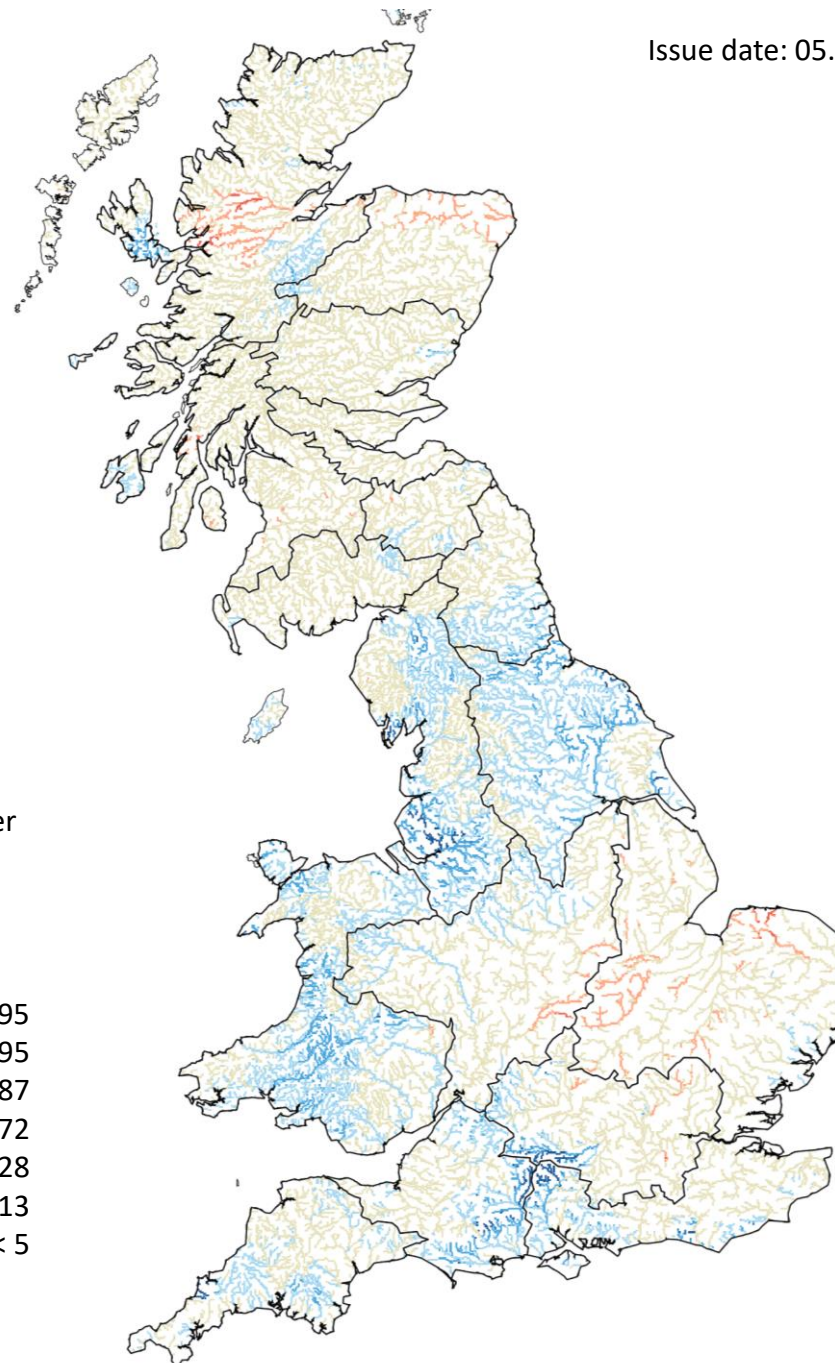
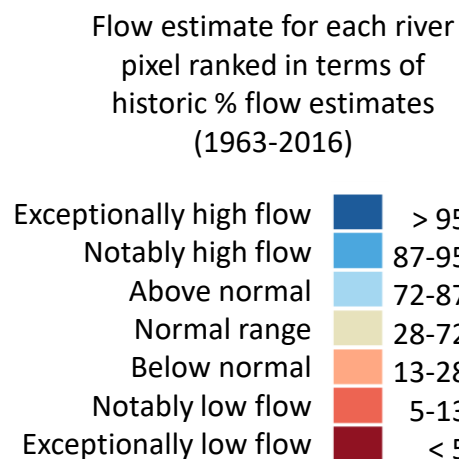


This map shows the simulated monthly mean flow across Great Britain for last month, ranked in terms of 54 years of historical flow estimates (1963 – 2016).

