundwater severe flood warnings issued during May

Area	Number of fluvial severe flood warnings in May	Number of coastal severe flood warnings in May	Number of groundwater severe flood warnings in May
North Wessex	0	0	0
South Wessex	0	0	0

8 Stream support

8.1 Sites providing stream support

Table 4: End of May status for stream support sites.

Catchment	River	Stream support site	Gauging station	End of May status
Bristol Avon	Chalfield Brook	South Wraxall	Great Chalfield (Wessex Water)	On
Bristol Avon	Chalfield Brook	Little Chalfield	Great Chalfield (Wessex Water)	Off
Bristol Avon	Charlton Stream	Charlton	Crabb Mill	Off
Bristol Avon	Gauze Brooke	Hullavington	Rodbourne	Off
Bristol Avon	Horscombe Stream	Tucking Mill	No Gauge	Off
Bristol Avon	Luckington Brook	Luckington	Fossway	Off
Bristol Avon	Rodbourne Brook	Lower Stanton St. Quinton	Startley	Off
Bristol Avon	Semington Brook	Easterton	No Gauge	Off
Bristol Avon	Sherston Avon	Stanbridge	Fossway	Off
Bristol Avon	Tetbury Avon	Tetbury	Brokenborough	Off
Dorset Frome	South Winterbourne	Winterbourne Abbas	Winterbourne Steepleton	Off

Dorset Frome	Watergates Stream	Watergates	No Gauge	On
Piddle	Devil's Brook	Dewlish	Dewlish Woodsdown Cross	Off
Piddle	Piddle	Alton Mill	South House & Little Puddle	Off
Piddle	Piddle	Morningwell	South House & Little Puddle	Off
Piddle	Piddle	Briantspuddle	Briantspuddle	Off
Dorset Stour	Crichel Stream	Long Crichel	No Gauge	Off
Dorset Stour	Gussage Stream	Gussage All Saints	Bowerswain	Off
Dorset Stour	Allen	Wyke Down	All Hallows	Off
Dorset Stour	Pimperne Stream	Pimperne	No Gauge	Off
Hampshire Avon	Bourne	Porton	Salisbury Bourne	Off
Hampshire Avon	Chitterne Brook	Codford Road	Codford	Off
Hampshire Avon	Wylde	Brixton Deverill	Brixton Deverill & Heytesbury	Off
Hampshire Avon	Wylde	Kingston Deverill	Brixton Deverill & Heytesbury	Off

9 Abstraction licences subject to restrict or cease

9.1 Abstraction licences subject to restrict or cease

Table 5: Number of licences at restrict or cease at the end of May.

Catchment	Number of licences at restrict at the end of May	Number of licences at cease at the end of May
Bristol Avon	0	0
Dorset	0	0
Hampshire Avon	0	3
Somerset	0	1

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 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).

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

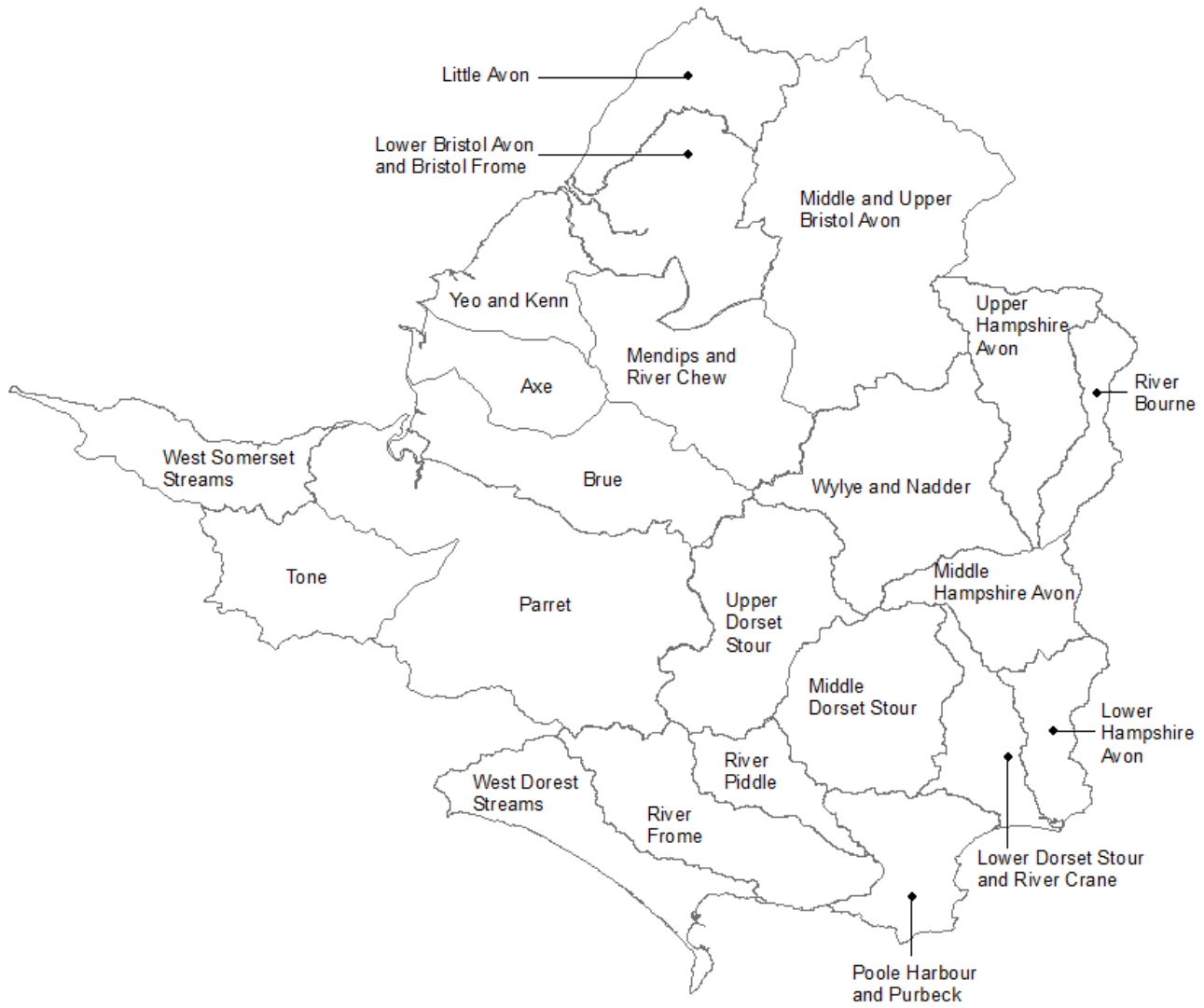
Value likely to fall within this band 8% of the time.

