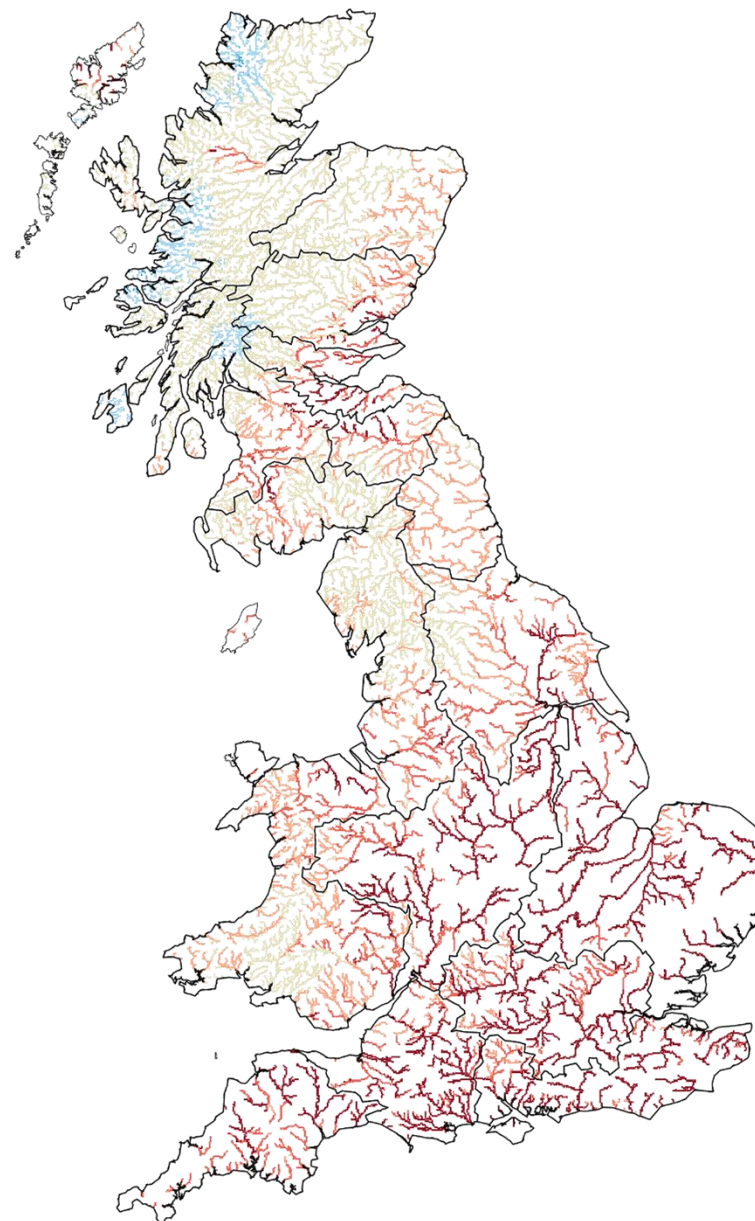


This map shows the simulated monthly mean flow across Great Britain for last month, ranked in terms of 54 years of historical flow estimates (1963 – 2016).

These flows are produced by the 1km resolution Grid-to-Grid (G2G) hydrological model, which is run up to the end of each calendar month using observed rainfall and MORECS potential evaporation as input.

Note that the G2G model provides estimates of natural flows.



*Flow estimate for each river pixel ranked in terms of historic % flow estimates (1963-2016)*

Exceptionally high flow	> 95
Notably high flow	87-95
Above normal	72-87
Normal range	28-72
Below normal	13-28
Notably low flow	5-13
Exceptionally low flow	< 5

