Monthly water situation report: East Anglia

1 Summary – January 2025

East Anglia started 2025 wet with rainfall through much of the first week. January as a whole however has been particularly average, with most catchments observing both normal volumes of rainfall and river flows. Catchments in the south and west have been wetter on average, containing some above normal rainfall totals and river flows. Groundwater levels are healthy for the time of year with almost all measuring stations reading normal or above normal levels.

1.1 Rainfall

Rainfall in January was close to the monthly average across East Anglia, with almost all catchments receiving normal amounts of rainfall for the time of year. The Upper Bedford Ouse and North and South Essex are the only exceptions, receiving above normal levels. Most rainfall fell within the first and final week of the month, with all catchments receiving upwards of 20mm from the 1st to the 7th and again from the 23rd to the 31st. Catchments in the northeast did receive noticeably less rainfall on average, being the only ones to receive less than 100% of their respective catchments' long-term average. The last 3 months have been close to the long-term average, with the last 6 months slightly below though still normal in most catchments. The cumulative 12 months totals remain high owing to the high rainfall volumes in both February and September.

1.2 Soil moisture deficit and recharge

The soil moisture deficit at the end of January was slightly below the long-term average across East Anglia. Following the heavy rainfall and sharp SMD decline of September, the very average rainfall observed this January combined with low winter evapotranspiration rates has produced a slow but steady increase in soil moisture.

1.3 River flows

Like rainfall, river flows were close to average across much of the region, with almost all monitoring sites reading normal flows. The only exceptions to this were clay rivers in the upper and lower Bedford Ouse, responding to the above normal rainfall in these areas with above normal flows, and the chalk-fed Rhee, fed by very high groundwater levels in its proximity.

1.4 Groundwater levels

Still impacted by the last year of high rainfall, groundwater levels remain above normal levels at many sites in the western catchments, being exceptionally high at Therfield Rectory. Catchments in the North and East are relatively lower for their areas by comparison, at normal levels with the exception of Hindolveston which is below normal. This can be attributed to these catchments receiving below average rainfall for the past 6 months while those in the west and central areas receiving more.

1.5 Reservoir stocks

Reservoir storage in public water supply reservoirs is healthy for the time of year, with each above their respective normal operating curves.

1.6 Forward look

1.6.1 Probabilistic ensemble projections for river flows at key sites

River flow projections are predicting over 70% of normal or above flows by March 2025 for all modelled catchments, and above 30% chance of slightly above normal or higher flows. For June 2025, the it is predicted that there will be almost no likelihood of below average flows

1.6.2 Probabilistic ensemble projections for groundwater levels in key aquifers

Much like the current levels, groundwater projections for March predict normal or above levels for all modelled sites, with Therfield Rectory in the west projecting notably high or exceptionally high levels with almost certainty. Forecasts for September are much the same, though shifted more towards normal levels at all sites. There is also a small likelihood of below normal levels at boreholes in the central region for September.

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*[SMD]: soil moisture deficits

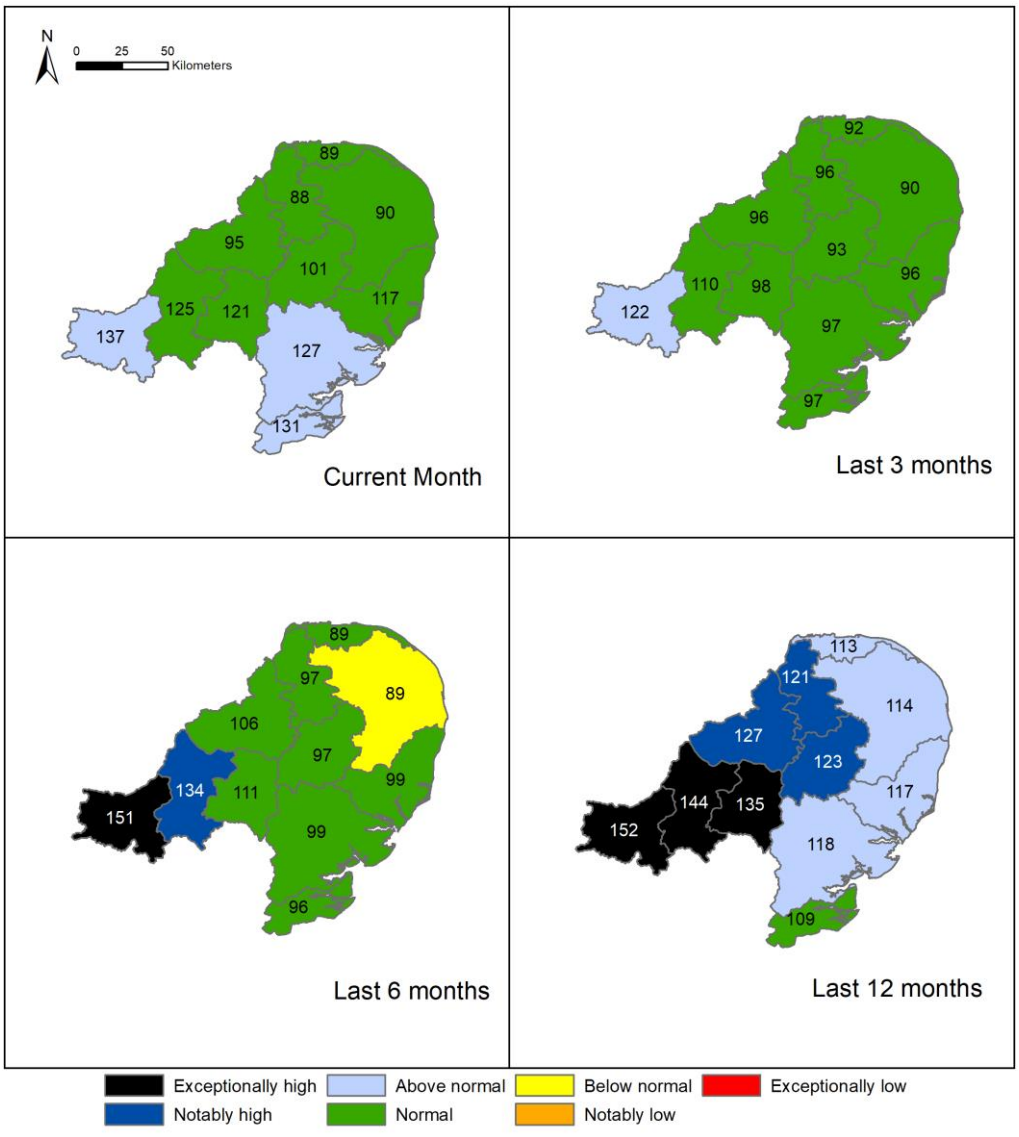
*[LTA]: long term average

Contact Details: 03708 506 506

2 Rainfall

2.1 Rainfall map

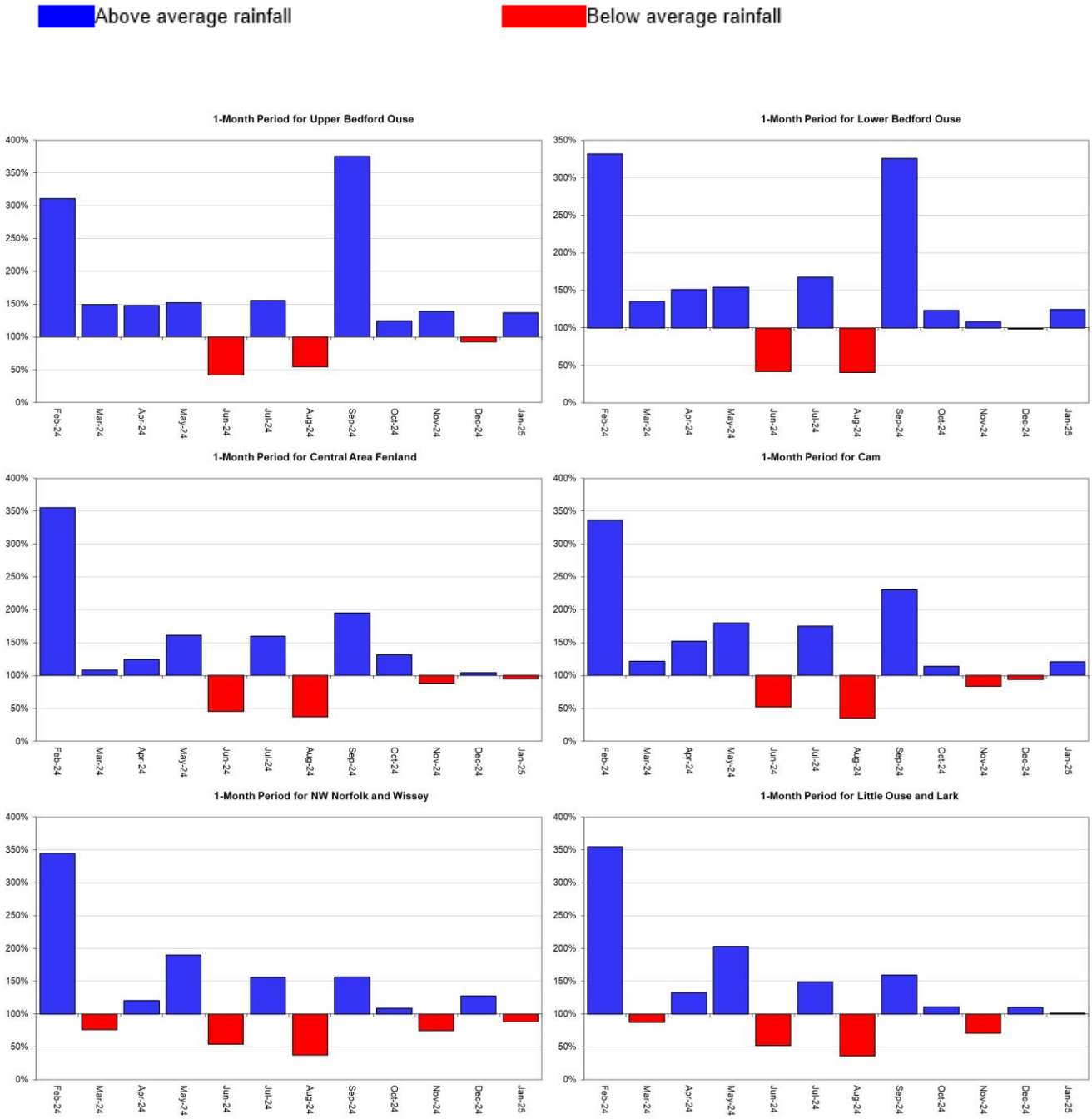
Figure 2.1: Total rainfall for hydrological areas across East Anglia, expressed as a percentage of long term average rainfall for the current month (up to 31 January 2025), the last 3 months, the last 6 months, and the last 12 months. Category classes are based on an analysis of respective historic totals. Table available in the appendices with detailed information.

