

Monthly water situation report: England

1 Summary - November 2022

Monthly rainfall totals in November were above average in all catchments across England. As a result of the rainfall, soil moisture deficits declined quickly and at the end of the month soils were wetter than would be expected across most of England for this time of year. River flows increased at almost all sites in November and the majority of sites were classed as normal or higher for the time of year. Groundwater levels increased at two thirds of indicator sites, and the same proportion were classed as normal or higher for the time of year. Reservoir stocks in November increased at all except one of the reservoir and reservoir groups we report on, although more than half of reservoirs were still classed as below normal or lower for the time of year.

1.1 Rainfall

The November rainfall total for England was 133.9mm which represents 164% of the 1961-1990 long term average (LTA) for the time of year (145% of the 1991-2020 LTA). All catchments received above average rainfall during November. The wettest catchment was the River Ouse in the east Sussex which received 303% of November's LTA rainfall. The driest catchment was Esk (Dumfries) in the Scottish borders where 102% of LTA rainfall for November was received. Sixty three catchments recorded rainfall totals within the top ten wettest for November, and fifteen all in south-east England saw their wettest ever November using records starting in 1891. (Figure 2.1).

November rainfall totals were classed as above normal or higher for almost the whole country, with only seven catchments classed as normal for the time of year. At a regional scale, November rainfall totals were normal in north-east England, and above normal in north-west England. All other regions were notably high for the time of year. (Figure 2.2)

November was the third consecutive month of above average rainfall for England as a whole and the wettest since 2009, with 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, although some catchments on the east coast were below normal and catchments on the Sussex coast were above normal or higher. The 12 month cumulative rainfall totals were classed as normal or lower in all catchments across England. (Figure 2.3)

1.2 Soil moisture deficit

Soil moisture deficits (SMD) continued to decline quickly across the country during November. Soils became wetter in many areas due to above average rainfall and lower temperatures. (Figure 3.1)

With the above average rainfall, the end of November SMDs were below average across much of England, leaving soils wetter than would be expected for the time of year. (Figure 3.2)

1.3 River flows

November monthly mean river flows increased at all except one of the indicator sites we report on since October. Two thirds of sites were above normal or higher for the time of year, and a quarter were normal for the time of year. Despite increases in flows, three sites were below normal for the time of year. (Figure 4.1)

At the regional index sites monthly mean flows were all normal or higher for the time of year. The River Thames (naturalised flows) at Kingston was normal after increased flows helped it recover from below normal monthly mean flows in October. Also in the south east the Great Stour had notably high monthly mean flows, having been notably low in October. The River Dove in central England was also notably high for the time of year. Haydon Bridge on the South Tyne was the only site to see a decrease in monthly mean flows, as it returned to normal flows having been above normal for the time of year in October. (Figure 4.2)

1.4 Groundwater levels

At the end of November, groundwater levels increased at two thirds of the reported indicator sites as wet soils and above average rainfall helped some aquifers begin their seasonal recovery. The other third of sites continued to decline. Almost half of the end of month groundwater levels were classed as normal for the time of year. The remaining sites were split, with three sites above normal and two exceptionally high, while the rest were below normal or lower for the time of year. (Figure 5.1)

The major aquifer index sites showed a mixed picture at the end of November with all except one site seeing a change in class from October. The most notable change was at Chilgrove in the Chichester Chalk on the south coast, where groundwater levels increased quickly through November to end the month at above normal levels, having ended October at exceptionally low levels. In contrast Little Bucket in the East Kent Stour Chalk and Stonor Park in the South West Chilterns Chalk both remained at below normal levels at the end of November. Groundwater levels at Jackaments Bottom in the Burford Jurassic Limestone recovered quickly from exceptionally low levels at the end of October, and ended the month with normal levels. (Figure 5.2)

1.5 Reservoir storage

At the end of November reservoirs stocks had increased at all except one of the reservoirs and reservoir groups we report on. Fifteen reservoirs or reservoir groups saw an increase of more than 20% in their stocks in comparison to the end of September. Of particular note were Ardingly and Bough Beech in the south east which increased by 55% and 41% respectively. Despite these increases, more than half of all reservoirs or reservoir groups were classed as below normal or lower for the time of year. (Figure 6.1)

At the regional scale, total reservoir stocks ranged from 43% in south-west England to 83% in north-east England. Total reservoir stocks for England were at 73% of total capacity at the end of November. (Figure 6.2)

1.6 Forward look

Early December was dominated by cold and dry weather across most of the country. Below average temperatures are forecast for the middle of December with an increased chance of colder and wintry conditions. There is also an increased likelihood of a drier December.

For the three month period from December to February near average temperatures are forecast with an increased chance of cold weather in early winter. There is a reduced chance of wet conditions with stormy conditions and high winds less likely than normal.

1.7 Projections for river flows at key sites

By the end of March 2023 river flows have a greater likelihood of being above normal in south east and south west England. Across the rest of the country river flows have a greater chance of being normal or below normal. By the end of September 2023 river flows have an increased chance of being above normal in all regions except in the eastern and central areas where river flows are most likely to be normal and below normal respectively.

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 east 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 normal across all regions except northern England, where groundwater levels have an increased chance of being below normal.

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

Author: National water resources hydrology team, Nationalhydrology@environment-agency.gov.uk

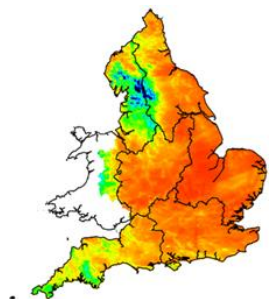
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2 Rainfall

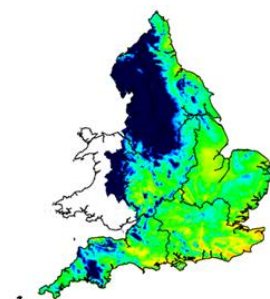
2.1 Rainfall map

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.

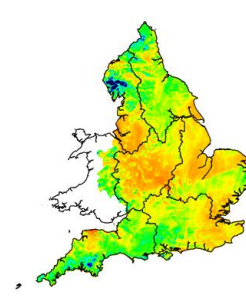
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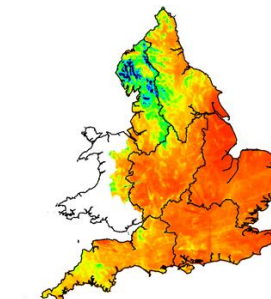
February 2022