# Current Daily Simulated Subsurface Water Storage Conditions

Based on subsurface water storage estimated for 31<sup>st</sup> July 2022

Issue date: 02.08.2022

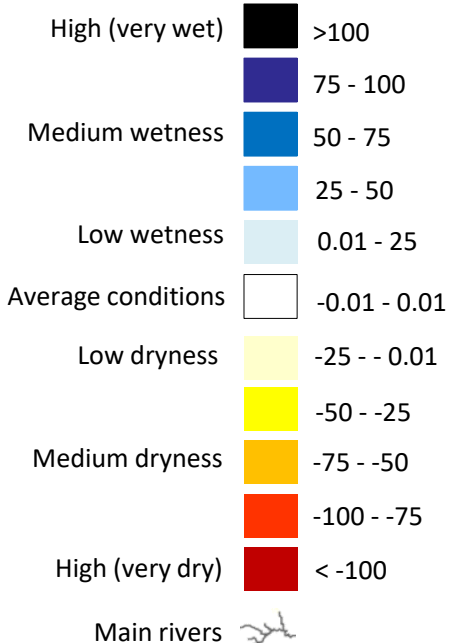
These maps are based on Grid-to-Grid (G2G) hydrological model simulated subsurface water storage, expressed as an anomaly from the historical monthly mean. To highlight areas that are particularly wet or dry, the storage anomaly is presented here using a colour scale highlighting water storage relative to historical extremes. The maps below show the “relative wetness” which combines maps previously shown separately as the “relative wetness” and “relative dryness”.