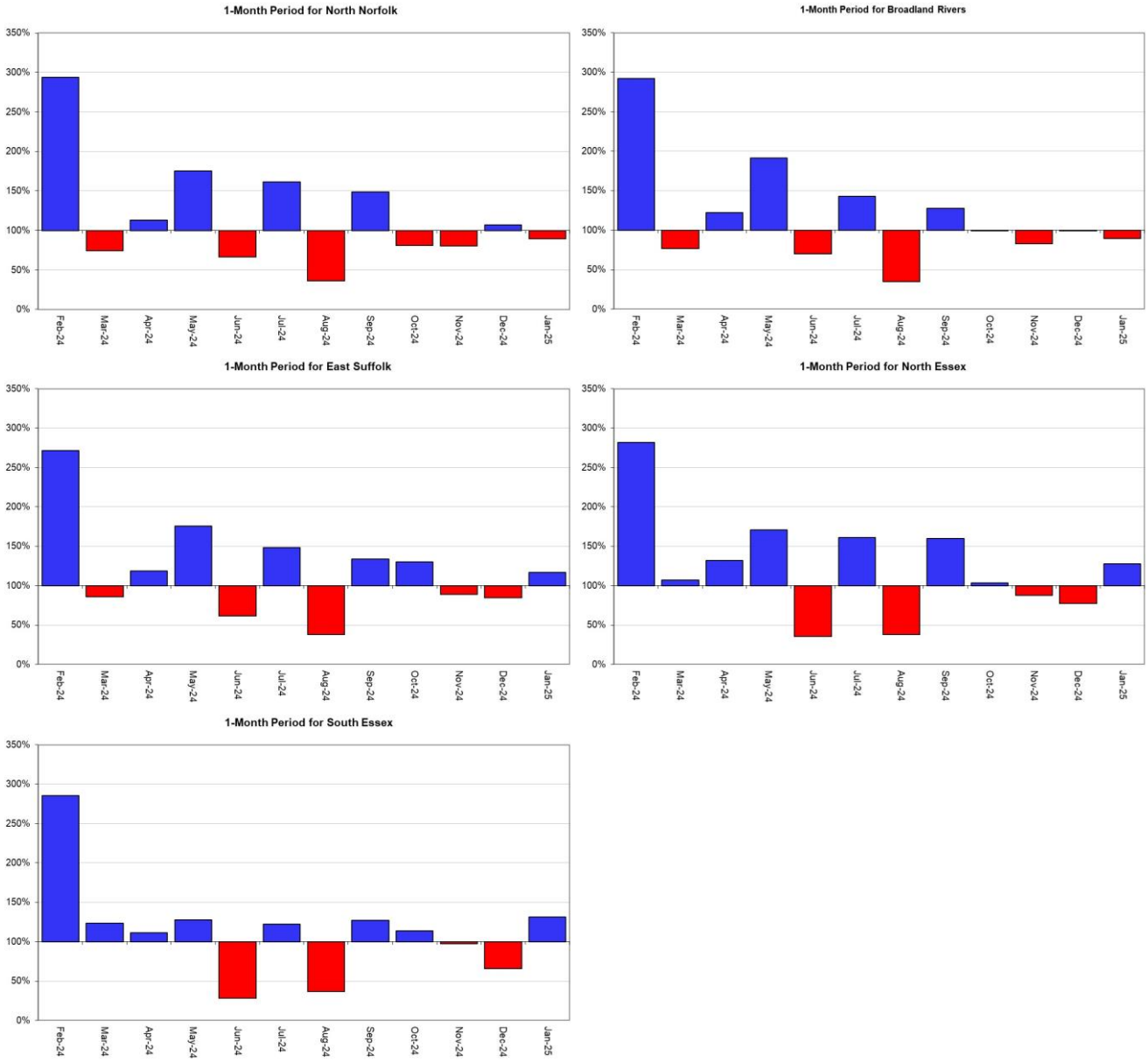


HadUK data based on the Met Office 1km gridded rainfall dataset derived from rain gauges (Source: Met Office. Crown copyright, 2025). Provisional data based on Environment Agency 1km gridded rainfall dataset derived from Environment Agency intensity rain gauges. Crown copyright. All rights reserved.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

2.2 Rainfall charts

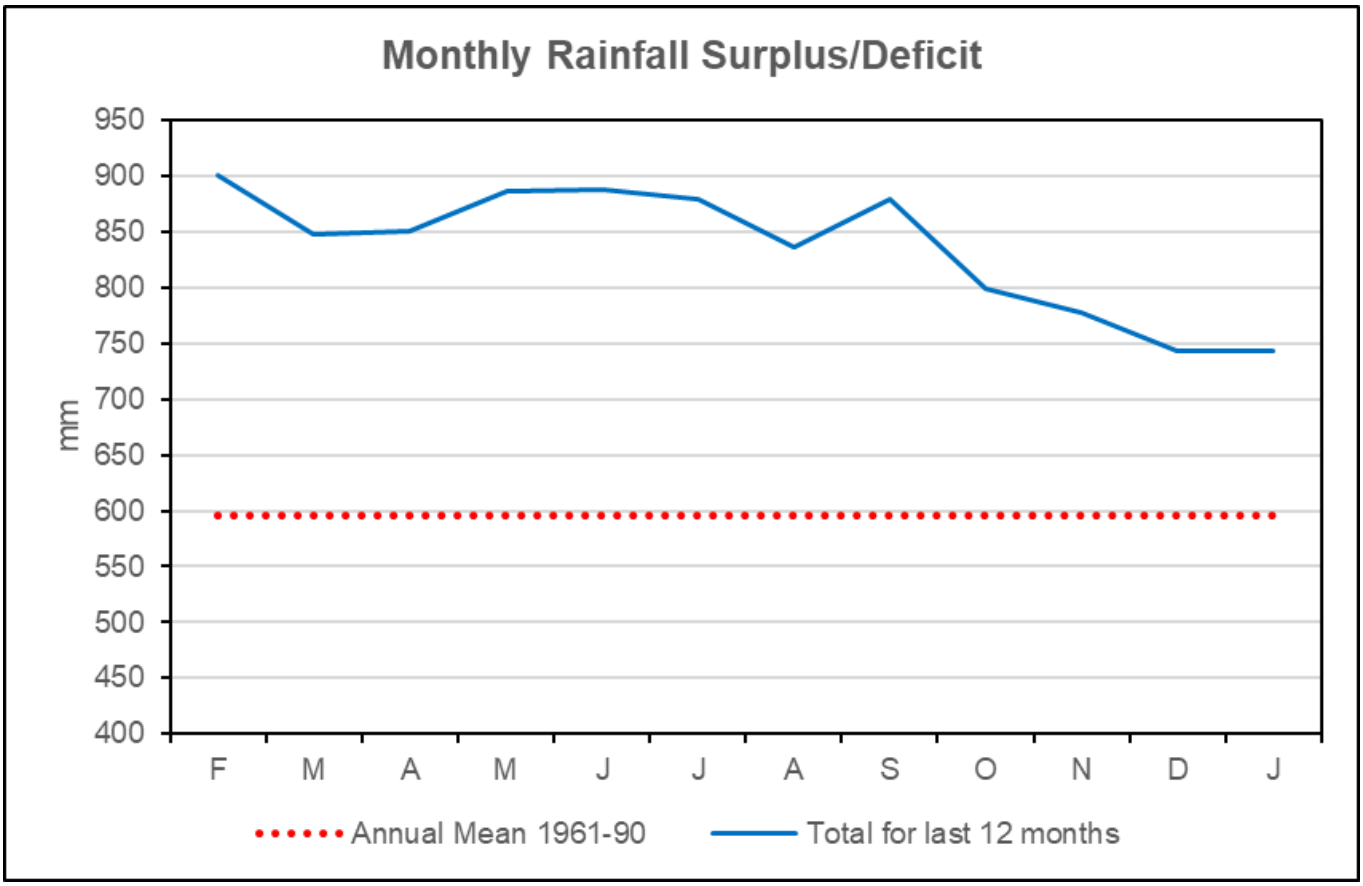
Figure 2.2: Monthly rainfall totals for the past 12 months as a percentage of the 1961 to 1990 long term average for each region and for England.





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

2.3 Monthly rainfall surplus deficit chart



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

3 Soil moisture deficit

3.1 Soil moisture deficit map

Figure 3.1: Soil moisture deficit values for 31 January 2025. Values based on the weekly MORECS data for real land use.

