

# Monthly water situation report: England

## 1 Summary - December 2022

Monthly rainfall totals in December were in the normal range in most catchments across England. Soil moisture deficits continue to decline and at the end of the month and deficits across most of England were typical for this time of year. River flows decreased at nearly two thirds of indicator sites in December and the majority of sites were classed as normal or higher for the time of year. Groundwater levels increased at most indicator sites, and almost half were classed as normal for the time of year. Reservoir stocks in December increased at all except one of the reservoir and reservoir groups we report on, although nearly half of reservoirs were still classed as below normal or lower for the time of year.

### 1.1 Rainfall

The December rainfall total for England was 89.3mm which represents 106% of the 1961-1990 long term average (LTA) for the time of year (97% of the 1991-2020 LTA). At the regional scale above average rainfall fell in December with the exception of central and eastern England which saw below average rainfall. Most catchments received above average rainfall during December. The wettest hydrological area was the Dover Chalk in southeast England which received 167% of December's LTA rainfall. The driest area was the middle Severn in central England with 67% of LTA rainfall for December. (Figure 2.1).

December rainfall totals were classed as normal or higher for almost all catchments across the country, with only two catchments classed as below normal for the time of year. At a regional scale, December rainfall totals were classed as normal in all regions of the country and for England as a whole. (Figure 2.2)

December was the fourth consecutive month of above average rainfall for England as a whole. The 3 month cumulative totals in almost all catchments being above normal or higher. The 6 month cumulative rainfall totals were classed as normal for most of the country. The 12 month cumulative rainfall totals were classed as normal or lower in all catchments across England with cumulative rainfall in Norfolk catchments being classed as notably or exceptionally low. (Figure 2.3)

### 1.2 Soil moisture deficit

Soil moisture deficits (SMD) continued to reduce across England during December. Soils, as expected for the time of year, became wetter in many areas due to the rainfall in the second half of the month. (Figure 3.1)

End of December SMD values across the majority of the country were generally close to or smaller than the LTA for the time of year. At a regional scale, the end of December SMD for most regions were typical for the time of year. (Figure 3.2)

### 1.3 River flows

December monthly mean river flows decreased at nearly two thirds of the indicator sites we report on since November. Two thirds of sites were normal for the time of year, with a fifth above normal for the time of year. Eight sites were below normal or lower for the time of year. (Figure 4.1)

All the regional index sites monthly mean flows were classed as normal except for Marston-on-Dove on the River Dove in central England which was below normal for the time of the year. Flows on the River Exe at Thorverton in south west England and the Great Stour at Horton in south east England decreased to be classed as normal having been above normal and notably high respectively in November (Figure 4.2)

### 1.4 Groundwater levels

At the end of December, groundwater levels increased at all but five of the reported indicator sites as wet soils and further rainfall helped most aquifers continue their seasonal recharge. Almost half of the end of month groundwater levels were classed as normal for the time of year. The remaining sites were split, with seven sites above normal, while the remaining seven sites were below normal for the time of year. (Figure 5.1)

The major aquifer index sites showed a varied picture at the end of December. Index sites in the major aquifers were classed as normal at most sites. Index site classifications range from notably high at Chilgrove in the Chichester Chalk in the south Downs, where groundwater levels increased throughout December. In contrast Skirwith in the Carlisle Basin Sandstone and Stonor Park in the South West Chilterns Chalk both remained at below normal levels at the end of December. (Figure 5.2)

### 1.5 Reservoir storage

At the end of December reservoirs stocks had increased at all except one of the reservoirs and reservoir groups we report on. Five reservoirs or reservoir groups saw an increase of more than 20% in their stocks in comparison to the end of November. The largest stock increases were at Clatworthy and Wimbleball in the southwest England which increased by 45% and 31% respectively. Despite these increases, nearly half of all reservoirs or reservoir groups were classed as below normal or lower for the time of year. The Dee reservoirs which supply northwest England are undergoing reservoir safety work (Figure 6.1).

At the regional scale, total reservoir stocks ranged from 61% in south-west England to 89% in north-east England. Total reservoir stocks for England were at 82% of total capacity at the end of December. (Figure 6.2)

### 1.6 Forward look

Early January was dominated by changeable conditions for many with wet and windy weather mixed with sunny spells. Unsettled conditions are forecast to persist during much of January

until the end of the month brings more settled conditions. Temperatures are forecast to be occasionally mild but generally around average.

For the three month period from January to March there is an increased chance of mild conditions. There is an increased likelihood of heavy rain and strong winds compared to the early winter, and there is a slight increase in the period as a whole being wet.

## **1.7 Projections for river flows at key sites**

By the end of March 2023 and September 2023 river flows have a greater likelihood of being above normal across most of England. In central and north west England river flows have a greater chance of being normal. By the end of September 2023 river flows have an increased chance of being above normal in all regions except in the central and north western areas where river flows are most likely to be normal.

For scenario based projections of cumulative river flows at key sites by March 2023 and September 2023 see Figure 7.1 and Figure 7.2

For probabilistic ensemble projections of cumulative river flows at key sites by March 2023 and September 2023 see Figure 7.3 and Figure 7.4

## **1.8 Projections for groundwater levels in key aquifers**

By the end of March 2023 groundwater levels have a higher than expected chance of being normal or lower in all regions except south west and central England, where groundwater levels have an increased likelihood of being above normal or higher. By the end of September 2023 groundwater levels have a higher than expected chance of being above normal or higher in east and central England. In north west and north east England there is a higher than expected chance of groundwater levels being below normal or lower. Groundwater levels in the south west and south east have a higher than expected chance of being normal by the end of September 2023.

For scenario based projections of groundwater levels in key aquifers in March 2023 and September 2023 see Figure 7.5 and Figure 7.6

For probabilistic ensemble projections of groundwater levels in key aquifers in March 2023 and September 2023 see Figure 7.7 and Figure 7.8

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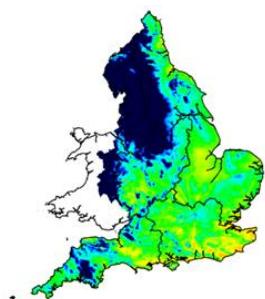
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## 2 Rainfall

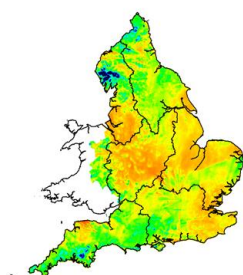
### 2.1 Rainfall map

Figure 2.1: Monthly rainfall across England and Wales for the past 11 months. UKPP radar data Note: Radar beam blockages in some regions may give anomalous totals in some areas.

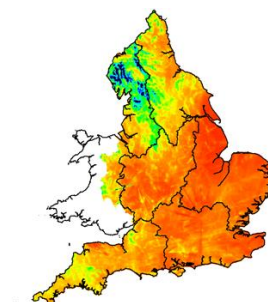
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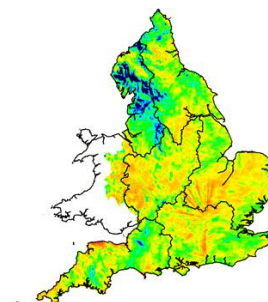
March 2022



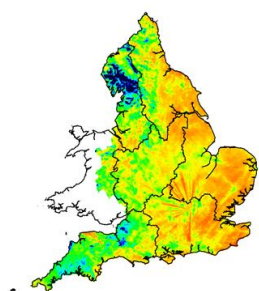
April 2022



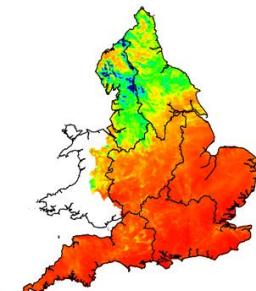
May 2022



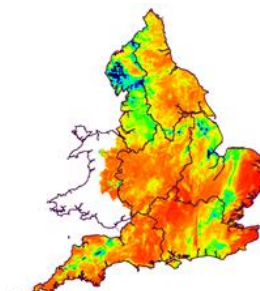
June 2022



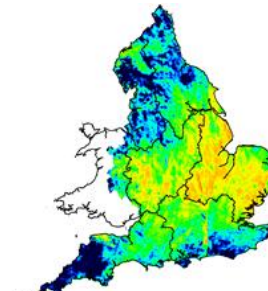
July 2022



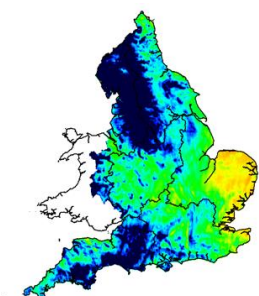
August 2022



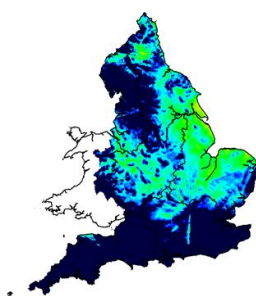
September 2022



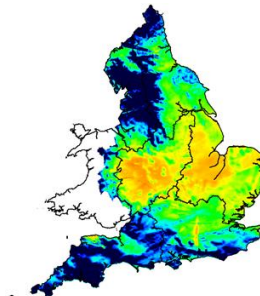
October 2022



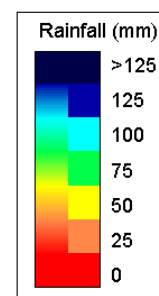
November 2022



December 2022

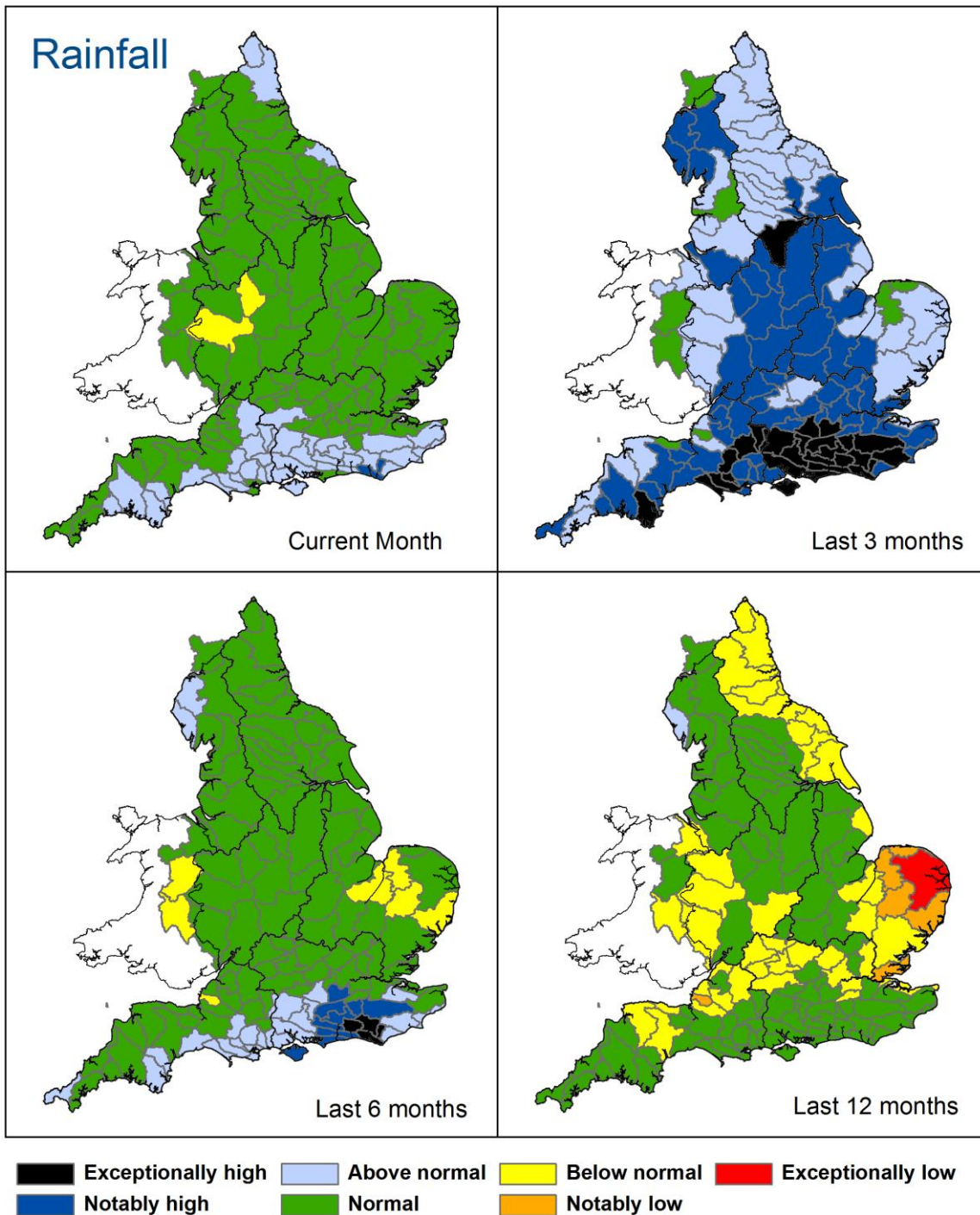


Map Legend



(Source: Met Office. Crown copyright, 2023). All rights reserved. Environment Agency, 100024198, 2023.