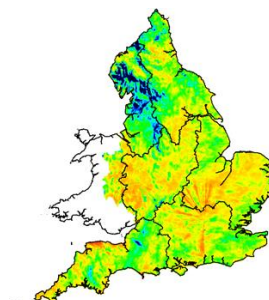
March 2022



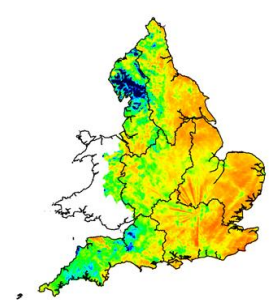
April 2022



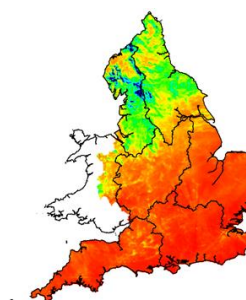
May 2022



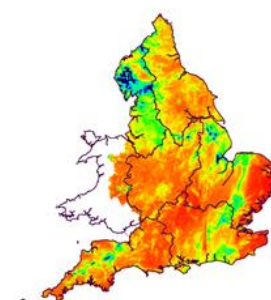
June 2022



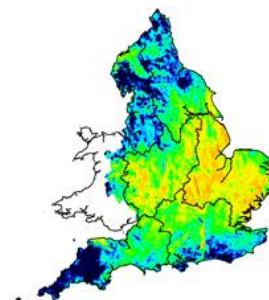
July 2022



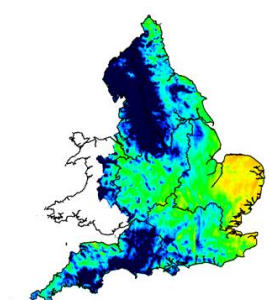
August 2022



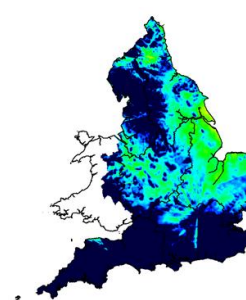
September 2022



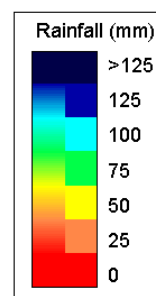
October 2022



November 2022

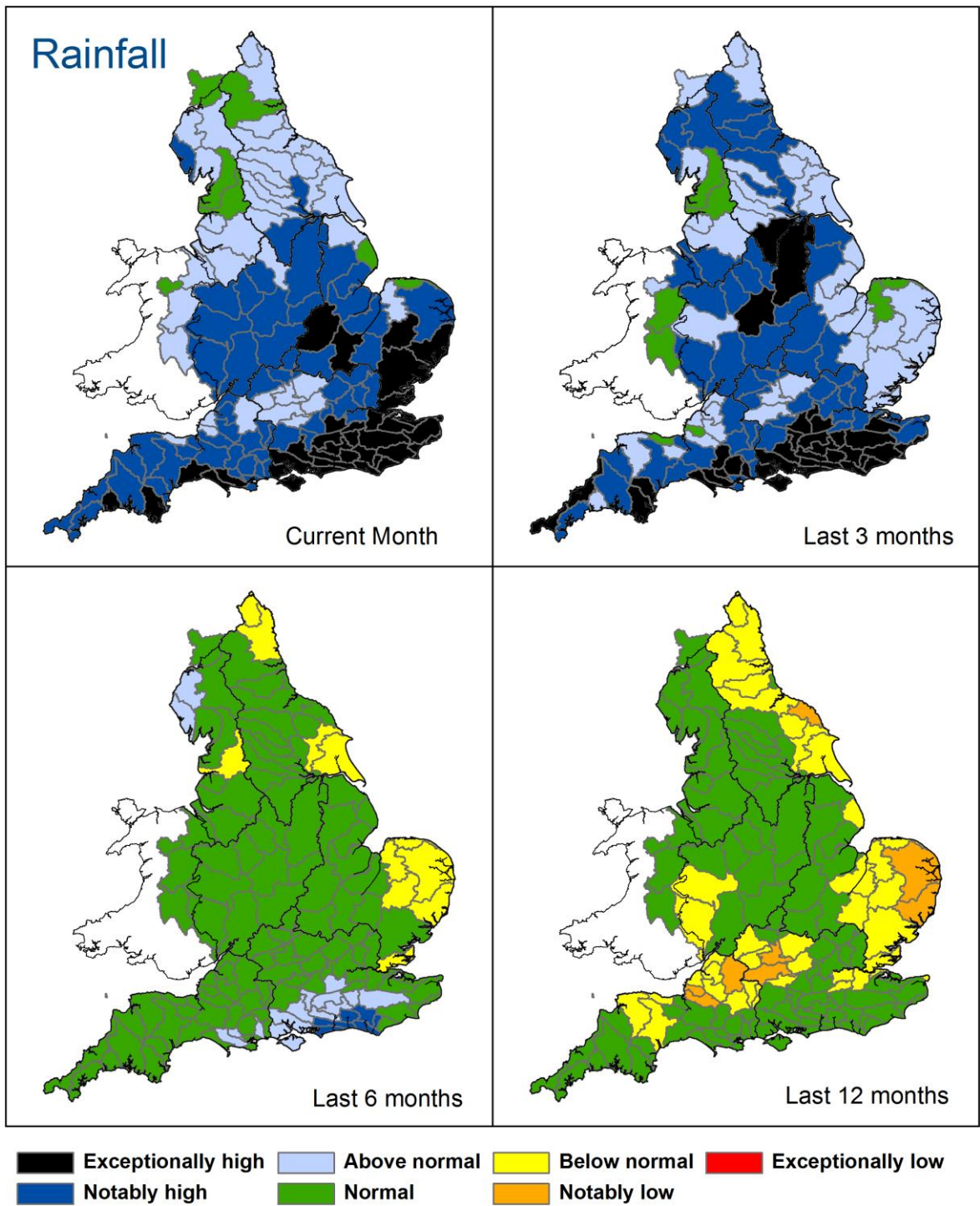


Map Legend



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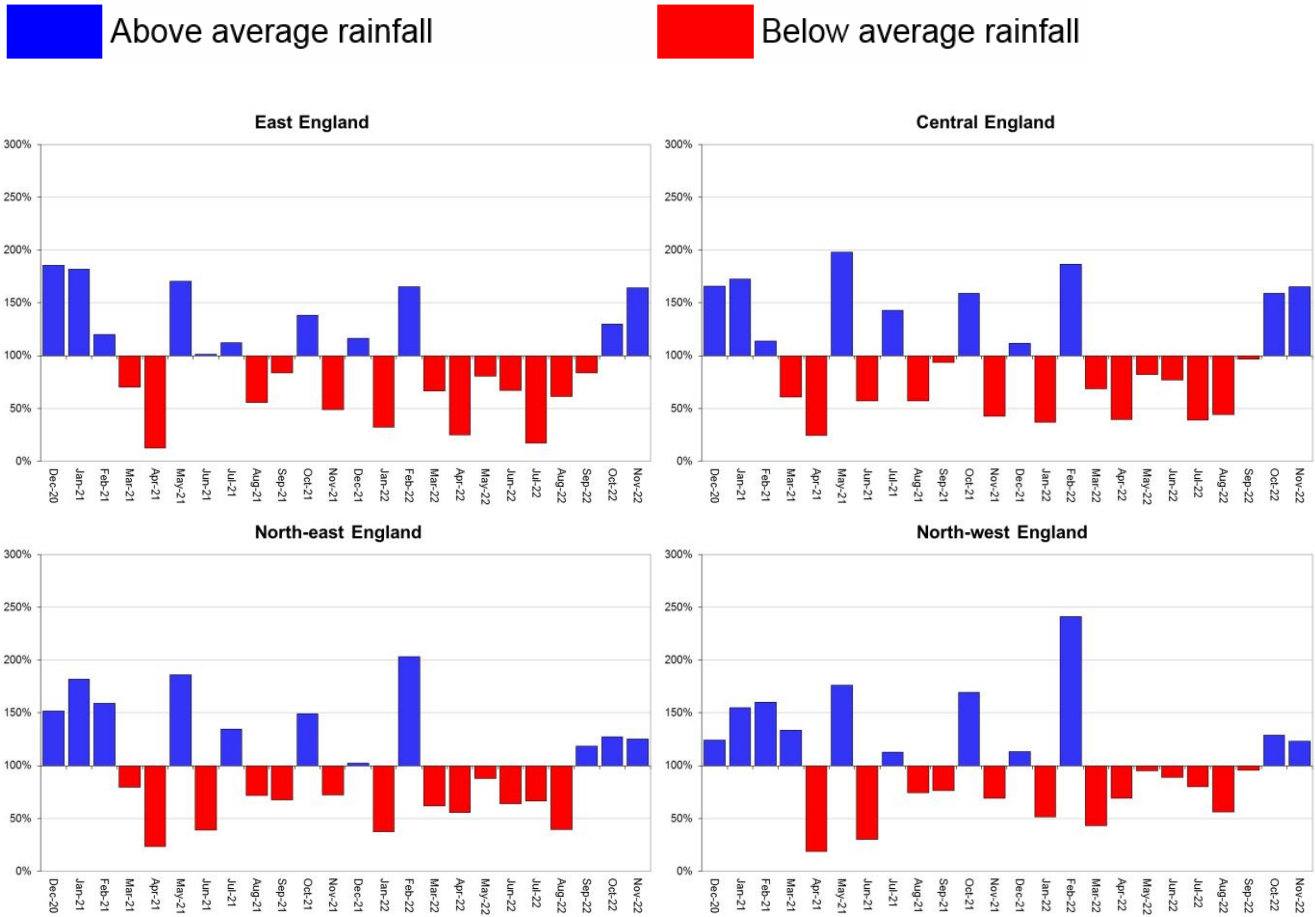
Figure 2.2: Total rainfall for hydrological areas across England for the current month (up to 30 November 2022), the last 3 months, the last 6 months, and the last 12 months, classed relative to an analysis of respective historic totals.

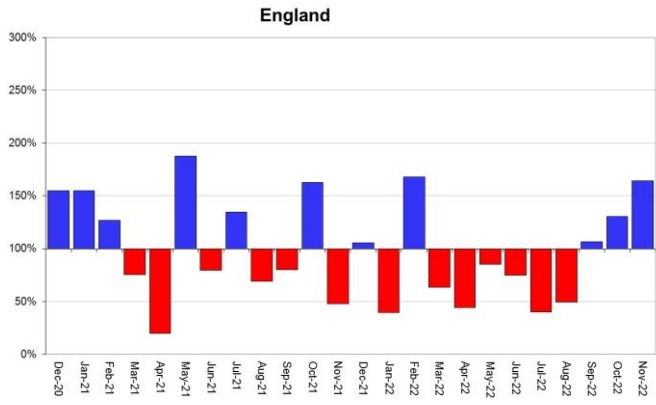
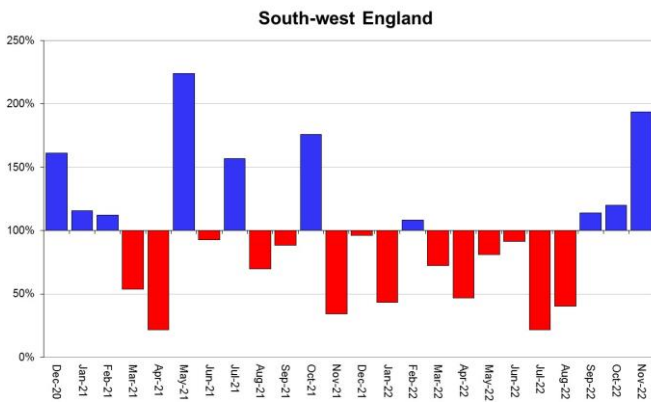
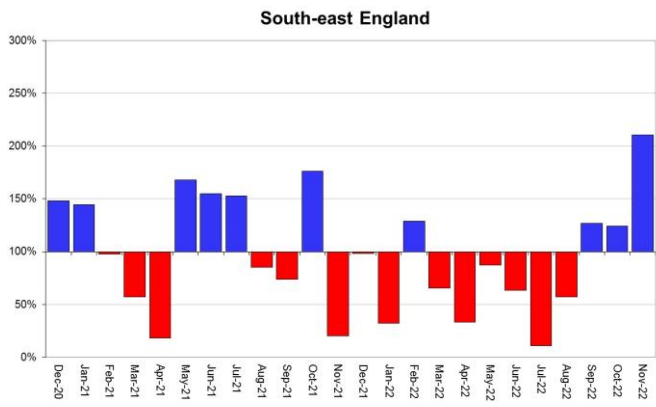


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2022). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved. Environment Agency, 100024198, 2022.

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, 2022).

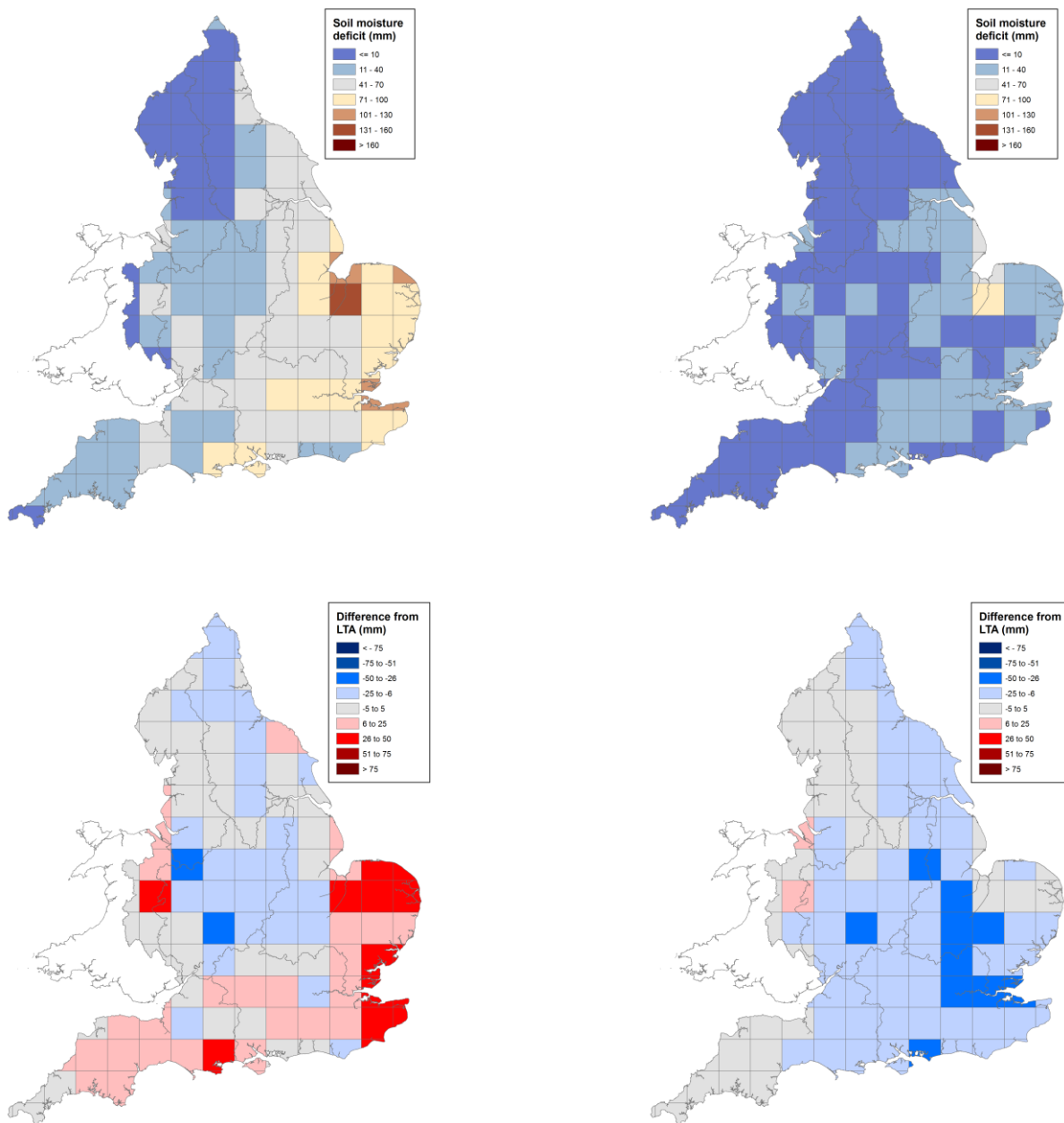
3 Soil moisture deficit

3.1 Soil moisture deficit map

Figure 3.1: Soil moisture deficits for weeks ending, 02 November 2022 (left panel) and 30 November 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 October 2022