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.



Current Daily Simulated Subsurface Water Storage Conditions

Based on subsurface water storage estimated for 31 August 2023

Issue date: 05.09.2023

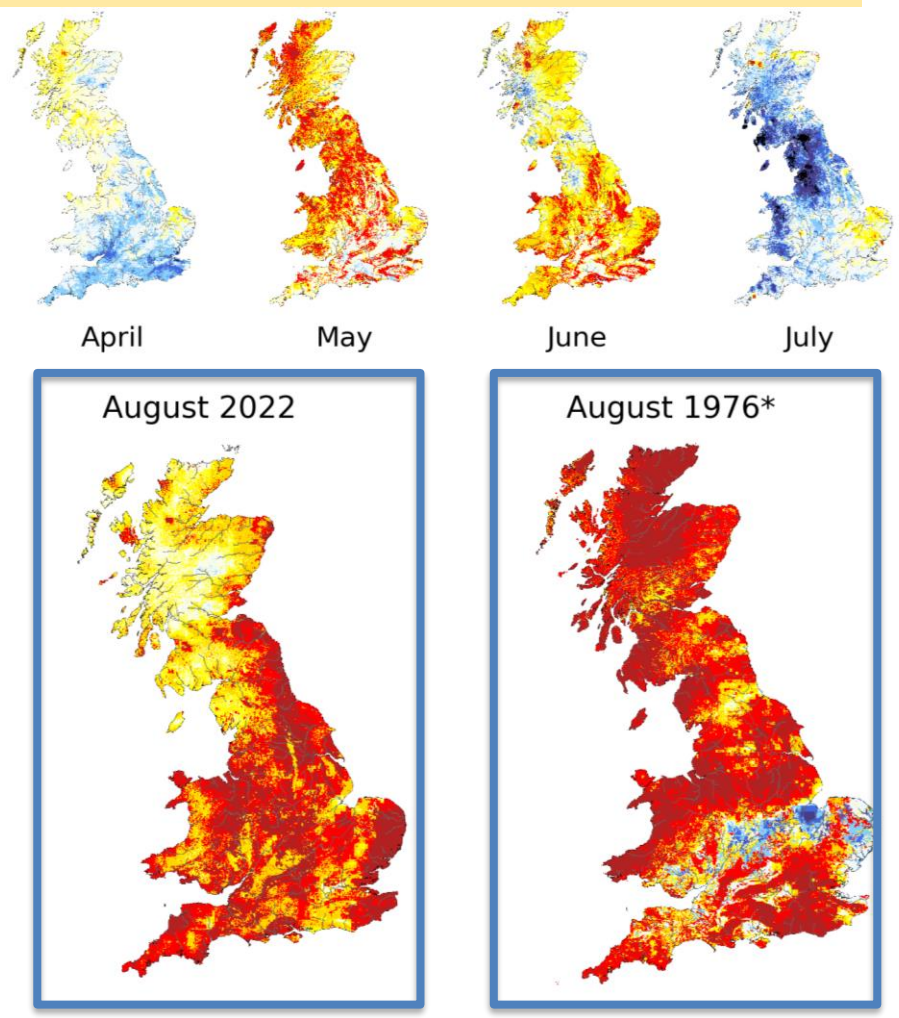
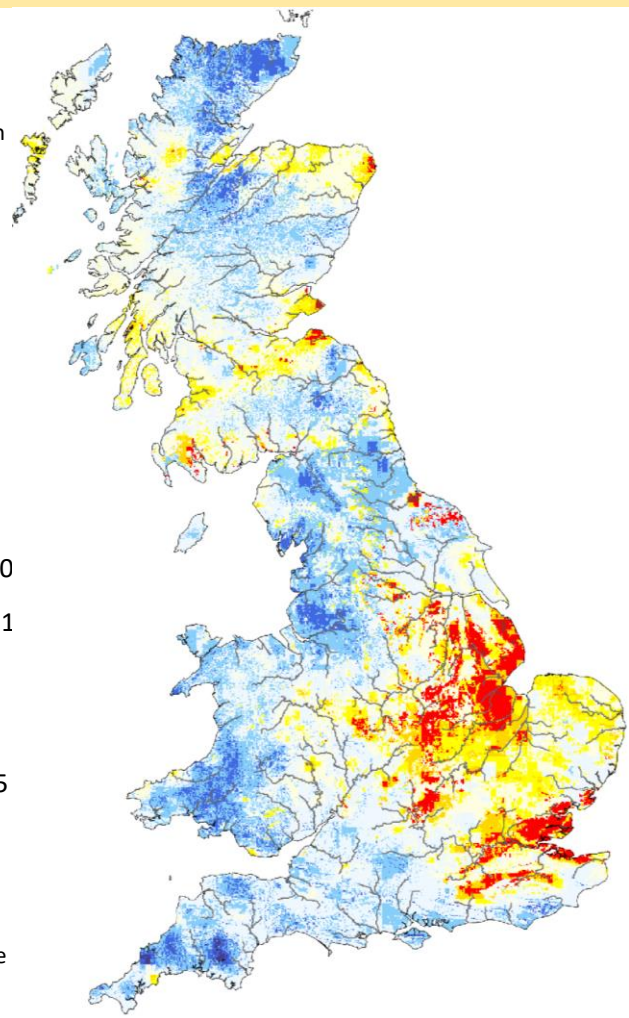
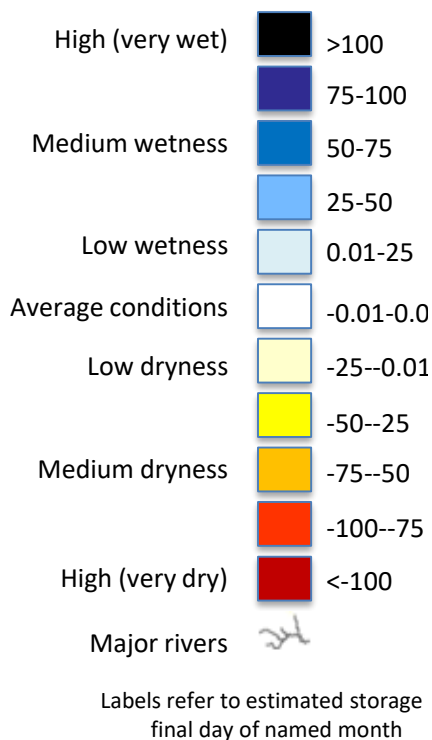
These maps are based on Grid-to-Grid (G2G) hydrological model simulated subsurface water storage, expressed as an anomaly from the historical monthly mean. To highlight areas that are particularly wet or dry, the storage anomaly is presented here using a colour scale highlighting water storage relative 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 August, subsurface water levels were slightly higher (wetter) than is typical for this time of year across most of Great Britain, apart from large areas of dry conditions in central England and East Anglia and small pockets of dry conditions in southern and eastern Scotland.