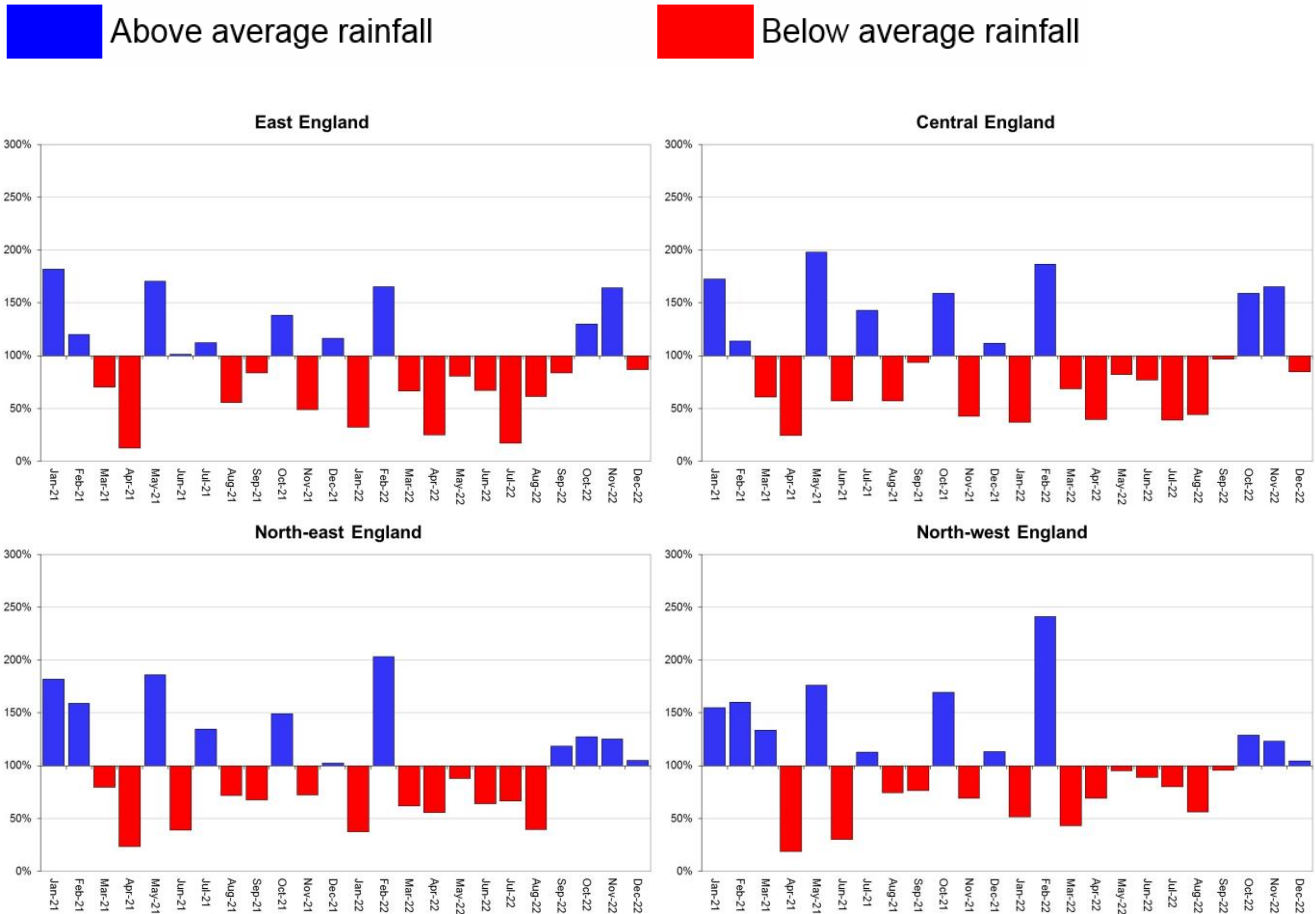
Figure 2.2: Total rainfall for hydrological areas across England for the current month (up to 31 December 2022), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals.

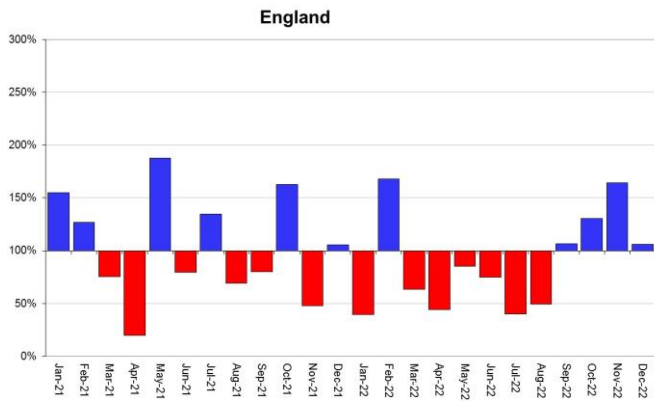
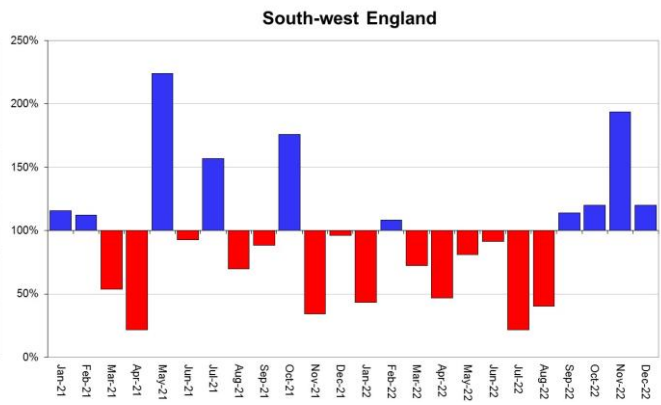
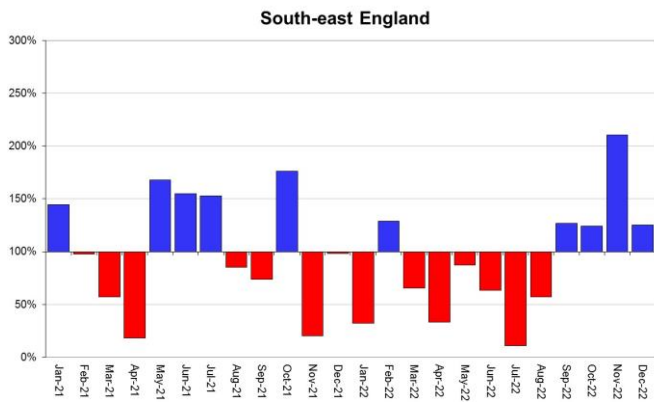


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2023). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved. Environment Agency, 100024198, 2023.

## 2.2 Rainfall charts

Figure 2.3: 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.





HadUK rainfall data. (Source: Met Office. Crown copyright, 2023).

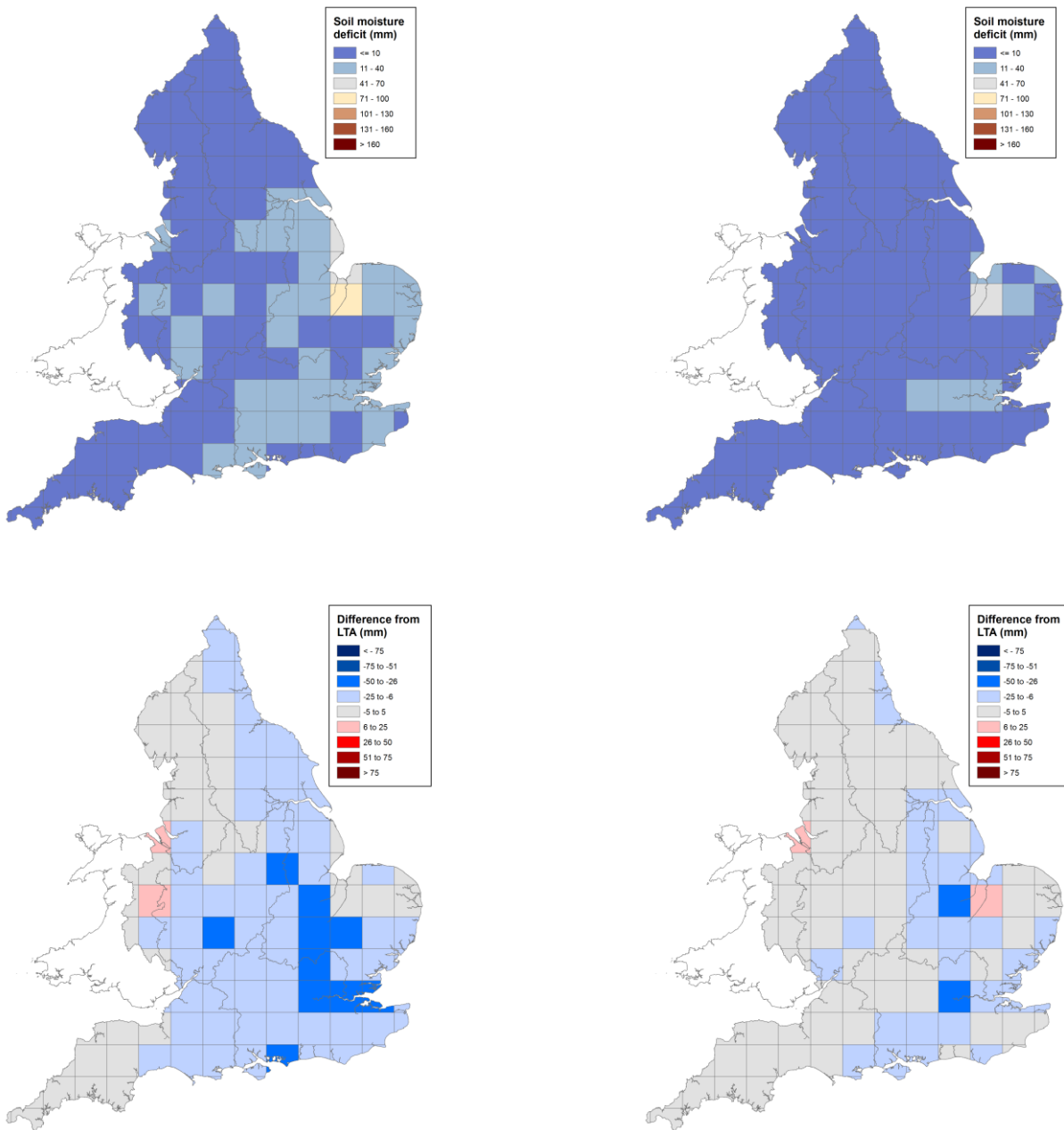
# 3 Soil moisture deficit

## 3.1 Soil moisture deficit map

Figure 3.1: Soil moisture deficits for weeks ending, 30 November 2022 (left panel) and 28 December 2022 (right panel). Top row shows actual soil moisture deficits (mm) and bottom row shows the difference (mm) of the actual from the 1961 to 1990 long term average soil moisture deficits. MORECS data for real land use.

End of November 2022

End of December 2022

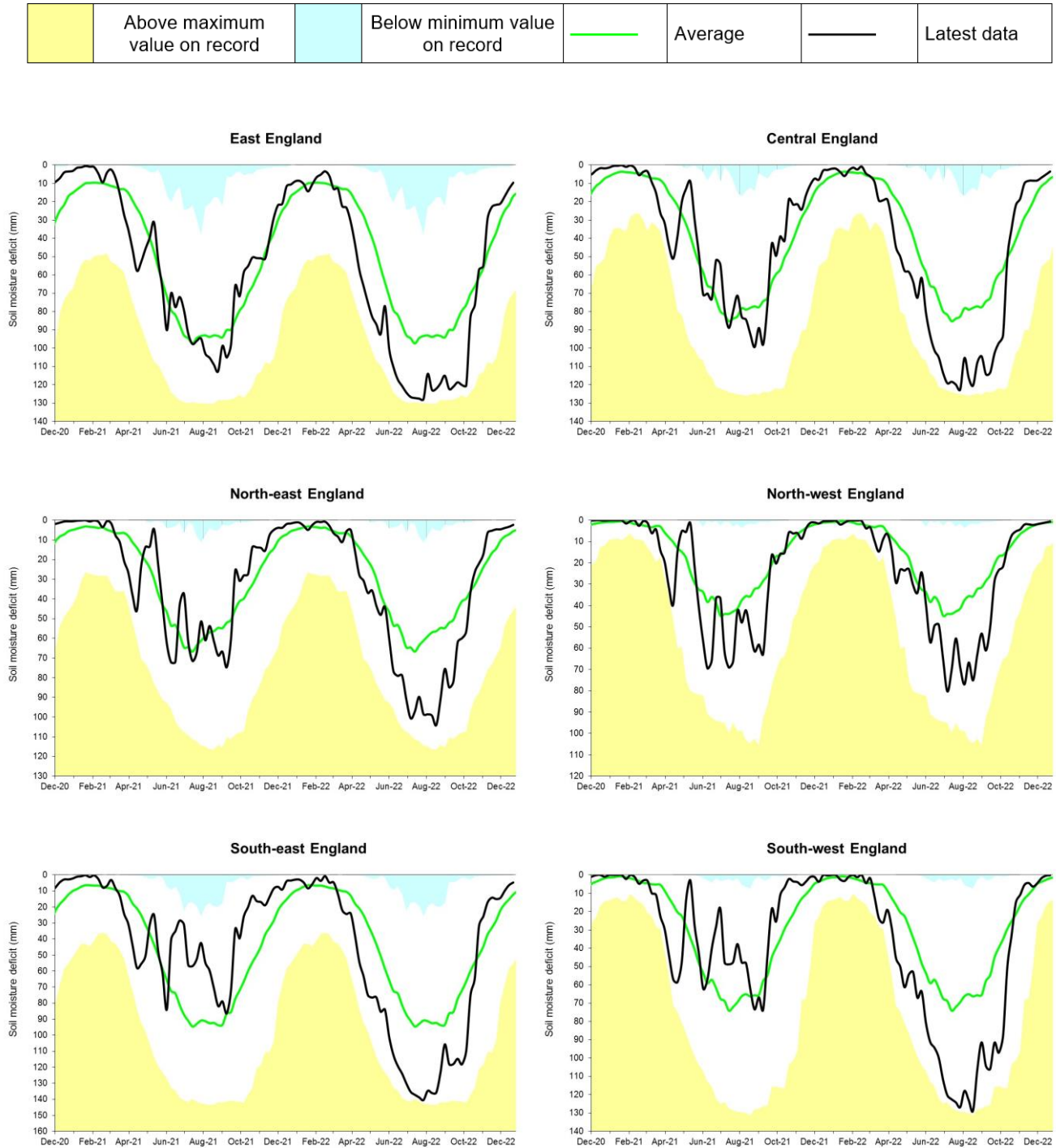


(Source: Met Office. Crown copyright, 2023). Crown copyright. All rights reserved. Environment Agency, 100024198, 2023.