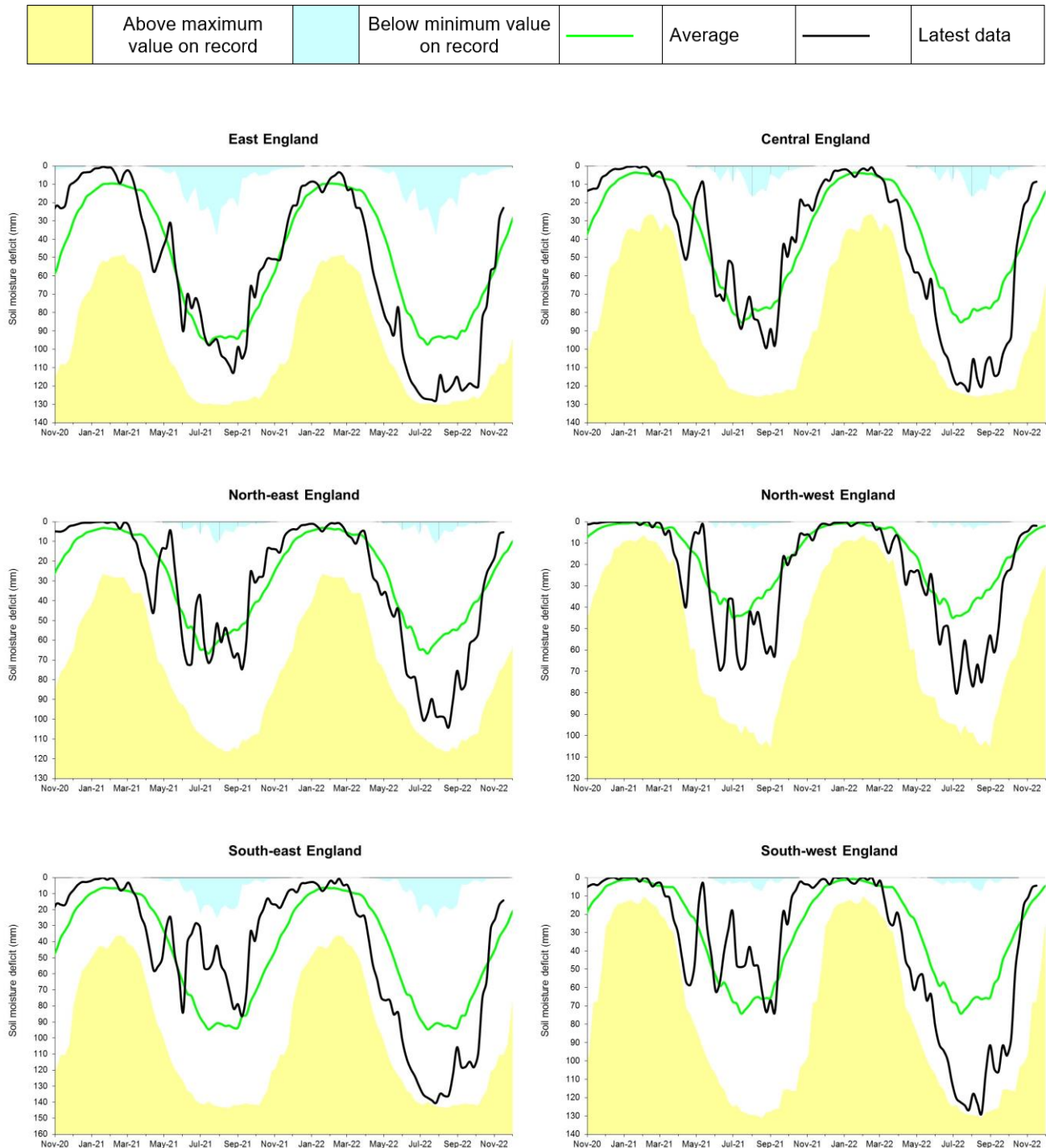
End of November 2022



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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.



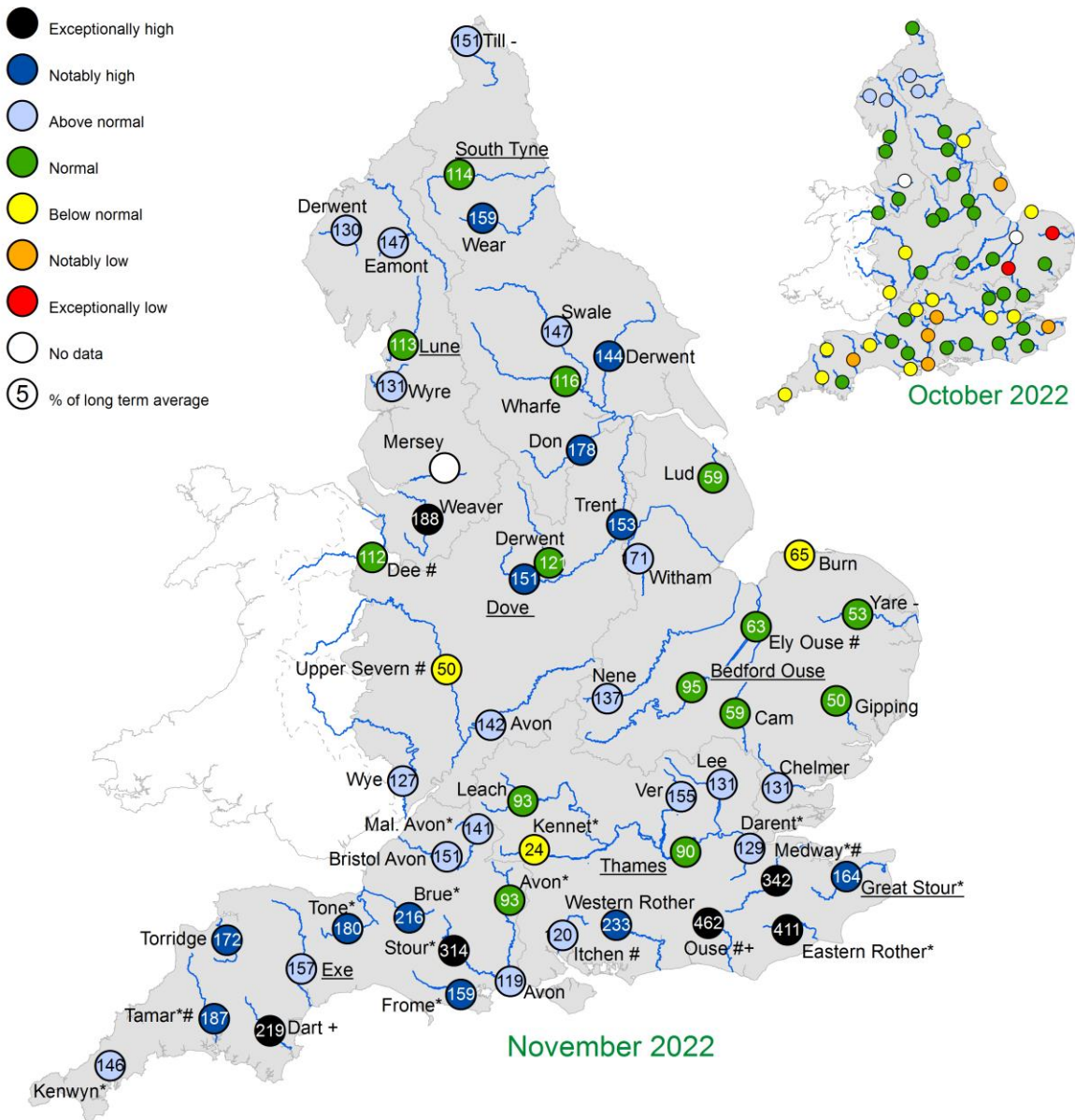
(Source: Met Office. Crown copyright, 2022).

4 River flows

4.1 River flow map

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

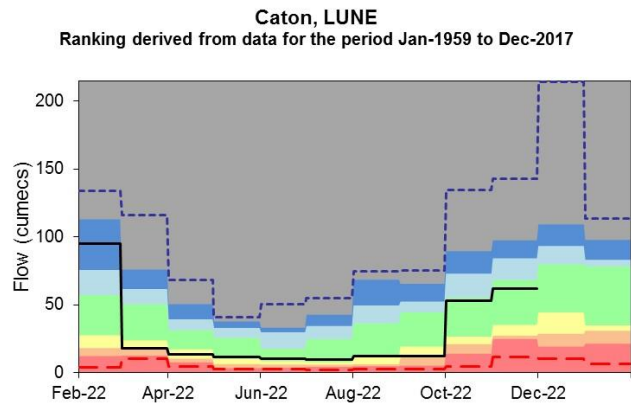
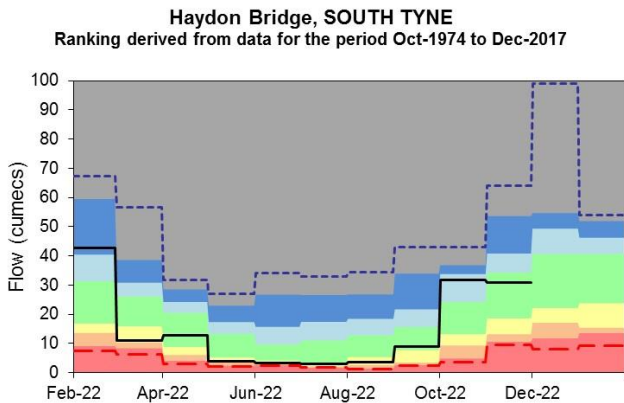
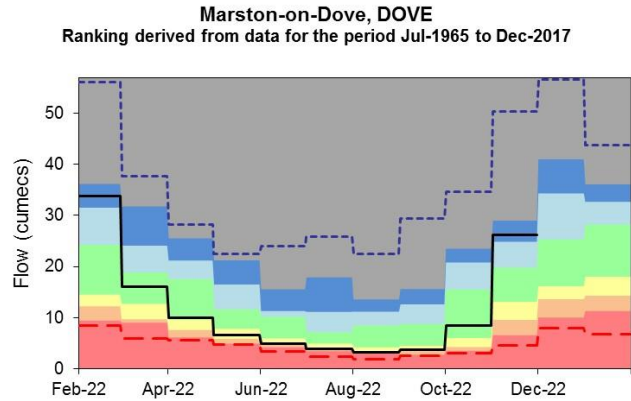
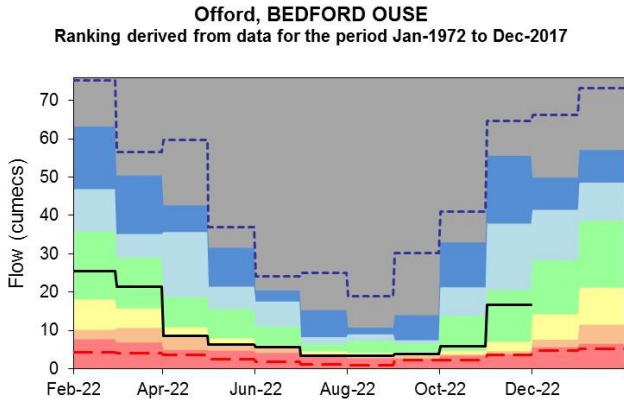
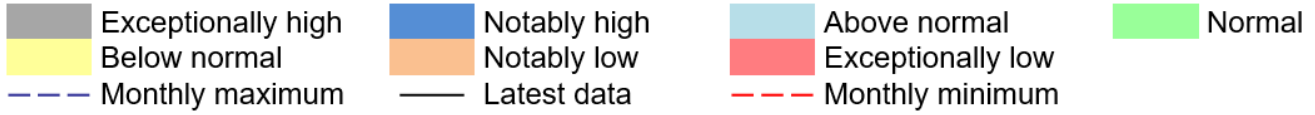
Naturalised flows are provided for the River Thames and the River Lee. +/- Monthly mean flow is the highest/lowest on record for the current month (note that record length varies between sites). # Flows may be impacted at these sites by water releases from upstream reservoirs. * Flows may be overestimated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



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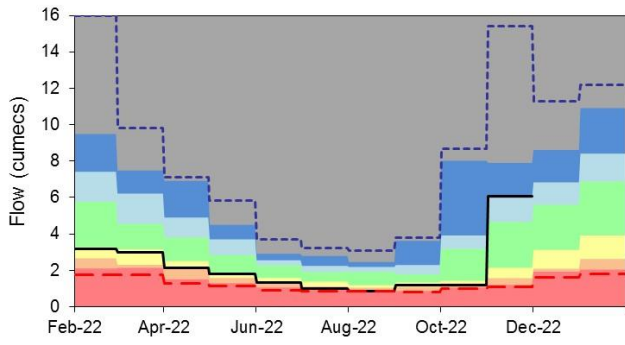
4.2 River flow charts

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.