Exceptionally low

Value likely to fall within this band 5% of the time.

10.3 Rainfall Areas Map

Figure 6.2 Rainfall catchments in Wessex.



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11 Appendices

11.1 Rainfall table

Hydrological area	May 2024 rainfall % of long term average 1961 to 1990	May 2024 band	Mar 2024 to May cumulative band	Dec 2023 to May cumulative band	Jun 2023 to May cumulative band
Axe	161	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
Brue	164	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
Little Avon	136	Above Normal	Notably high	Exceptionally high	Exceptionally high
Lower Bristol Avon And Bristol Frome	156	Notably High	Notably high	Exceptionally high	Exceptionally high
Lower Dorset Stour And River Crane	149	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
Lower Hampshire Avon	138	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
Mendips And River Chew	153	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
Middle And Upper Bristol Avon	121	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high

Middle Dorset Stour	163	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
Middle Hampshire Avon	141	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
Parrett	189	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
Poole Harbour And Purbeck	172	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
River Bourne	131	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
River Frome	220	Exceptionally High	Exceptionally high	Exceptionally high	Exceptionally high
River Piddle	197	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
Tone	165	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
Upper Dorset Stour	173	Notably High	Exceptionally high	Exceptionally high	Exceptionally high
Upper Hampshire Avon	134	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
West Dorset Streams	229	Exceptionally High	Exceptionally high	Exceptionally high	Exceptionally high

West Somerset Streams	114	Normal	Notably high	Exceptionally high	Exceptionally high
Wylde And Nadder	148	Above Normal	Exceptionally high	Exceptionally high	Exceptionally high
Yeo And Kenn	157	Above Normal	Notably high	Exceptionally high	Exceptionally high

11.2 River flows table

Site name	River	Catchment	May 2024 band	Apr 2024 band
Amesbury	Upper Hampshire Avon	Hampshire Avon	Exceptionally high	Exceptionally high
Ashford Mill	Isle	Parrett	Exceptionally high	Above normal
Baggs Mill	Piddle	Piddle	Exceptionally high	Exceptionally high
Bathford	Bristol Avon	Bristol Avon	Normal	Notably high
Beggearn Huish	Washford	Washford River	Above normal	Notably high
Bishops Hull	Tone	Tone	Exceptionally high	Notably high
Bridport East Bridge	Asker	Asker	Exceptionally high	Notably high
Fenny Castle	Sheppey	Brue	Above normal	Above normal
East Mills Combined	Middle Hampshire Avon	Hampshire Avon	Exceptionally high	Exceptionally high
East Stoke Combined	Dorset Frome	Dorset Frome	Exceptionally high	Exceptionally high
Frenchay	Bristol Frome	Bristol Frome	Normal	Above normal

Great Somerford	Bristol Avon	Bristol Avon	Above normal	Notably high
Hammoon	Middle Stour	Dorset Stour	Notably high	Notably high
Knapp Mill	Lower Hampshire Avon	Hampshire Avon	Data unavailable	Data unavailable
Lovington	Upper Brue	Brue	Above normal	Notably high
Pen Mill	Yeo	Parrett	Notably high	Above normal
South Newton	River Wylde	Hampshire Avon	Notably high	Exceptionally high
Sydling St Nicholas	Sydling Water	Dorset Frome	Exceptionally high	Exceptionally high
Tellisford	Somerset Frome	Bristol Avon	Above normal	Above normal
Throop	Lower Stour	Dorset Stour	Exceptionally high	Exceptionally high

11.3 Groundwater table

Site name	Aquifer	End of May 2024 band	End of Apr 2024 band
Allington No2	Upper Bristol Avon Great Oolite	Exceptionally high	Data unavailable
Chitterne Down	Upper Hampshire Avon Chalk	Above normal	Notably high
Delcombe	Dorset Frome And Piddle Chalk/upper Greensand	Notably high	Notably high
Didmarton 1	Upper Bristol Avon Inferior Oolite	Exceptionally high	Exceptionally high
Kingston Russell Road	Dorset Frome Chalk	Exceptionally high	Exceptionally high
Overcompton	Somerset Yeo Bridport Sand	Exceptionally high	Notably high
Tilshead	Upper Hampshire Avon Chalk	Notably high	Exceptionally high
Woodyates	Dorset Stour Chalk	Above normal	Exceptionally high
Oakley Industrial Estate	Upper Hampshire Avon Chalk	Normal	Notably high