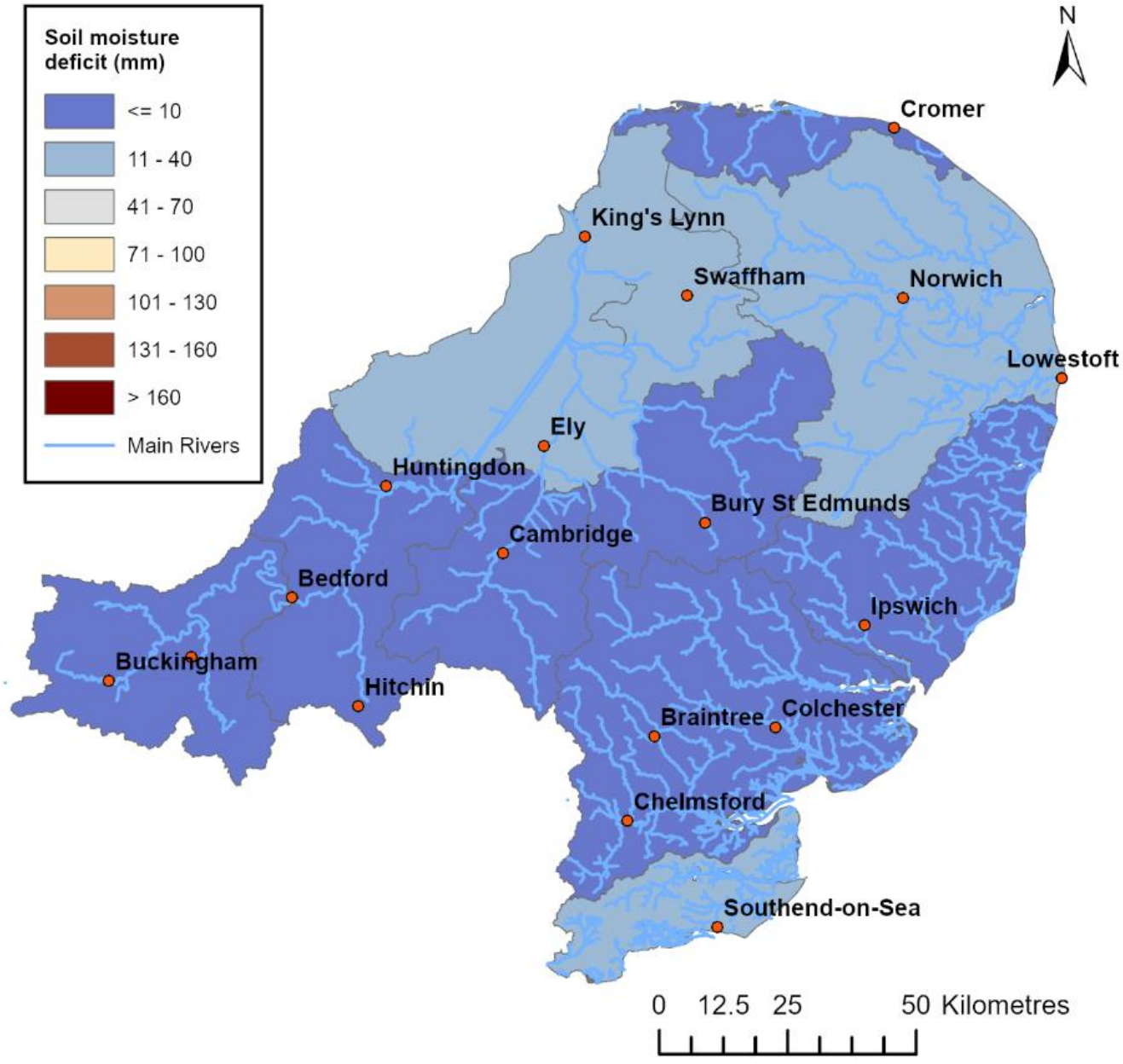
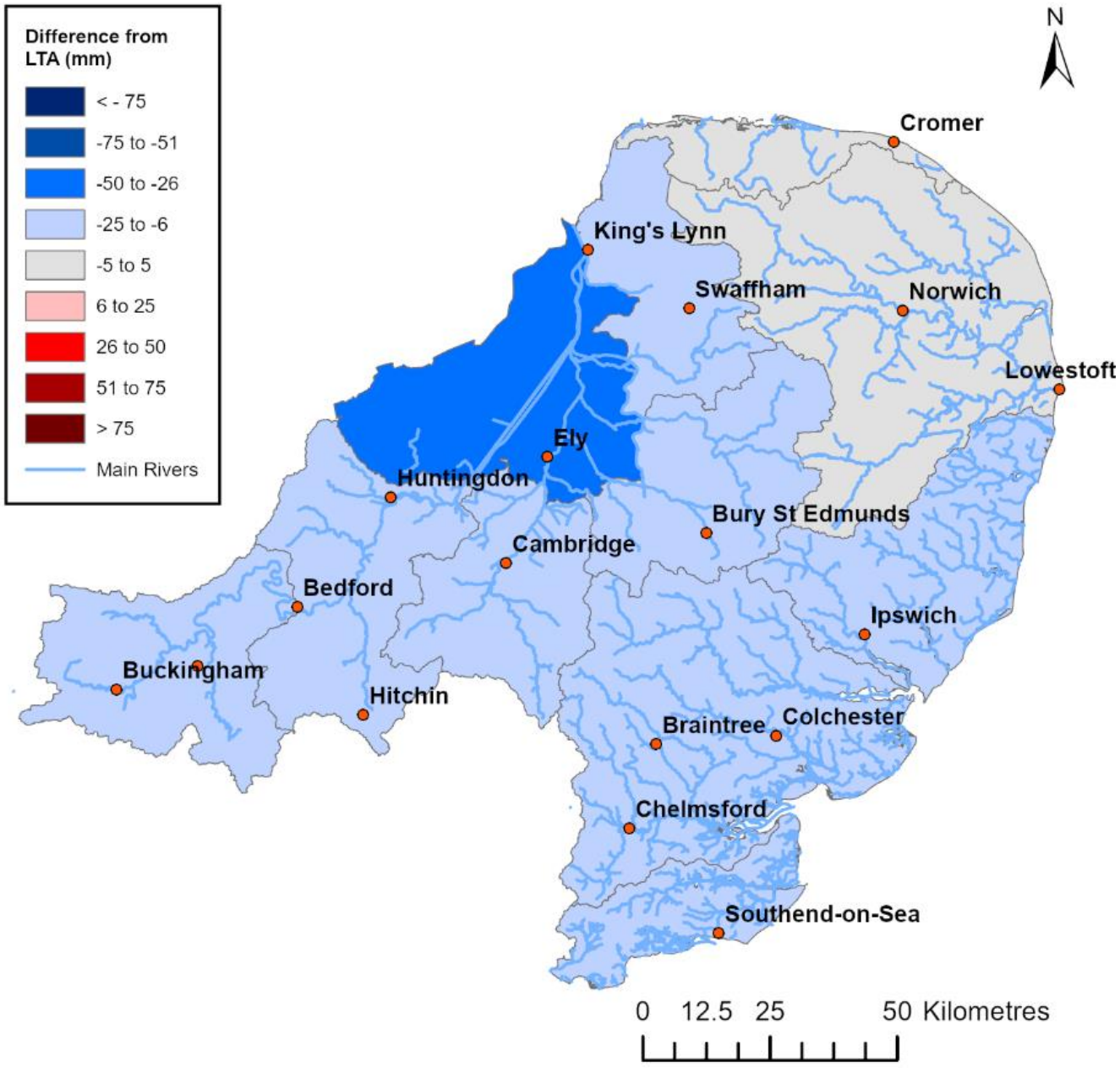
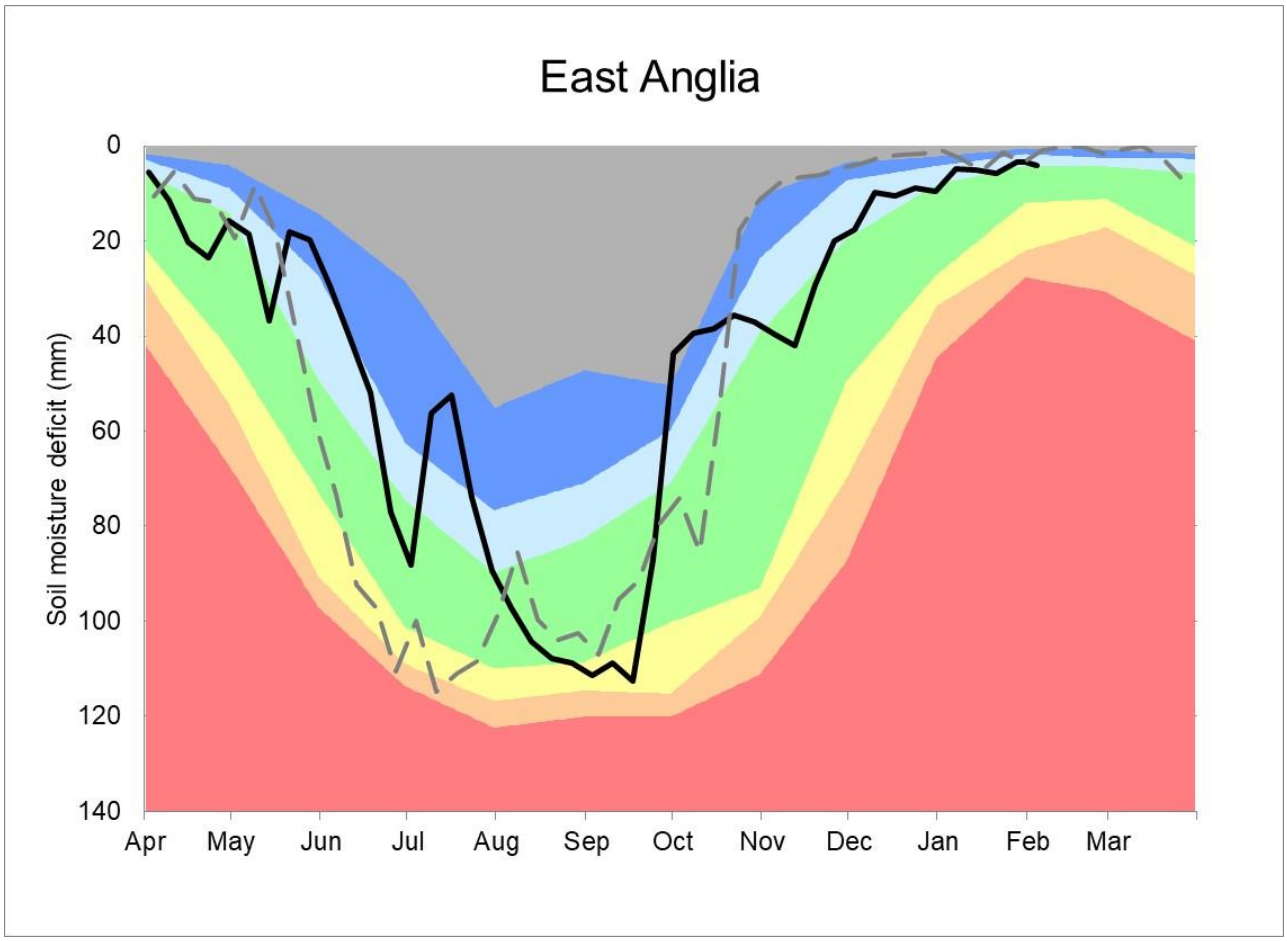


Figure 3.2: Soil moisture deficit difference from long-term average values for 31 January 2025. Values based on the weekly MORECS data for real land use.



3.2 Soil moisture deficit charts

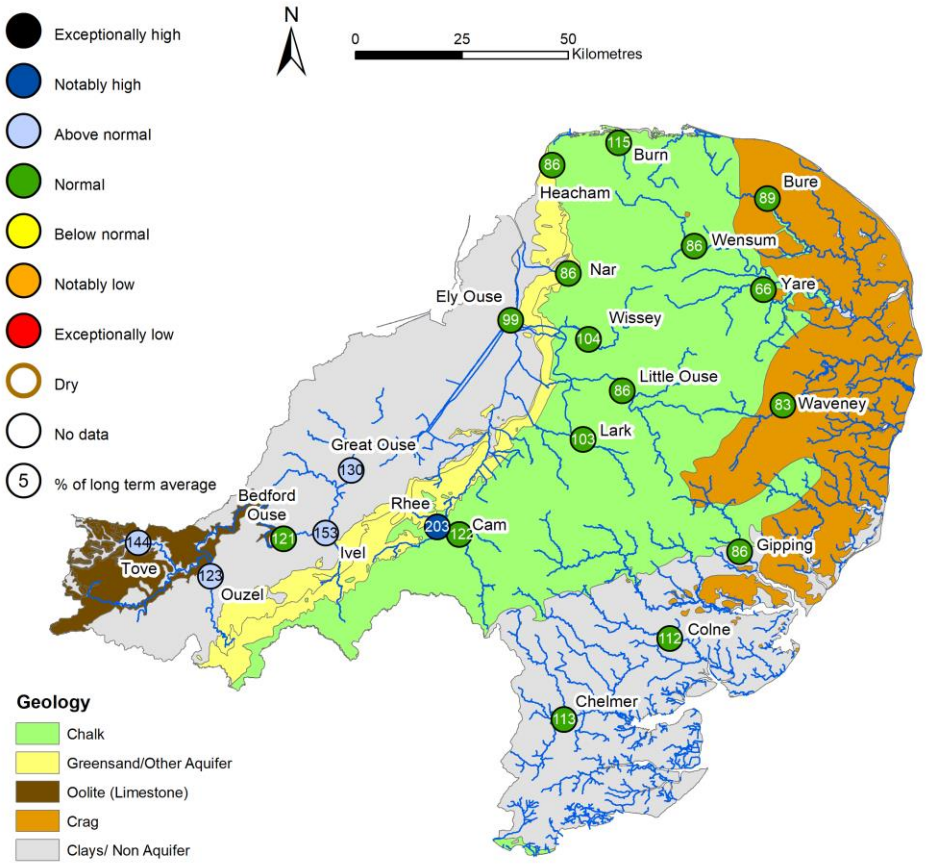
Figure 3.2: Latest soil moisture deficit compared to an analysis of historic 1961 to 1990 long term data set. Weekly MORECS data for real land use.



