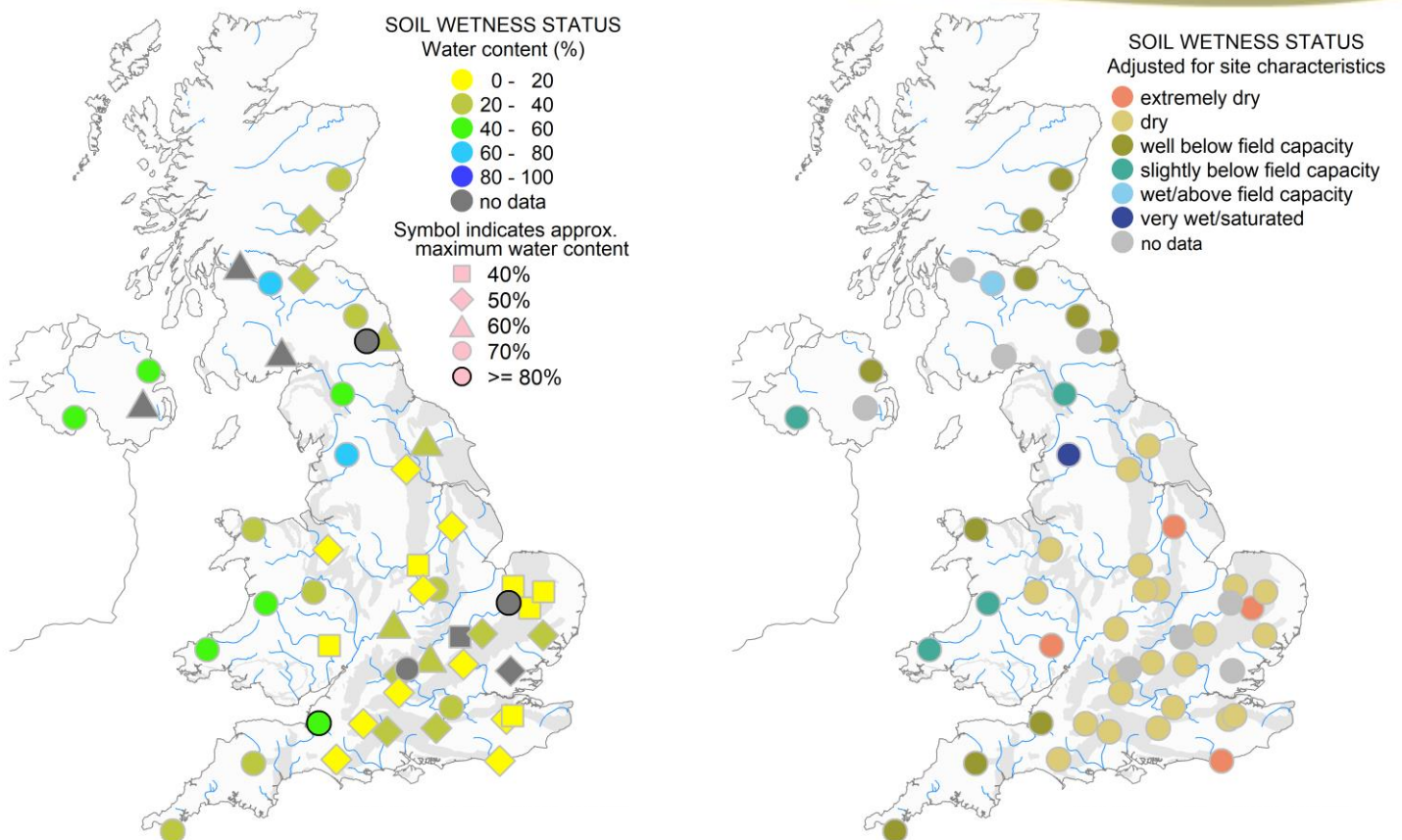




Soil moisture on 30 June 2025 (see back page for explanatory comments).

