

# Monthly water situation report: Wessex Area

## 1 Summary - November 2024

November marked a continuation of the wet weather from the previous two months with an average of 115mm of rainfall across Wessex, 137% of the long term average (LTA). Almost all of the rain and snow in November fell during the latter half of the month, particularly between 23 and 24 November during Storm Bert. Soil moisture deficit (SMD) initially increased during November in response to the drier start to the month before decreasing towards zero at the end of November. Monthly mean flows recorded across Wessex were all notably high or above normal apart from the River Washford at Beggearn Huish which reported normal flows. By the end of November, daily mean flows were falling at every site following the peak caused by Storm Bert. Groundwater sites towards the south of Wessex reported notably high levels at the end November while sites in the north reported exceptionally high levels. Reservoirs ended the month at around 99% and 91% capacity for Wessex Water and Bristol Water respectively. For Wessex Water this was similar to levels this time last year. For Bristol Water, levels were slightly lower than in November 2023.

### 1.1 Rainfall

In November an average of 115mm (137% LTA) of rain fell across Wessex. Most hydrological areas received normal rainfall while six areas in the northeast received above normal rainfall. In all hydrological areas in Wessex, rainfall during November was above average. Over 96% of November's rain fell during the latter half of the month with 47% of the monthly total falling on the weekend of 23 and 24 November during Storm Bert.

Nine of the past 12 months have received above average rainfall and it has been the wettest 10 and 11 month periods to November since our records began in 1871. This year is therefore on course to be the wettest calendar year since records began. In the last 3 months, most hydrological areas received exceptionally high rainfall with notably high levels recorded in a few areas to the south and west. In the last 6 months, areas largely received above normal rainfall to the west and notably high rainfall to the east of Wessex. All areas of Wessex received exceptionally rainfall over the last 12 months.

### 1.2 Soil moisture

Soil moisture deficit (SMD) in Wessex initially increased from around 1mm to around 6mm during the first couple of weeks of November. In response to rainfall during the latter half of November, SMD decreased to near zero on average across all areas of Wessex at the end of the month. The SMD at the end of November was slightly lower than the LTA deficit across most of Wessex but overall was similar to November last year.

### 1.3 River flows

All reporting sites across Wessex recorded notably high or above normal mean flows in November, apart from the River Washford at Beggearn Huish which recorded normal monthly mean flows. All sites recorded their peak flows for November following the high rainfall during Storm Bert.

By the end of the month, daily mean flows were falling across every site following the peak caused by high rainfall during Storm Bert. Sites in Chalk catchments largely ended November with notably or exceptionally high flows as they are supplemented by water from the Chalk aquifer. Most catchments with other underlying geologies ended the month with above normal flows.

### 1.4 Groundwater levels

All groundwater monitoring sites across Wessex ended November reporting either notably or exceptionally high levels. All sites showed slightly increased levels compared to the end of October. All sites to the south of Wessex including those monitoring the Chalk reported notably high levels at the end of the month. The two sites which recorded exceptionally high levels at the end of November were Allington and Didmarton to the north of Wessex (monitoring the Great and Inferior Oolite formations respectively). At the end of the month, all sites except Over Compton (monitoring the Bridport Sands formation) showed slightly increasing levels.

### 1.5 Reservoir stocks

Both Wessex Water and Bristol Water reservoir levels initially decreased in November before rising sharply in response to the rainfall during the latter half of the month. Wessex Water reservoirs ended the month around 99% capacity while Bristol Water reservoirs ended November around 91% capacity. The current combined levels for Wessex Water are similar to those recorded this time last year while for Bristol Water they are slightly lower than in November 2023. For both Wessex Water and Bristol Water, levels are significantly higher than in November 1995.

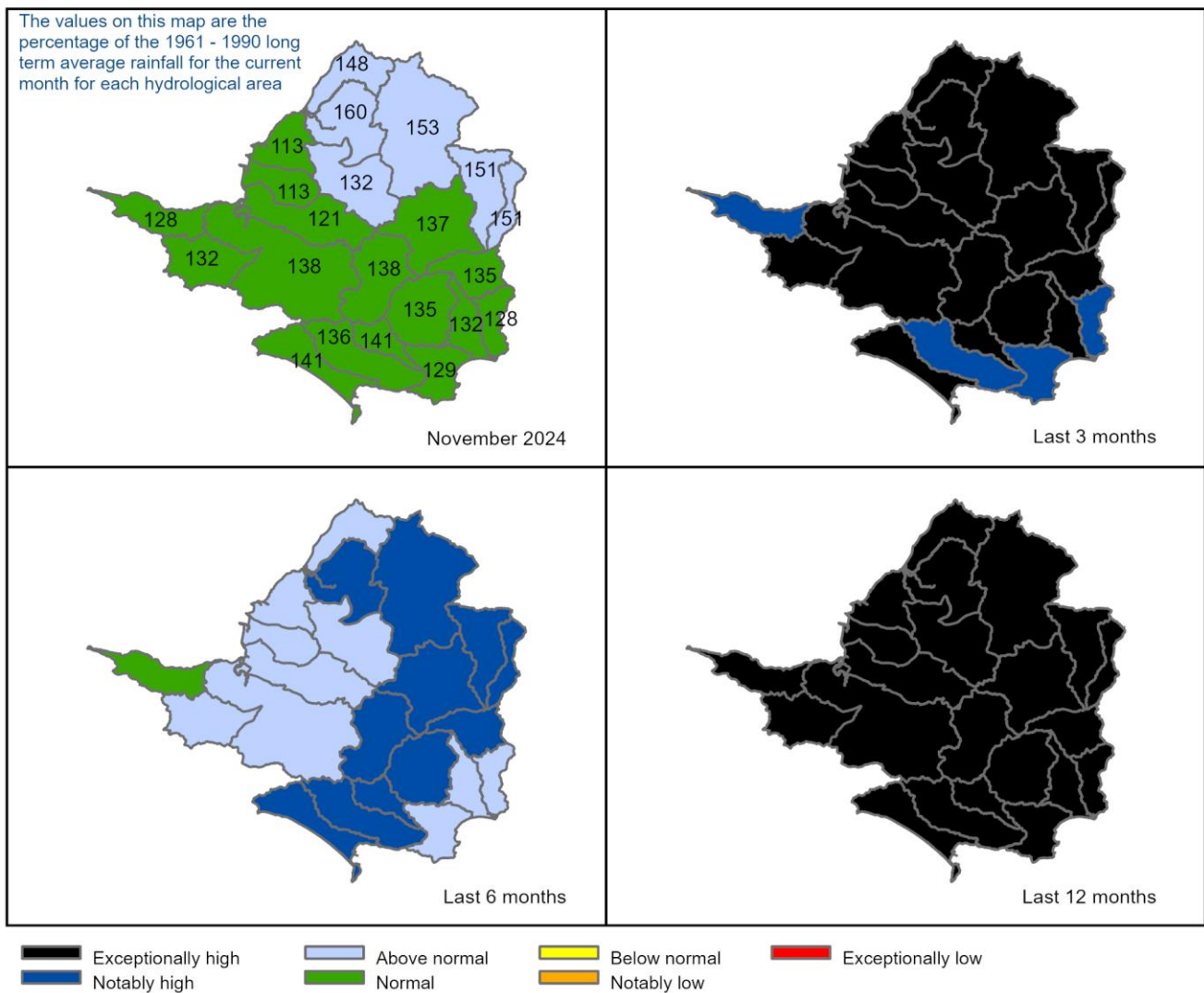
Author: Wessex Hydrology, [hydrologywessex@environment-agency.gov.uk](mailto:hydrologywessex@environment-agency.gov.uk)

All data are provisional and may be subject to revision. The views expressed in this document are not necessarily those of the Environment Agency. Its officers, servants or agents accept no liability for any loss or damage arising from the interpretation or use of the information, or reliance upon views contained in this report.