### 3.2 Soil moisture deficit charts

Figure 3.2: Latest soil moisture deficits for all geographic regions compared to maximum, minimum and 1961 to 1990 long term average. Weekly MORECS data for real land use.



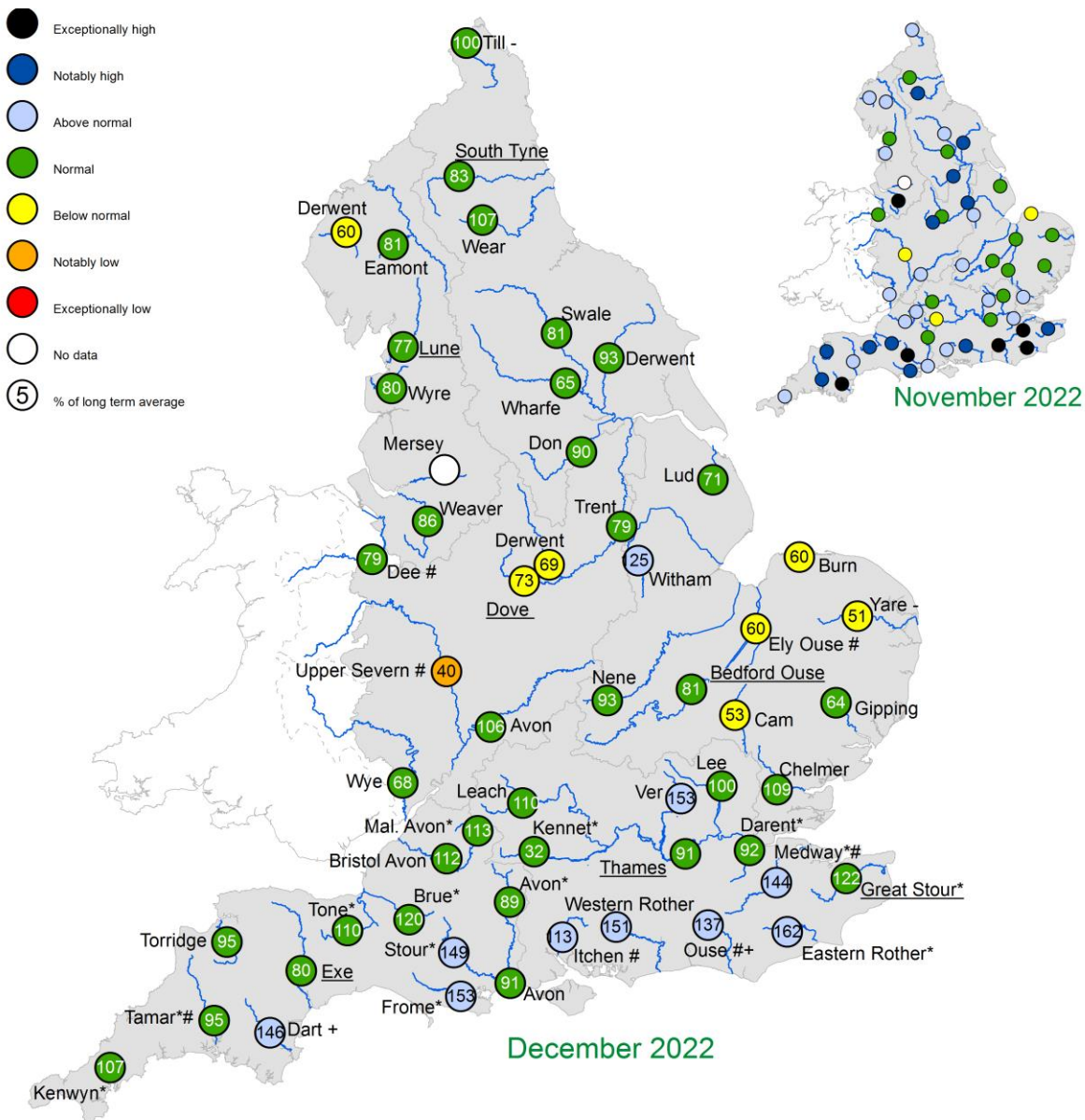
(Source: Met Office. Crown copyright, 2023).

# 4 River flows

## 4.1 River flow map

Figure 4.1: Monthly mean river flow for indicator sites for November 2022 and December 2022, expressed as a percentage of the respective long term average and classed relative to an analysis of historic November and December monthly means. Table available in the appendices with detailed information. Regional index sites are underlined and shown in the hydrographs in Figure 4.2.

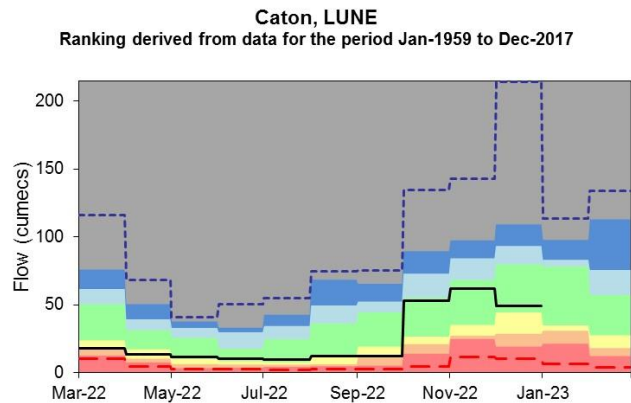
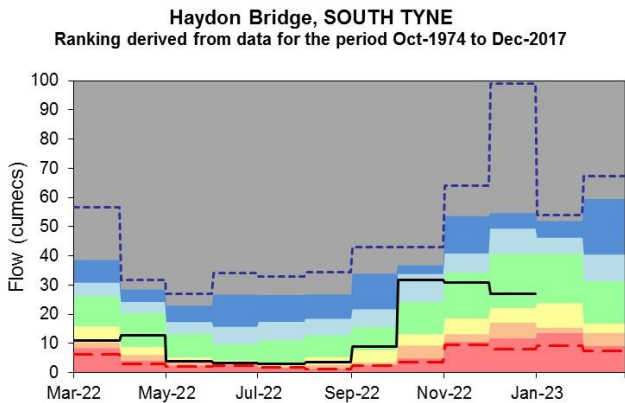
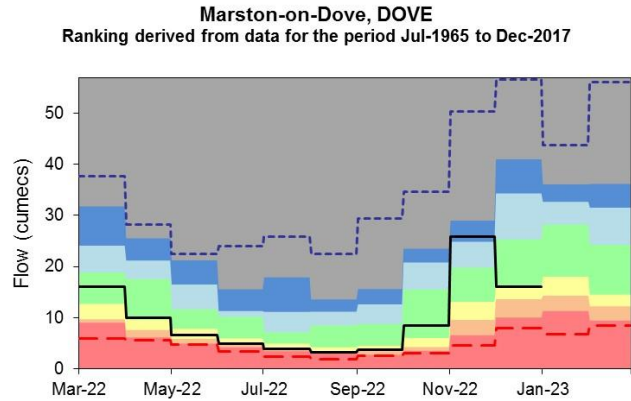
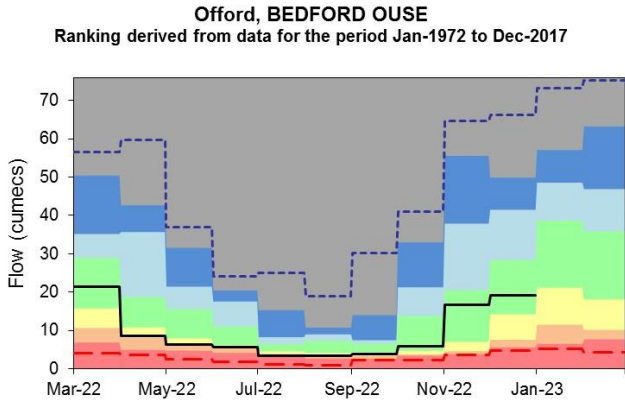
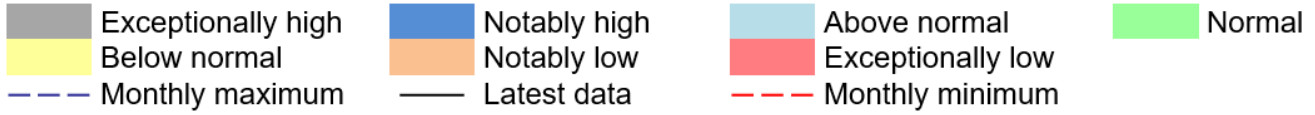
Naturalised flows are provided for the River Thames and the River Lee. +/- Monthly mean flow is the highest/lowest on record for the current month (note that record length varies between sites). # Flows may be impacted at these sites by water releases from upstream reservoirs. \* Flows may be overestimated at these sites – data should be treated with caution.



(Source: Environment Agency). Crown copyright. All rights reserved. Environment Agency, 100024198, 2023.

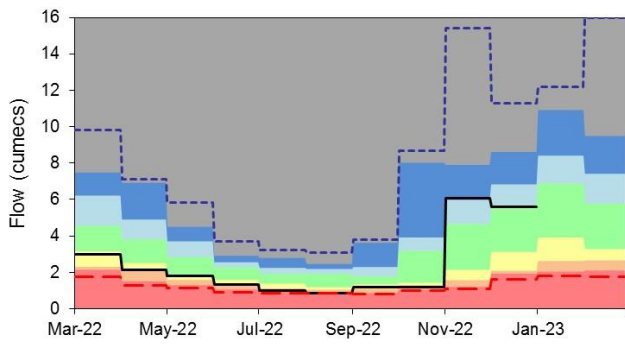
## 4.2 River flow charts

Figure 4.2: Monthly mean river flow for index sites over the past year for each geographic region, compared to an analysis of historic monthly mean flows, and long term maximum and minimum flows.