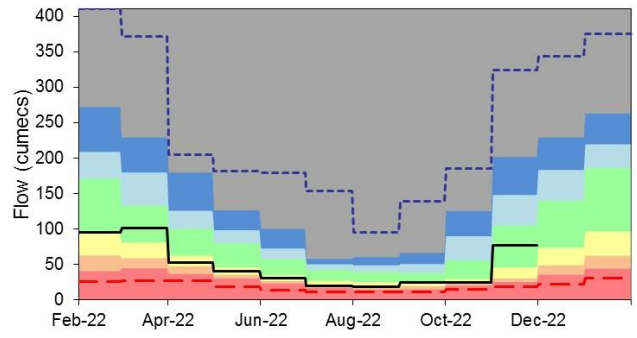
Horton, GREAT STOUR

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



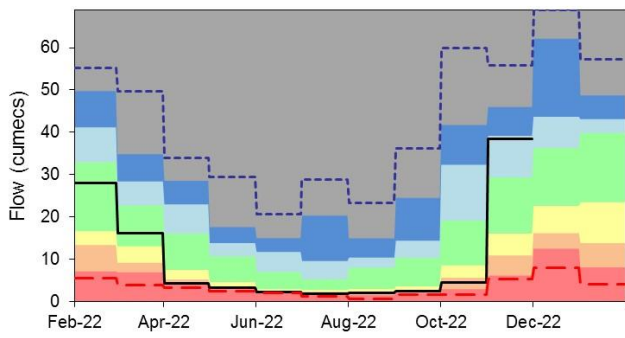
Kingston, THAMES

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



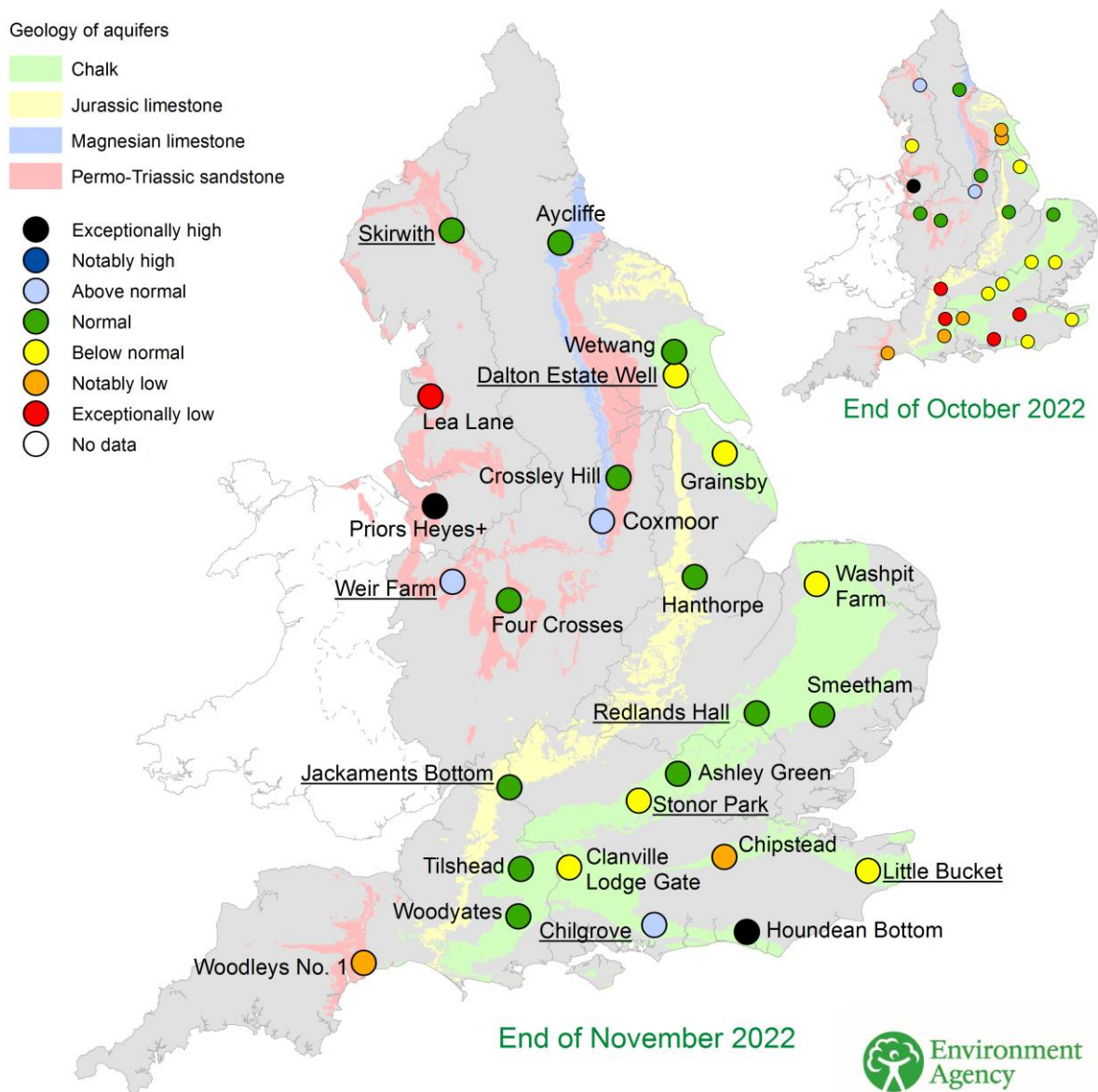
(Source: Environment Agency).

5 Groundwater levels

5.1 Groundwater levels map

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

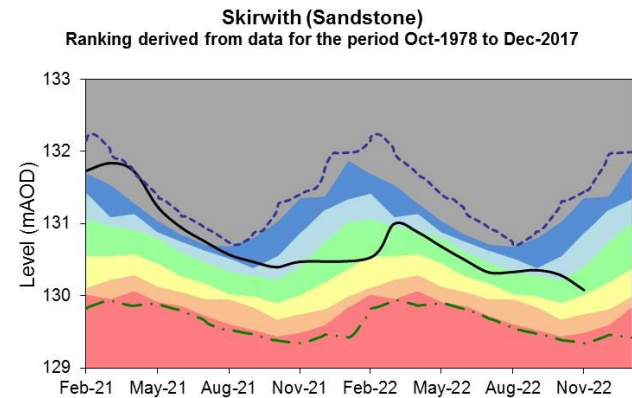
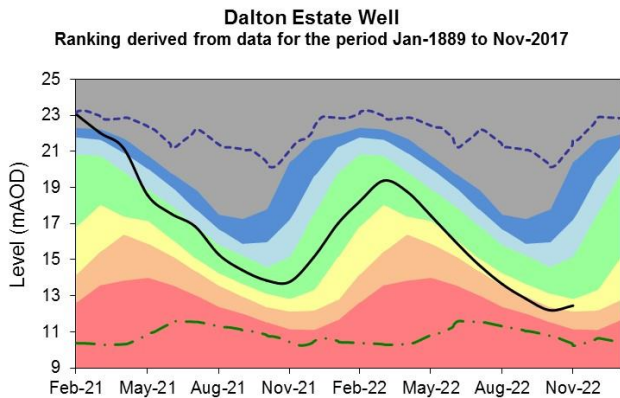
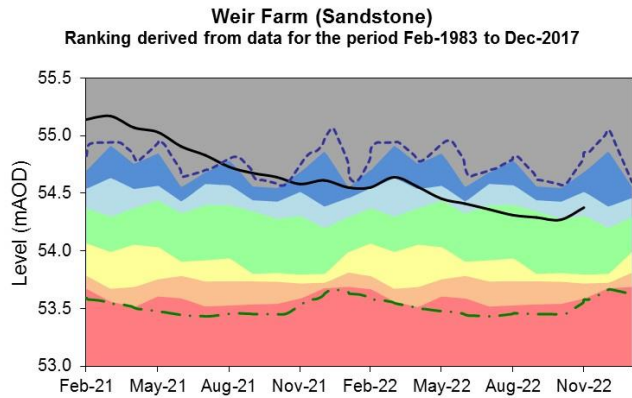
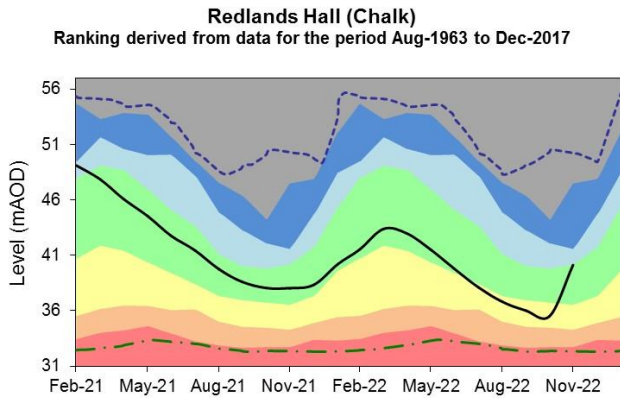
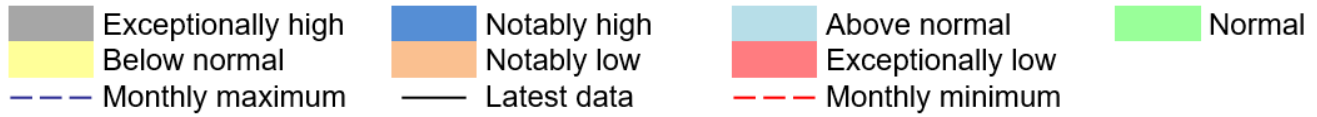
Redlands Hall and Aycliffe are manually dipped at different times during the month and so may not be fully representative of month end levels. Levels at Lea Lane affected by nearby abstraction. Levels at Priors Heyes remain high compared to historic levels because the aquifer is recovering from the effects 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, 2022.

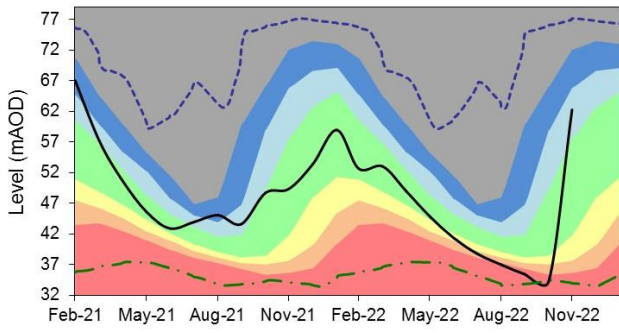
5.2 Groundwater level charts

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.