Relative wetness

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



*Example month displaying extreme negative wetness

September 2023

CURRENT CONDITIONS

Based on soil moisture estimated for 31 August 2023

Issue date: 05.09.2023

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

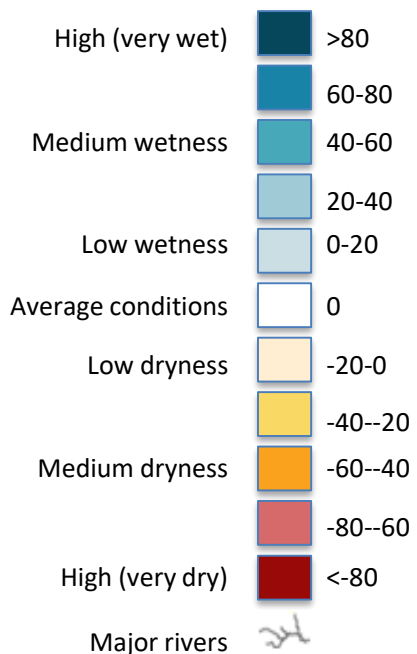
These maps do not provide a forecast. These maps are prototype representations of model estimates of soil moisture, which are currently under development.

Soil moisture will often look similar to total storage (shown on the previous slide), since total storage comprises both soil moisture and storage in the saturated zone.

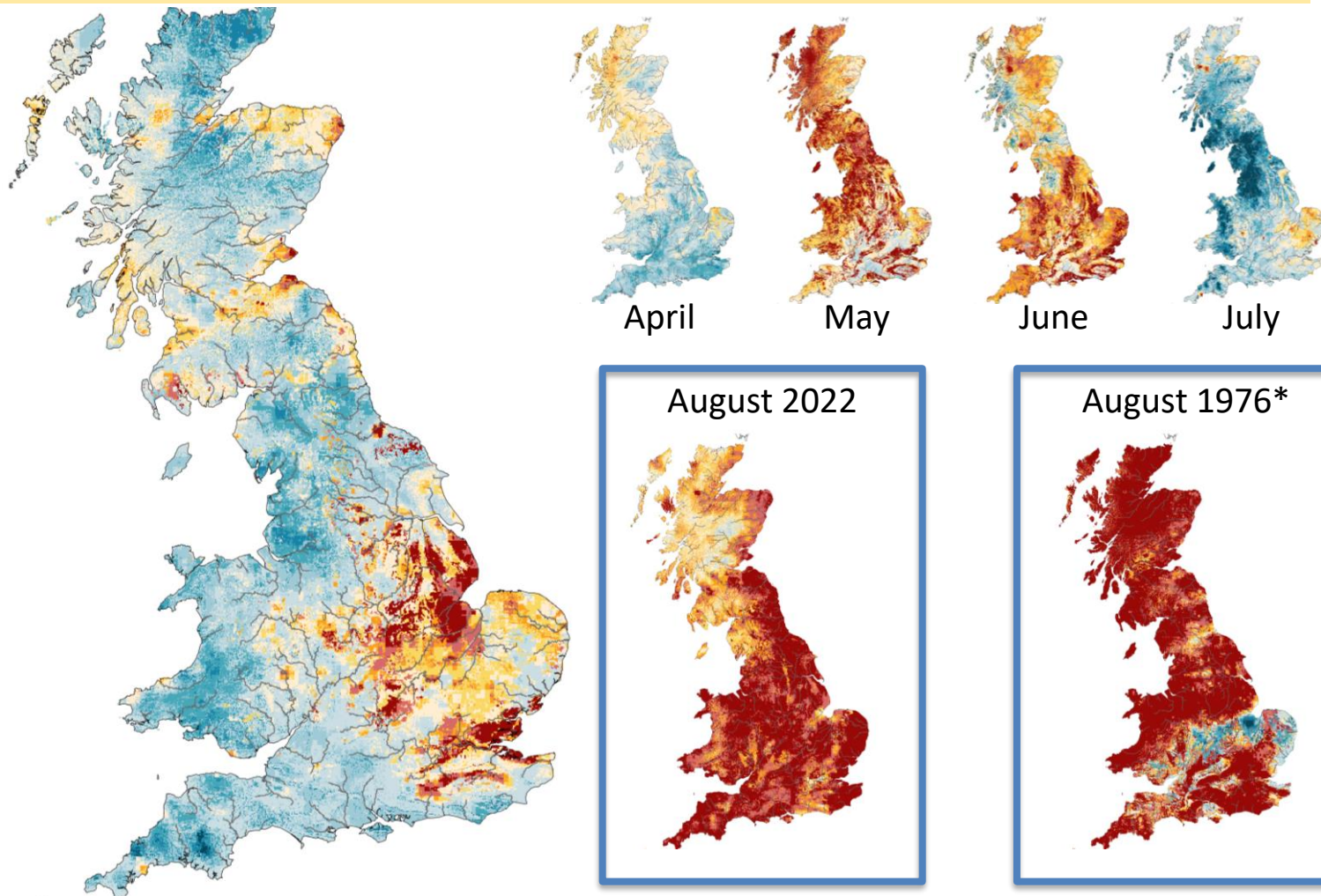
SUMMARY: At the end of August, soil wetness levels were slightly higher (wetter) than is typical for this time of year across most of Great Britain, apart from large areas of dry conditions in central England and East Anglia and small pockets of dry conditions in southern and eastern Scotland.

