

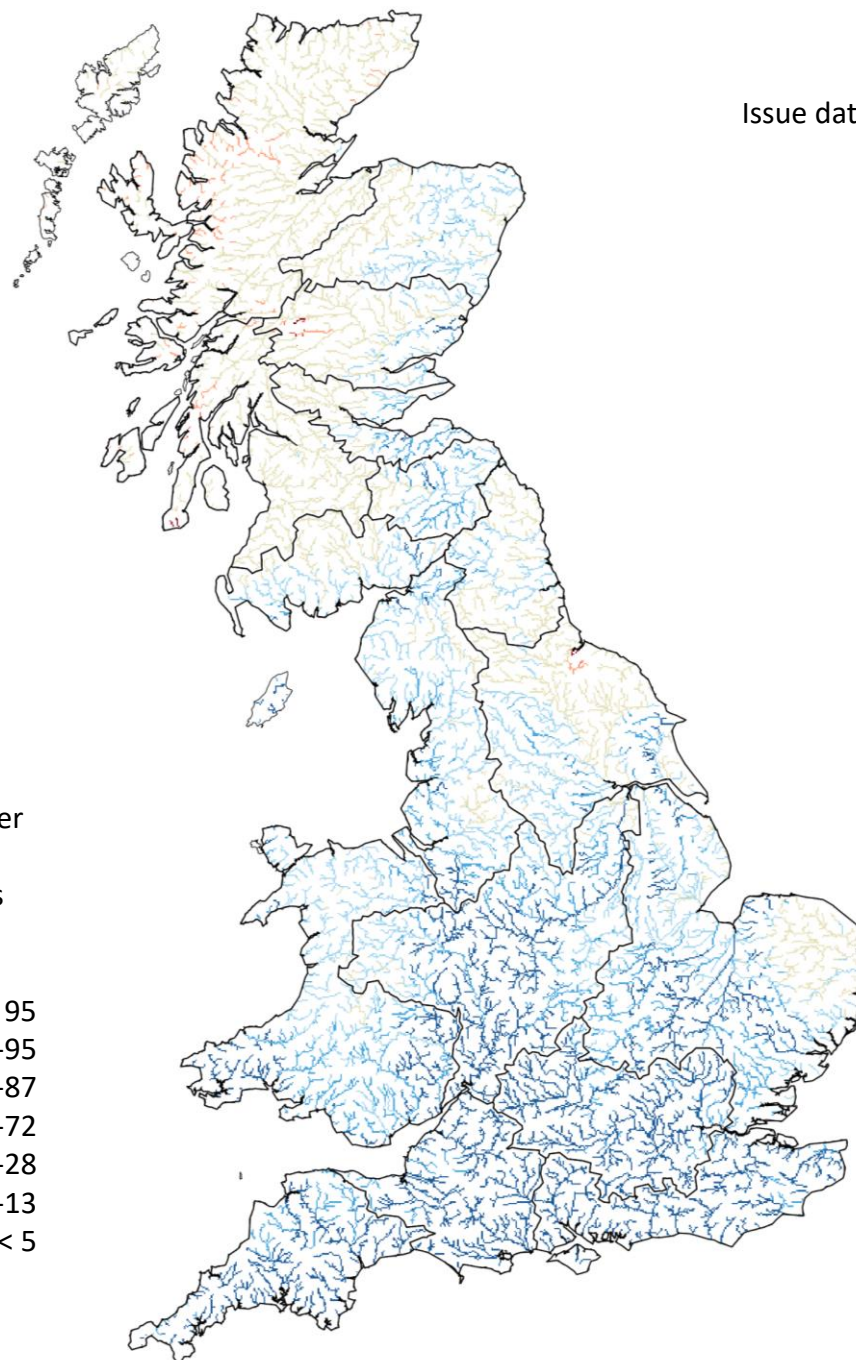
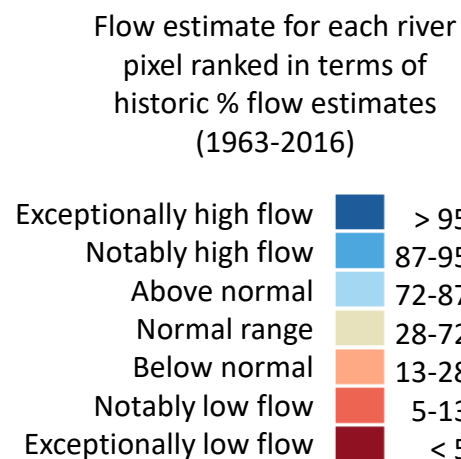
## March's mean river flows simulated by the Grid-to-Grid hydrological model

Issue date: 04.04.2024

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.