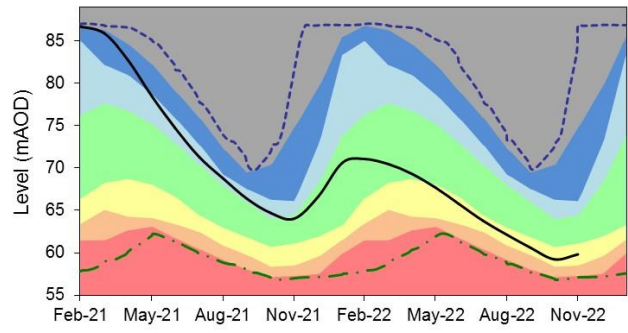
Chilgrove (Chalk)

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



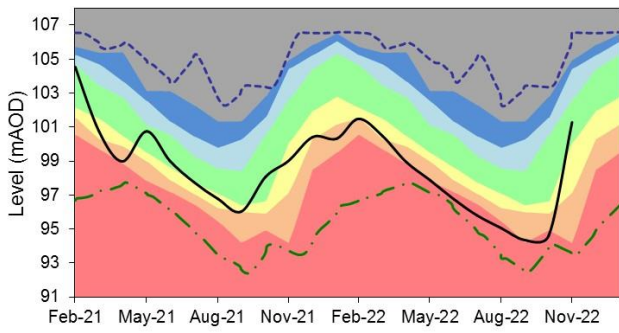
Little Bucket (Chalk)

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



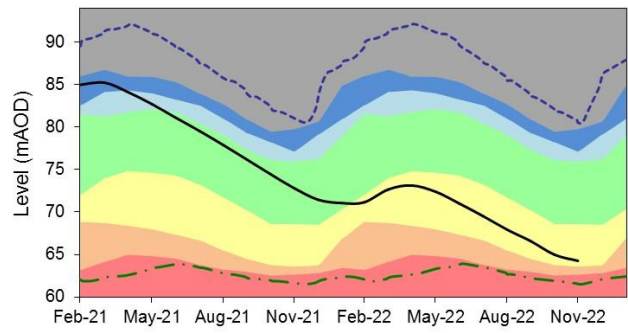
Jackaments Bottom (Jurassic Limestone)

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

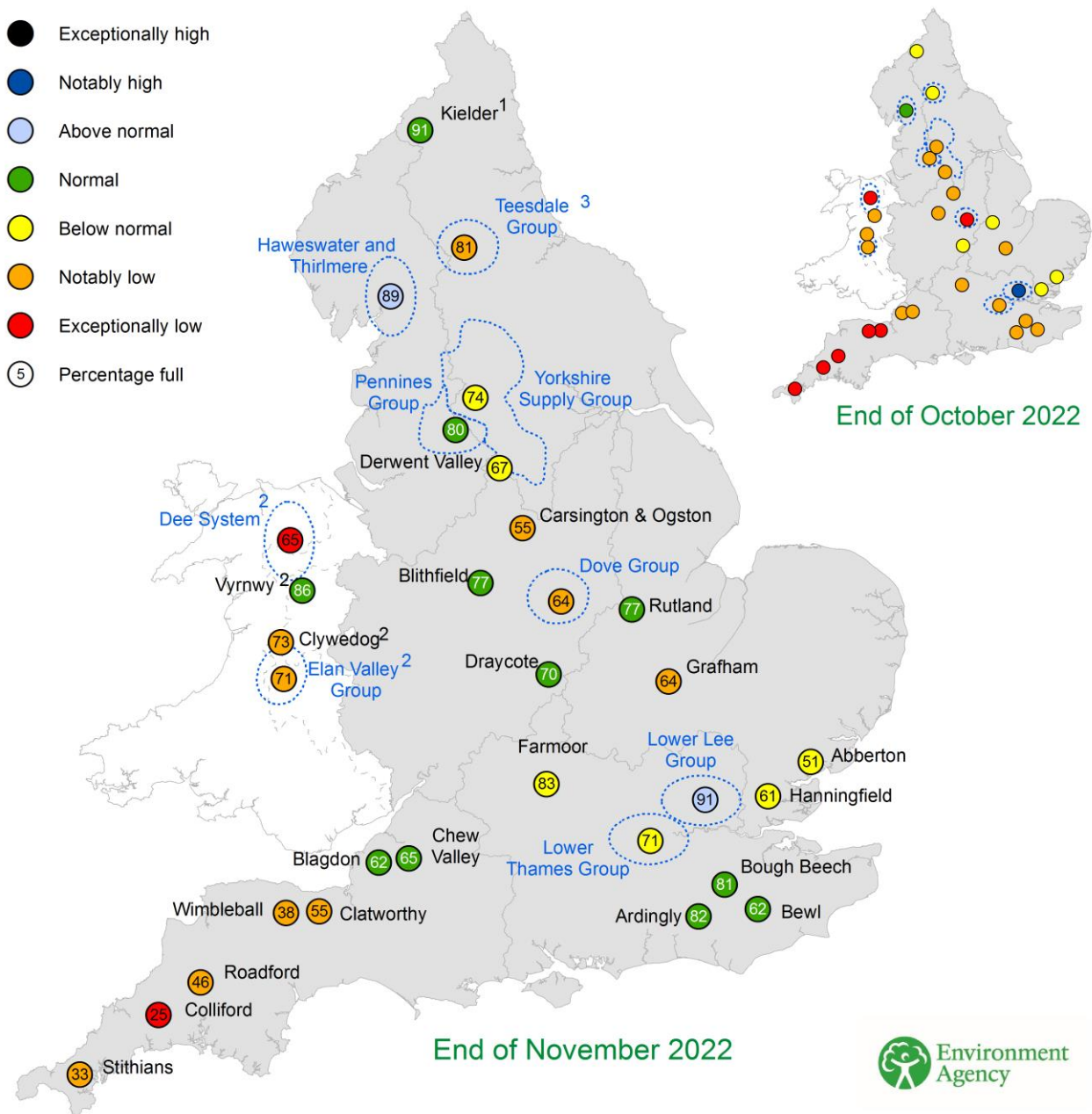


(Source: Environment Agency, 2022)

6 Reservoir storage

6.1 Reservoir storage map

Figure 6.1: Reservoir stocks at key individual and groups of reservoirs at the end of October 2022 and November 2022 as a percentage of total capacity and classed relative to an analysis of historic October and November 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.

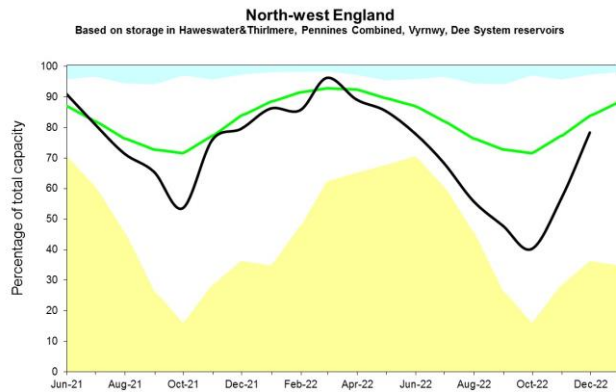
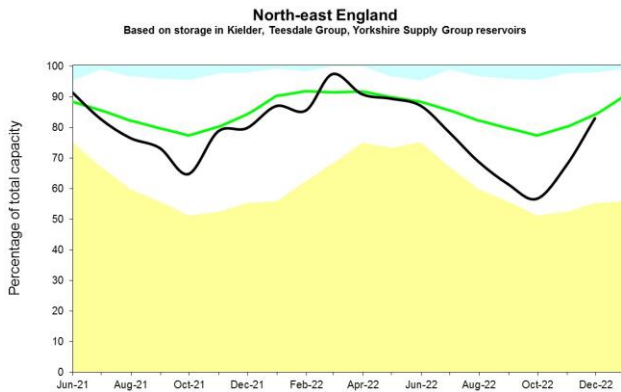
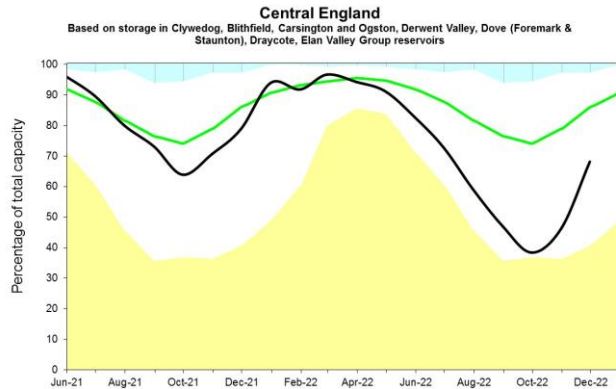
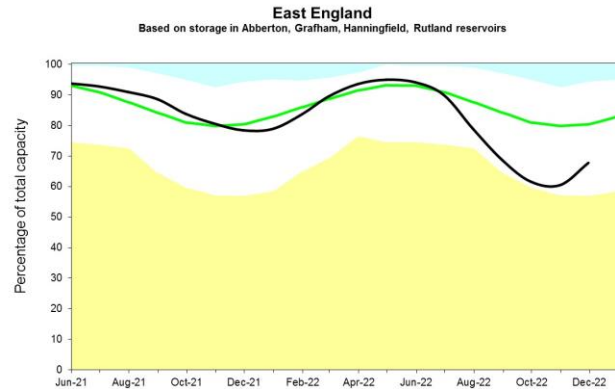
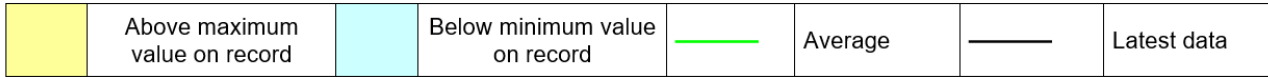


(Source: water companies). Crown copyright. All rights reserved. Environment Agency, 100024198, 2022



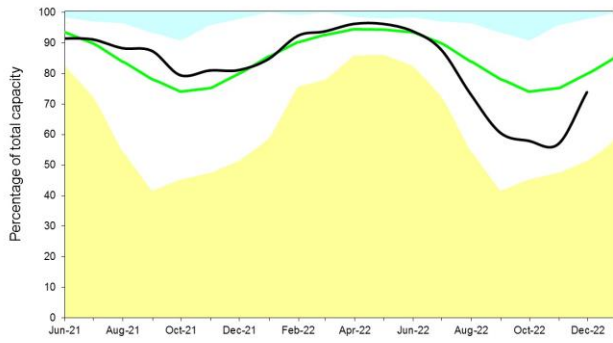
6.2 Reservoir storage charts

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.



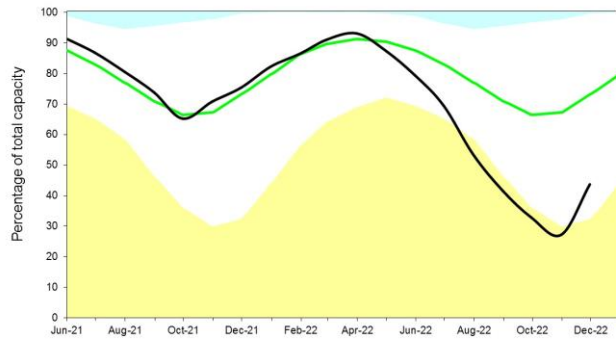
South-east England

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



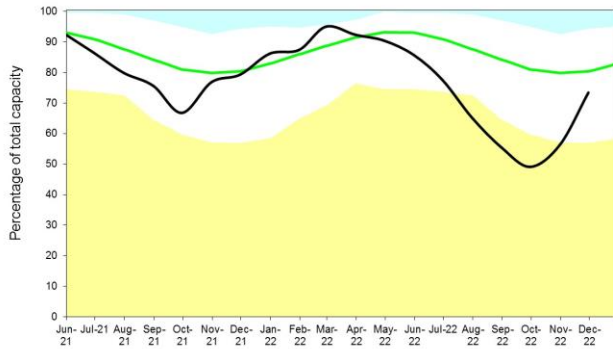
South-west England

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



England

Based on combined regional storage



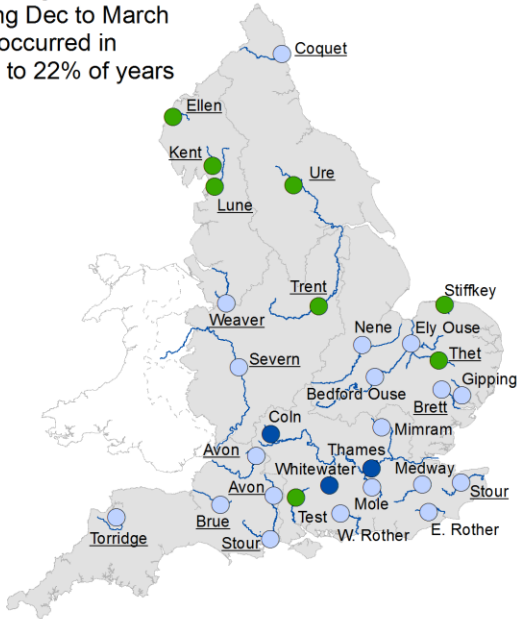
(Source: Water Companies).