These maps do not provide a forecast and are not maps of soil moisture. Instead they indicate areas which are particularly wet or dry. Rainfall in areas with high positive relative wetness could result in flooding in the coming days/weeks. Areas of negative relative wetness provide an indication of locations which are particularly dry, and little or no rain in these areas could potentially lead to (or prolong) a drought.

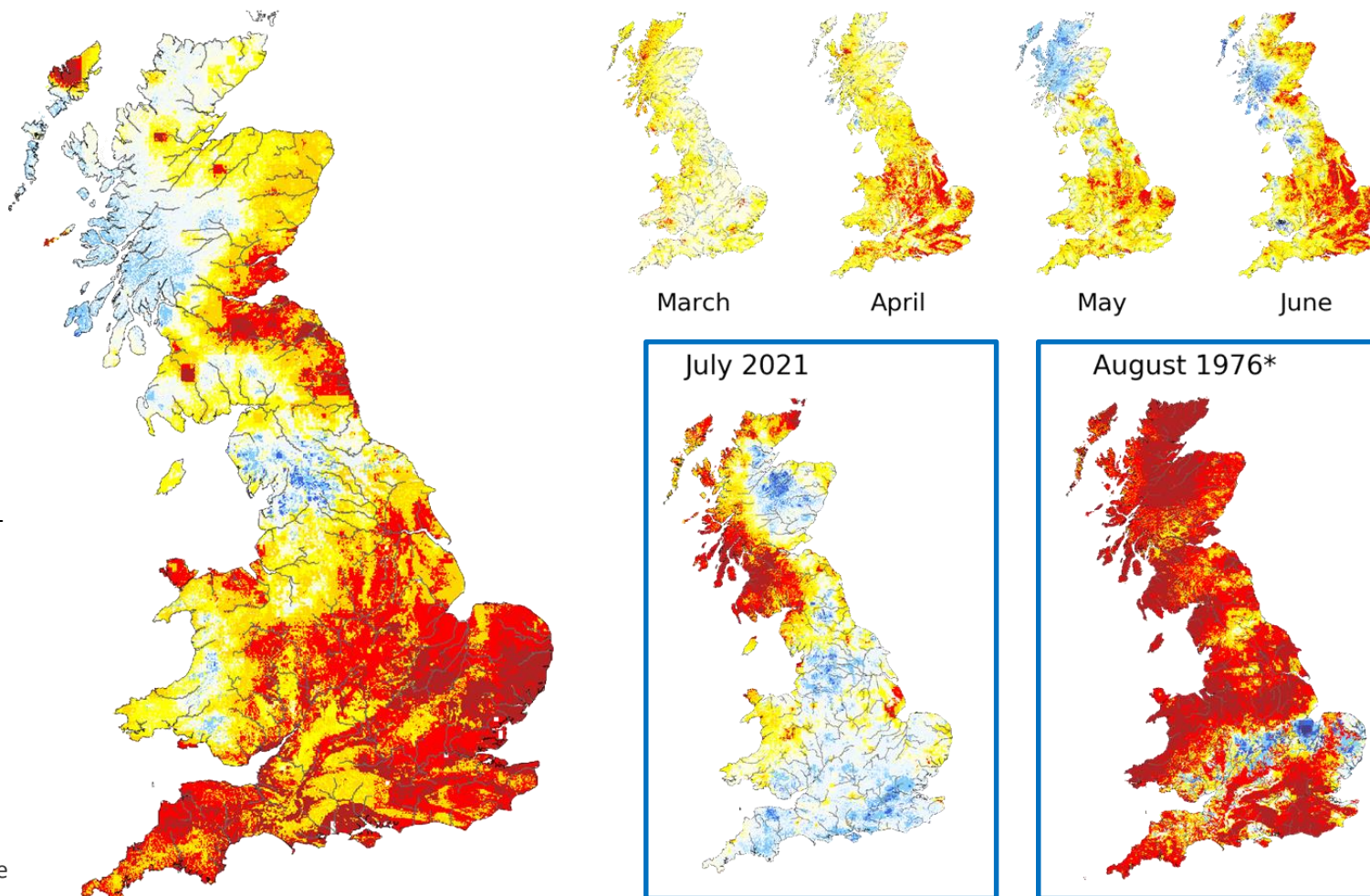
**SUMMARY:** At the end of July subsurface levels were generally lower (drier) than normal across England, Wales and eastern Scotland, especially in southern and eastern England where many areas were very dry. In some areas of north west England, south Wales and western Scotland, subsurface water levels were higher (wetter) than normal.