## 2 Rainfall

### 2.1 Rainfall map

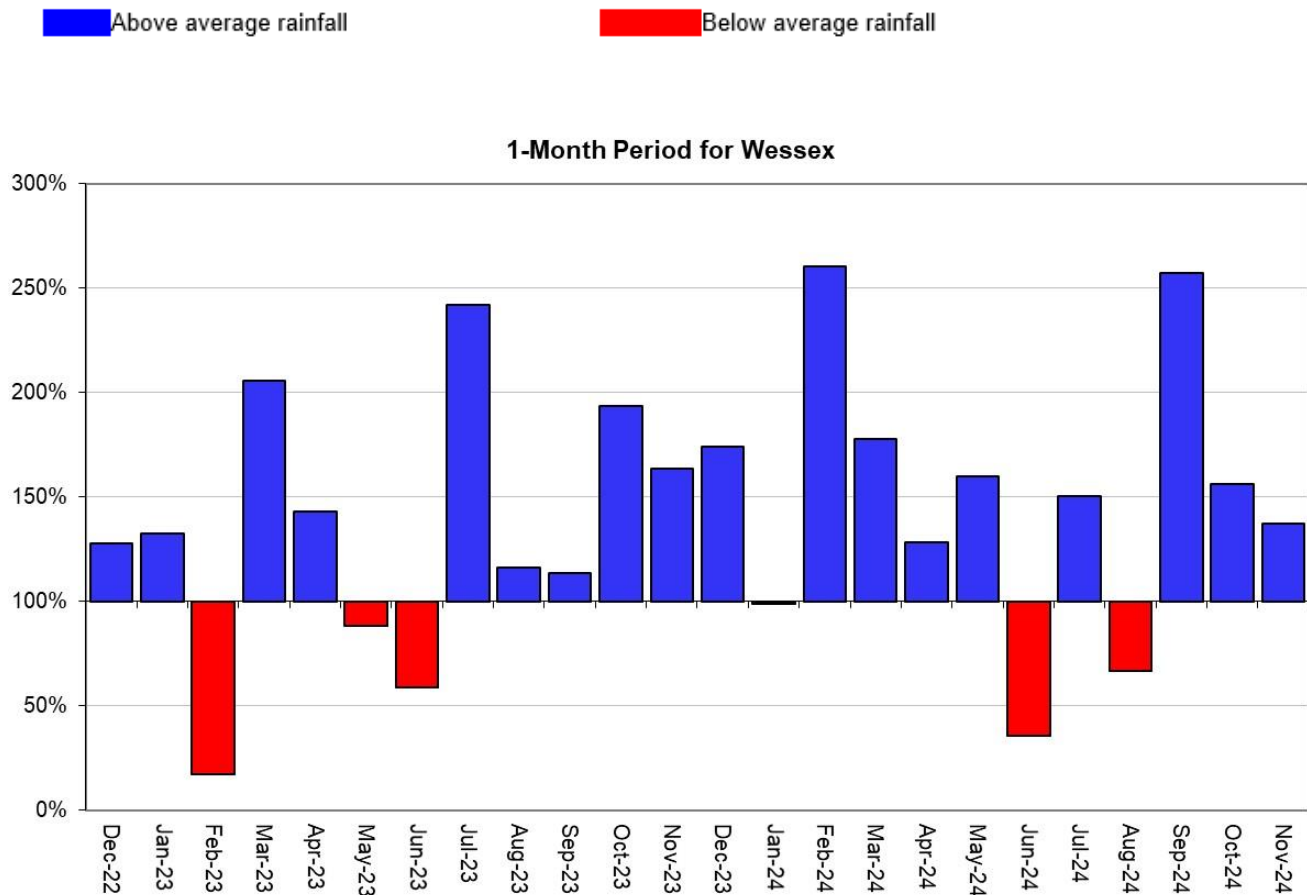
Figure 2.1: Total rainfall for hydrological areas for the current month (up to 30 November 2024), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals. Table available in the appendices with detailed information.



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 Wessex.

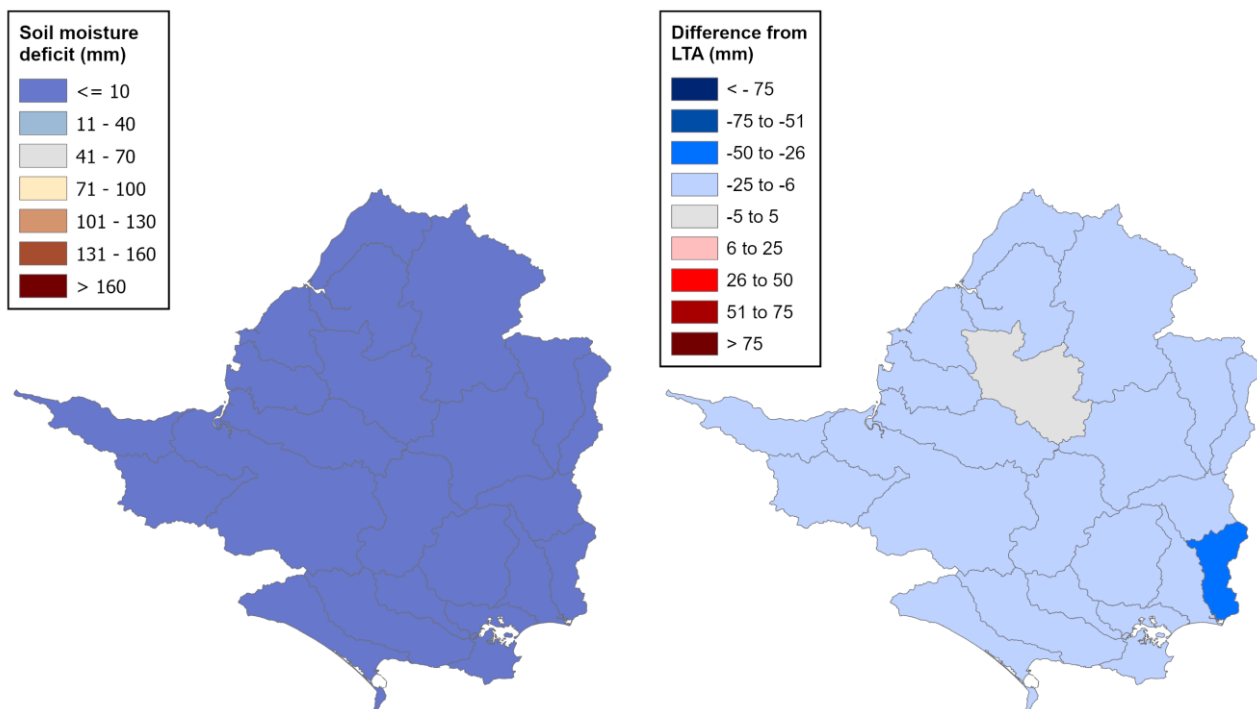


Rainfall data for 2023 and 2024, extracted from Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. (Source: Environment Agency. Crown Copyright, 100024198, 2024). Rainfall data prior to 2023, extracted from Met Office HadUK 1km gridded rainfall dataset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