4 River flows

4.1 River flows map

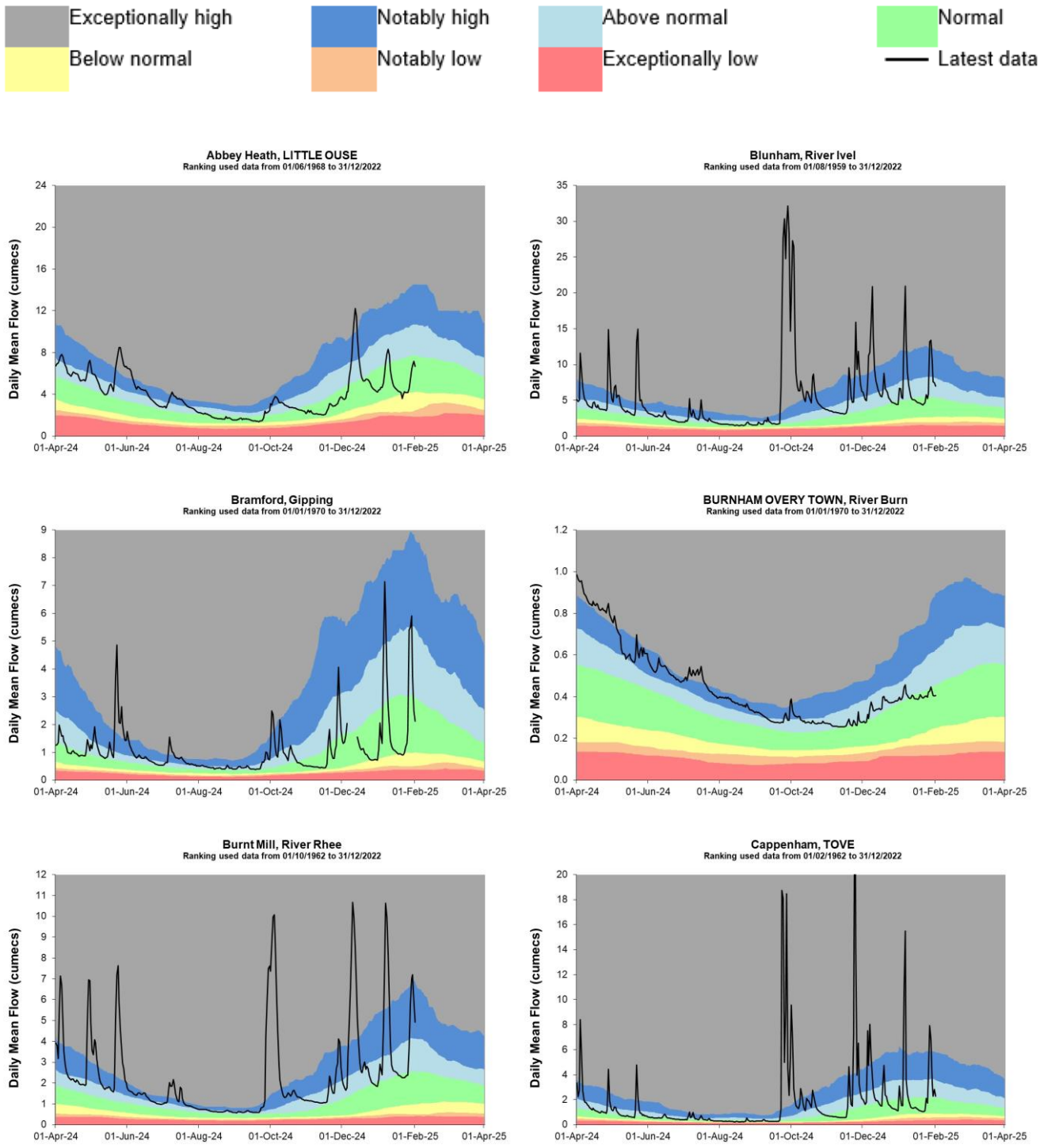
Figure 4.1: Monthly mean river flow for indicator sites for January 2025, expressed as a percentage of the respective long term average and classed relative to an analysis of historic January monthly means Table available in the appendices with detailed information.



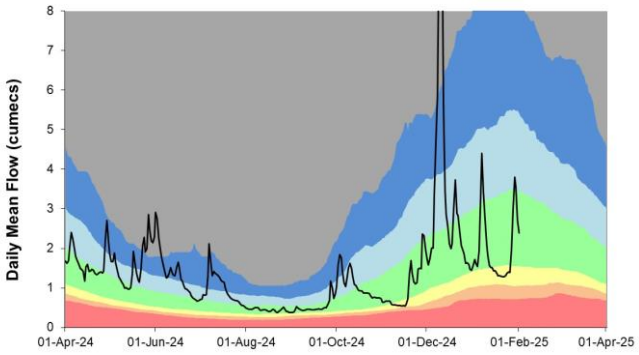
(Source: Environment Agency). Geological map reproduced with kind permission from UK Groundwater Forum, BGS copyright NERC. Crown copyright. All rights reserved. Environment Agency, 100024198, 2025.

4.2 River flow charts

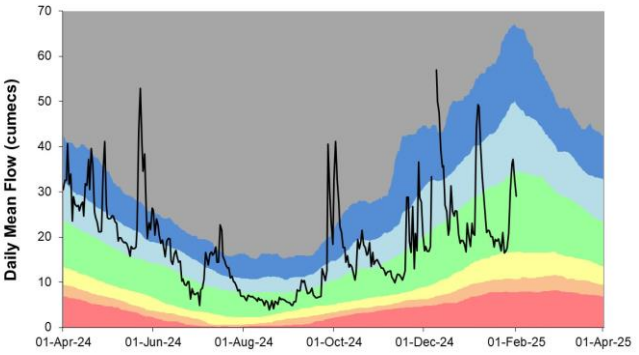
Figure 4.2: Daily mean river flow for index sites over the past year, compared to an analysis of historic daily mean flows, and long term maximum and minimum flows.



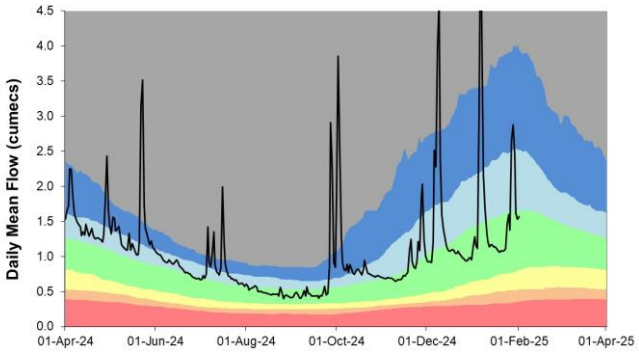
COLNEY, River Yare
Ranking used data from 01/01/1970 to 31/12/2022



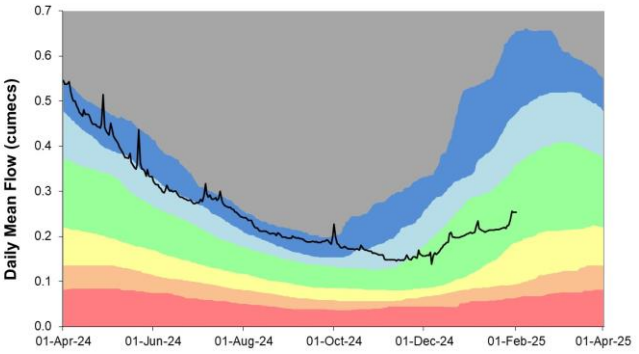
Denver, ELY OUSE
Ranking used data from 01/11/1971 to 31/12/2022



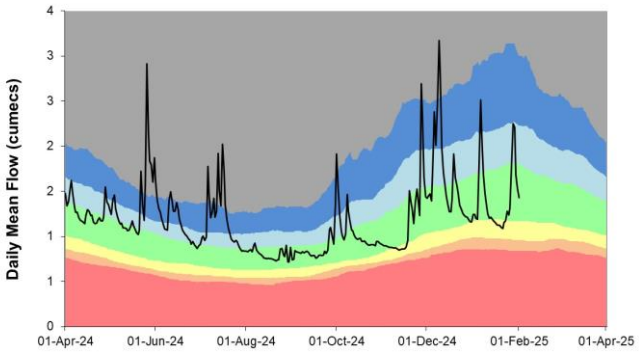
Dernford, CAM
Ranking used data from 21/02/1949 to 23/12/2022



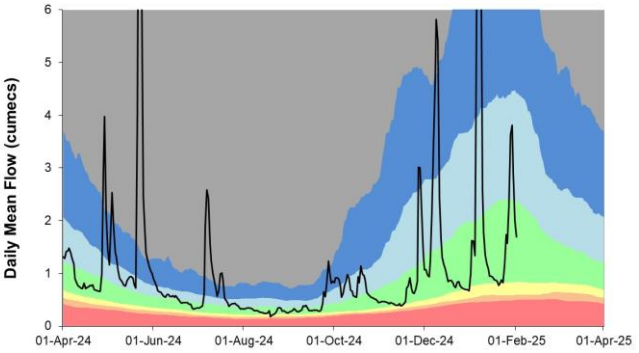
Heacham, HEACHAM
Ranking used data from 01/11/1965 to 31/12/2022



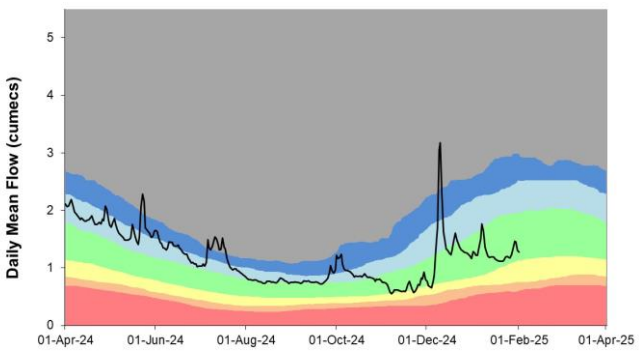
Ingworth, Bure
Ranking used data from 01/01/1970 to 31/12/2022



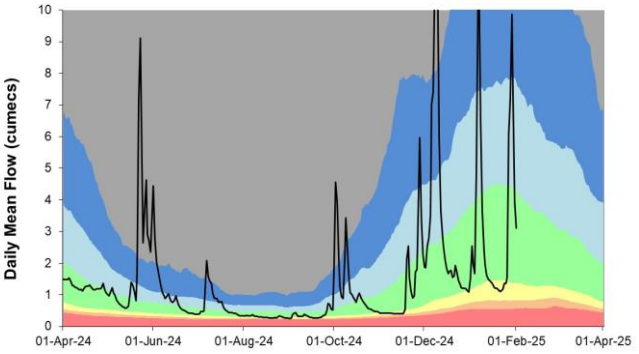
Lexden, Colne
Ranking used data from 01/01/1970 to 31/12/2022