Relative soil wetness

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



Labels refer to estimated soil moisture on final day of named month



*Example month displaying extreme negative wetness

September 2023

Return Period of Rainfall Required to Overcome Dry Conditions

Period: September 2023 - February 2024

Issue date: 05.09.2023

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: No areas of Great Britain will require particularly unusual (>5 years return period) rainfall over the next six months to replenish current storage deficits.

SCOTLAND

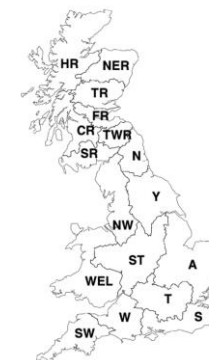
- HR Highlands Region
- NER North East Region
- TR Tay Region
- FR Forth Region
- CR Clyde Region
- TWR Tweed Region
- SR Solway Region

ENGLAND

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

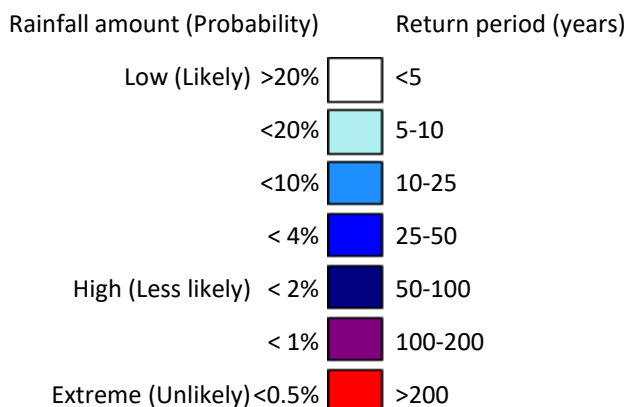
WALES

- WEL Welsh



NORTHERN IRELAND

This method cannot currently be used in Northern Ireland



Estimate of Additional Rainfall Required to Overcome Dry Conditions

Based on subsurface water storage estimated for 31 August 2023

Issue date: 05.09.2023

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

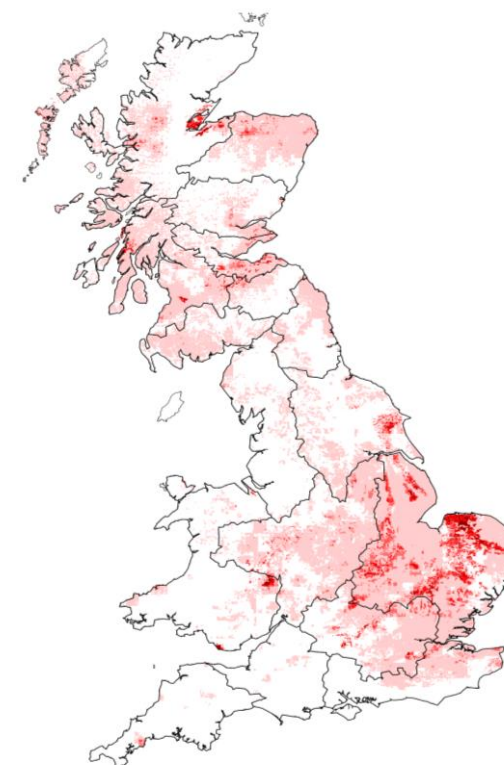
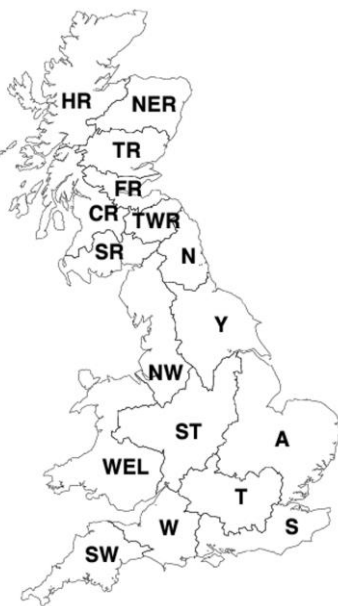
- 0 HR Highlands Region
- 0 NER North East Region
- 0 TR Tay Region
- 4 FR Forth Region
- 2 CR Clyde Region
- 0 TWR Tweed Region
- 0 SR Solway Region

ENGLAND

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

WALES

- 0 WEL Welsh



Water storage deficit
(anomaly; mm)