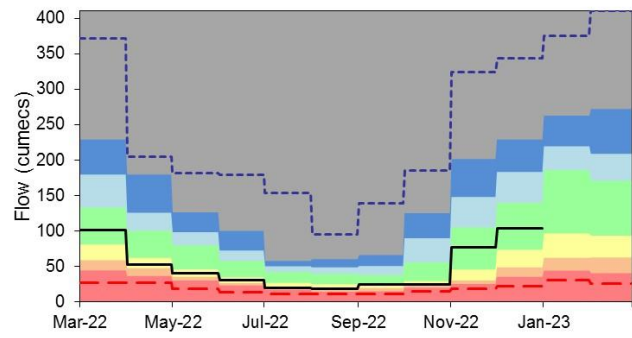
### Horton, GREAT STOUR

Ranking derived from data for the period Oct-1964 to Dec-2017



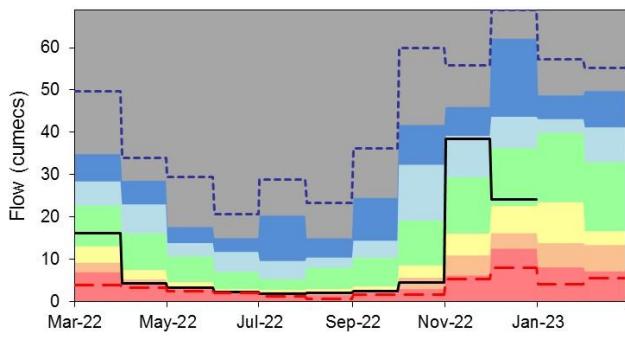
### Kingston, THAMES

Ranking derived from data for the period Jan-1883 to Dec-2017



### Thorverton, EXE

Ranking derived from data for the period Apr-1956 to Dec-2017



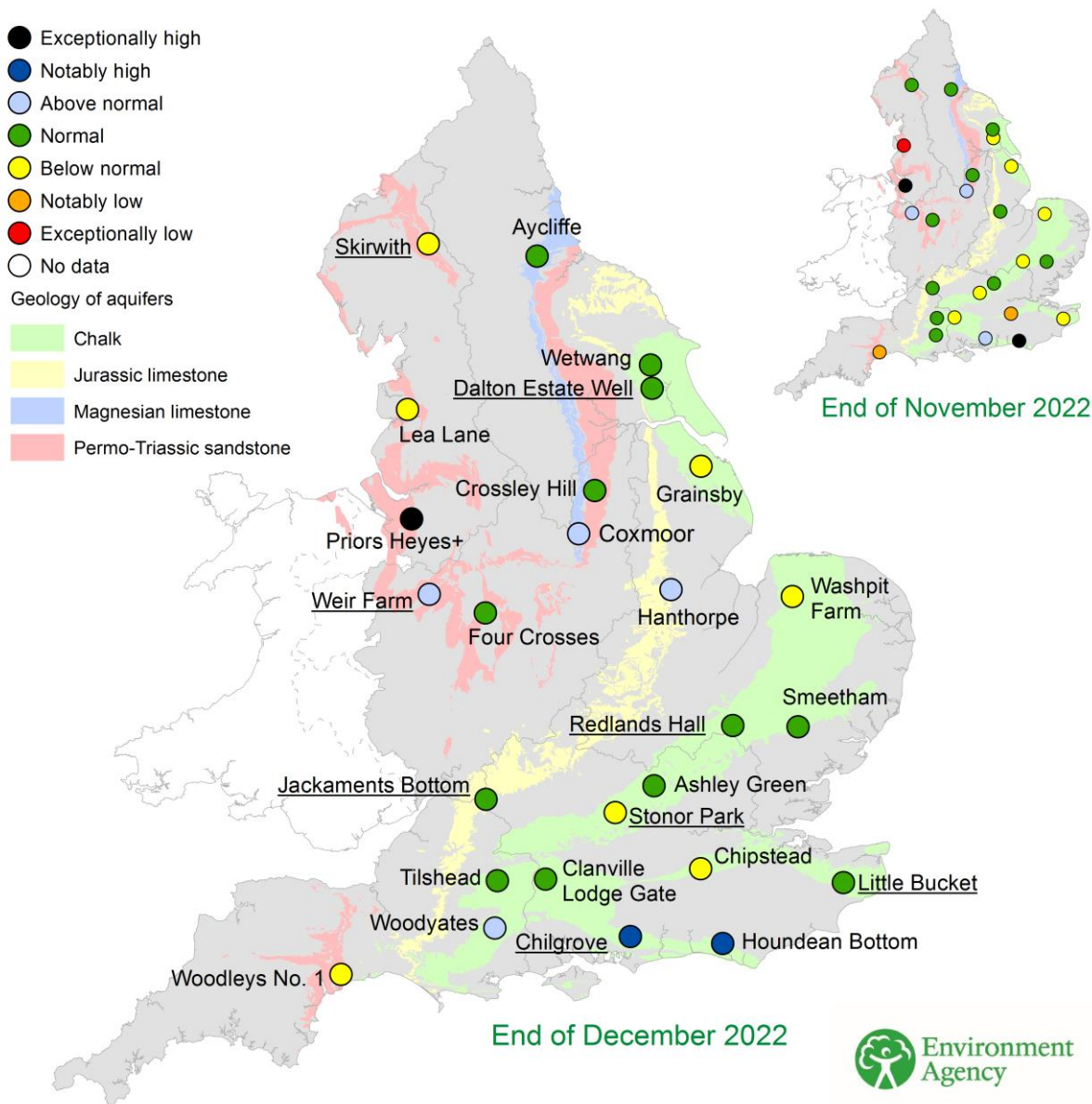
(Source: Environment Agency).

# 5 Groundwater levels

## 5.1 Groundwater levels map

Figure 5.1: Groundwater levels for indicator sites at the end of November 2022 and December 2022, classed relative to an analysis of respective historic November and December levels. Major aquifer index sites are underlined and shown in groundwater level charts in Figure 5.2.

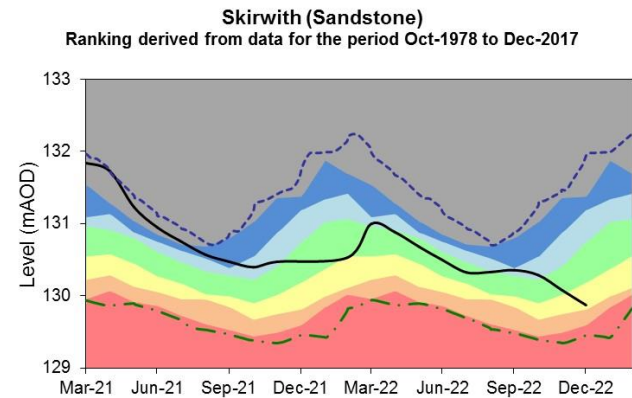
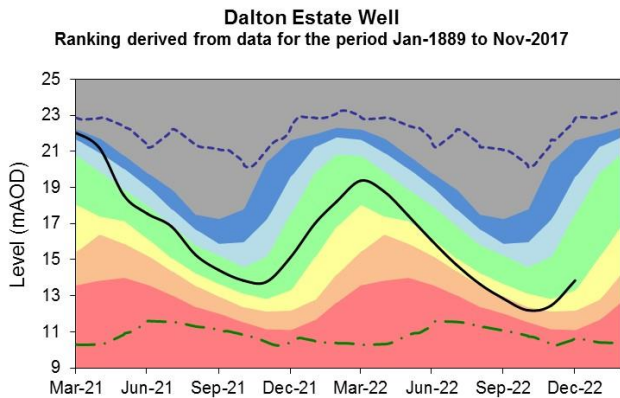
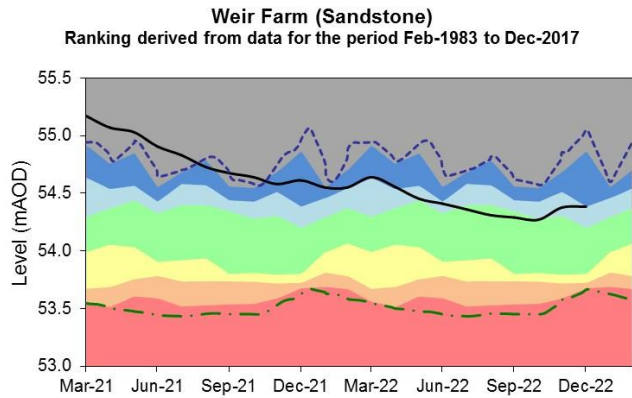
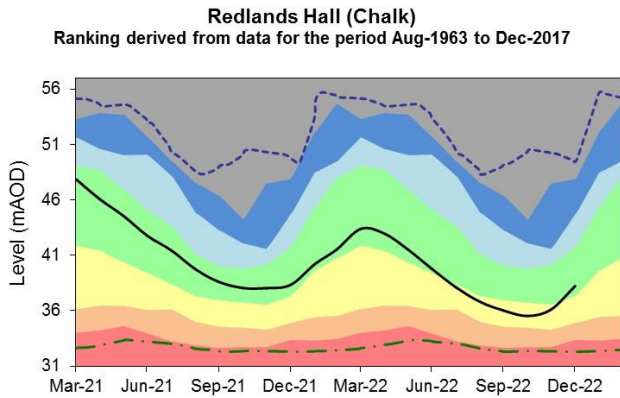
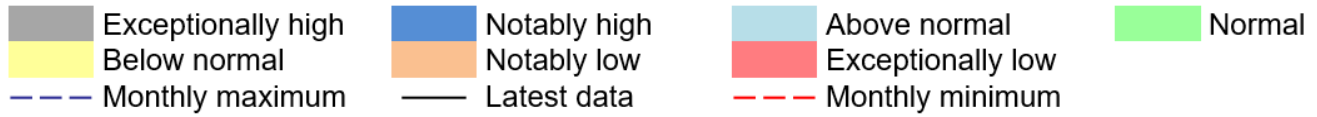
Redlands Hall and Aycliffe are manually dipped at different times during the month and so may not be fully representative of month end levels. Levels at Priors Heyes remain high compared to historic levels because the aquifer is recovering from the effects of historic abstraction. + End of month groundwater level is the highest on record for the current month (note that record length varies between sites).



(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2023.

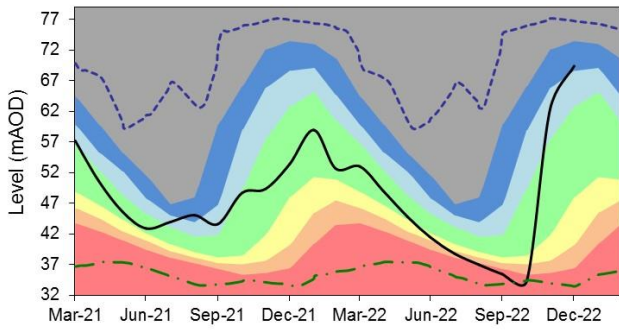
## 5.2 Groundwater level charts

Figure 5.2: End of month groundwater levels at index groundwater level sites for major aquifers. Past 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



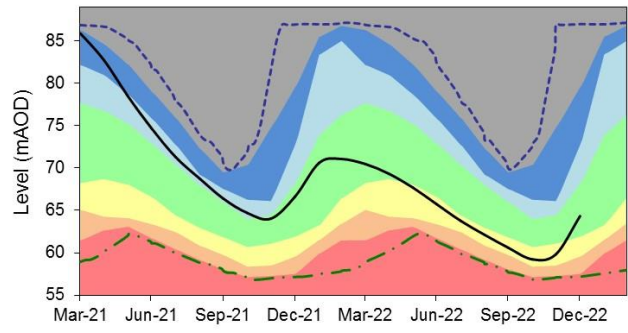
### Chilgrove (Chalk)

Ranking derived from data for the period Feb-1836 to Dec-2017



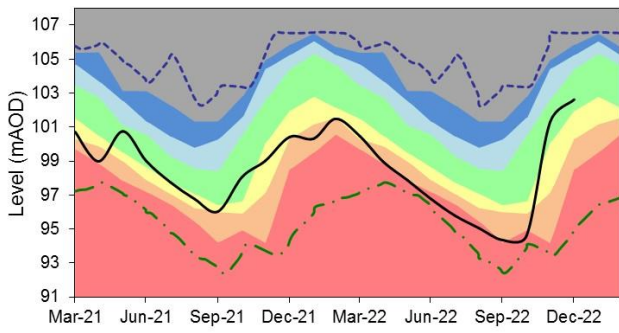
### Little Bucket (Chalk)

Ranking derived from data for the period Jan-1971 to Dec-2017



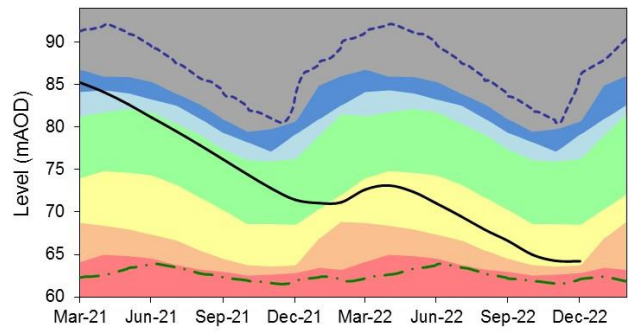
### Jackaments Bottom (Jurassic Limestone)