### 3 Soil moisture deficit

#### 3.1 Soil moisture deficit map

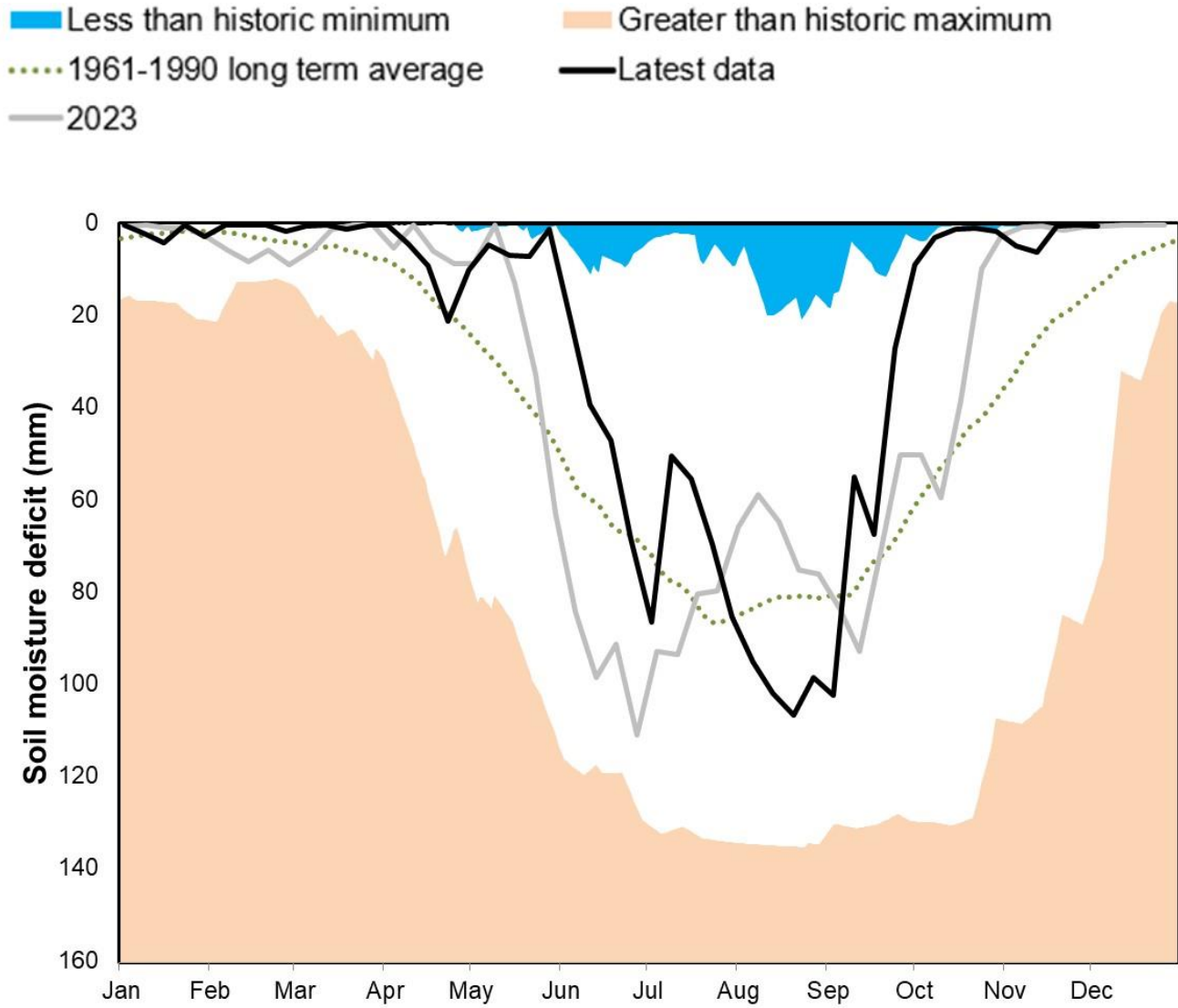
Figure 3.1: Soil moisture deficits for weeks ending 30 November 2024. Shows the difference (mm) of the actual soil moisture deficit from the 1961 to 1990 long term average soil moisture deficits. MORECS data for real land use.



(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.



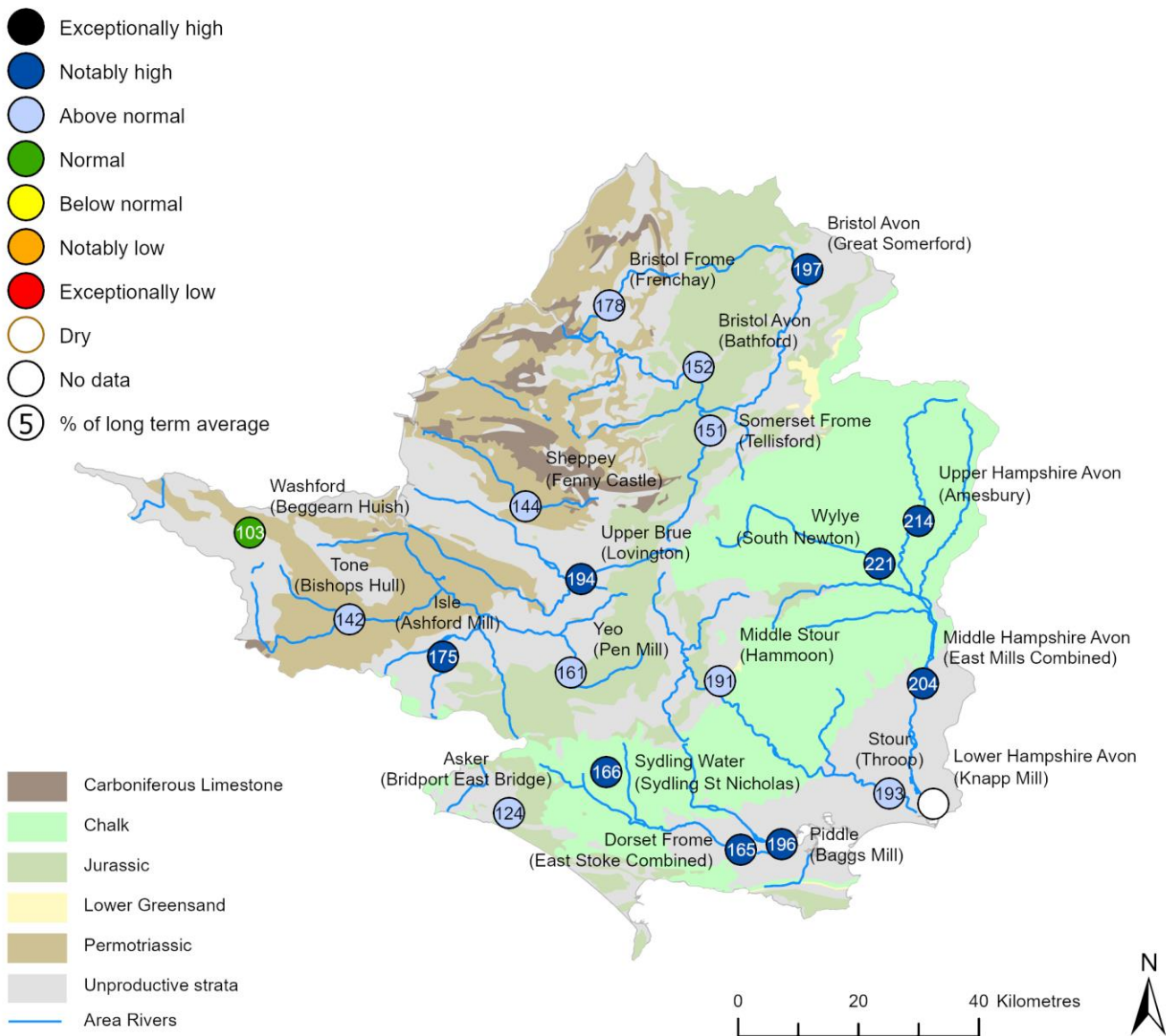
(Source: Met Office. Crown copyright, 2024). All rights reserved. Environment Agency, 100024198, 2024