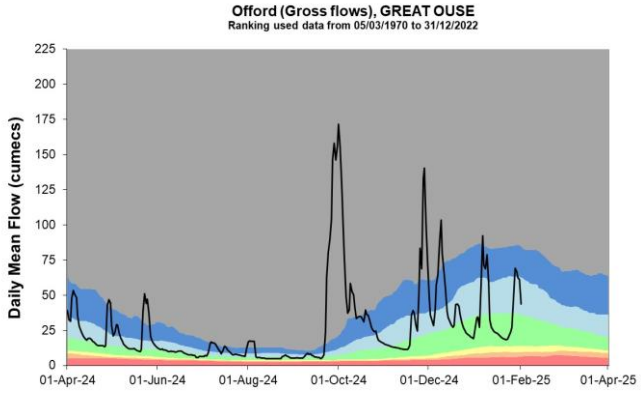


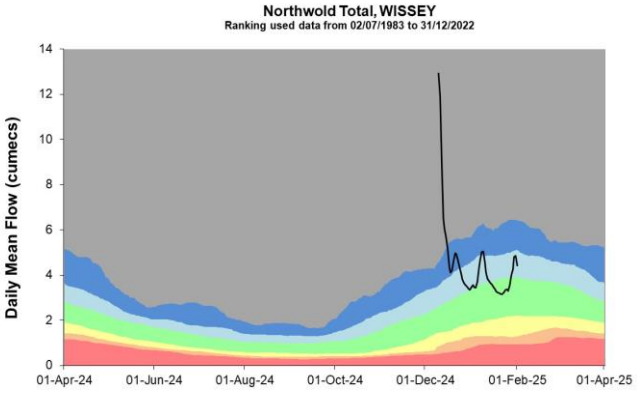
Marham, River Nar
Ranking used data from 01/09/1953 to 31/12/2022

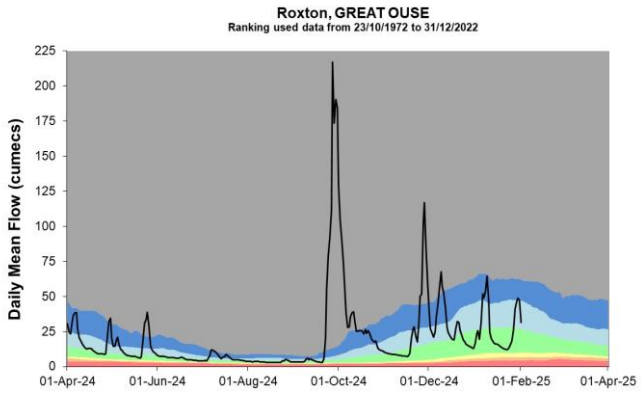


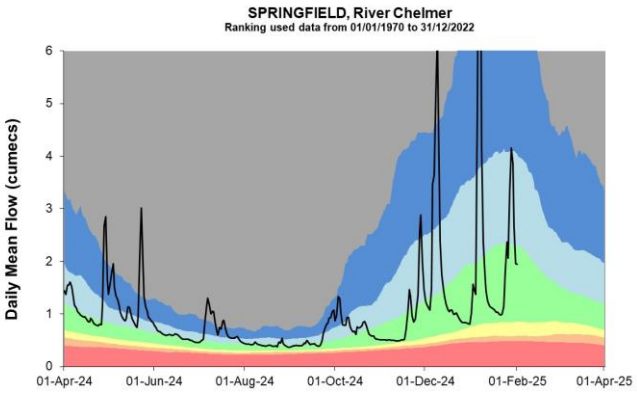
Needham Weir Total, Waveney
Ranking used data from 01/01/1970 to 31/12/2022

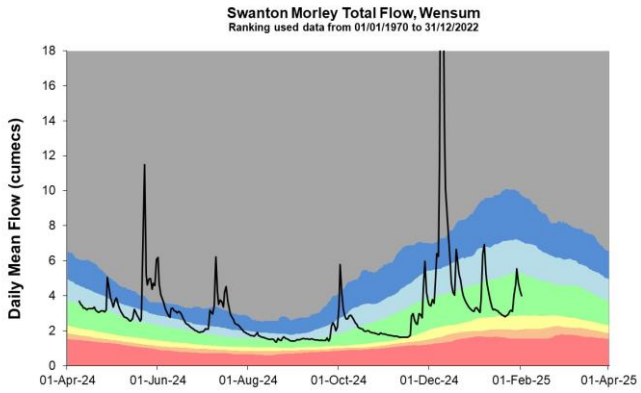


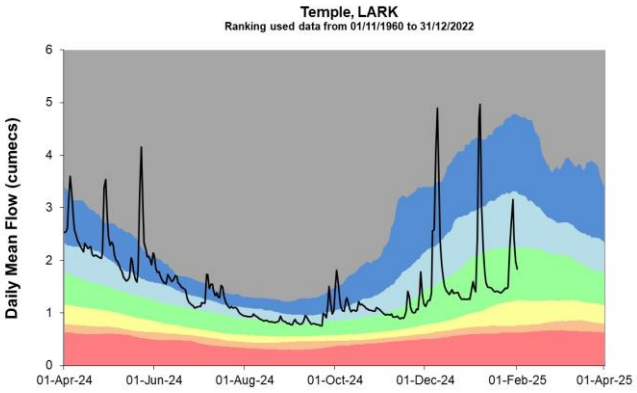


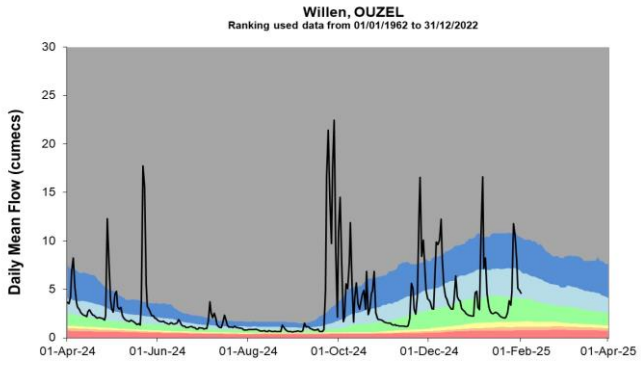










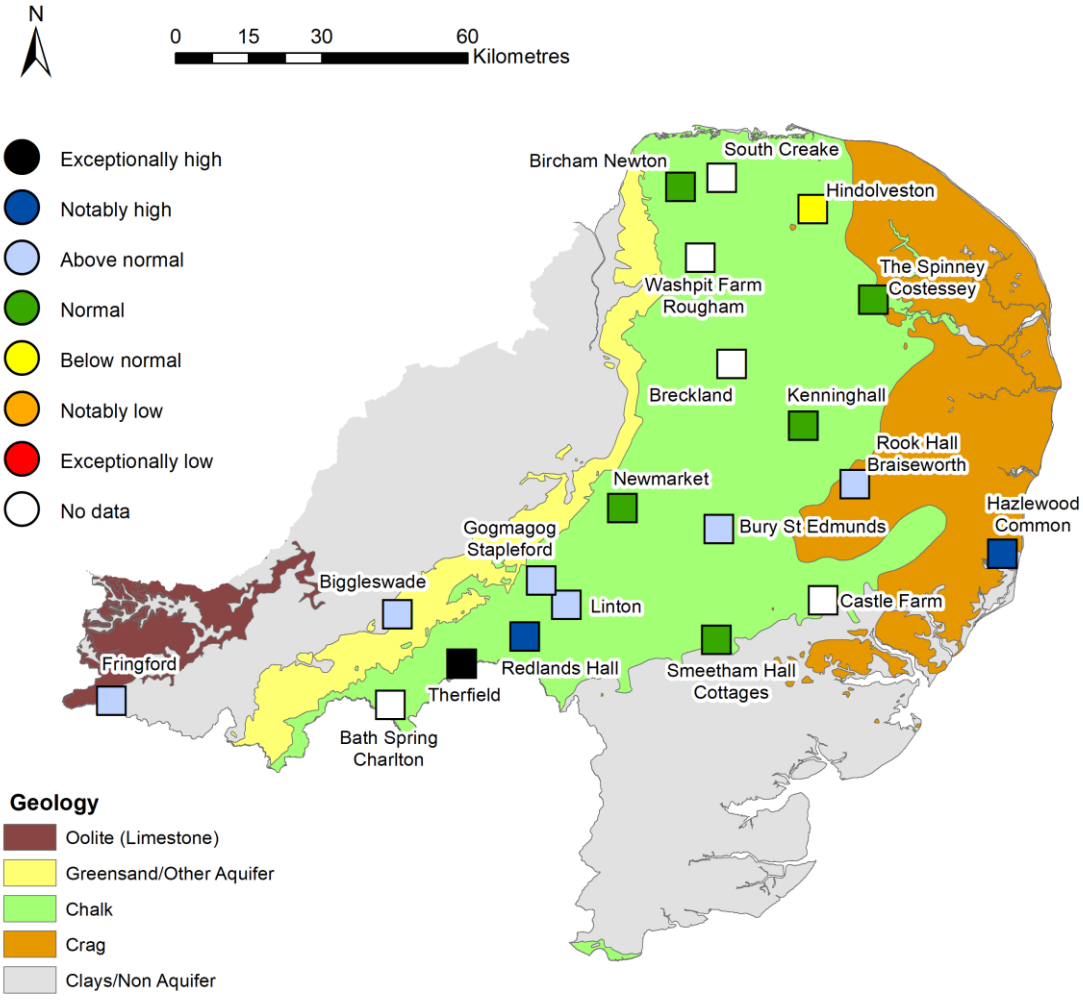


Source: Environment Agency.

5 Groundwater levels

5.1 Groundwater levels map

Figure 5.1: Groundwater levels for indicator sites at the end of January 2025, classed relative to an analysis of respective historic January levels. Table available in the appendices with detailed information.



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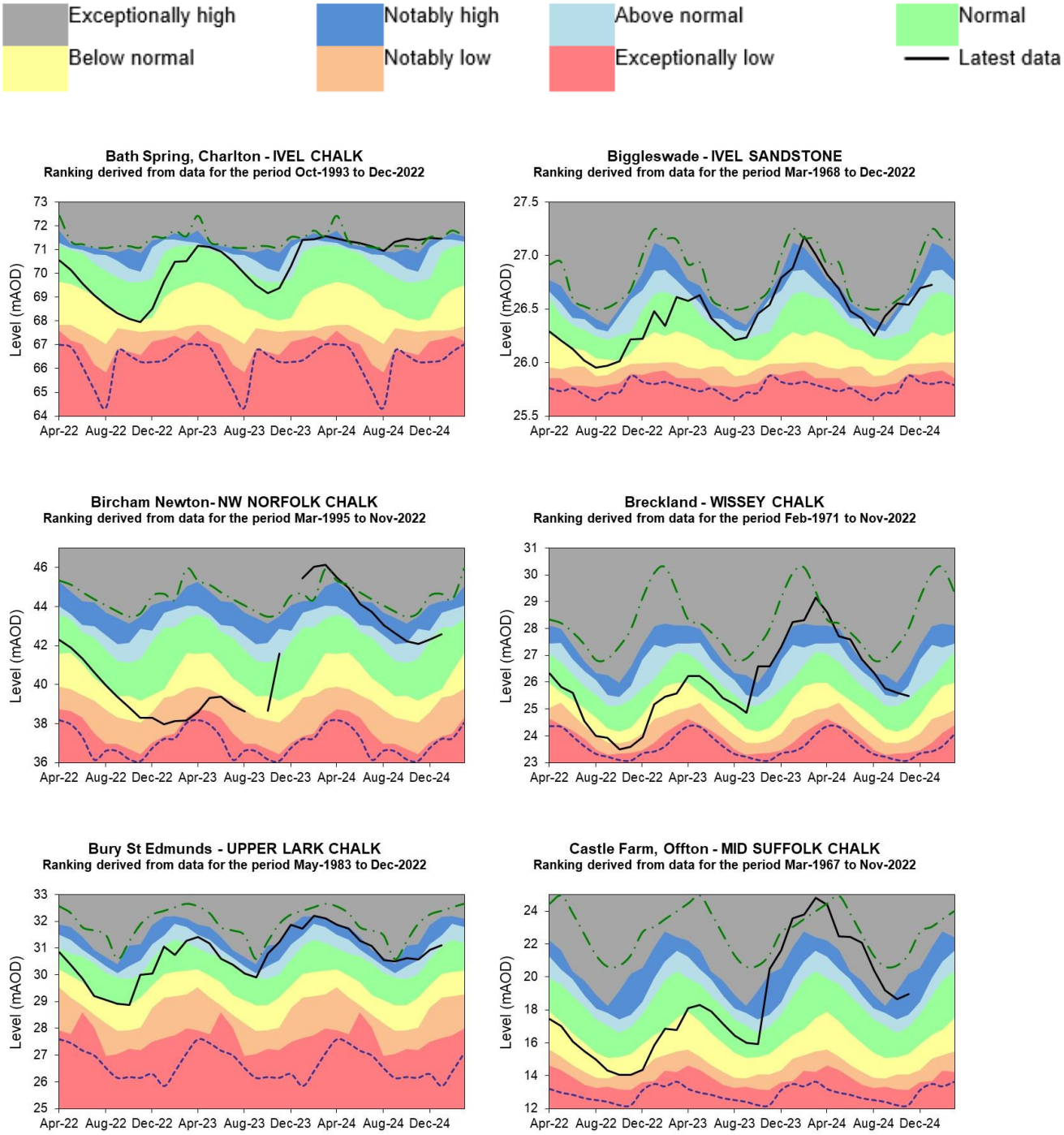
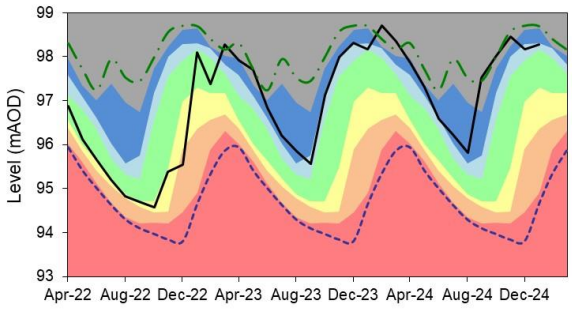
5.2 Groundwater level charts