Ranking derived from data for the period Jan-1974 to Dec-2017



### Stonor Park (Chalk)

Ranking derived from data for the period May-1961 to Dec-2017

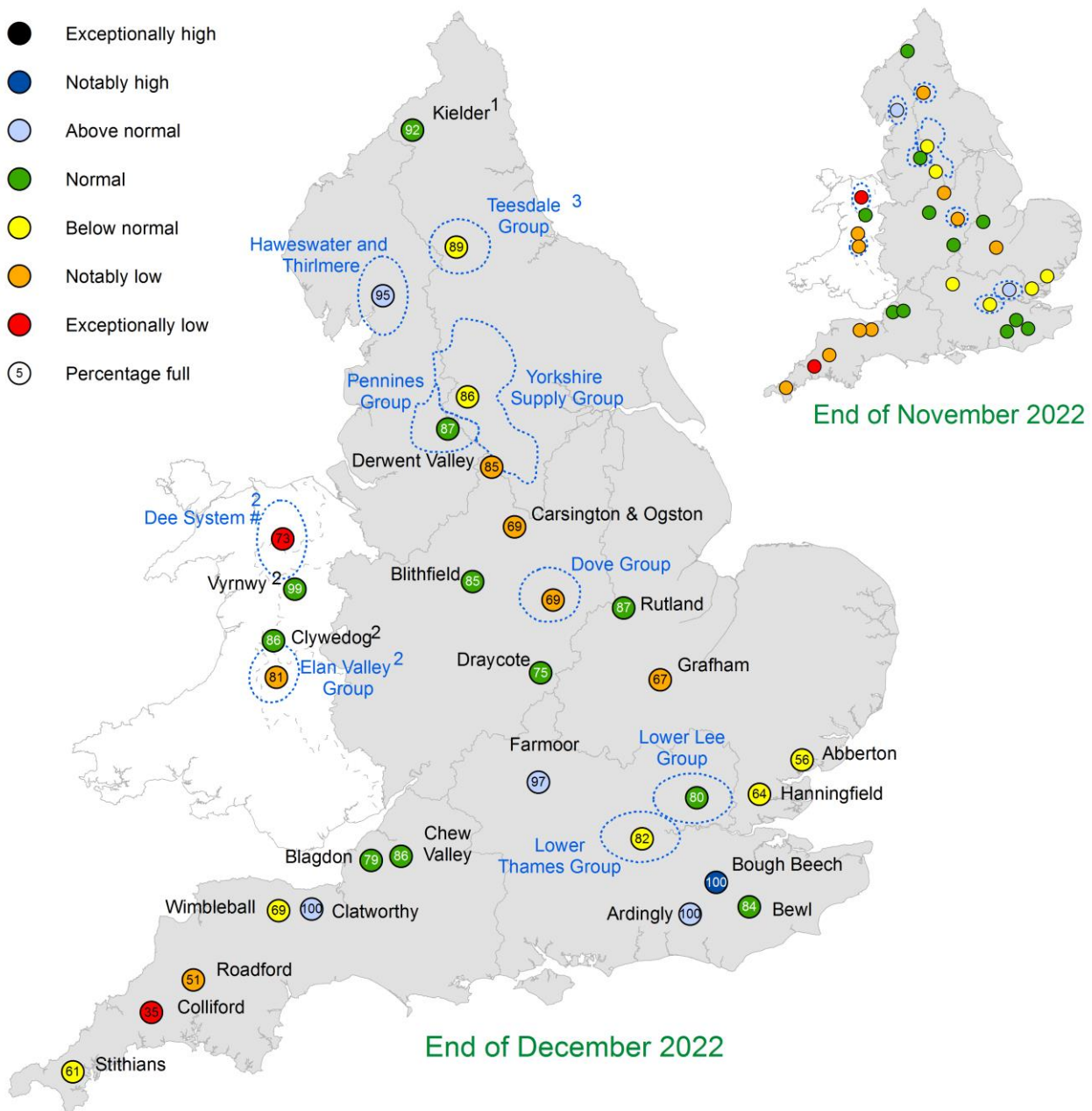


(Source: Environment Agency, 2023)

# 6 Reservoir storage

## 6.1 Reservoir storage map

Figure 6.1: Reservoir stocks at key individual and groups of reservoirs at the end of November 2022 and December 2022 as a percentage of total capacity and classed relative to an analysis of historic November and December values respectively. Note: Classes shown may not necessarily relate to control curves or triggers for drought actions. As well as for public water supply, some reservoirs are drawn down to provide flood storage, river compensation flows or for reservoir safety inspections. In some cases current reservoir operating rules may differ from historic ones. # = Reservoir currently drawn down for essential maintenance work

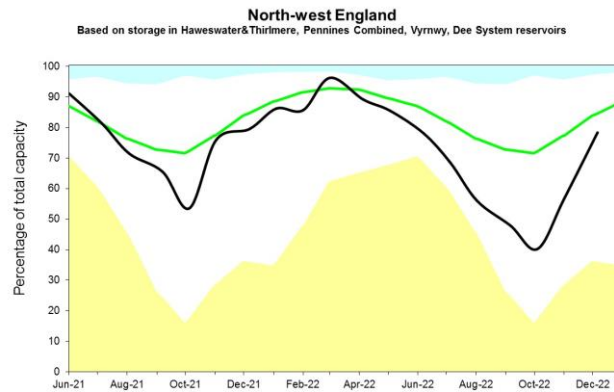
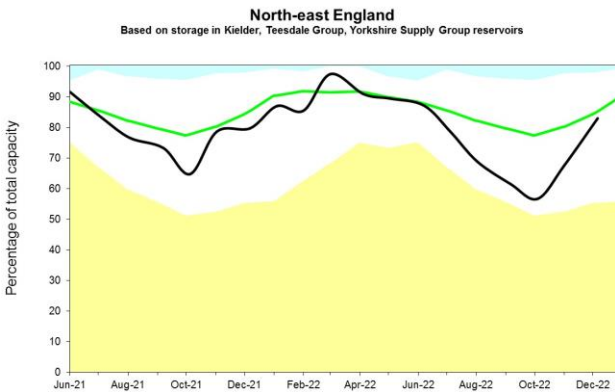
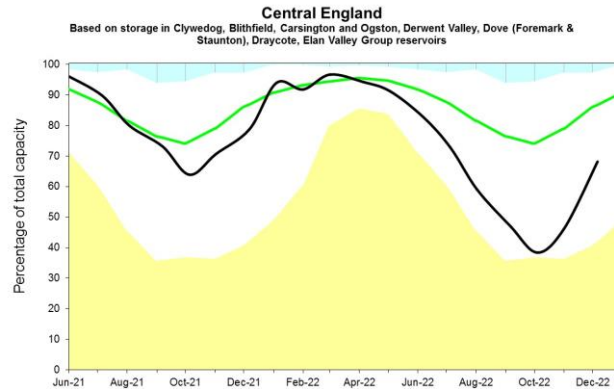
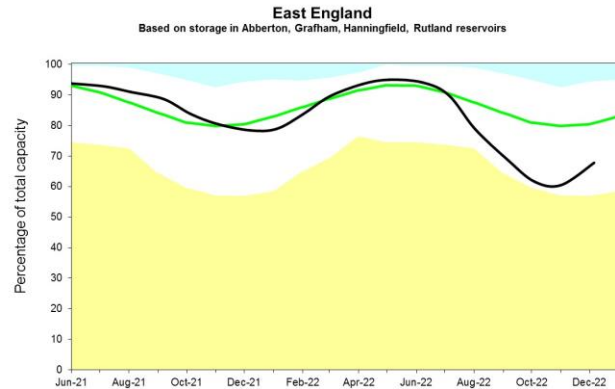
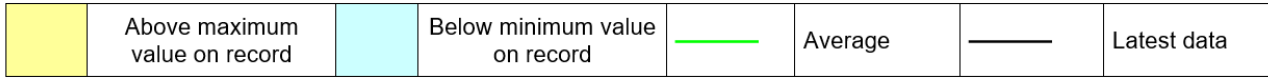


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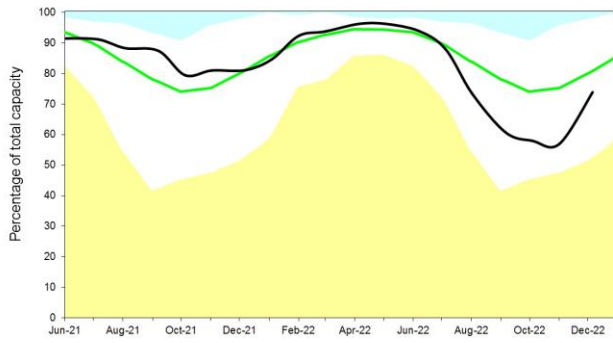
## 6.2 Reservoir storage charts

Figure 6.2: Regional reservoir stocks. End of month reservoir stocks compared to long term maximum, minimum and average stocks. Note: Historic records of individual reservoirs/reservoir groups making up the regional values vary in length.



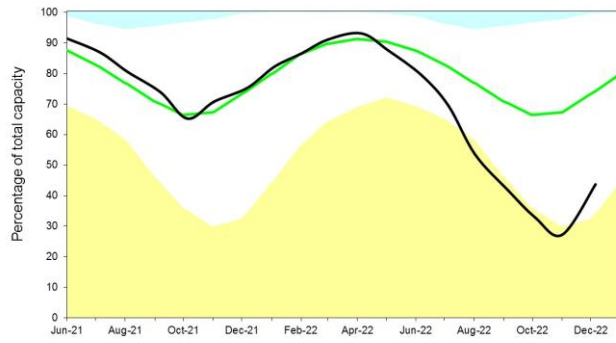
### South-east England

Based on storage in Ardingly, Bewl, Bough Beech, Farmoor, Lower Lee Group, Lower Thames Group reservoirs



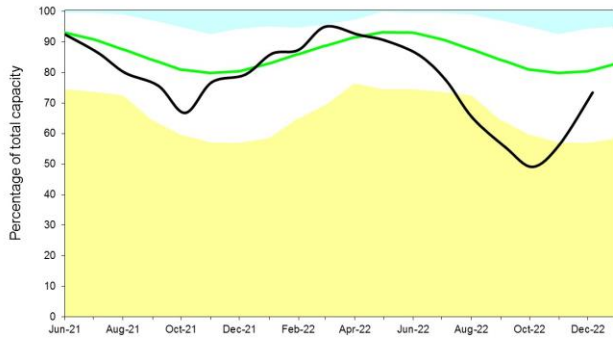
### South-west England

Based on storage in Blagdon, Chew Valley, Clatworthy, Colliford, Roadford, Stithians, Wimbleball reservoirs



### England

Based on combined regional storage



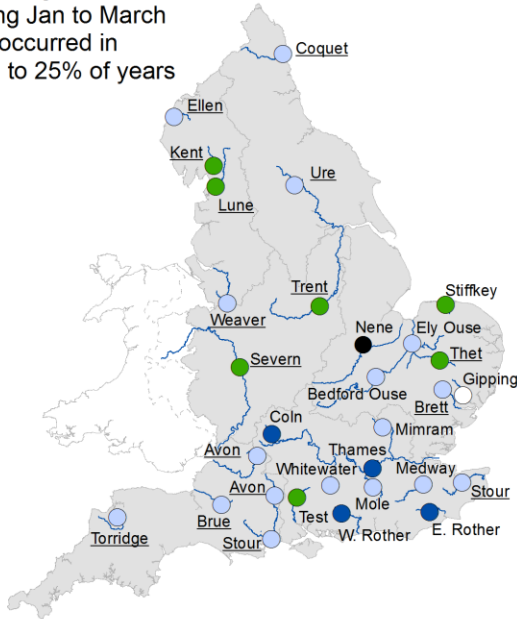
(Source: Water Companies).

# 7 Forward look

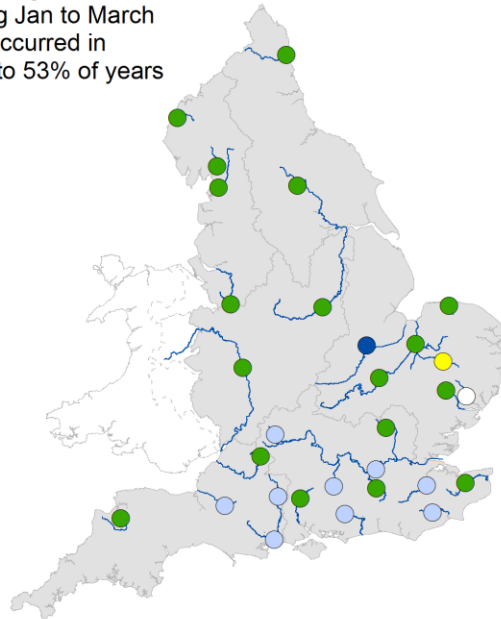
## 7.1 River flow

Figure 7.1: Projected river flows at key indicator sites up until the end of March 2023. Projections based on four scenarios: 120%, 100%, 80% and 60% of long term average rainfall between January 2023 and March 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by CEH.

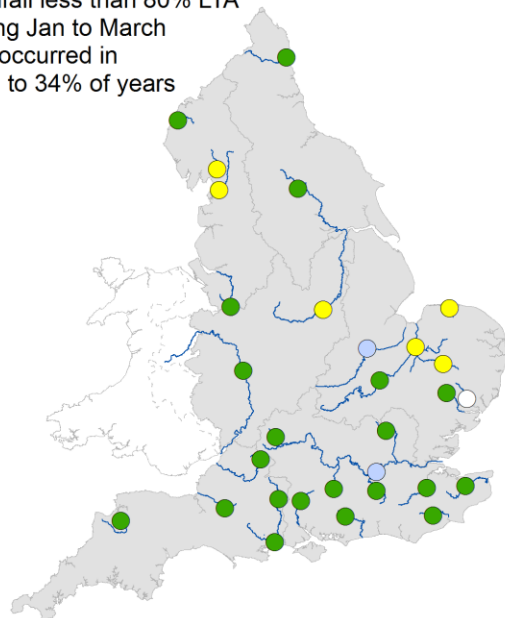
Rainfall greater than 120% LTA during Jan to March has occurred in 18% to 25% of years



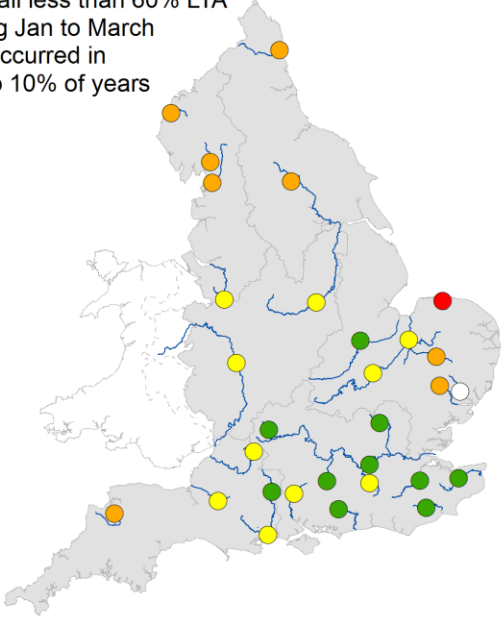
Rainfall greater than 100% LTA during Jan to March has occurred in 41% to 53% of years