7 Forward look

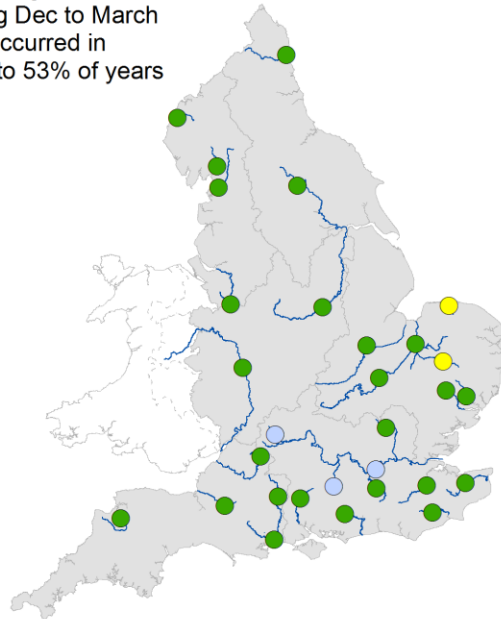
7.1 River flow

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 December 2022 and March 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by CEH.

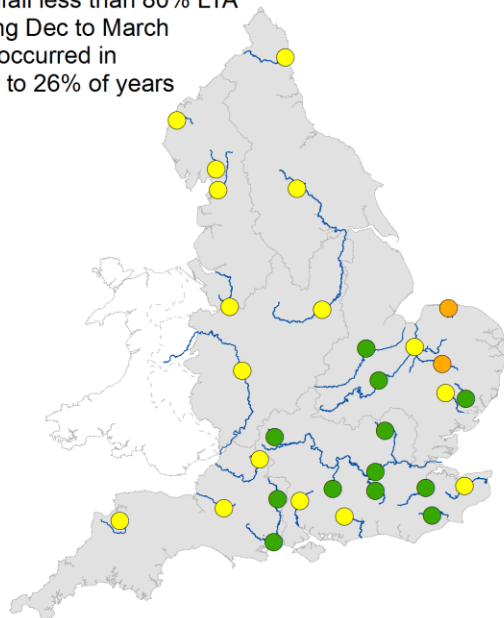
Rainfall greater than 120% LTA during Dec to March has occurred in 21% to 22% of years



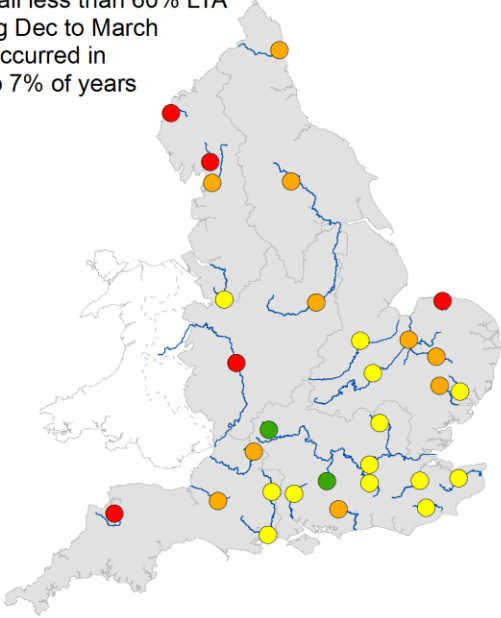
Rainfall greater than 100% LTA during Dec to March has occurred in 44% to 53% of years



Rainfall less than 80% LTA during Dec to March has occurred in 14% to 26% of years



Rainfall less than 60% LTA during Dec to March has occurred in 1% to 7% of years

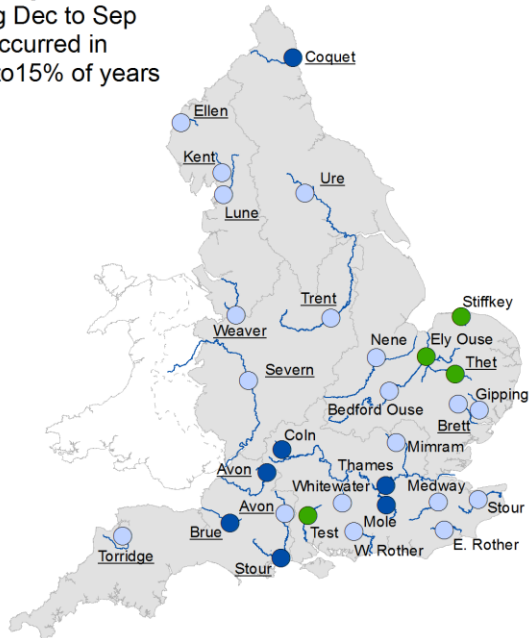


- Exceptionally high
- Above normal
- Below normal
- Exceptionally low
- Notably high
- Normal
- Notably low
- No data

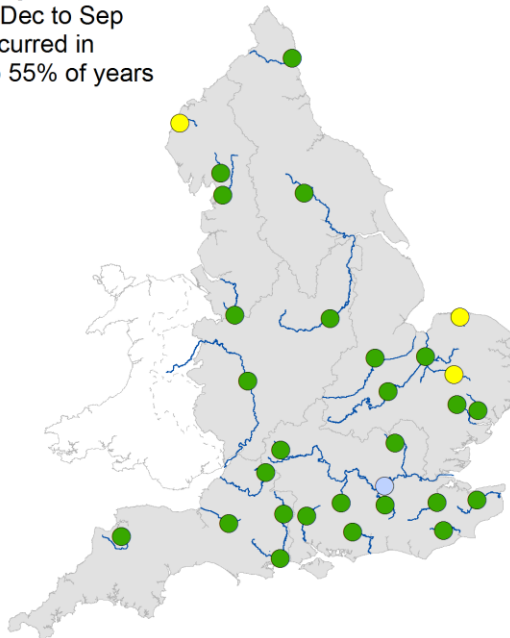
(Source: UK Centre for Ecology and Hydrology, Environment Agency).

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 December 2022 and September 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by CEH.

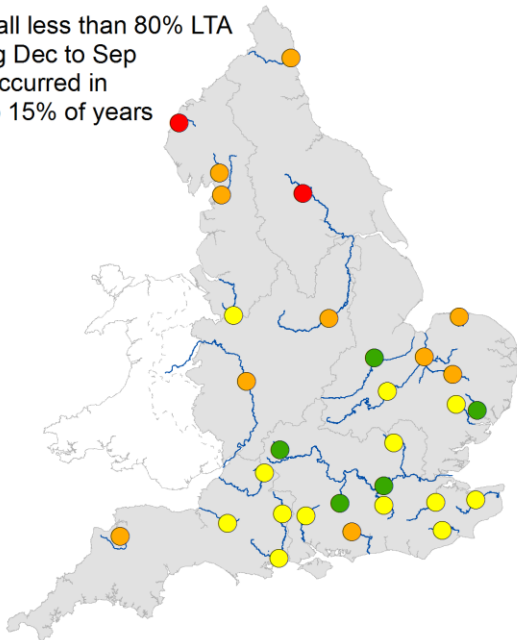
Rainfall greater than 120% LTA during Dec to Sep has occurred in 10% to 15% of years



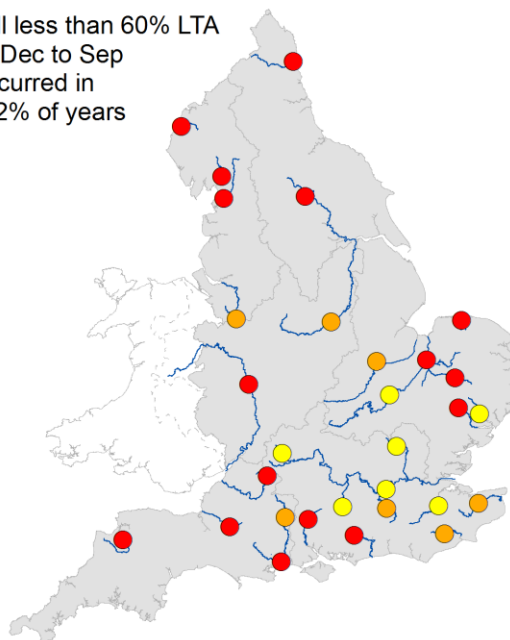
Rainfall greater than 100% LTA during Dec to Sep has occurred in 49% to 55% of years



Rainfall less than 80% LTA during Dec to Sep has occurred in 6% to 15% of years



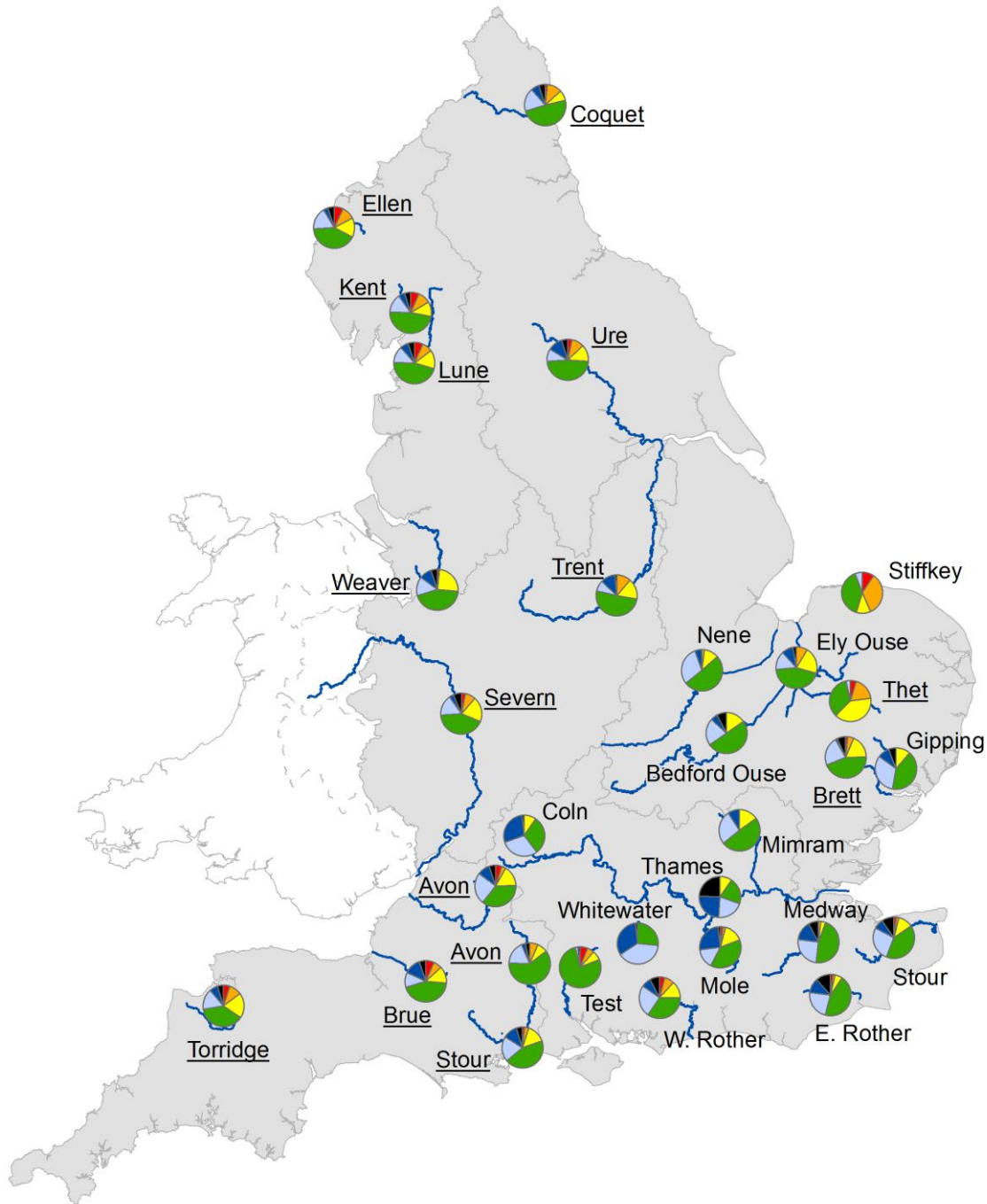
Rainfall less than 60% LTA during Dec to Sep has occurred in 0% to 2% of years