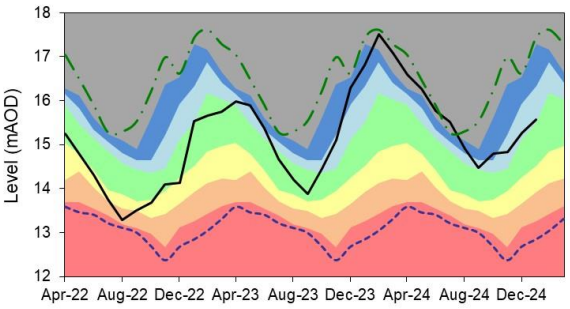
Figure 5.2: End of month groundwater levels at index groundwater level sites for major aquifers. 22 months compared to an analysis of historic end of month levels and long term maximum and minimum levels.



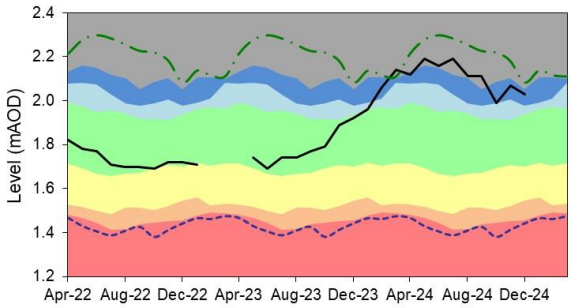
Fringford - GREAT OOLITE
Ranking derived from data for the period Sep-1980 to Dec-2022



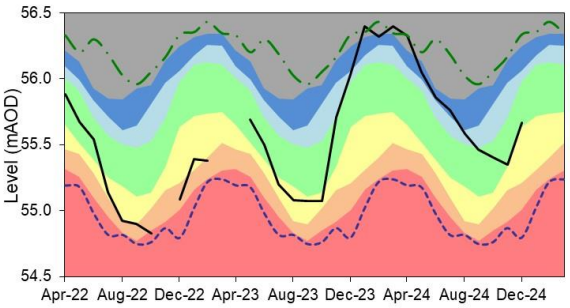
Gog Magog, Stapleford - CAM CHALK
Ranking derived from data for the period Jan-1980 to Dec-2022



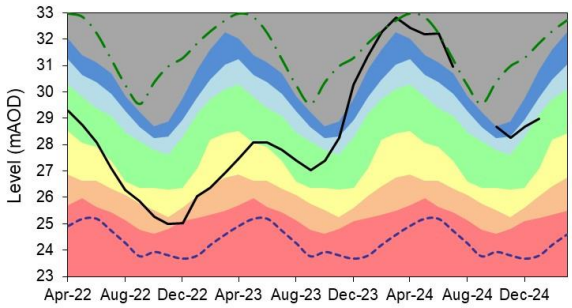
Hazlewood Common - SUFFOLK CRAG
Ranking derived from data for the period Oct-1988 to Nov-2022



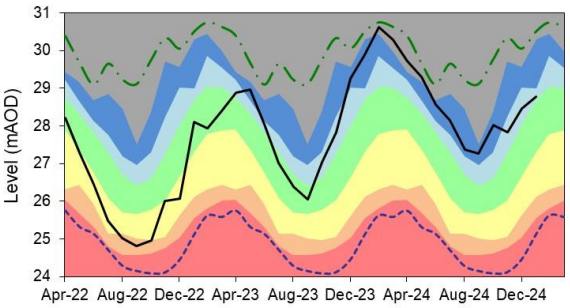
Hindolveston - NORFOLK CHALK
Ranking derived from data for the period Sep-1984 to Nov-2022



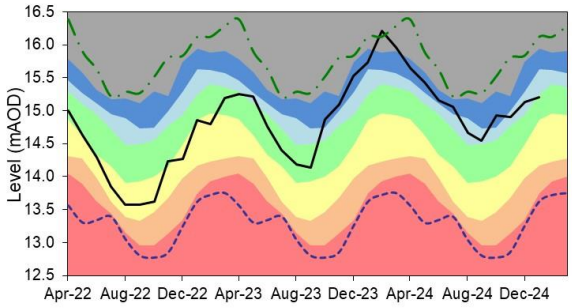
Kenninghall - LITTLE OUSE CHALK
Ranking derived from data for the period Aug-1973 to Dec-2022



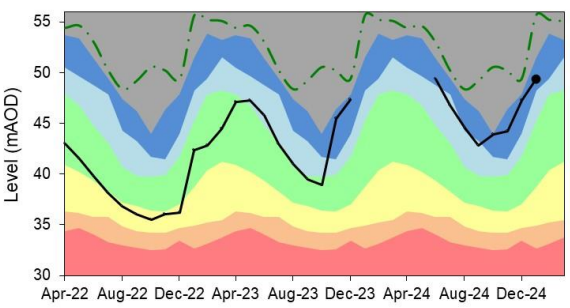
Linton- CAM CHALK
Ranking derived from data for the period Jan-1980 to Dec-2022

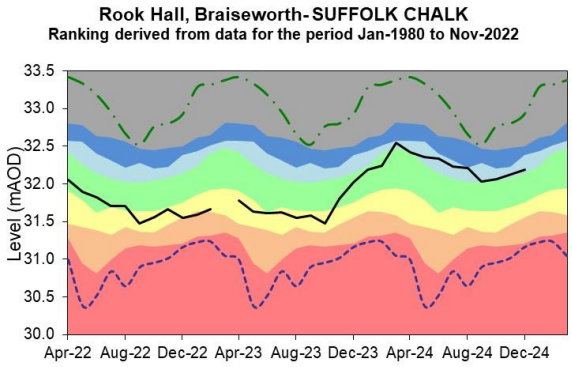


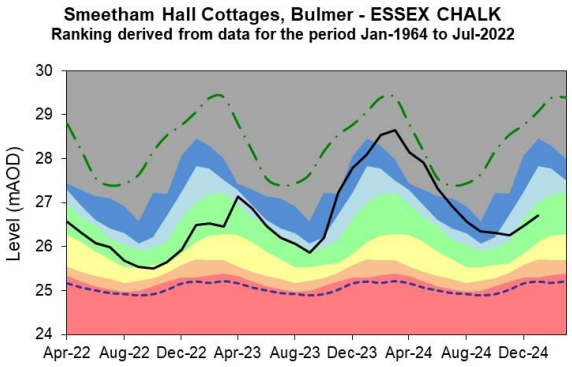
Newmarket - SNAIL CHALK
Ranking derived from data for the period Feb-1983 to Dec-2022

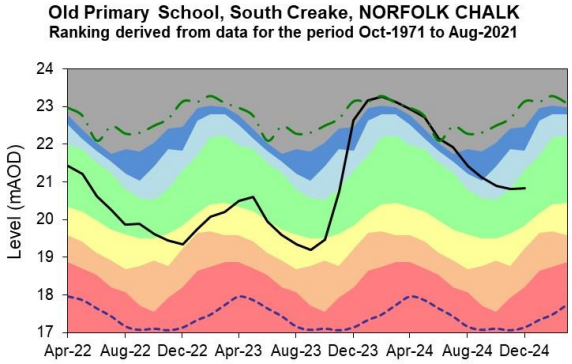


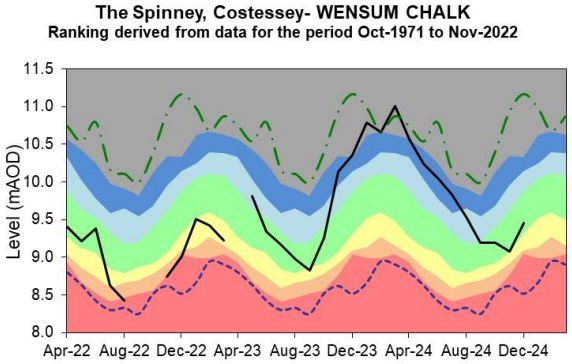
Redlands Hall, Ickleton - CAM CHALK
Ranking derived from data for the period Aug-1963 to Dec-2022