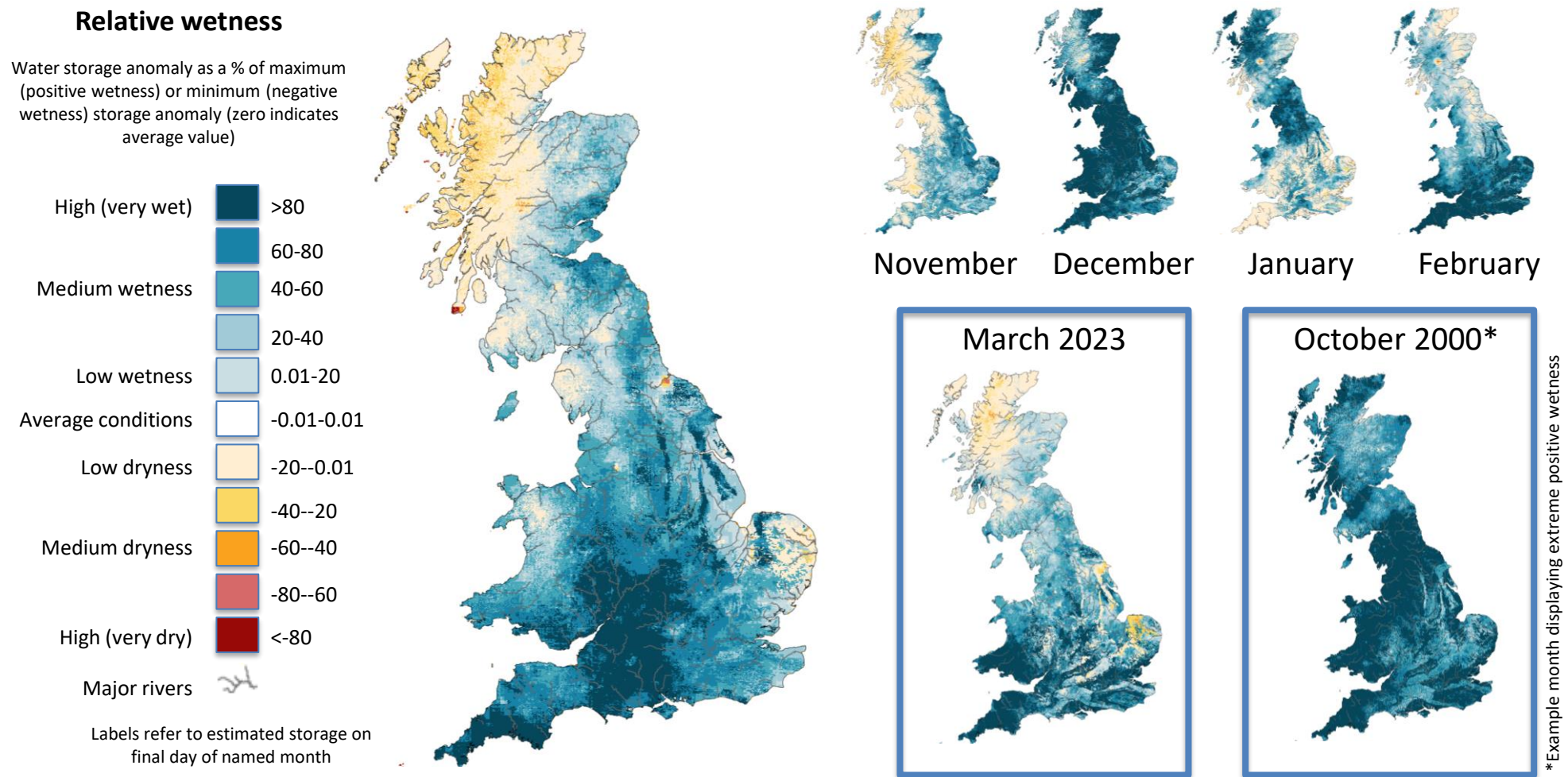
# Current Daily Simulated Subsurface Water Storage Conditions