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

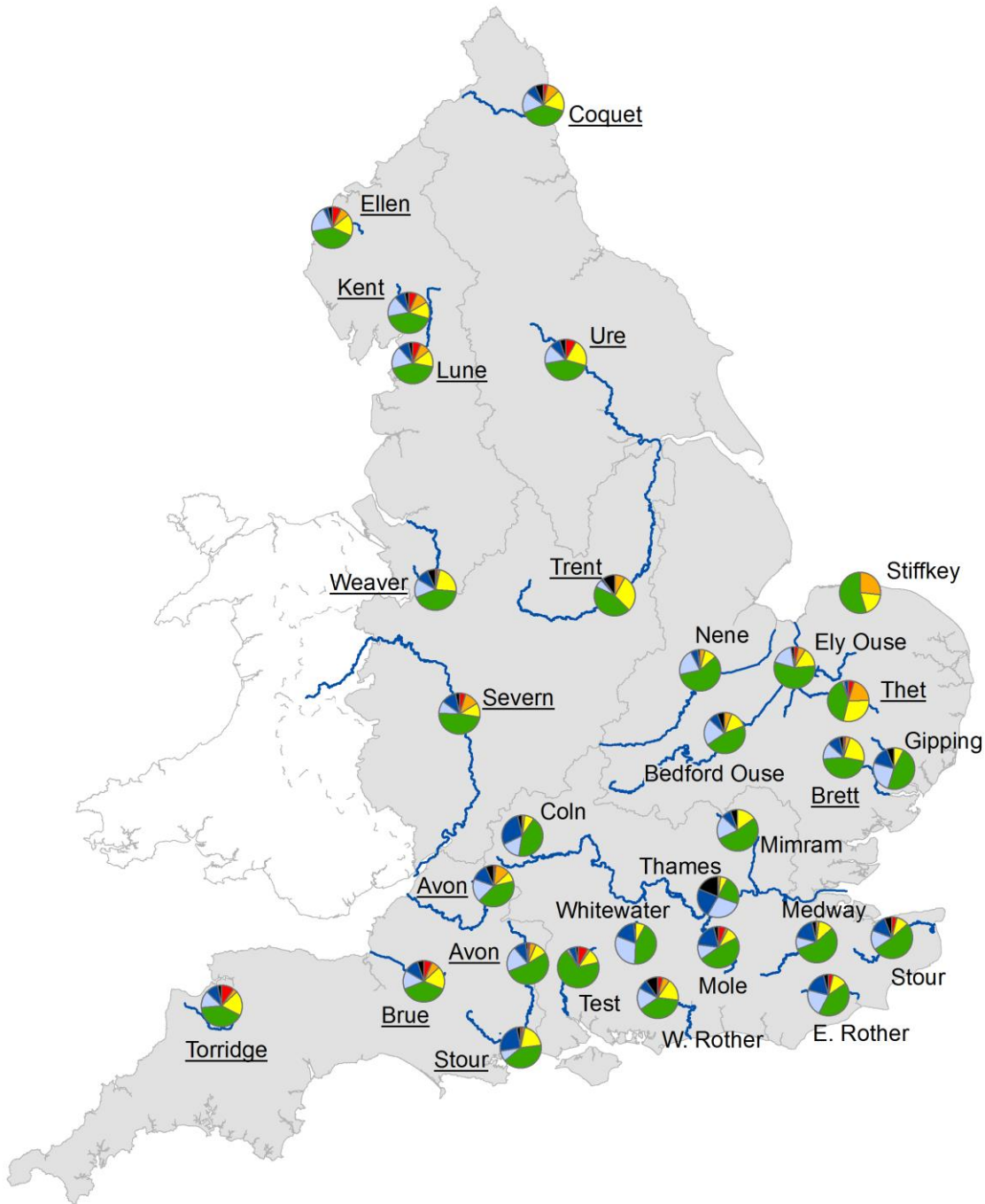
(Source: UK Centre for Ecology and Hydrology, Environment Agency)

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.

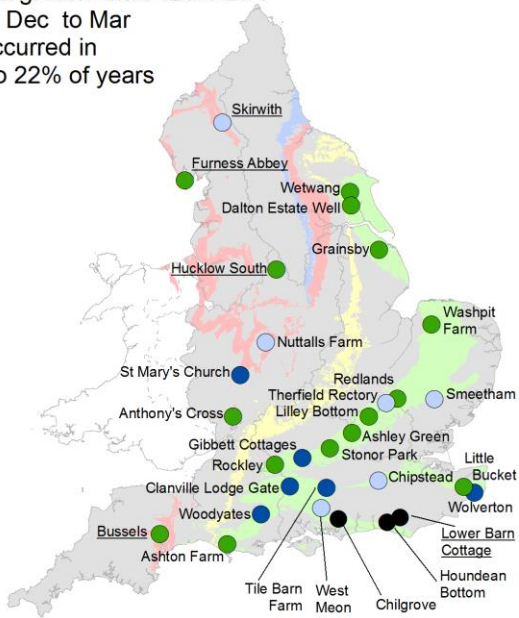


(Source: UK Centre for Ecology and Hydrology, Environment Agency).

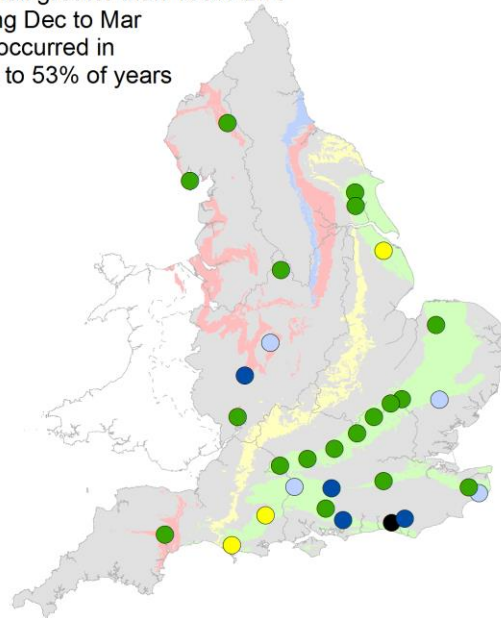
7.2 Groundwater

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 December 2022 and March 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by BGS.

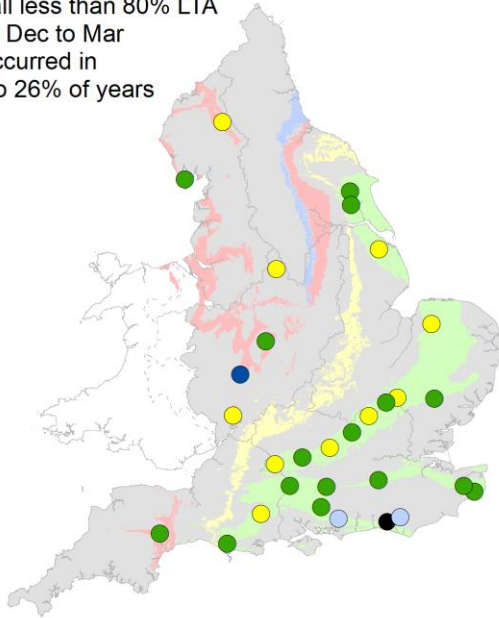
Rainfall greater than 120% LTA during Dec to Mar has occurred in 21% to 22% of years



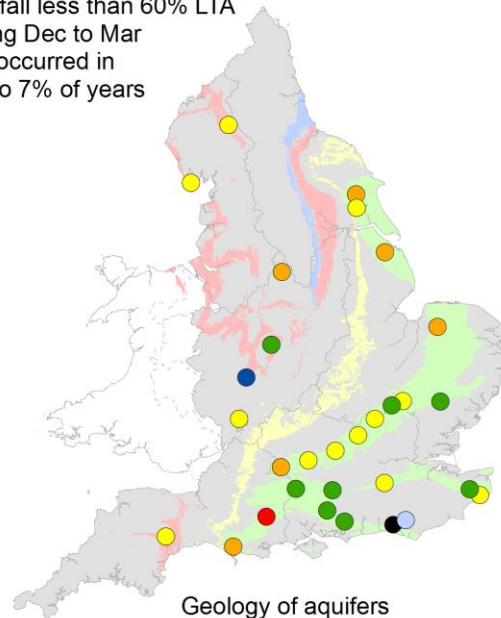
Rainfall greater than 100% LTA during Dec to Mar has occurred in 44% to 53% of years



Rainfall less than 80% LTA during Dec to Mar has occurred in 14% to 26% of years



Rainfall less than 60% LTA during Dec to Mar has occurred in 1% to 7% of years



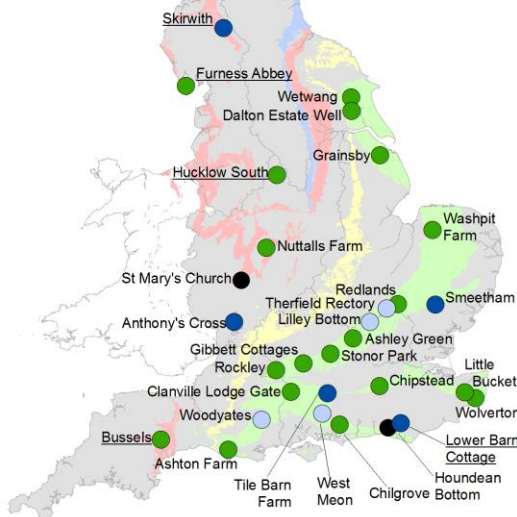
● Exceptionally high ● Notably high ● Above normal ● Normal
● Below normal ● Notably low ● Exceptionally low ○ No data

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

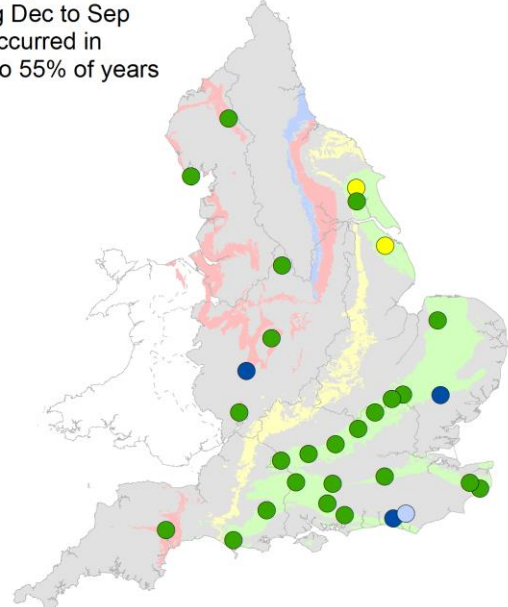
(Source: Environment Agency) Geological map reproduced with kind permission from UK Groundwater Forum BGS © NERC. Crown copyright all rights reserved. Environment Agency 100024198, 2022.

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 December 2022 and September 2023. Rainfall statistics based on occurrence in the historic record since 1891. Projections for underlined sites produced by BGS.