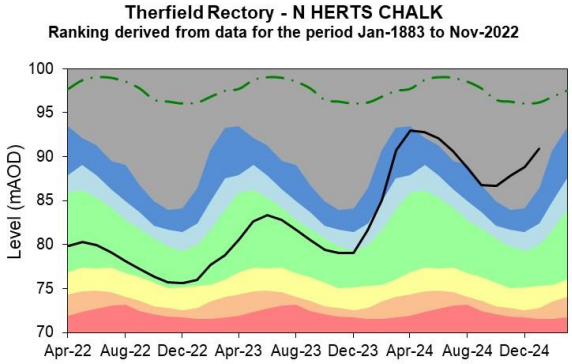


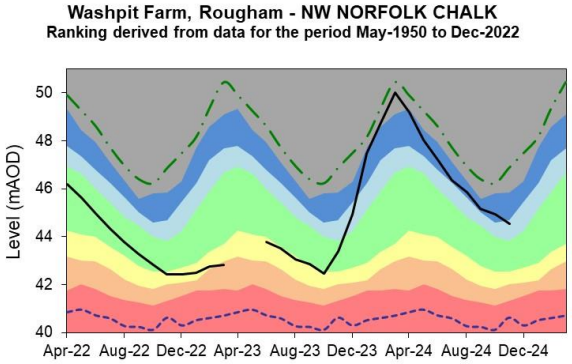








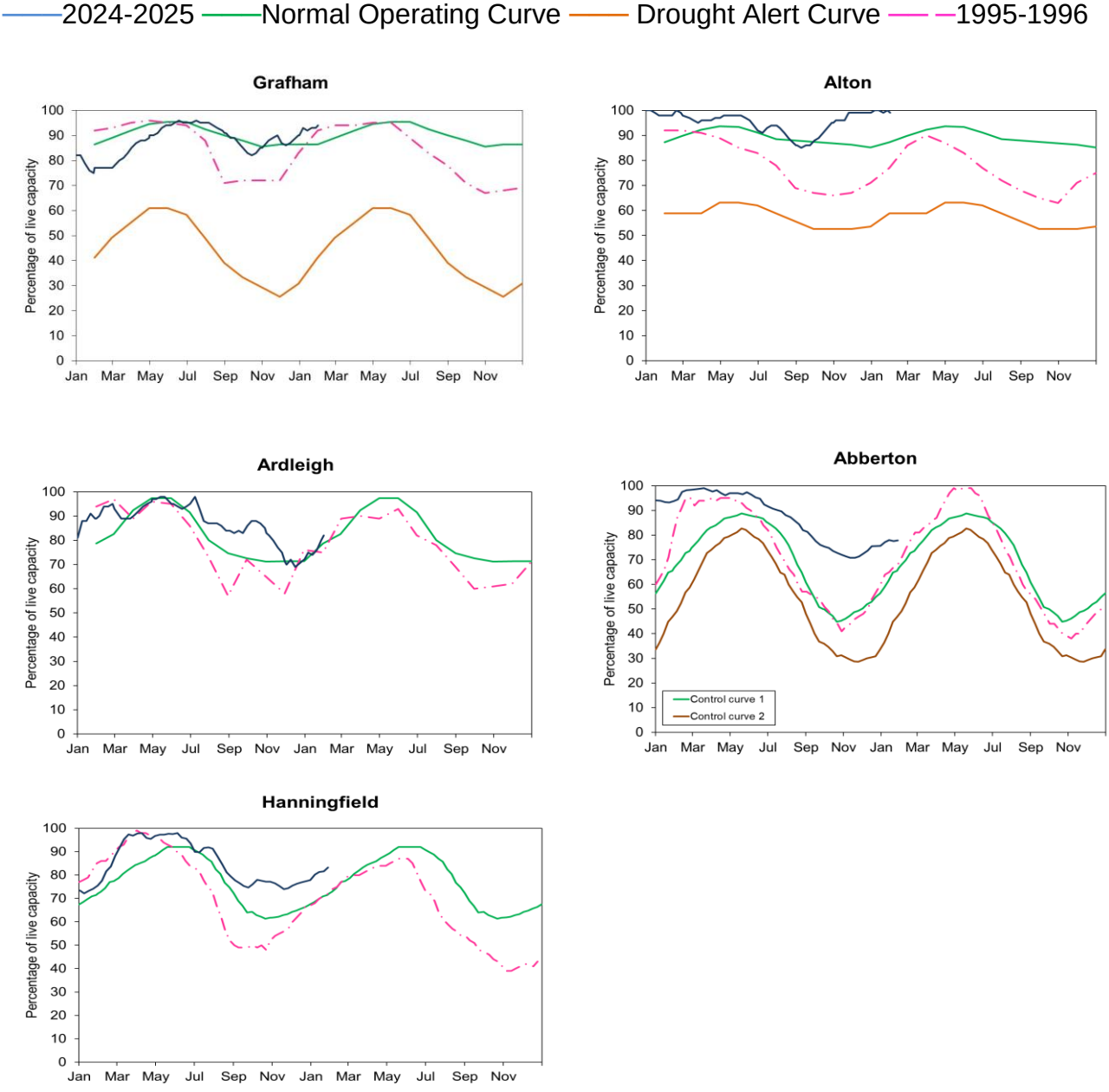




Source: Environment Agency, 2025.

6 Reservoir stocks

Figure 6.1: End of month regional reservoir stocks compared to the normal operating curve, drought curve and dry 1995-1996 stocks. Note: Historic records of individual reservoirs and reservoir groups making up the regional values vary in length.

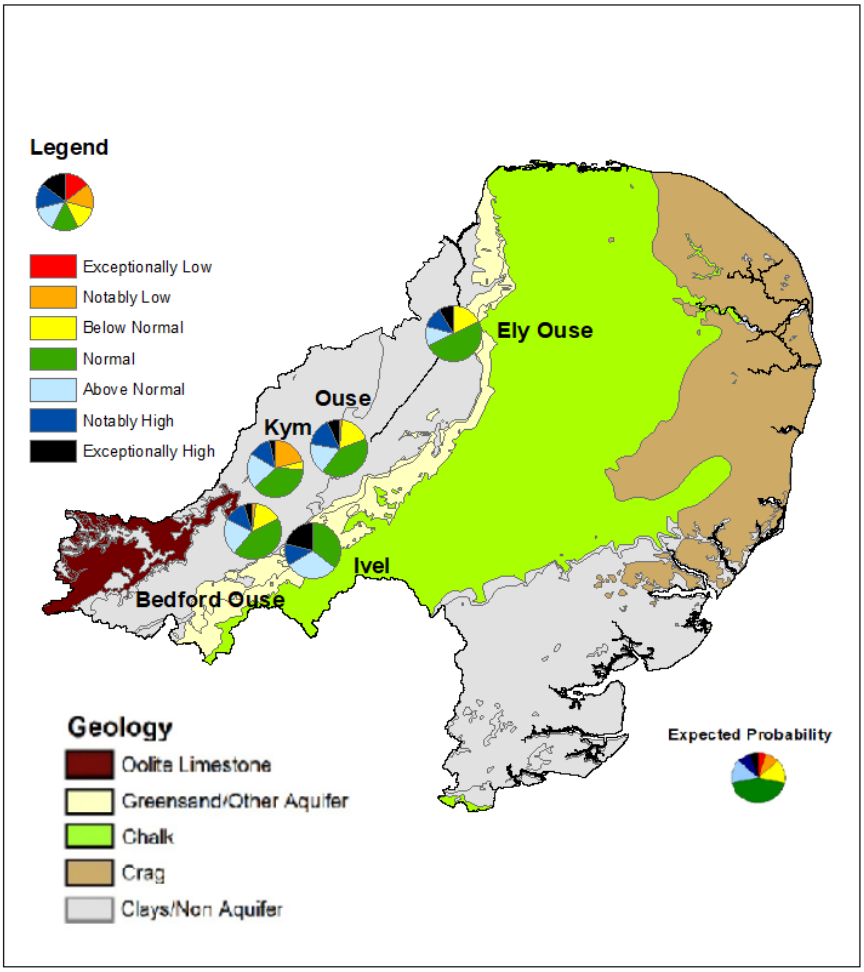


(Source: water companies)

7 Forward look

7.1 Probabilistic ensemble projection of river flows at key sites in March 2025

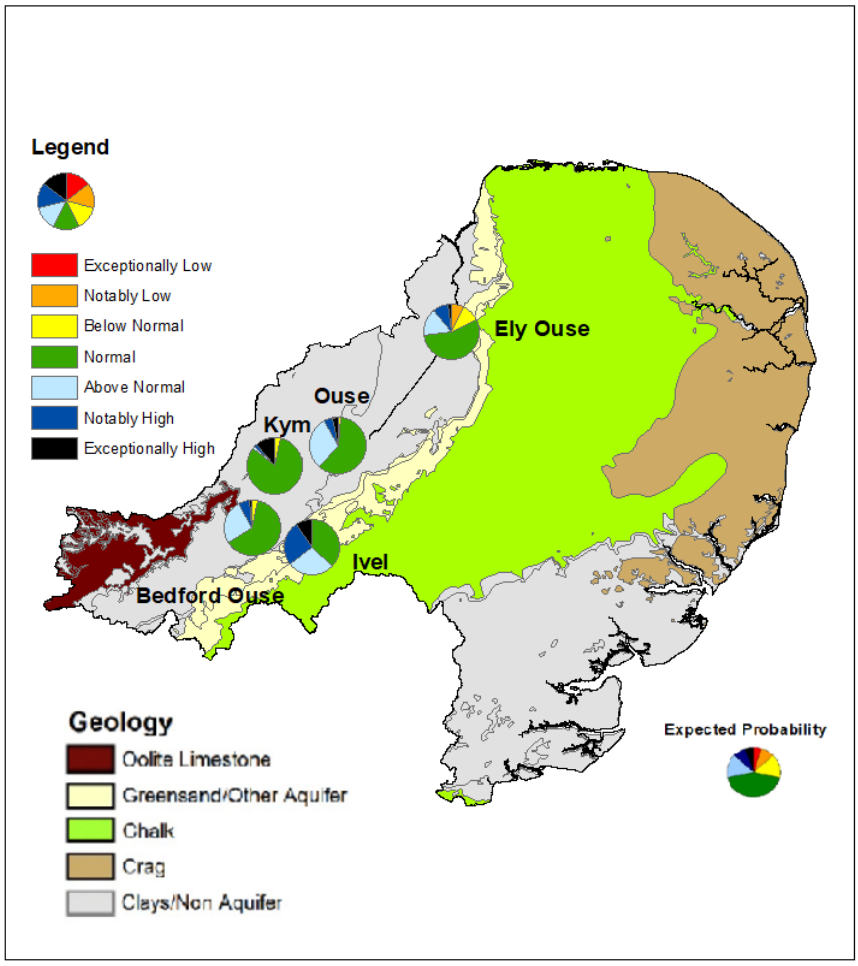
Table available in the appendices with detailed information. Exceptionally high or low levels are those which would typically occur 5% of the time within the historic record. Notably high or low levels are those which would typically occur 8% of the time. Above normal or below normal levels are those which would typically occur 15% of the time. Normal levels are those which would typically occur 44% of the time within the historic record.



Pie charts indicate probability, based on climatology, of the surface water flow at each site being, for example, exceptionally low for the time of year. (Source: Centre for Ecology and Hydrology, Environment Agency) Geological map reproduced with kind permission from UK Groundwater Forum, BGS © NERC. Crown copyright. All rights reserved. Environment Agency, 100026380, 2025.