Soil moisture levels across most of the COSMOS-UK network remained very dry; however, additional rainfall in some northerly and westerly regions resulted in some sites being wetter than usual

Provisional data indicate that the total monthly rainfall in June was below average for England and Wales as a whole, but above average for Scotland and Northern Ireland. However, temperatures were some of the highest since records began. Overall, the UK experienced its second-warmest June on record, and sunshine hours were above average for many regions. East Anglia was one of the driest, warmest, and sunniest regions, with a mean temperature of 18.2 °C, 27.3 mm of rainfall, and 276.8 hours of sunshine throughout the month.

Almost a third of the COSMOS-UK sites experienced their lowest average soil moisture levels for June on record. By the end of the month, soil moisture levels remained well below field capacity for most of the UK. Much of southern England remains much drier than usual (e.g., Bunny Park, Euston, Fincham, Heytesbury, Sheepdrove). However, rain at some sites (e.g., Cwm Garw, Fivemiletown, Hartwood, Moor House, Plynlimon) resulted in conditions being wetter than normal for the time of year.

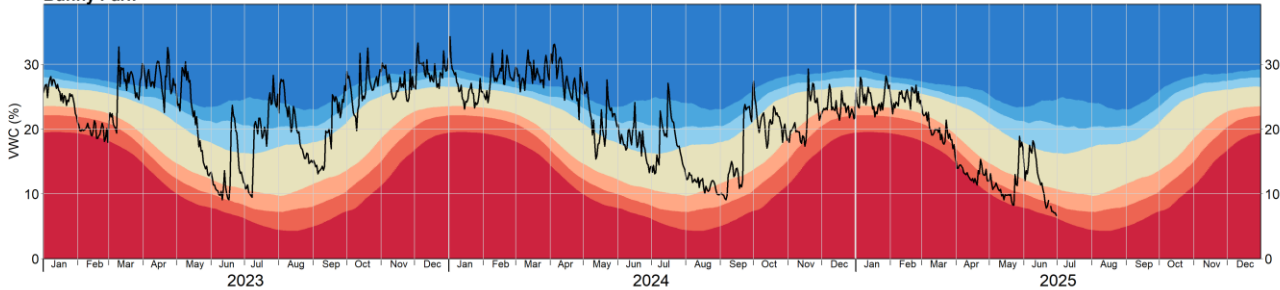
Despite receiving more rain than the previous month, warm and sunny conditions mean that most COSMOS-UK sites remain drier than usual. However, rain at some northerly and westerly sites helped recover soil moisture levels to within and above their normal range for the time of year.

Network news

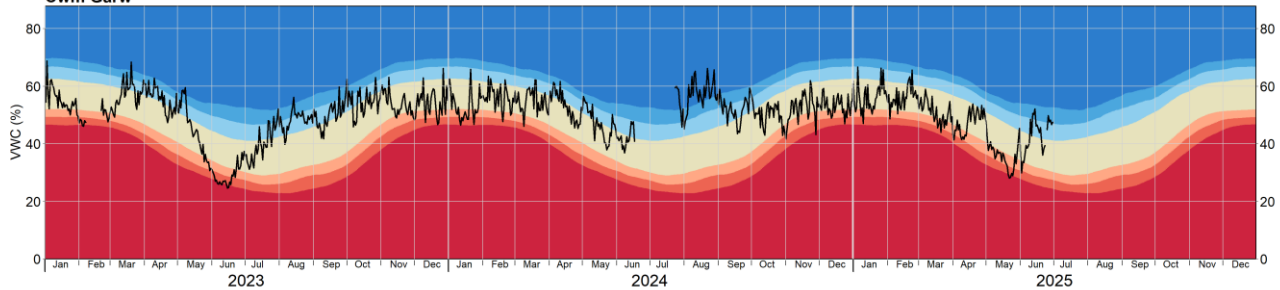
Spenn Farm was visited on June 25th to replace a radiometer and a faulty rain gauge. Waddesdon was also visited on June 26th to replace a faulty cosmic-ray neutron sensor. The next round of planned preventive maintenance is scheduled to begin on July 8th, starting at Tadham Moor.