Based on subsurface water storage estimated for 31 March 2024

Issue date: 04.04.2024

These maps are based on Grid-to-Grid (G2G) hydrological model simulated subsurface water storage (water in the soil and groundwater), expressed as an anomaly from the historical monthly mean. To highlight areas that are particularly wet or dry, the storage anomaly is presented relative to historical extremes. Rainfall in WET areas with high positive relative wetness could result in flooding in the coming days/weeks. Areas of negative relative wetness indicate locations which are particularly DRY, and little or no rain in these areas could potentially lead to (or prolong) a drought. Maps of soil moisture only are available on the next page.

**SUMMARY:** Subsurface water stores are medium to high (medium to very wet) in England and Wales, with lower wetness in the north of England and the southeast Scotland. In the northwest of Scotland, conditions are typical to slightly drier than usual for the time of the year.



# Current Daily Simulated Soil Moisture Conditions

Based on soil moisture estimated for 31 March 2024

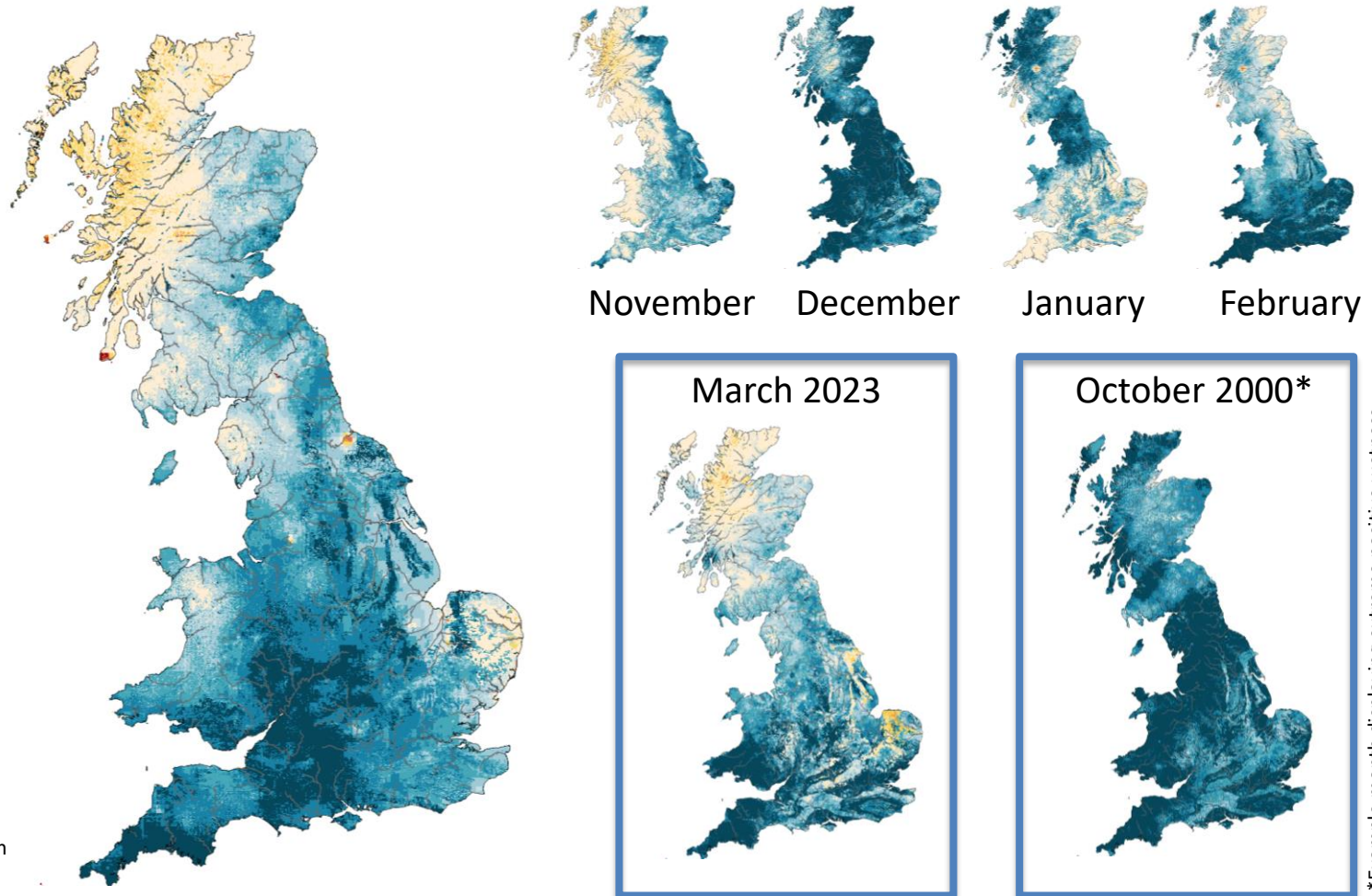
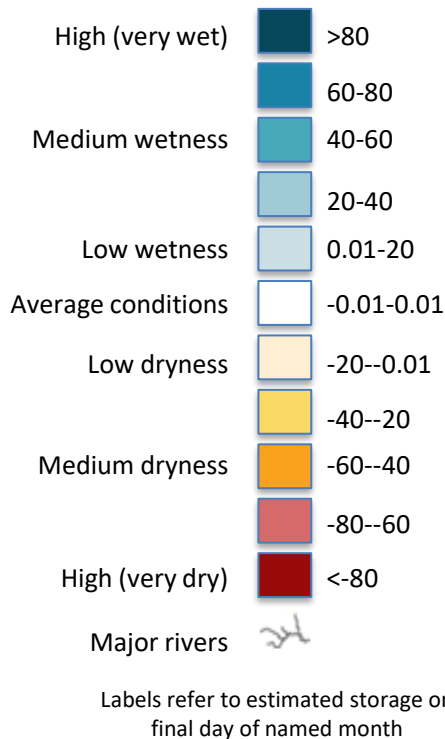
Issue date: 04.04.2024