# 4 River flows

## 4.1 River flows map

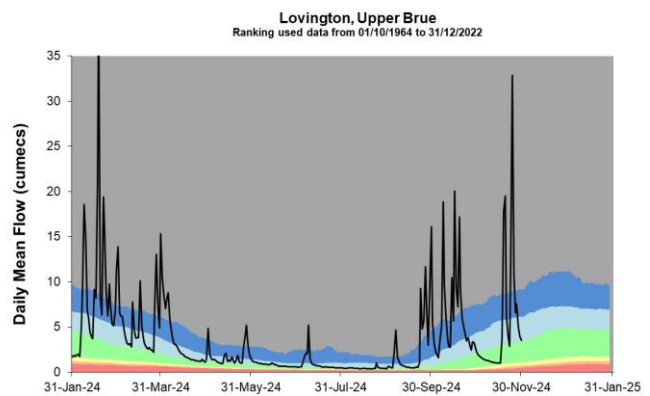
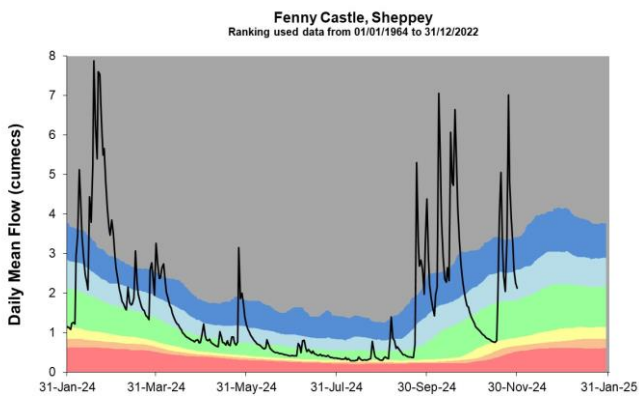
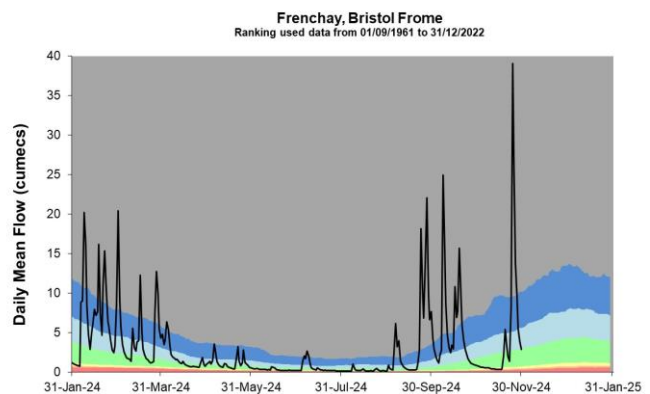
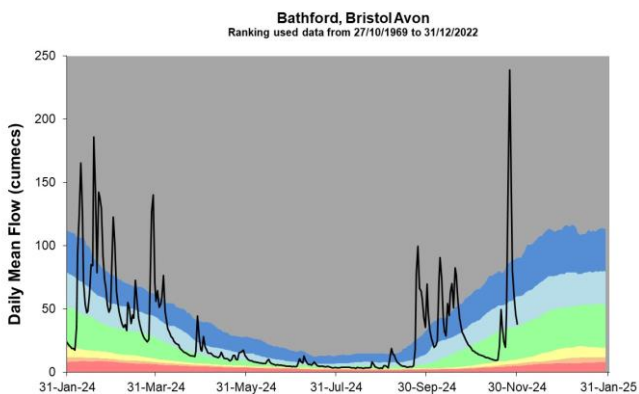
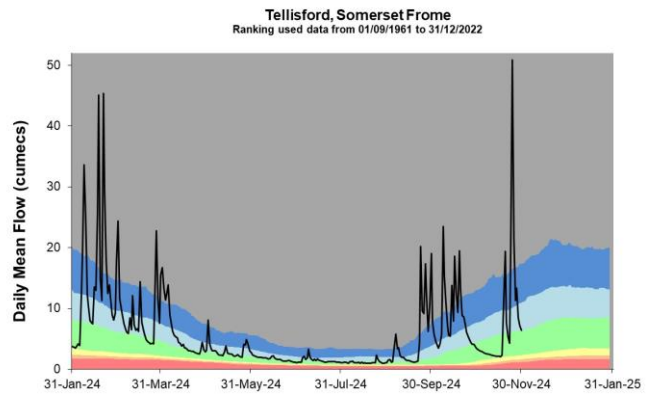
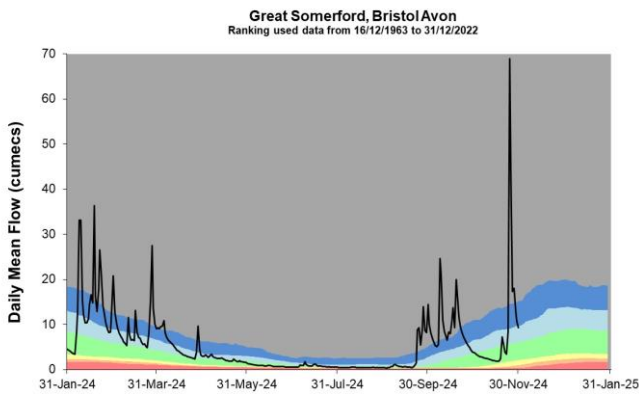
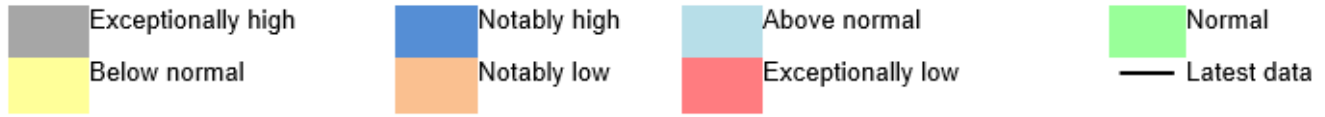
Figure 4.1: Monthly mean river flow for indicator sites for November 2024, expressed as a percentage of the respective long term average and classed relative to an analysis of historic November monthly means Table available in the appendices with detailed information.



(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 and the Dorset Frome at East Stoke Combined should be treated with caution due to existing data issues.

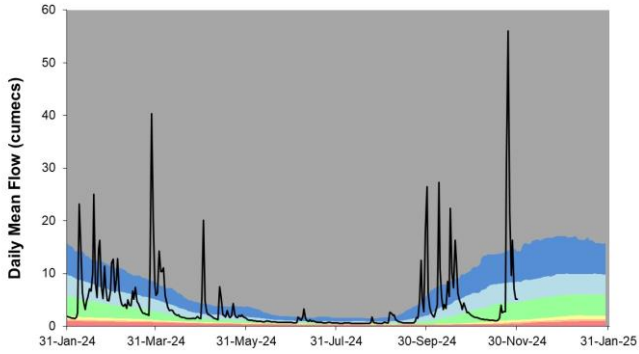
## 4.2 River flow charts

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

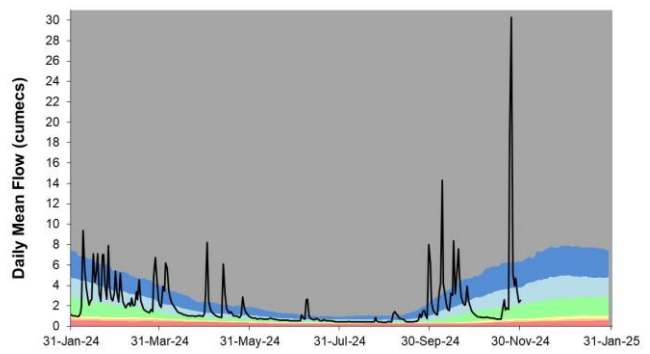




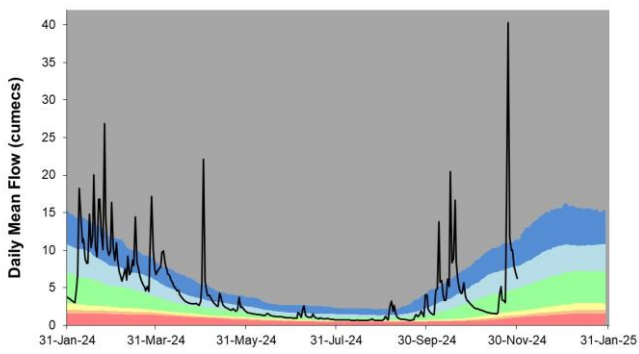
**Pen Mill, Somerset Yeo**  
Ranking used data from 31/10/1963 to 31/12/2022