Rainfall less than 80% LTA during Jan to March has occurred in 22% to 34% of years



Rainfall less than 60% LTA during Jan to March has occurred in 4% to 10% of years

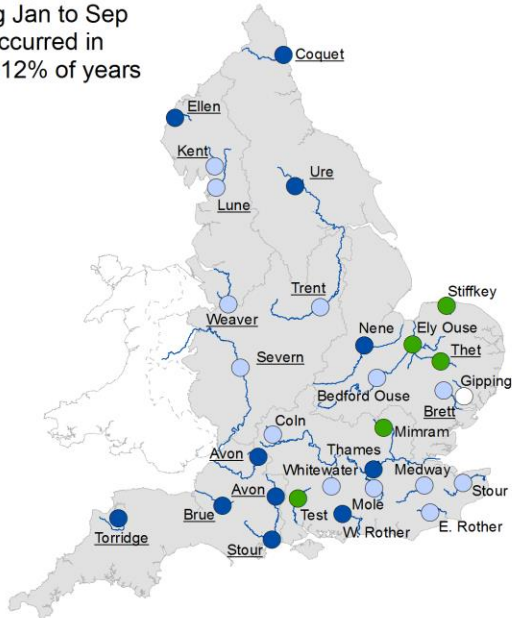


- Exceptionally high
- Above normal
- Below normal
- Exceptionally low
- Notably high
- Normal
- Notably low
- No data

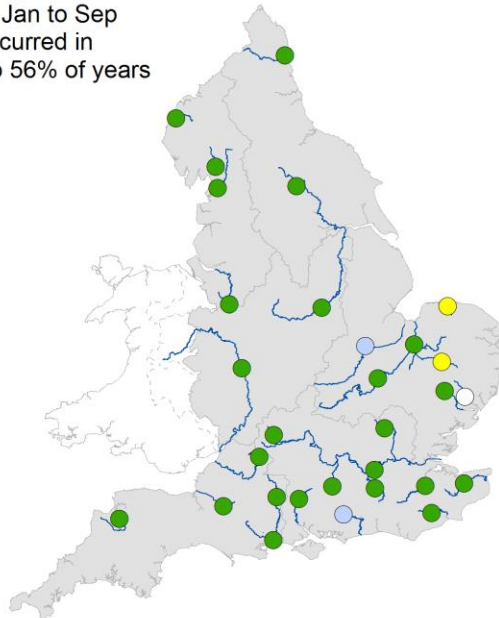
(Source: UK Centre for Ecology and Hydrology, Environment Agency).

Figure 7.2: Projected river flows at key indicator sites up until the end of September 2023. Projections based on four scenarios: 120%, 100%, 80% and 60% of long term average rainfall between January 2023 and September 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by CEH.

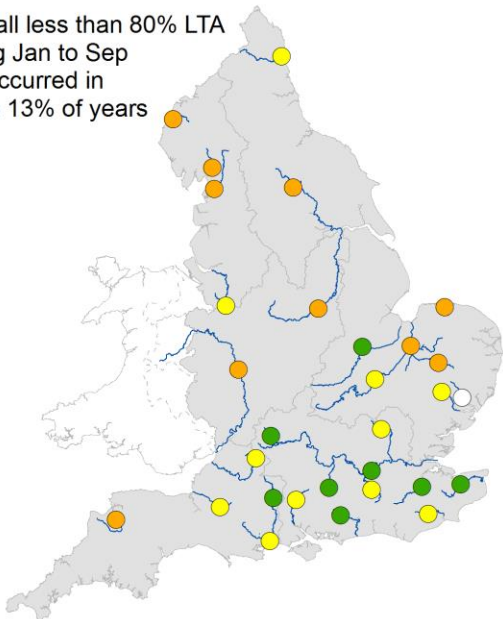
Rainfall greater than 120% LTA during Jan to Sep has occurred in 8% to 12% of years



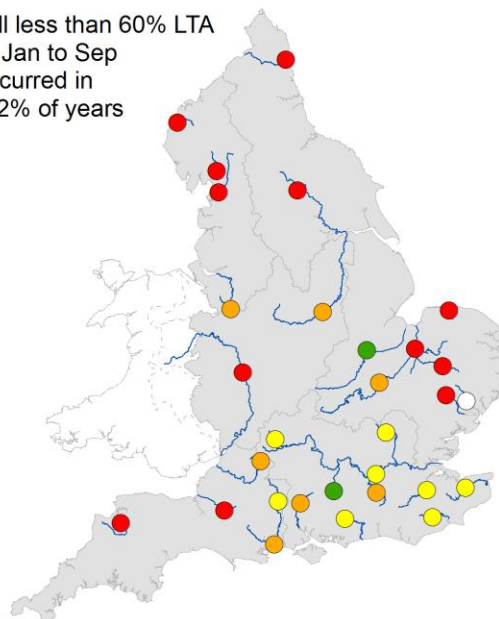
Rainfall greater than 100% LTA during Jan to Sep has occurred in 49% to 56% of years



Rainfall less than 80% LTA during Jan to Sep has occurred in 6% to 13% of years



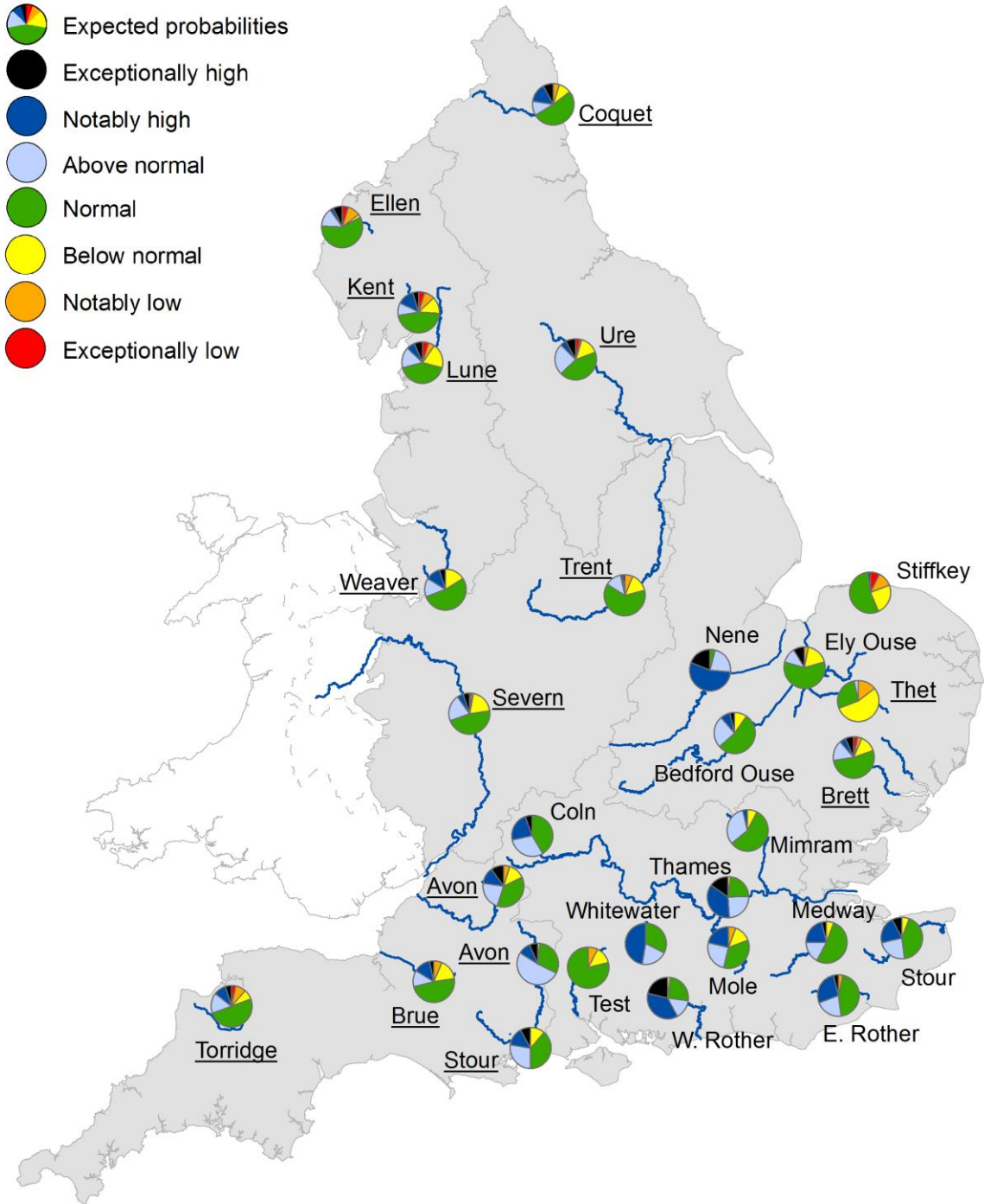
Rainfall less than 60% LTA during Jan to Sep has occurred in 0% to 2% of years



- Exceptionally high    ● Above normal    ● Below normal    ● Exceptionally low
- Notably high        ● Normal        ● Notably low    ● No data

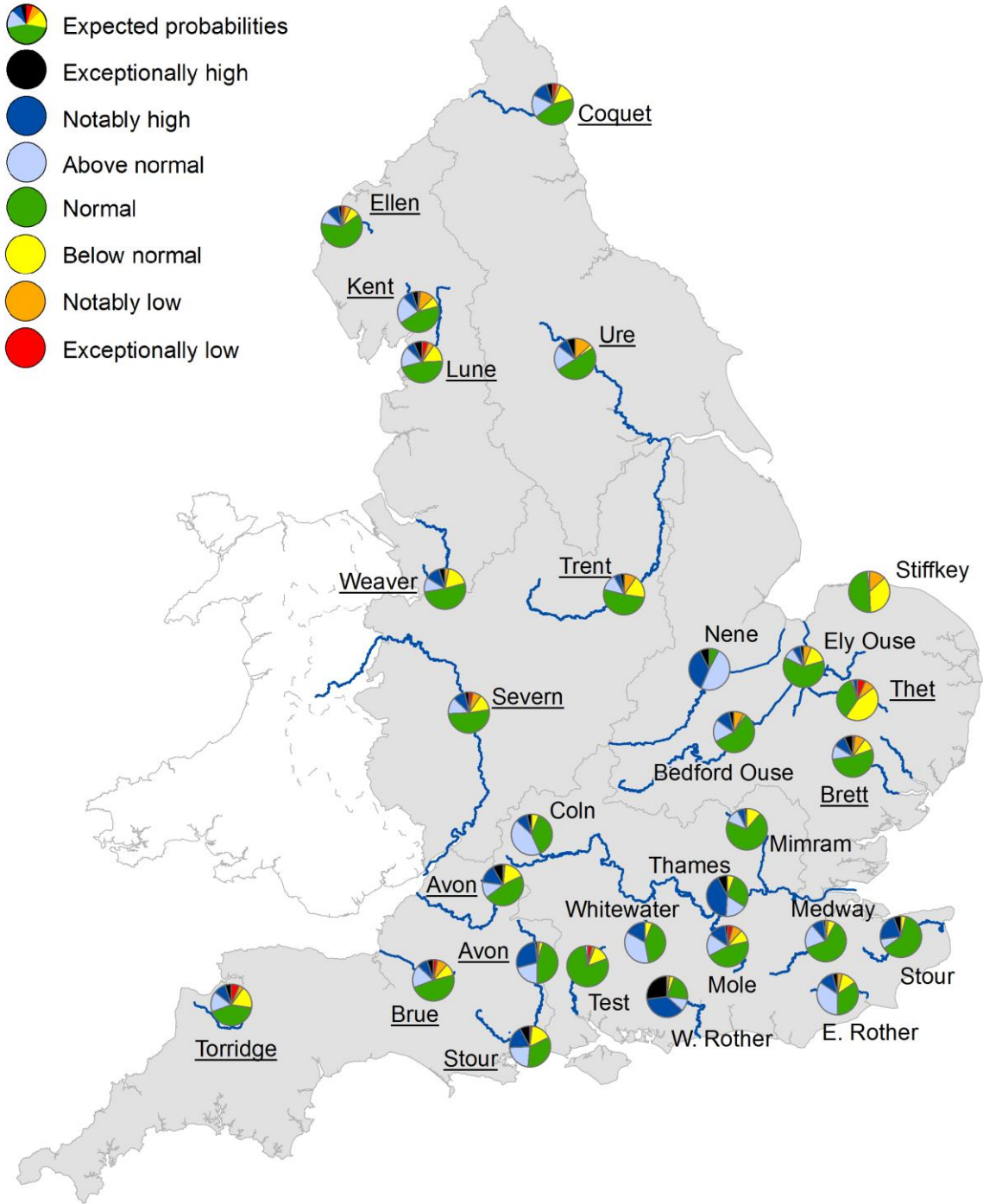
(Source: UK Centre for Ecology and Hydrology, Environment Agency)

Figure 7.3: Probabilistic ensemble projections of river flows at key indicator sites up until the end of March 2023. Pie charts indicate probability, based on climatology, of the surface water flow at each site being e.g. exceptionally low for the time of year. Projections for underlined sites produced by CEH.