## Relative wetness

Water storage anomaly as a % of maximum (positive wetness) or minimum (negative wetness) storage anomaly (zero indicates average value)



Labels refer to estimated storage on *final day* of named month



\*Example month displaying extreme negative wetness

# August 2022

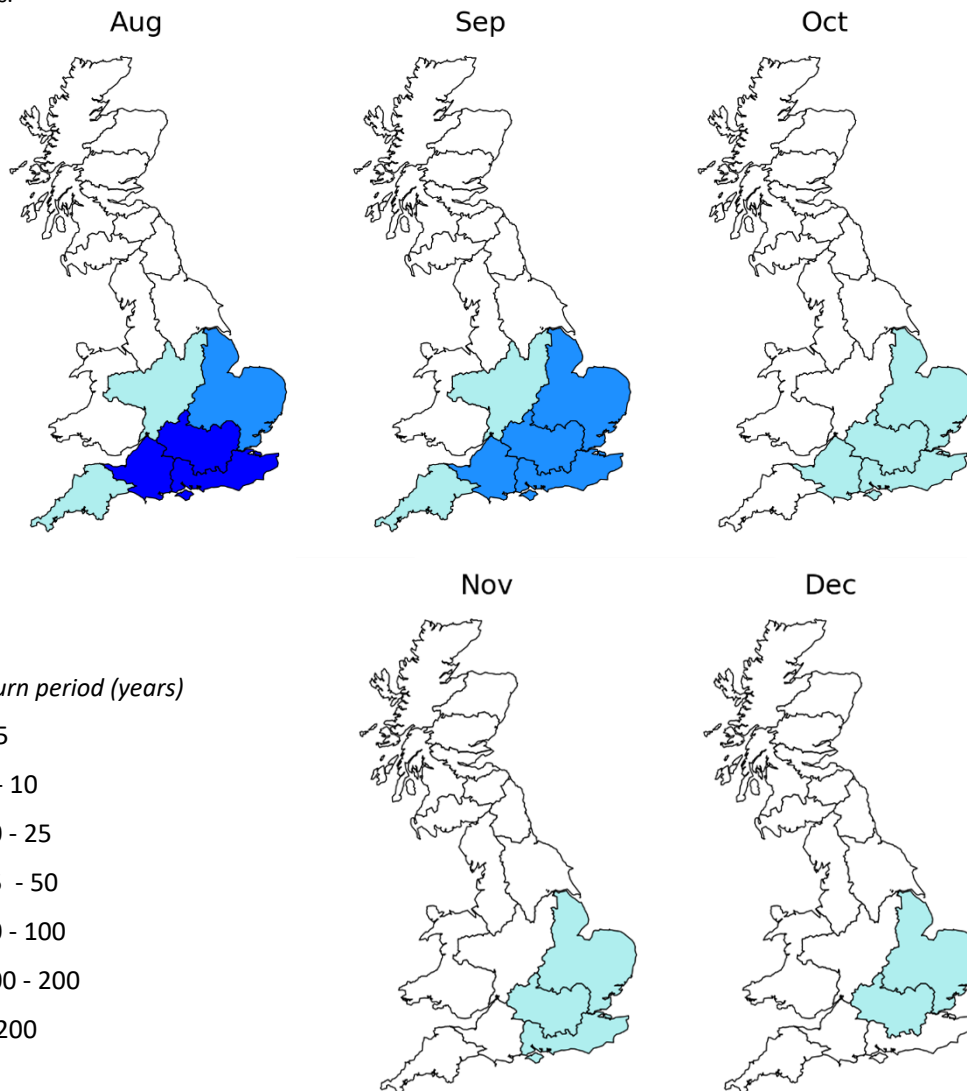
OUTLOOK BASED ON CURRENT CONDITIONS

These maps show the **return period** of the rainfall required to overcome dry conditions simulated using the Grid-to-Grid (G2G) hydrological model. The maps are coloured according to the return period of accumulated rainfall required to overcome the estimated current subsurface water storage deficit over the next few months.

These maps do not provide a drought forecast. Instead they indicate the return period of rainfall required to overcome the dry conditions for the following 6 months based on current conditions.

**SUMMARY:** During August to September, regions in southern and eastern England would require rainfall with a return period of between 5 and 50 years to overcome the dry conditions. Rainfall of a 5 to 10 year return period would be required for conditions to return to normal in eastern England by the end of December.

Elsewhere, not particularly unusual rainfall (<5 year return periods) would be required to return to average conditions for this time of year.



**SCOTLAND**

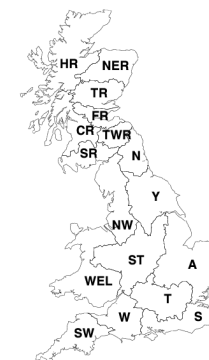
- HR Highlands Region
- NER North East Region
- TR Tay Region
- FR Forth Region
- CR Clyde Region
- TWR Tweed Region
- SR Solway Region

**ENGLAND**

- N Northumbria
- NW North West
- Y Yorkshire
- ST Severn Trent
- A Anglian
- T Thames
- S Southern
- W Wessex
- SW South West

**WALES**

- WEL Welsh



**NORTHERN IRELAND**

This method cannot currently be used in Northern Ireland

Rainfall amount / Probability	Return period (years)
Low (this rain is likely to occur)	> 20%  < 5
< 20%	5 - 10
< 10%	10 - 25
< 4%	25 - 50
High (less likely)	< 2%  50 - 100
< 1%	100 - 200
Extreme (unlikely but still possible)	< 0.5%  > 200