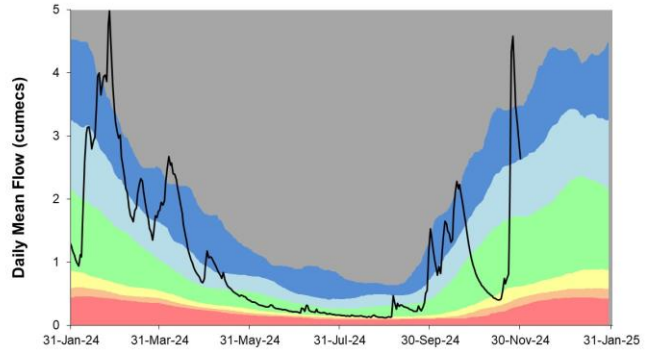
**Ashford Mill, River Isle**  
Ranking used data from 01/10/1962 to 31/12/2022



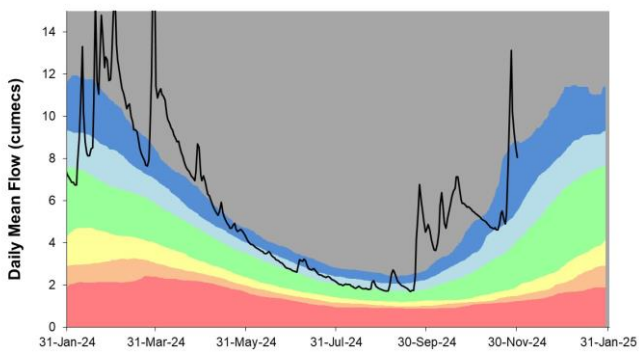
**Bishops Hull, River Tone**  
Ranking used data from 01/02/1961 to 31/12/2022



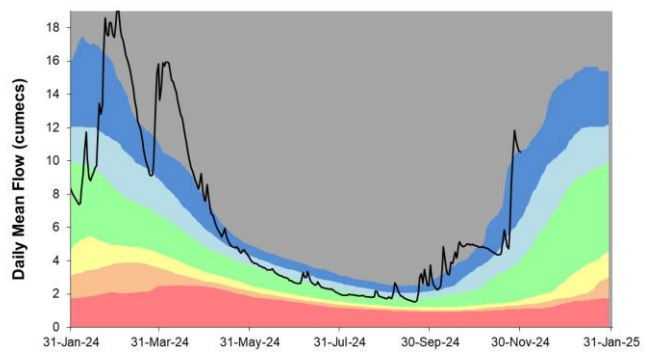
**Beggearn Huish, Washford River**  
Ranking used data from 01/01/1967 to 31/12/2022



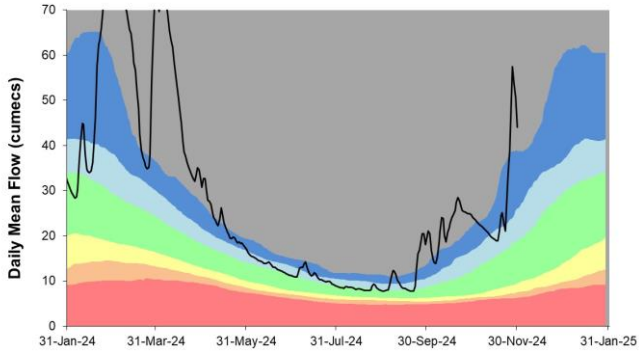
**Amesbury, Upper Hampshire Avon**  
Ranking used data from 01/02/1965 to 31/12/2022



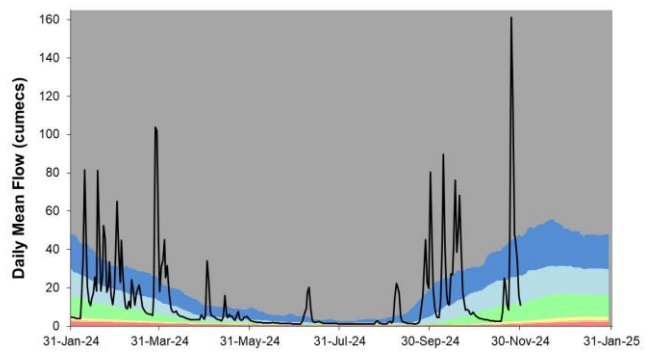
**South Newton, River Wylde**  
Ranking used data from 01/01/1967 to 31/12/2022

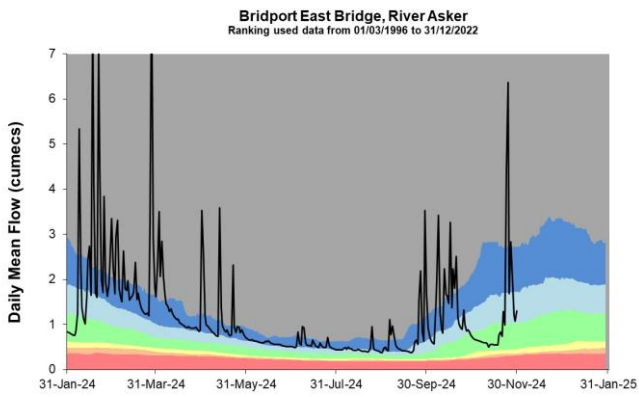
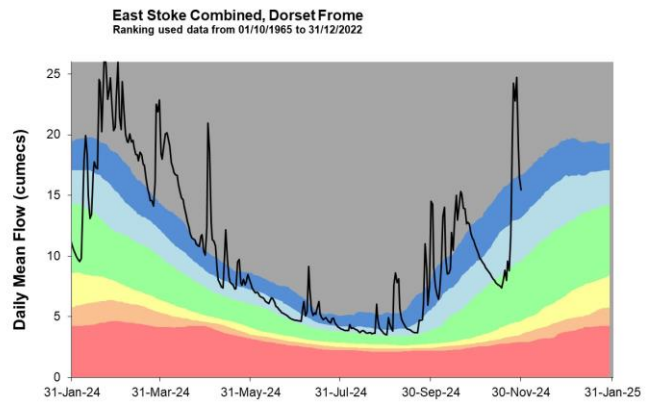
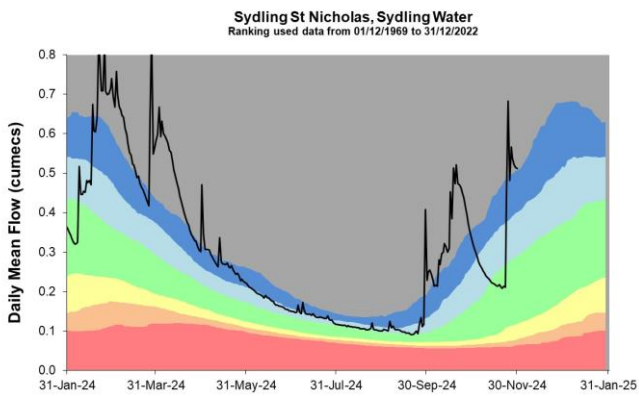
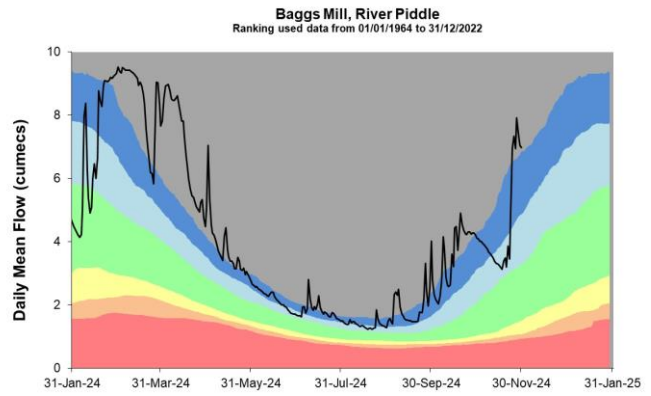
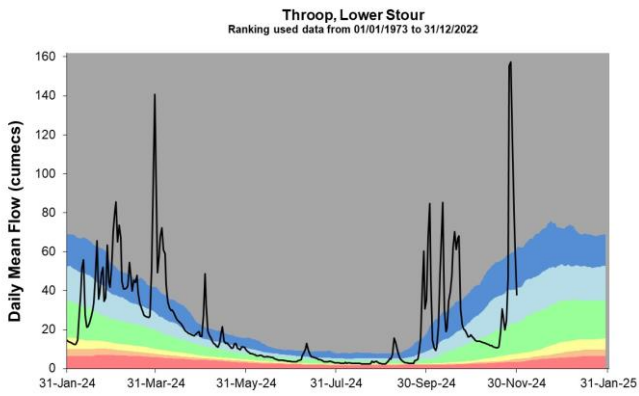