(Source: UK Centre for Ecology and Hydrology, Environment Agency).

Figure 7.4: Probabilistic ensemble projections of river flows at key indicator sites up until the end of September 2023. Pie charts indicate probability, based on climatology, of the surface water flow at each site being e.g. exceptionally low for the time of year. Projections for underlined sites produced by CEH.

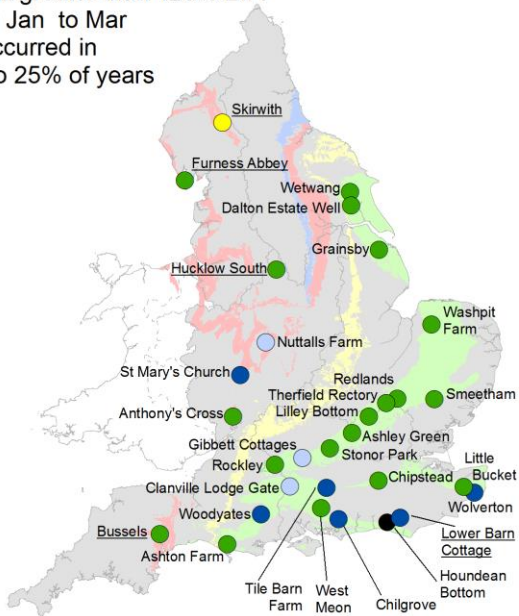


(Source: UK Centre for Ecology and Hydrology, Environment Agency).

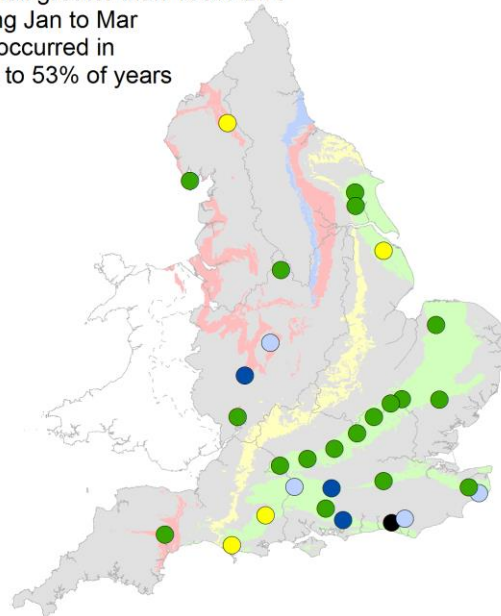
## 7.2 Groundwater

Figure 7.5: Projected groundwater levels at key indicator sites at the end of March 2023. Projections based on four scenarios: 120%, 100%, 80% and 60% of long term average between January 2023 and March 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by BGS.

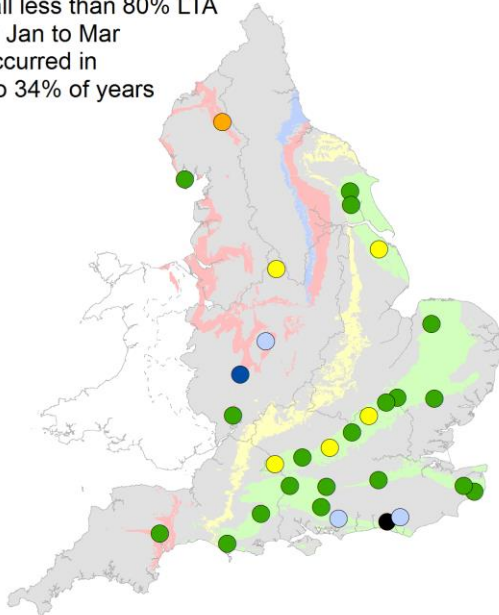
Rainfall greater than 120% LTA during Jan to Mar has occurred in 18% to 25% of years



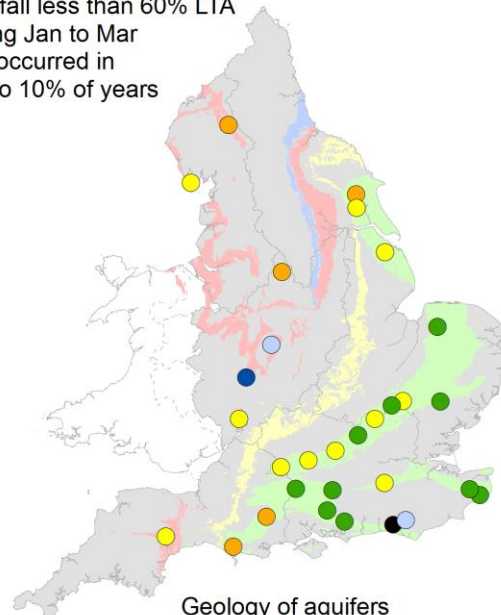
Rainfall greater than 100% LTA during Jan to Mar has occurred in 41% to 53% of years



Rainfall less than 80% LTA during Jan to Mar has occurred in 22% to 34% of years



Rainfall less than 60% LTA during Jan to Mar has occurred in 4% to 10% of years



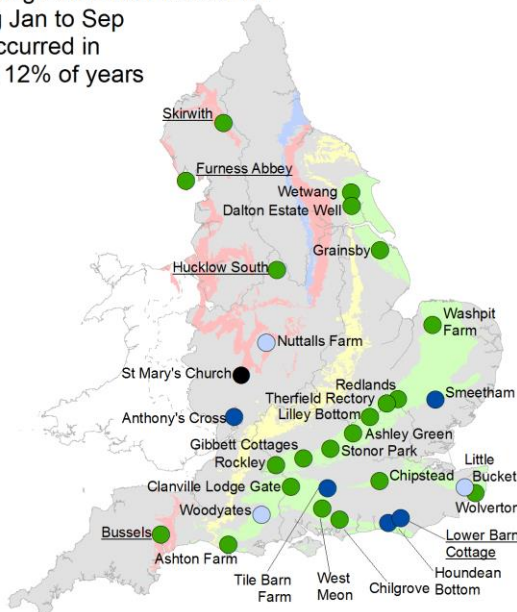
● Exceptionally high ● Notably high ● Above normal ● Normal  
 ● Below normal ● Notably low ● Exceptionally low ○ No data

Geology of aquifers  
 ■ Chalk  
 ■ Jurassic limestone  
 ■ Magnesian limestone  
 ■ Permo-Triassic sandstones

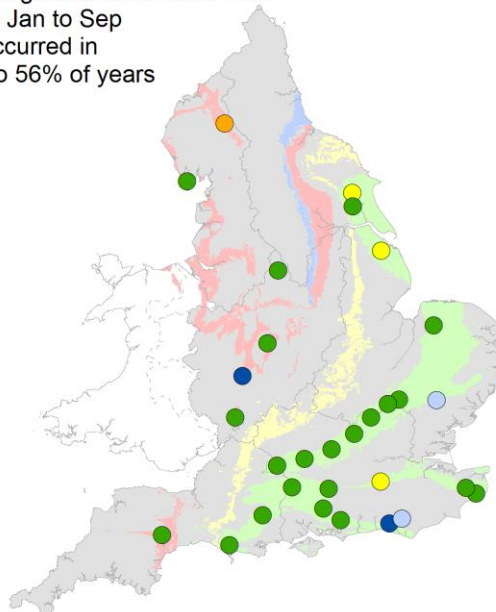
(Source: Environment Agency) Geological map reproduced with kind permission from UK Groundwater Forum BGS © NERC. Crown copyright all rights reserved. Environment Agency 100024198, 2023.

Figure 7.6: Projected groundwater levels at key indicator sites at the end of September 2023. Projections based on four scenarios: 120%, 100%, 80% and 60% of long term average rainfall between January 2023 and September 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by BGS.

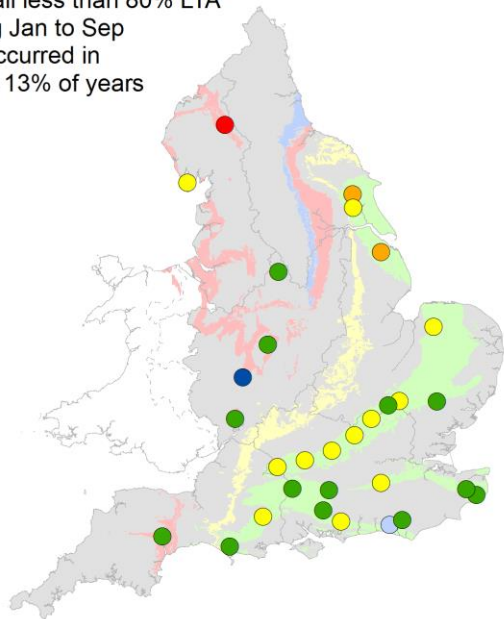
Rainfall greater than 120% LTA during Jan to Sep has occurred in 8% to 12% of years



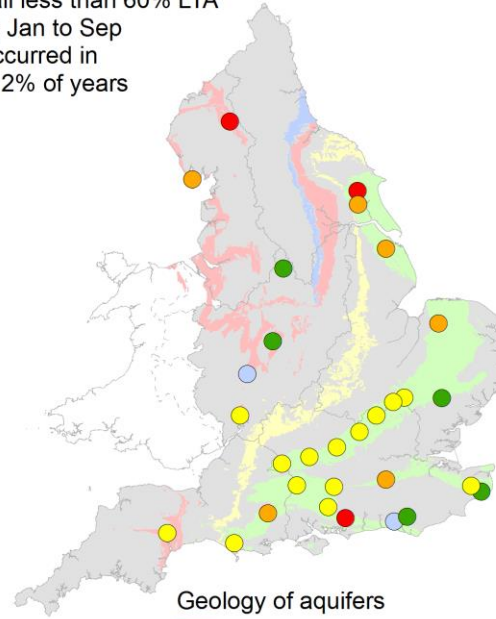
Rainfall greater than 100% LTA during Jan to Sep has occurred in 49% to 56% of years



Rainfall less than 80% LTA during Jan to Sep has occurred in 6% to 13% of years



Rainfall less than 60% LTA during Jan to Sep has occurred in 0% to 2% of years

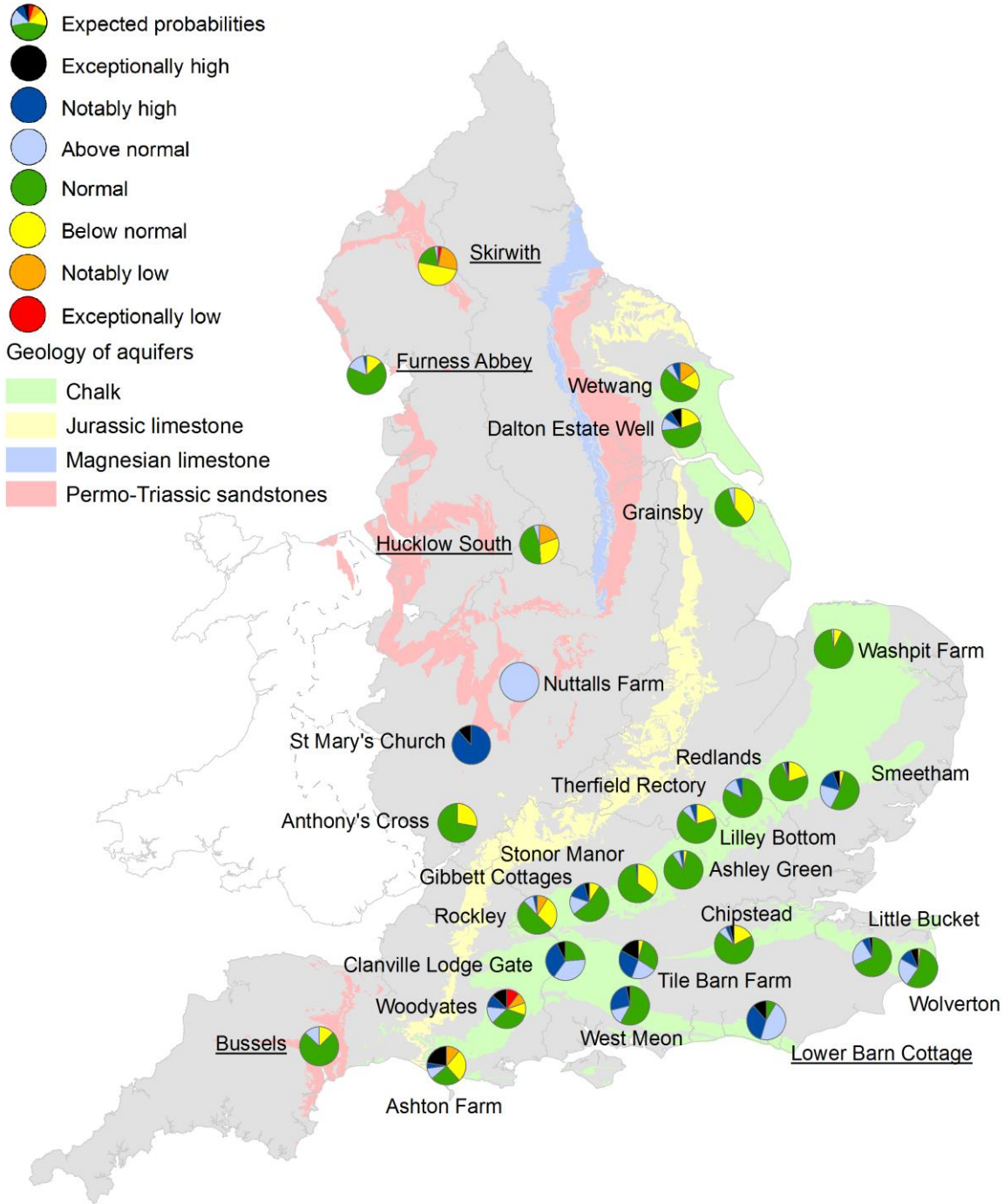


- |                      |                |                     |           |
|----------------------|----------------|---------------------|-----------|
| ● Exceptionally high | ● Notably high | ● Above normal      | ● Normal  |
| ● Below normal       | ● Notably low  | ● Exceptionally low | ○ No data |
- Geology of aquifers
- Chalk
  - Jurassic limestone
  - Magnesian limestone
  - Permo-Triassic sandstones