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 relative to historical extremes. These maps are not a forecast; rather an indication of current conditions. 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:** Soil moisture stores are medium to high (medium to very wet) in England and Wales, with lower wetness in the north of England and the southeast Scotland. In the northwest of Scotland, conditions are typical to slightly drier than usual for the time of the year.

## Relative wetness

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



\*Example month displaying extreme positive wetness

April 2024

CURRENT CONDITIONS

# Estimate of Additional Rainfall Required to Overcome Dry Conditions

Based on subsurface water storage estimated for 31 March 2024

Issue date: 04.04.2024

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 in red/pink.

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

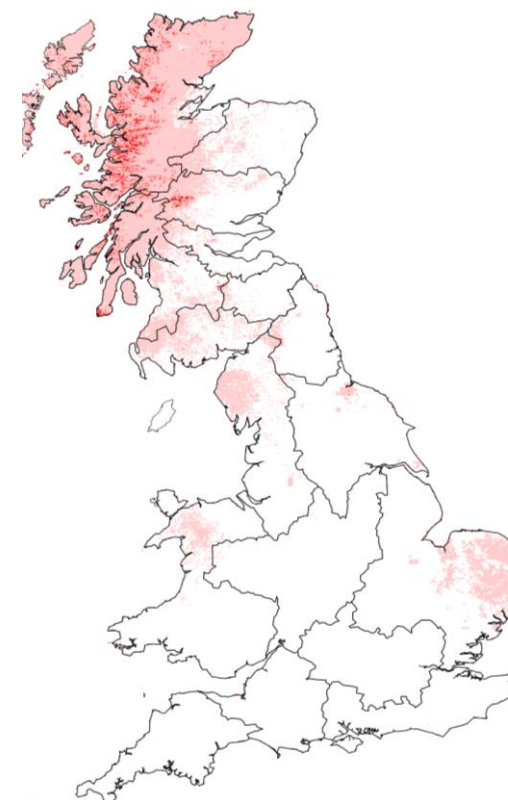
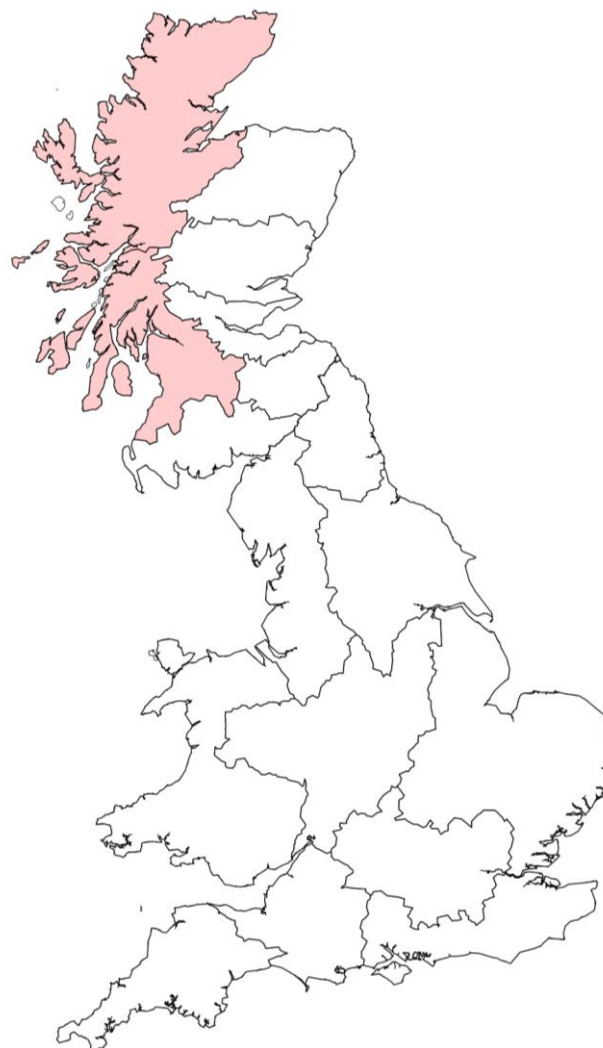
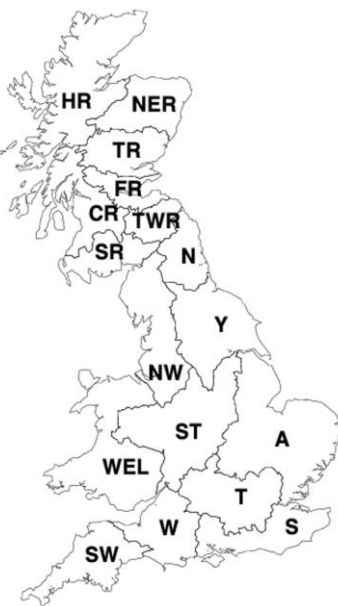
13	HR	Highlands Region
0	NER	North East Region
0	TR	Tay Region
0	FR	Forth Region
5	CR	Clyde Region
0	TWR	Tweed Region
0	SR	Solway Region

### ENGLAND

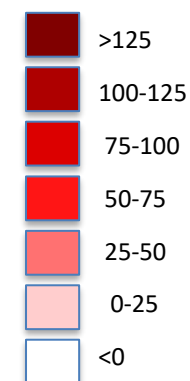
0	N	Northumbria
0	NW	North West
0	Y	Yorkshire
0	ST	Severn Trent
0	A	Anglian
0	T	Thames
0	W	Wessex
0	S	Southern
0	SW	South West

### WALES

0	WEL	Welsh
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Water storage deficit (anomaly; mm)



# Return Period of Rainfall Required to Overcome Dry Conditions

Period: April 2024 - September 2024

Issue date: 04.04.2024

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 one to six months (areas with no storage deficit will always be white). These maps do not provide a drought forecast; instead they indicate whether particularly heavy rainfall would be required to return to normal conditions for the time of year.

**SUMMARY:**  
The only region with a water storage deficit at the end of March is the Highlands but this does not require unusual (>5-year return period) rainfall to replenish.

- 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