**East Mills Combined, Middle Hampshire Avon**  
Ranking used data from 01/11/1965 to 31/12/2022



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



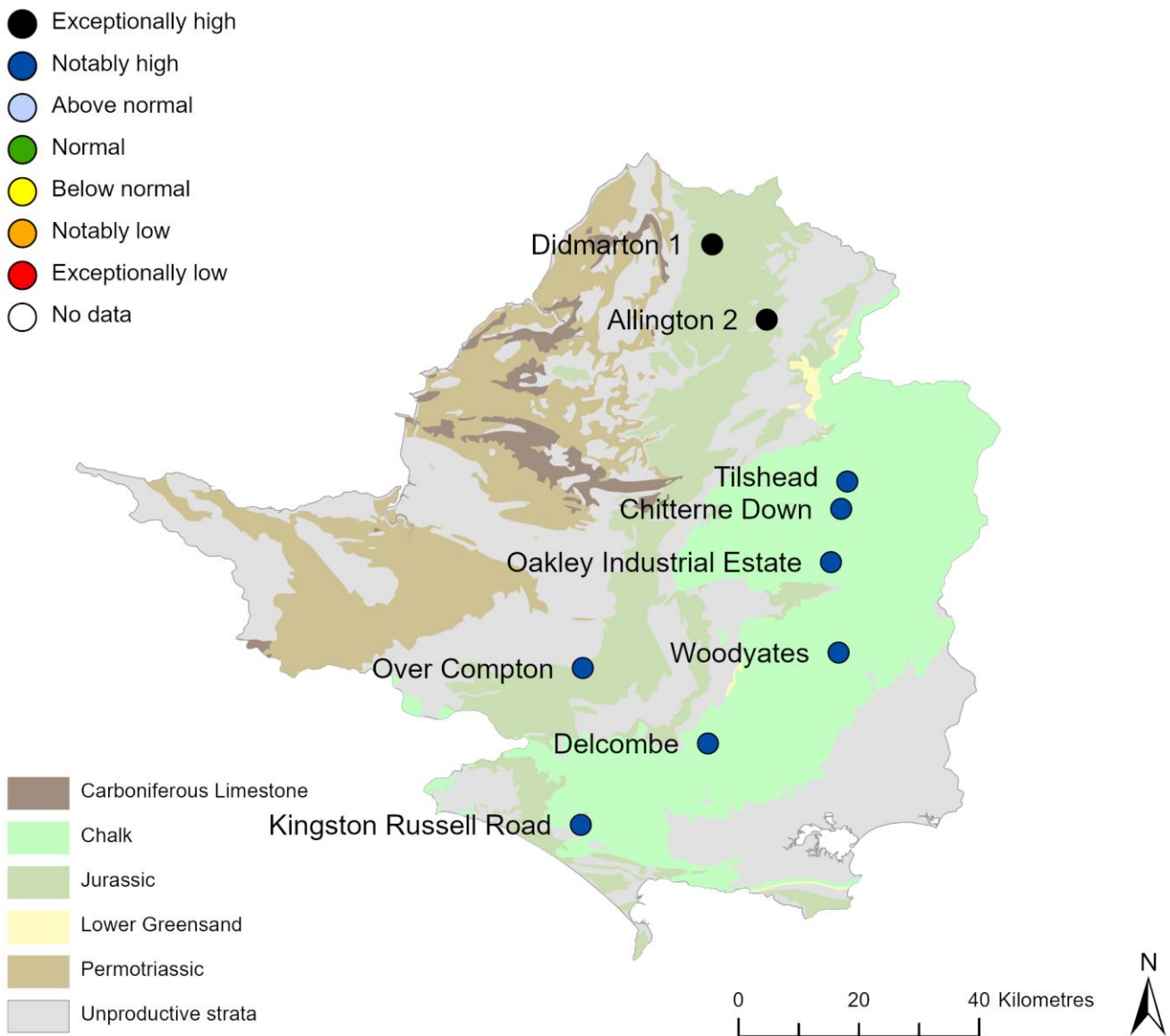


Source: Environment Agency, 2024. The Stour at Throop and the Dorset Frome at East Stoke Combined should be treated with caution due to ongoing data issues.

# 5 Groundwater levels

## 5.1 Groundwater levels map

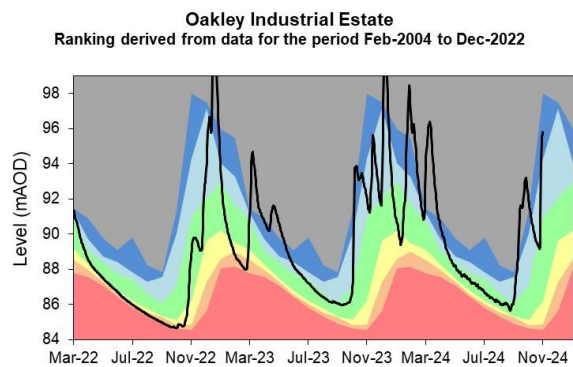
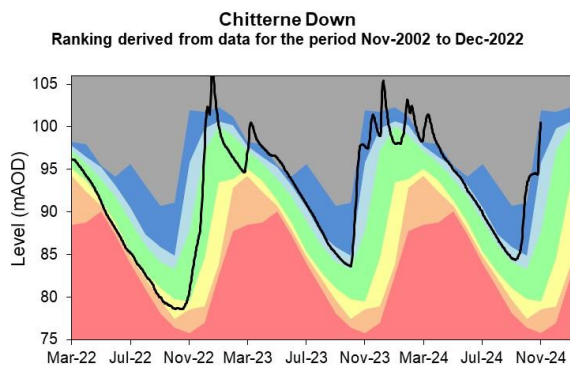
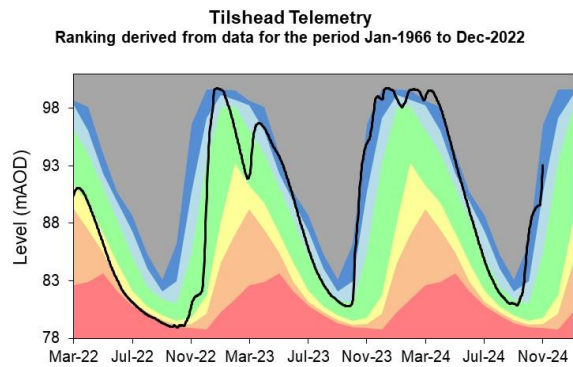
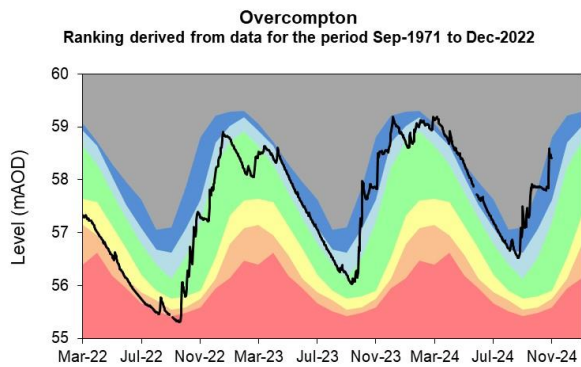
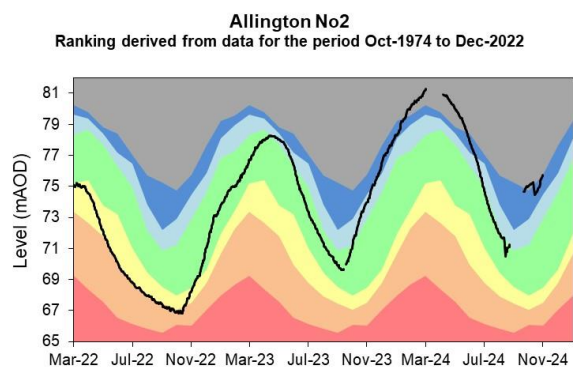
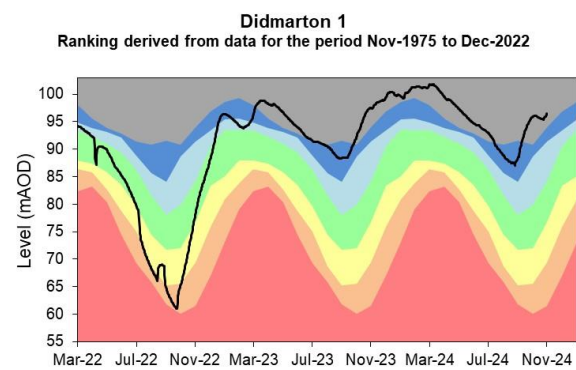
Figure 5.1: Groundwater levels for indicator sites at the end of November 2024, classed relative to an analysis of respective historic November levels. Table available in the appendices with detailed information.