# Estimate of Additional Rainfall Required to Overcome Dry Conditions

Based on subsurface water storage estimated for 31<sup>st</sup> July 2022

Issue date: 02.08.2022

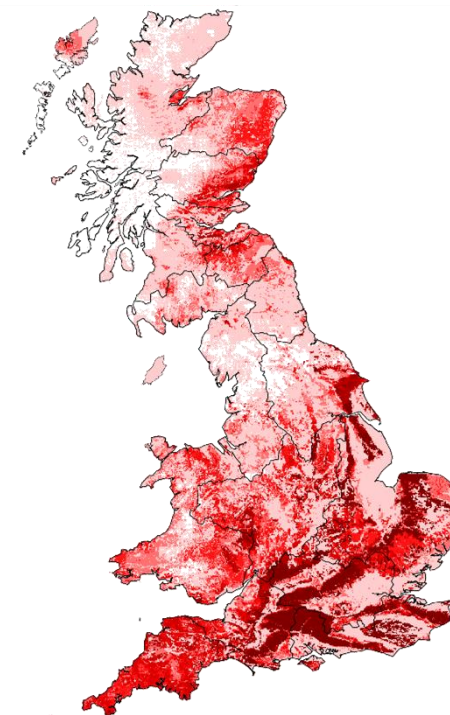
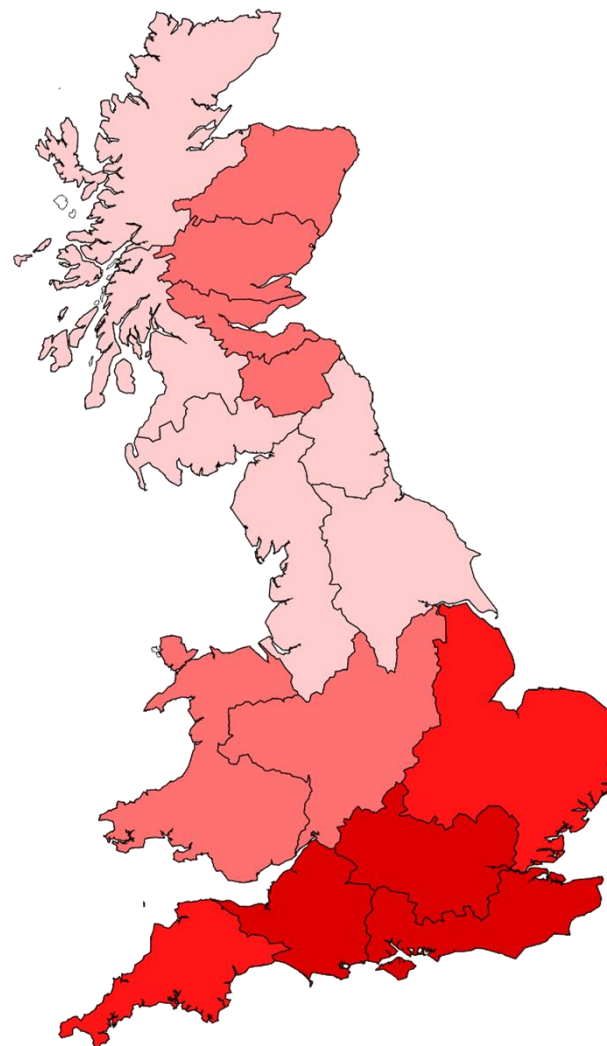
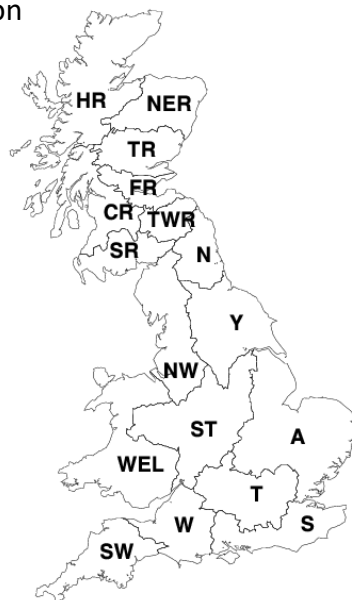
These maps show the Grid-to-Grid (G2G) hydrological model simulated subsurface water storage, expressed as an anomaly from the historical monthly mean (1981-2010), presented on a 1km grid and as regional means.

**Subsurface storage deficits**, i.e. where the subsurface water storage anomaly is less than zero, are highlighted by the red/pink colours.

The **subsurface storage deficit (mm)** can be interpreted as an estimate of additional rainfall that would be required in future months to overcome dry conditions (i.e. rainfall in addition to what is expected on average). Regional mean values of additional rainfall required are provided in the table below.

Regional estimate of additional rainfall required (mm)

SCOTLAND		
3	HR	Highlands Region
30	NER	North East Region
29	TR	Tay Region
34	FR	Forth Region
1	CR	Clyde Region
38	TWR	Tweed Region
12	SR	Solway Region
ENGLAND		
15	N	Northumbria
9	NW	North West
24	Y	Yorkshire
45	ST	Severn Trent
61	A	Anglian
77	T	Thames
83	W	Wessex
82	S	Southern
70	SW	South West
WALES		
34	WEL	Welsh



Water storage deficit (anomaly, mm)