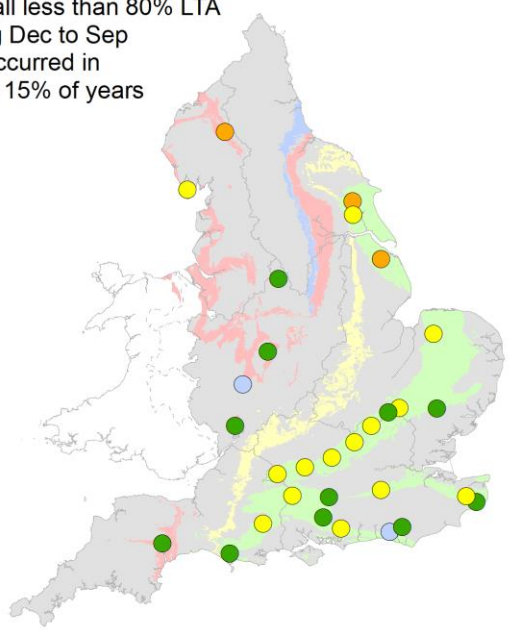
Rainfall greater than 120% LTA during Dec to Sep has occurred in 10% to 15% of years



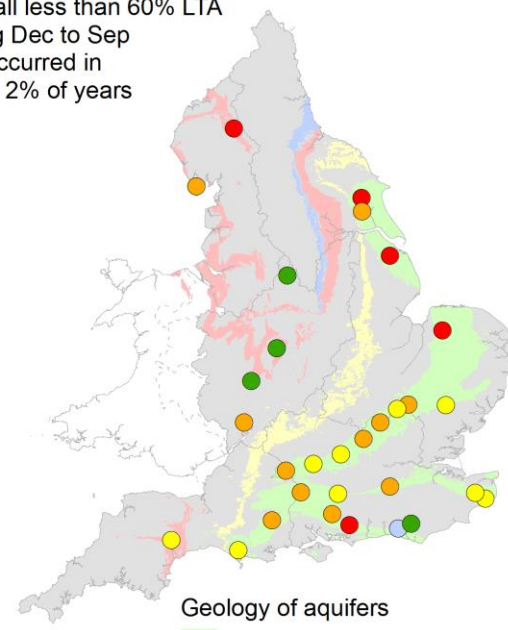
Rainfall greater than 100% LTA during Dec to Sep has occurred in 49% to 55% of years



Rainfall less than 80% LTA during Dec to Sep has occurred in 6% to 15% of years



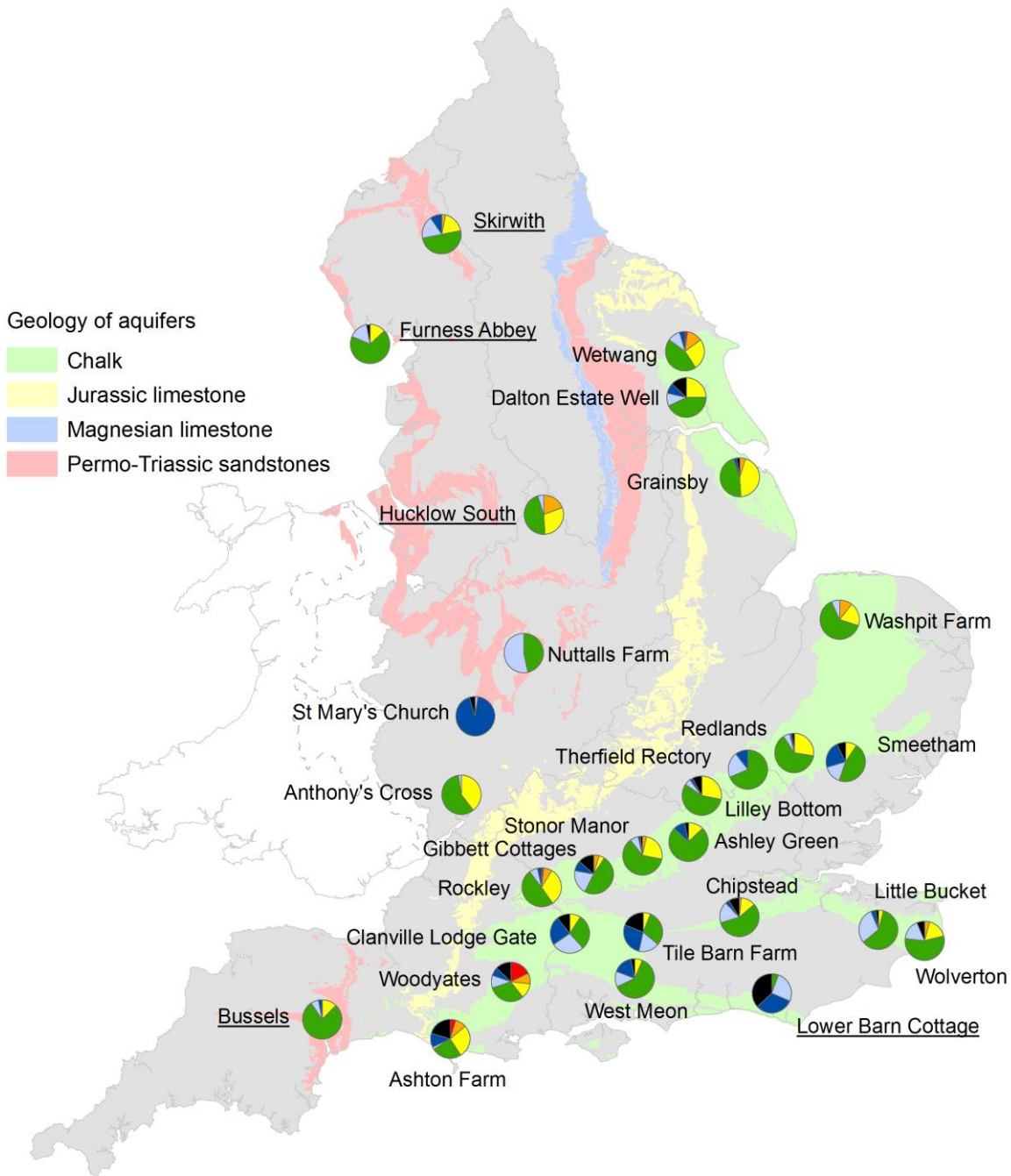
Rainfall less than 60% LTA during Dec to Sep has occurred in 0% to 2% of years



- | | | | |
|----------------------|----------------|---------------------|-----------|
| ● 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

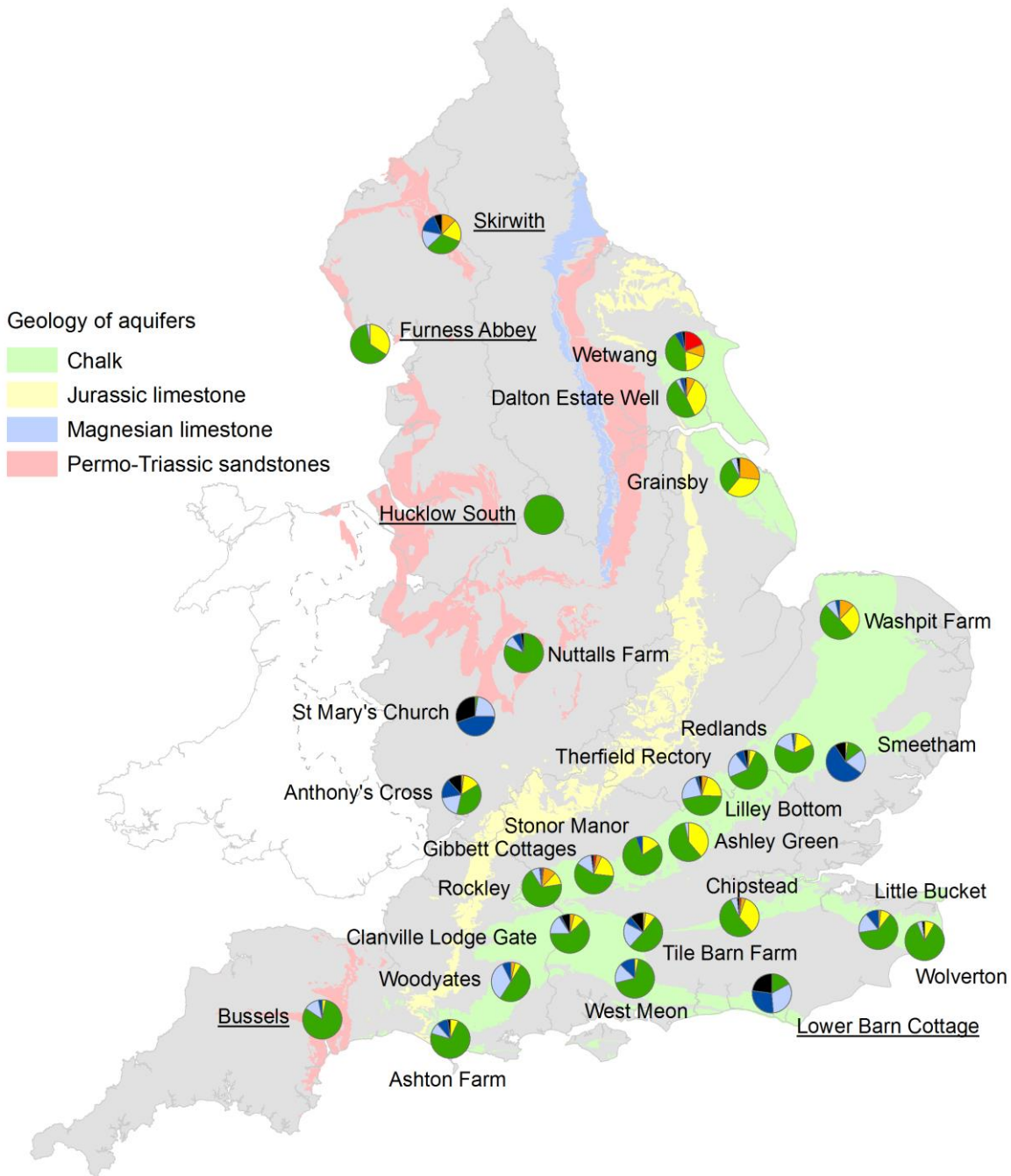
(Source: Environment Agency) Geological map reproduced with kind permission from UK Groundwater Forum BGS © NERC Crown copyright. All rights reserved. Environment Agency 100024198 2022.

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 (m^3s^{-1} or m^3/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 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 (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	Nov 2022 rainfall % of long term average 1961 to 1990	Nov 2022 band	Sep 2022 to November 2022 cumulative band	Jun 2022 to November 2022 cumulative band	Dec 2021 to November 2022 cumulative band
East England	164	Notably High	Above normal	Below normal	Below normal
Central England	165	Notably High	Notably high	Normal	Normal
North-east England	125	Normal	Above normal	Below normal	Below normal
North-west England	123	Above Normal	Above normal	Normal	Normal
South-east England	211	Notably High	Exceptionally high	Normal	Below normal
South-west England	194	Notably High	Notably high	Normal	Below normal
England	164	Notably High	Notably high	Normal	Below normal

9.2 River flows table

Geographic area	Site name	River	Nov 2022 band	Oct 2022 band
East	Burnham	Burn	Below normal	Below normal
East	Claypole	Upper Witham	Above normal	Normal
East	Colney	Yare	Normal	Exceptionally low
East	Denver	Ely Ouse	Normal	No data
East	Dernford	Cam	Normal	Exceptionally low
East	Louth Weir	Lud	Normal	Notably low
East	Offord	Bedford Ouse	Normal	Normal
East	Springfield	Chelmer	Above normal	Normal
East	Stowmarket	Gipping	Normal	Normal
East	Upton Mill	Nene	Above normal	Normal
Central	Bewdley	Severn	Below normal	Below normal
Central	Derby St Marys	Derwent	Normal	Normal
Central	Evesham	Avon	Above normal	Normal
Central	Marston-on-dove	Dove	Notably high	Normal
Central	North Muskham	Trent	Notably high	Normal
North East	Buttercrambe	Derwent	Notably high	Below normal

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

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

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

9.3 Groundwater table

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

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

South West	Woodleys No1	Otter Valley Sandstone	Notably low	Notably low
South West	Woodyates	Dorset Stour Chalk	Normal	Notably low

9.4 Reservoir table

Geographic region	% Full	Average comparison
East England	68	Below average
Central England	68	Below average
North-east England	83	Below average
North-west England	78	Below average
South-east England	74	Below average
South-west England	44	Below average
England	73	Below average