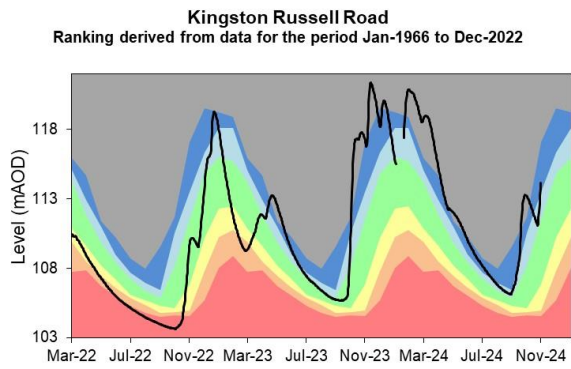
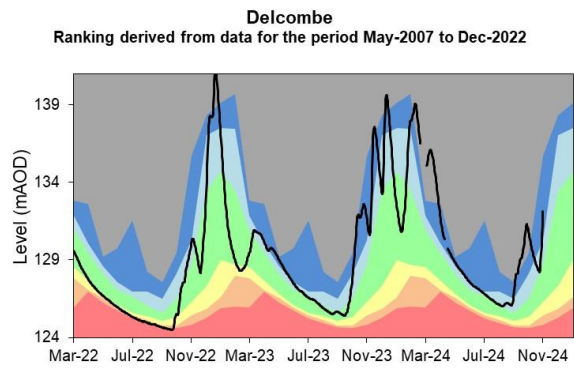
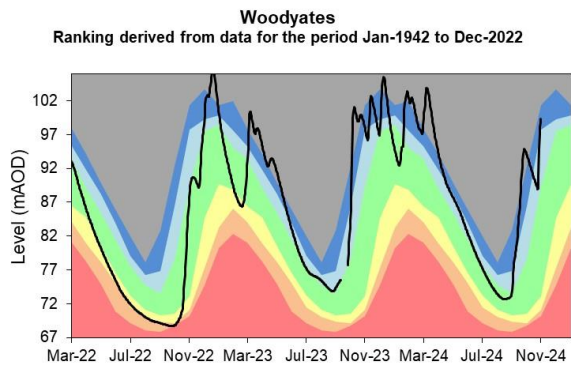
(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2024. Allington 2 should be treated with caution due to recent data issues.

## 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.



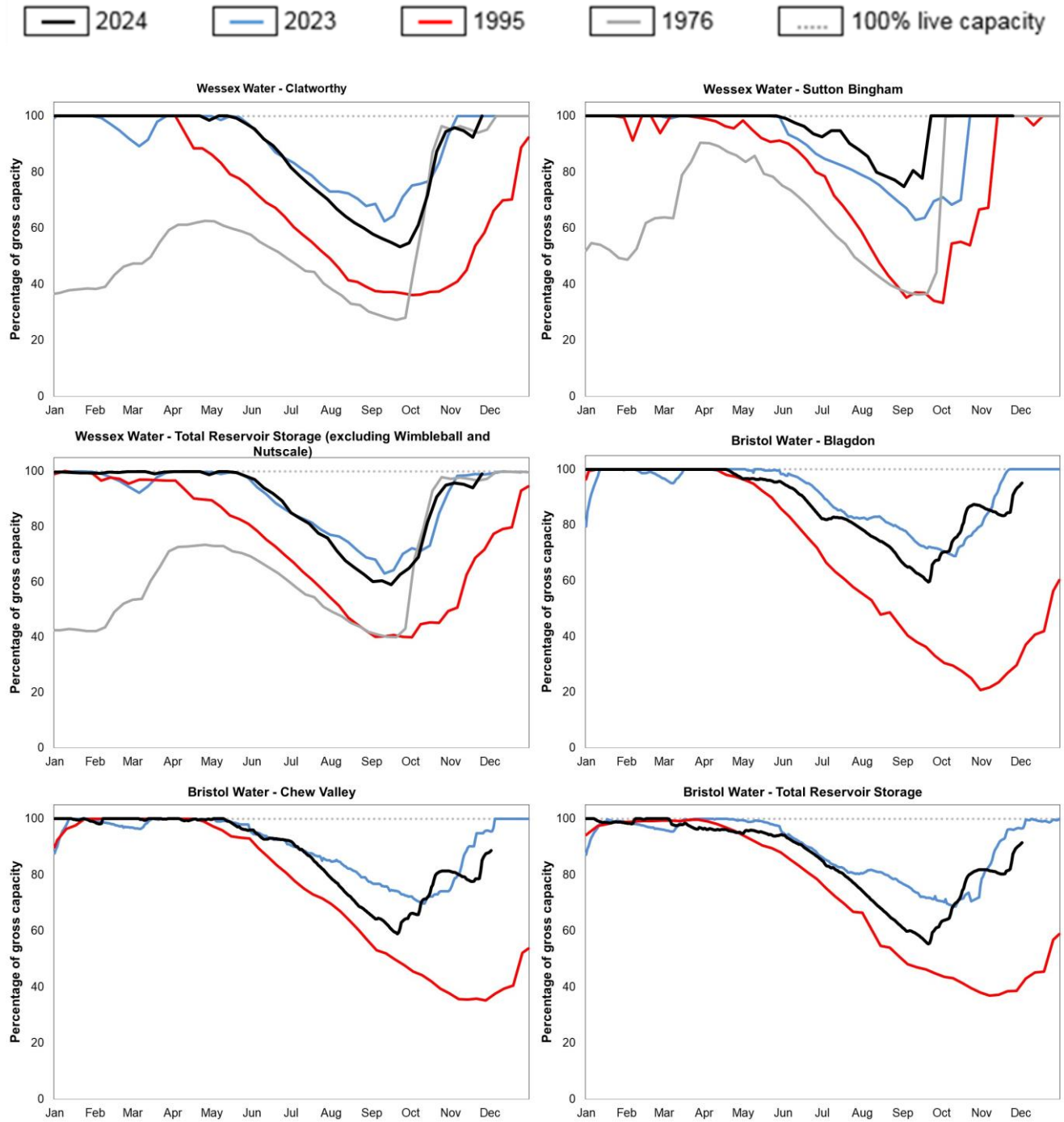




Source: Environment Agency, 2024. Allington 2 should be treated with caution due to recent data issues.