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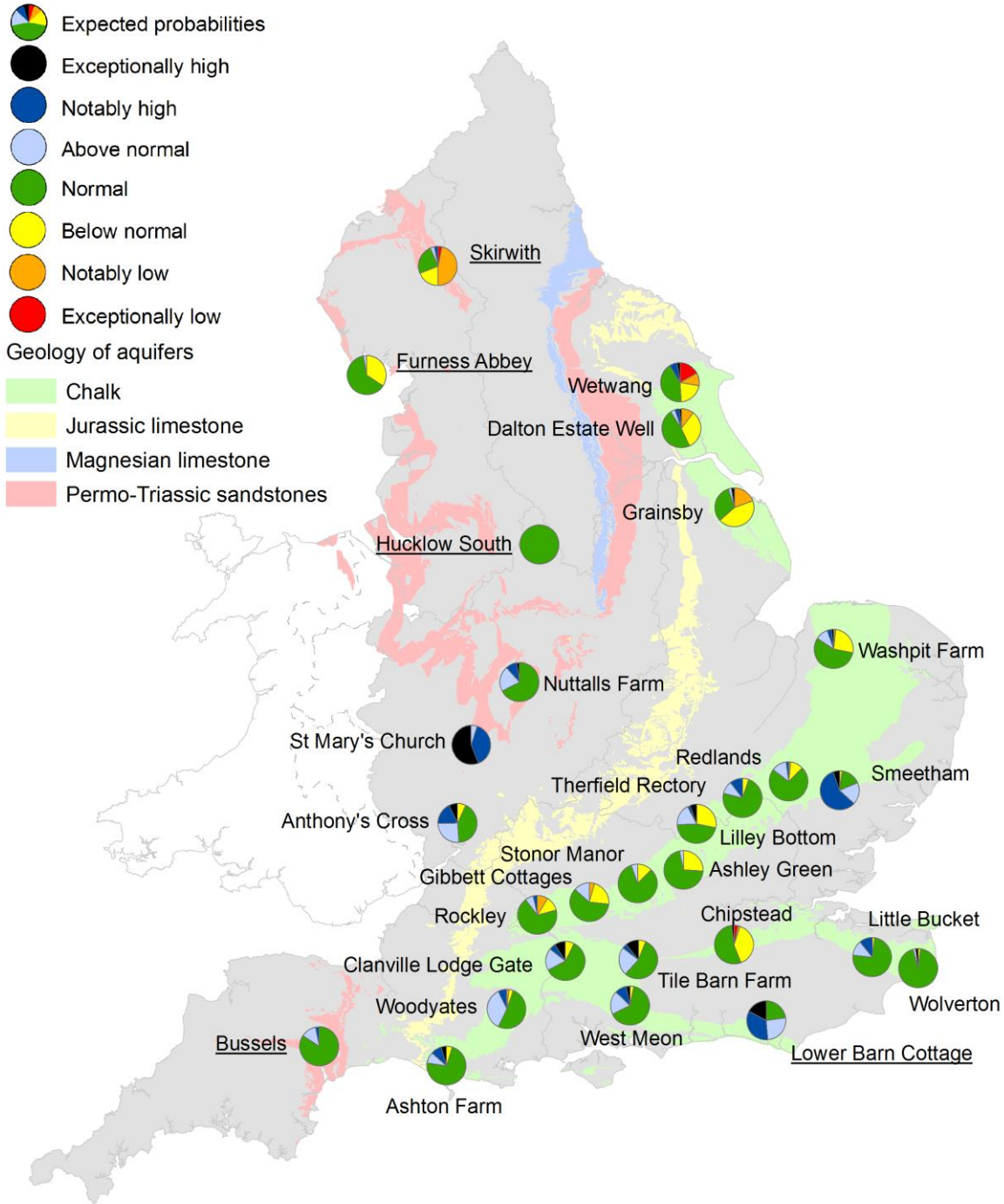


Figure 7.7: Probabilistic ensemble projections of groundwater levels at key indicator sites at the end of March 2023. Pie charts indicate probability, based on climatology, of the groundwater level at each site being e.g. exceptionally low for the time of year. Projections for underlined sites produced by BGS.



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Figure 7.8: Probabilistic ensemble projections of groundwater levels at key indicator sites at the end of September 2023. Pie charts indicate probability, based on climatology, of the groundwater level at each site being e.g. exceptionally low for the time of year. Projections for underlined sites produced by BGS.



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## 8 Glossary

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

#### **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 1961-1990. 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 x 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 provisional Met Office 51km 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 (e.g. 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).

## 8.2 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.

## 8.3 Geographic regions

Throughout this report regions of England are used to group Environment Agency areas together. Below the areas in each region are listed, and Figure 8.1 shows the geographical extent of these regions.

**East includes:** Cambridgeshire and Bedfordshire, Lincolnshire and Northamptonshire, and Essex, Norfolk and Suffolk areas.

**South east includes:** Solent and South Downs, Hertfordshire and North London, Thames, and Kent and South London areas.

**South west includes:** Devon and Cornwall, and Wessex areas.

**Central includes:** Shropshire, Herefordshire, Worcestershire and Gloucestershire, Staffordshire, Warwickshire and West Midlands, and Derbyshire, Nottinghamshire and Leicestershire areas.

**North west includes:** Cumbria and Lancashire, and Greater Manchester, Merseyside and Cheshire areas.

**North east includes:** Yorkshire, and Northumberland Durham and Tees areas.

Figure 8.1: Geographic regions



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## 9 Appendices

### 9.1 Rainfall table

Region	Dec 2022 rainfall % of long term average 1961 to 1990	Dec 2022 band	Oct 2022 to December 2022 cumulative band	Jul 2022 to December 2022 cumulative band	Jan 2022 to December 2022 cumulative band
East England	87	Normal	Above normal	Below normal	Notably low
Central England	85	Normal	Notably high	Normal	Below normal
North-east England	105	Normal	Above normal	Normal	Below normal
North-west England	105	Normal	Above normal	Normal	Normal
South-east England	125	Normal	Notably high	Normal	Below normal
South-west England	120	Normal	Notably high	Normal	Below normal
England	106	Normal	Notably high	Normal	Below normal

## 9.2 River flows table

Geographic area	Site name	River	Dec 2022 band	Nov 2022 band
East	Burnham	Burn	Below normal	Below normal
East	Claypole	Upper Witham	Above normal	Above normal
East	Colney	Yare	Below normal	Normal
East	Denver	Ely Ouse	Below normal	Normal
East	Dernford	Cam	Below normal	Normal
East	Louth Weir	Lud	Normal	Normal
East	Offord	Bedford Ouse	Normal	Normal
East	Springfield	Chelmer	Normal	Above normal
East	Stowmarket	Gipping	Normal	Normal
East	Upton Mill	Nene	Normal	Above normal
Central	Bewdley	Severn	Notably low	Below normal
Central	Derby St Marys	Derwent	Below normal	Normal
Central	Evesham	Avon	Normal	Above normal
Central	Marston-on-dove	Dove	Below normal	Notably high
Central	North Muskham	Trent	Normal	Notably high
North East	Buttercrambe	Derwent	Normal	Notably high



North East	Crakehill Topcliffe	Swale	Normal	Above normal
North East	Heaton Mill	Till	Normal	Above normal
North East	Doncaster	Don	Normal	Notably high
North East	Haydon Bridge	South Tyne	Normal	Normal
North East	Tadcaster	Wharfe	Normal	Normal
North East	Stanhope	Wear	Normal	Notably high
North West	Ashton Weir	Mersey	No data	No data
North West	Caton	Lune	Normal	Normal
North West	Ouse Bridge	Derwent	Below normal	Above normal
North West	Pooley Bridge	Eamont	Normal	Above normal
North West	St Michaels	Wyre	Normal	Above normal
North West	Ashbrook	Weaver	Normal	Exceptionally high
South East	Allbrook and Highbridge	Itchen	Above normal	Above normal
South East	Feildes Weir	Lee	Normal	Normal
South East	Hansteads	Ver	Above normal	Above normal
South East	Hawley	Darent	Normal	Above normal
South East	Horton	Great Stour	Normal	Notably high
South East	Kingston	Thames	Normal	Normal
South East	Lechlade	Leach	Normal	Normal

South East	Teston and Farleigh	Medway	Above normal	Exceptionally high
South East	Marlborough	Kennet	Normal	Below normal
South East	Udiam	Rother	Above normal	Exceptionally high
South East	Ardingley Gs	Ouse	Above normal	Exceptionally high
South East	Princes Marsh Gs	Rother	Above normal	Notably high
South West	Amesbury	Upper Avon	Normal	Normal
South West	Bathford	Avon	Normal	Above normal
South West	Bishops Tull	Tone	Normal	Notably high
South West	East Stoke	Frome	Above normal	Notably high
South West	Great Somerford	Avon	Normal	Above normal
South West	Gunnislake	Tamar	Normal	Notably high
South West	Hammoon	Middle Stour	Above normal	Exceptionally high
South West	Knapp Mill	Avon	Normal	Above normal
South West	Lovington	Upper Brue	Normal	Notably high
South West	Thorverton	Exe	Normal	Above normal
South West	Torrington	Torrige	Normal	Notably high
South West	Truro	Kenwyn	Normal	Above normal

South West	Austins Bridge	River Dart	Above normal	Exceptionally high
EA Wales	Manley Hall	Dee	Normal	Normal
EA Wales	Redbrook	Wye	Normal	Above normal

### 9.3 Groundwater table

Geographic area	Site name	Aquifer	End of Dec 2022 band	End of Nov 2022 band
East	Grainsby	Grimsby Ancholme Louth Chalk	Below normal	Below normal
East	Redlands Hall (chalk)	Cam Chalk	Below normal	Normal
East	Hanthorpe	Cornbrash (South)	Above normal	Normal
East	Smeetham Hall Cott.	North Essex Chalk	Normal	Normal
East	Washpit Farm Rougham	North West Norfolk Chalk	Below normal	Below normal
Central	Four Crosses	Grimsby Ancholme Louth Limestone	Normal	Normal
Central	Weir Farm (sandstone)	Bridgnorth Sandstone Formation	Above normal	Above normal
Central	Coxmoor	Permo Triassic Sandstone	Above normal	Above normal
Central	Crossley Hill	Permo Triassic Sandstone	Normal	Normal
North East	Dalton Estate Well	Hull & East Riding Chalk	Normal	Below normal
North East	Aycliffe Nra2	Skerne Magnesian Limestone	Normal	Normal

North East	Wetwang	Hull & East Riding Chalk	Normal	Normal
North West	Priors Heyes	West Cheshire Permo-Triassic Sandstone	Exceptionally high	Exceptionally high
North West	Skirwith (sandstone)	Carlisle Basin Permo-Triassic sandstone	Below normal	Normal
North West	Lea Lane	Fylde Permo-Triassic Sandstone	Below normal	Exceptionally low
South East	Chilgrove (chalk)	Chichester-Worthing-Portsdown Chalk	Notably high	Above normal
South East	Clanville Gate Gwl	River Test Chalk	Normal	Below normal
South East	Houndean Bottom Gwl	Brighton Chalk Block	Notably high	Exceptionally high
South East	Little Bucket (chalk)	East Kent Chalk - Stour	Normal	Below normal
South East	Jackaments Bottom (jurassic Limestone)	Burford Oolitic Limestone (Inferior)	Normal	Normal
South East	Ashley Green Stw Obh	Mid-Chilterns Chalk	Normal	Normal
South East	Stonor Park (chalk)	South-West Chilterns Chalk	Below normal	Below normal
South East	Chipstead Gwl	Epsom North Downs Chalk	Below normal	Notably low

South West	Tilshead	Upper Hampshire Avon Chalk	Normal	Normal
South West	Woodleys No1	Otterton Sandstone Formation	Below normal	Notably low
South West	Woodyates	Dorset Stour Chalk	Above normal	Normal

## 9.4 Reservoir table

Geographic region	% Full	Average comparison
East England	74	Below average
Central England	80	Below average
North-east England	89	Below average
North-west England	87	Below average
South-east England	84	Below average
South-west England	61	Below average
England	82	Below average