7.2 Probabilistic ensemble projection of river flows at key sites in June 2025

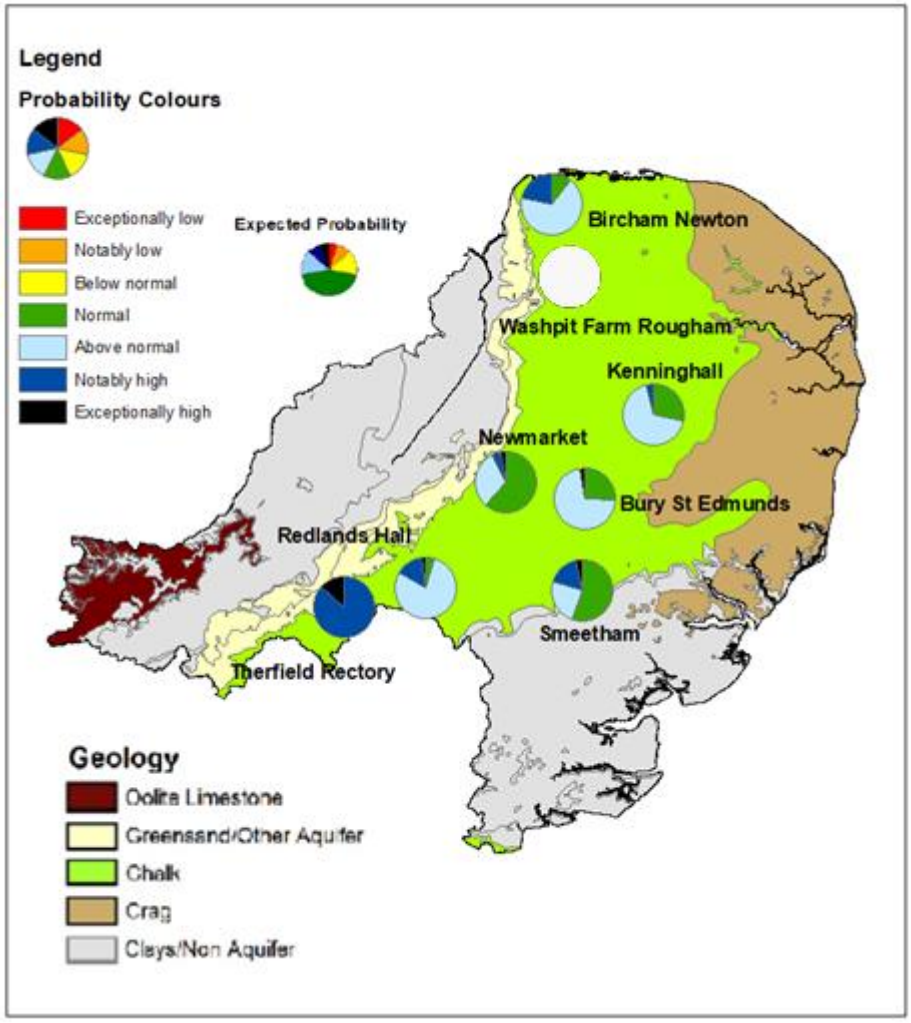
Table available in the appendices with detailed information. Exceptionally high or low levels are those which would typically occur 5% of the time within the historic record. Notably high or low levels are those which would typically occur 8% of the time. Above normal or below normal levels are those which would typically occur 15% of the time. Normal levels are those which would typically occur 44% of the time within the historic record.



Pie charts indicate probability, based on climatology, of the surface water flow at each site being, for example, exceptionally low for the time of year. (Source: Centre for Ecology and Hydrology, Environment Agency) Geological map reproduced with kind permission from UK Groundwater Forum, BGS © NERC. Crown copyright. All rights reserved. Environment Agency, 100026380, 2025

7.3 Probabilistic ensemble projection of groundwater levels at key sites in June 2025

Table available in the appendices with detailed information. Exceptionally high or low levels are those which would typically occur 5% of the time within the historic record. Notably high or low levels are those which would typically occur 8% of the time. Above normal or below normal levels are those which would typically occur 15% of the time. Normal levels are those which would typically occur 44% of the time within the historic record.



Pie charts indicate probability, based on climatology, of the groundwater level at each site being, for example, exceptionally low for the time of year. (Source: Environment Agency)

7.4 Probabilistic ensemble projection of groundwater levels at key sites in September 2025

Table available in the appendices with detailed information. Exceptionally high or low levels are those which would typically occur 5% of the time within the historic record. Notably high or low levels are those which would typically occur 8% of the time. Above normal or below normal levels are those which would typically occur 15% of the time. Normal levels are those which would typically occur 44% of the time within the historic record.

Pie charts indicate probability, based on climatology, of the groundwater level at each site being, for example, exceptionally low for the time of year. (Source: Environment Agency)

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}).

Effective rainfall

The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).

Flood alert and flood warning

Three levels of warnings may be issued by the Environment Agency. Flood alerts indicate flooding is possible. Flood warnings indicate flooding is expected. Severe flood warnings indicate severe flooding.

Groundwater

The water found in an aquifer.

Long term average (LTA)

The arithmetic mean calculated from the historic record, usually based on the period 1961 to 1990. However, the period used may vary by parameter being reported on (see figure captions for details).

mAOD

Metres above ordnance datum (mean sea level at Newlyn Cornwall).

MORECS

Met Office Rainfall and Evaporation Calculation System. Met Office service providing real time calculation of evapotranspiration, soil moisture deficit and effective rainfall on a 40 by 40 km grid.

Naturalised flow

River flow with the impacts of artificial influences removed. Artificial influences may include abstractions, discharges, transfers, augmentation and impoundments.

NCIC

National Climate Information Centre. NCIC area monthly rainfall totals are derived using the Met Office 5 km gridded dataset, which uses rain gauge observations.

Recharge

The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).

Reservoir gross capacity

The total capacity of a reservoir.

Reservoir live capacity

The capacity of the reservoir that is normally usable for storage to meet established reservoir operating requirements. This excludes any capacity not available for use (for example, storage held back for emergency services, operating agreements or physical restrictions). May also be referred to as ‘net’ or ‘deployable’ capacity.

Soil moisture deficit (SMD)

The difference between the amount of water actually in the soil and the amount of water the soil can hold. Expressed in depth of water (mm).

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.

9 Appendices

9.1 Rainfall table

Hydrological area	Jan 2025 rainfall % of long term average 1961 to 1990	Jan 2025 band	Nov 2024 to January cumulative band	Aug 2024 to January cumulative band	Feb 2024 to January cumulative band
Broadland Rivers	90	Normal	Normal	Below normal	Above normal
Cam	121	Normal	Normal	Normal	Exceptionally high
Central Area Fenland	95	Normal	Normal	Normal	Notably high
East Suffolk	117	Normal	Normal	Normal	Above normal
Little Ouse And Lark	102	Normal	Normal	Normal	Notably high
Lower Bedford Ouse	125	Normal	Normal	Notably high	Exceptionally high
North Essex	128	Above Normal	Normal	Normal	Above normal
North Norfolk	89	Normal	Normal	Normal	Above normal
Nw Norfolk And Wissey	88	Normal	Normal	Normal	Notably high
South Essex	131	Above Normal	Normal	Normal	Normal

Upper Bedford Ouse	137	Above Normal	Above normal	Exceptionally high	Exceptionally high

9.2 River flows table

Site name	River	Catchment	Jan 2025 band	Dec 2024 band
Abbey Heath	Little Ouse	Little Ouse	Normal	Above normal
Blunham	Ivel	Ivel	Above normal	Exceptionally high
Bramford	Gipping	Gipping	Normal	Normal
Burnham Overy	Burn	Burn	Normal	Above normal
Burnt Mill	Rhee	Rhee	Notably high	Notably high
Cappenham	Tove	Tove	Above normal	Above normal
Colney	Yare	Yare	Normal	Above normal
Denver	Ely Ouse	Cutoff and Renew Channel	Normal	Above normal
Dernford	Cam	Cam	Normal	Above normal
Heacham	Heacham	Heacham	Normal	Normal
Ingworth	Bure	Bure	Normal	Normal
Lexden	Colne	Colne Essex	Normal	Normal
Marham	Nar	Nar	Normal	Normal
Needham Weir Total	Waveney (lower)	Waveney	Normal	Normal

Northwold Total	Wissey	Wissey	Normal	
Offord (gross Flows)	Great Ouse	Ouse Beds	Above normal	Above normal
Roxton	Great Ouse	Ivel	Normal	Above normal
Springfield	Chelmer	Chelmer Upper	Normal	Normal
Swanton Morley Total	Wensum	Wensum	Normal	Notably high
Temple	Lark	Lark	Normal	Normal
Willen	Ouzel	Ouzel	Above normal	Above normal

9.3 Groundwater table

Site name	Aquifer	End of Jan 2025 band	End of Dec 2024 band
Biggleswade	Ivel Woburn Sands	Above normal	Notably high
Bircham Newton	North West Norfolk Chalk	Normal	Above normal
Breckland	Wissey Chalk		
Bury St Edmunds	Upper Lark Chalk	Above normal	Above normal
Castle Farm, Offton	East Suffolk Chalk		
Gog Magog, Stapleford	Cam Chalk	Above normal	Above normal
Hazlewood Common	East Suffolk Crag		Notably high
Hindolveston	Norfolk Chalk		Normal
Kenninghall	Little Ouse Chalk	Normal	Above normal
Linton	Cam Chalk	Above normal	Above normal
Newmarket	Snail Chalk	Normal	Above normal
Old Primary School, South Creake	North Norfolk Chalk		Normal

Redlands Hall, Ickleton	Cam Chalk	Notably high	Notably high
Rook Hall, Braiseworth	East Suffolk Chalk		Above normal
Smeetham Hall Cottages, Bulmer	North Essex Chalk	Normal	Normal
The Spinney, Costessey	Wensum Chalk		Normal
Washpit Farm, Rougham	North West Norfolk Chalk		
Therfield Rectory	Upper Lee Chalk	Exceptionally high	Exceptionally high
Fringford P.s.	Upper Bedford Ouse Oolitic Limestone (great)	Above normal	Above normal

9.4 Ensemble projections tables

9.4.1 Probabilistic ensemble projection of river flows at key sites in March 2025

Percentage of pie chart for each band

Site	Bedford Ouse	Kym	Ivel	Ouse	Ely Ouse
Exceptionally low	0	0	0	0	0
Notably low	2	21	0	2	0
Below normal	16	5	0	18	18
Normal	44	37	35	40	50
Above normal	21	21	31	18	11
Notably high	13	13	13	16	11
Exceptionally high	5	3	21	6	9

9.4.2 Probabilistic ensemble projection of river flows at key sites Jun 2025

Percentage of pie chart for each band

Site	Bedford Ouse	Kym	Ivel	Ouse	Ely Ouse
Exceptionally low	0	0	0	0	0
Notably low	0	0	0	0	7
Below normal	3	3	0	2	11
Normal	63	82	37	60	55
Above normal	26	2	27	31	16
Notably high	6	2	26	5	9
Exceptionally high	2	11	10	3	2

9.4.3 Probabilistic ensemble projection of groundwater levels at key sites in March 2025

Percentage of pie chart for each band

Site	Therfield Rectory	Redlands Hall	Newmarket	Bircham Newton	Kenninghall	Bury St Edmunds	Smeetham
Exceptionally low	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Notably low	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Below normal	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Normal	0.0	5.1	61.5	11.1	28.6	25.6	55.2
Above normal	0.0	78.0	30.8	66.7	67.3	71.8	24.1
Notably high	86.9	15.3	5.1	22.2	4.1	0.0	17.2
Exceptionally high	13.1	1.7	2.6	0.0	0.0	2.6	3.4

9.4.4 Probabilistic ensemble projection of groundwater levels at key sites in September 2025

Percentage of pie chart for each band

Site	Therfield Rectory	Redlands Hall	Newmarket	Bircham Newton	Kenninghall	Bury St Edmunds	Smeetham
Exceptionally low	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Notably low	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Below normal	0.0	1.7	7.3	0.0	0.0	2.6	0.0
Normal	4.9	64.4	75.6	70.4	24.5	79.5	13.8
Above normal	29.5	32.2	4.9	14.8	38.8	7.7	17.2
Notably high	55.7	1.7	4.9	7.4	24.5	7.7	63.8
Exceptionally high	9.8	0.0	7.3	7.4	12.2	2.6	5.2