## 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 November

Area	Number of fluvial flood alerts in November	Number of coastal flood alerts in November	Number of groundwater flood alerts in November
North Wessex	25	1	0
South Wessex	22	7	4

### 7.2 Flood warnings

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

Area	Number of fluvial flood warnings in November	Number of coastal flood warnings in November	Number of groundwater flood warnings in November
North Wessex	33	0	0
South Wessex	22	0	1

### 7.3 Severe flood warnings

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

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

## 8 Stream support

### 8.1 Sites providing stream support

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

Catchment	River	Stream support site	Gauging station	End of November status
Bristol Avon	Chalfield Brook	South Wraxall	Great Chalfield (Wessex Water)	Off
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 November.

Catchment	Number of licences at restrict at the end of November	Number of licences at cease at the end of November
Bristol Avon	0	0
Somerset	0	0
Hampshire Avon	0	0
Dorset	0	0

# 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 ( $\text{m}^3\text{s}^{-1}$ ).

### **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**

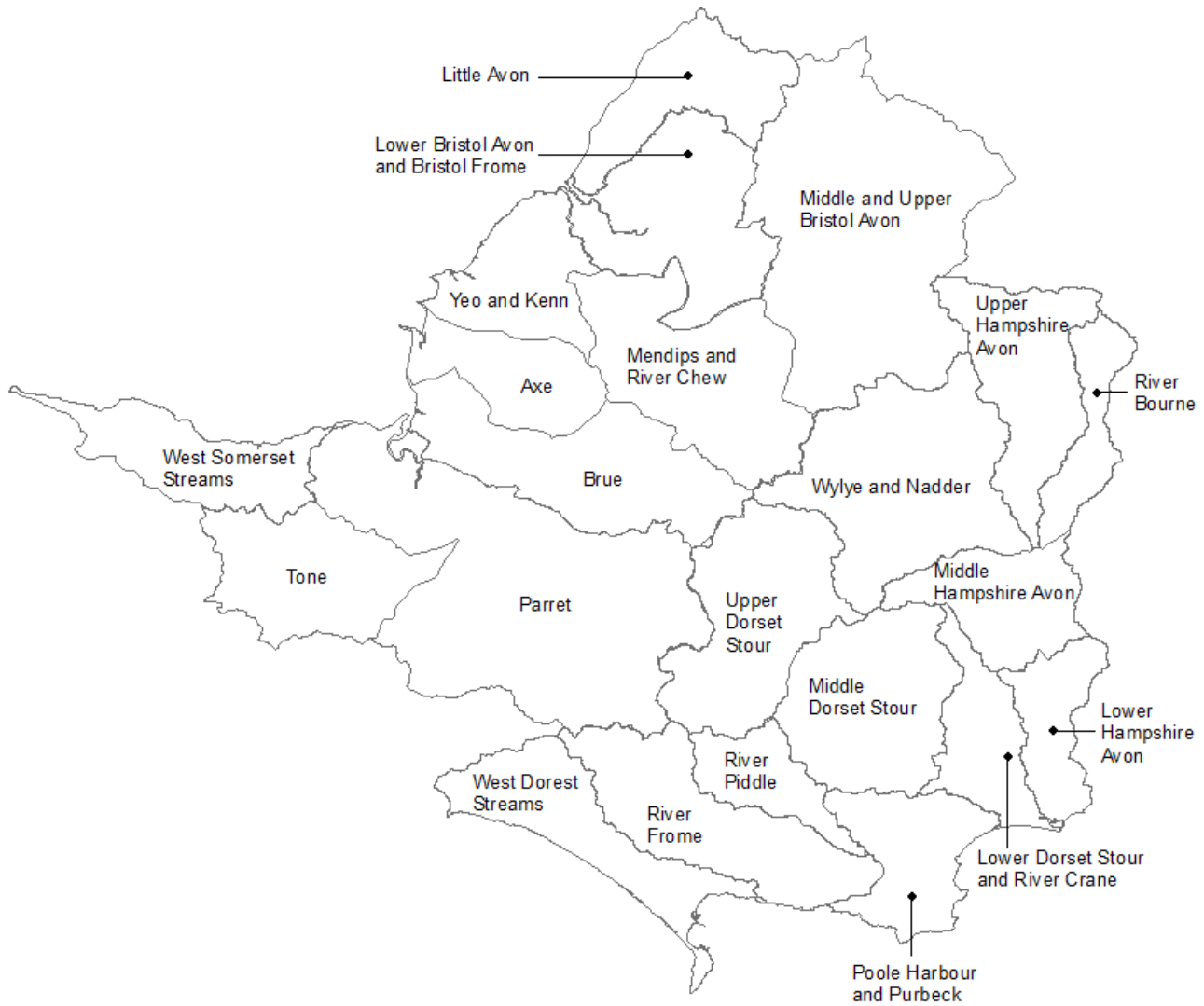
Value likely to fall within this band 8% of the time.

### **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.



Crown copyright. All rights reserved. Environment Agency, 100024198, 2024.

# 11 Appendices

## 11.1 Rainfall table

Hydrological area	Nov 2024 rainfall % of long term average 1961 to 1990	Nov 2024 band	Sep 2024 to November cumulative band	Jun 2024 to November cumulative band	Dec 2023 to November cumulative band
Axe	113	Normal	Exceptionally high	Above normal	Exceptionally high
Brue	121	Normal	Exceptionally high	Above normal	Exceptionally high
Little Avon	148	Above Normal	Exceptionally high	Above normal	Exceptionally high
Lower Bristol Avon And Bristol Frome	160	Above Normal	Exceptionally high	Notably high	Exceptionally high
Lower Dorset Stour And River Crane	132	Normal	Exceptionally high	Above normal	Exceptionally high
Lower Hampshire Avon	128	Normal	Notably high	Above normal	Exceptionally high
Mendips And River Chew	132	Above Normal	Exceptionally high	Above normal	Exceptionally high
Middle And Upper Bristol Avon	153	Above Normal	Exceptionally high	Notably high	Exceptionally high

Middle Dorset Stour	135	Normal	Exceptionally high	Notably high	Exceptionally high
Middle Hampshire Avon	136	Normal	Exceptionally high	Notably high	Exceptionally high
Parrett	138	Normal	Exceptionally high	Above normal	Exceptionally high
Poole Harbour And Purbeck	129	Normal	Notably high	Above normal	Exceptionally high
River Bourne	151	Above Normal	Exceptionally high	Notably high	Exceptionally high
River Frome	136	Normal	Notably high	Notably high	Exceptionally high
River Piddle	141	Normal	Exceptionally high	Notably high	Exceptionally high
Tone	132	Normal	Exceptionally high	Above normal	Exceptionally high
Upper Dorset Stour	138	Normal	Exceptionally high	Notably high	Exceptionally high
Upper Hampshire Avon	151	Above Normal	Exceptionally high	Notably high	Exceptionally high
West Dorset Streams	141	Normal	Exceptionally high	Notably high	Exceptionally high

West Somerset Streams	128	Normal	Notably high	Normal	Exceptionally high
Wylve And Nadder	137	Normal	Exceptionally high	Notably high	Exceptionally high
Yeo And Kenn	113	Normal	Exceptionally high	Above normal	Exceptionally high

## 11.2 River flows table

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



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

## 11.3 Groundwater table

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