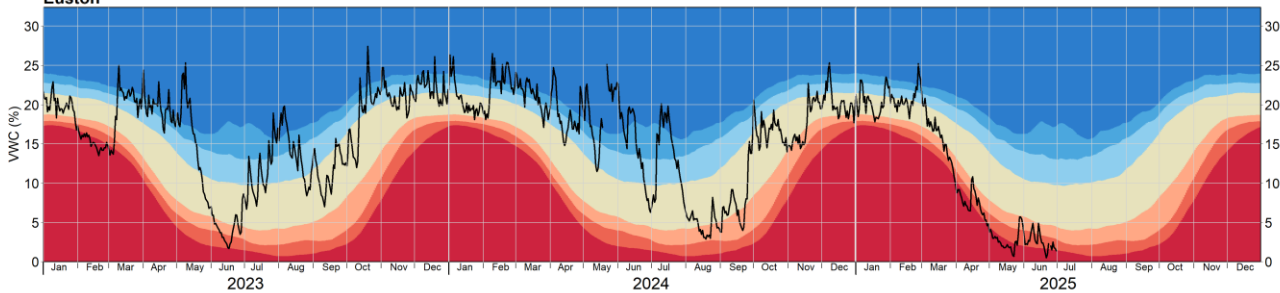
Bunny Park



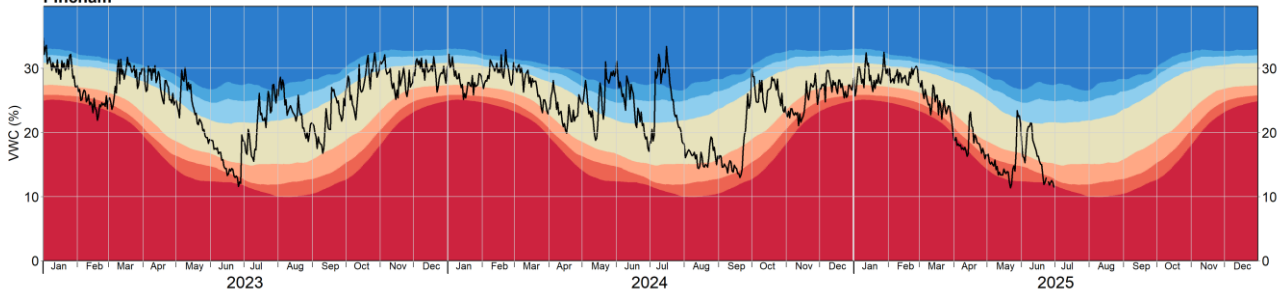
Cwm Garw



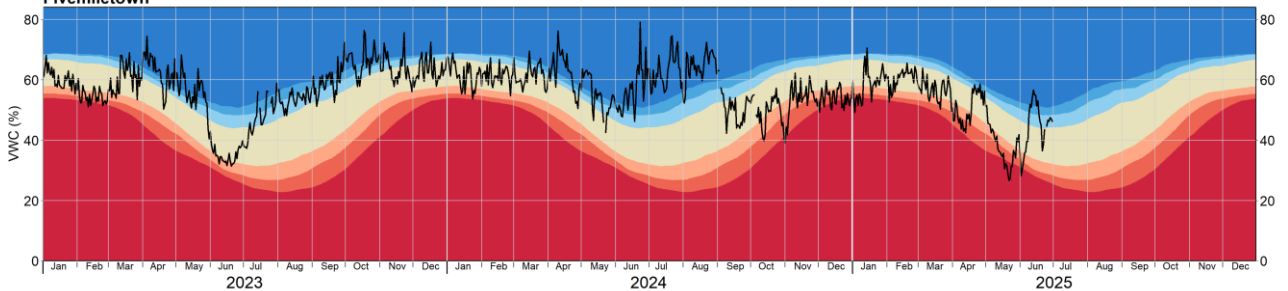
Euston

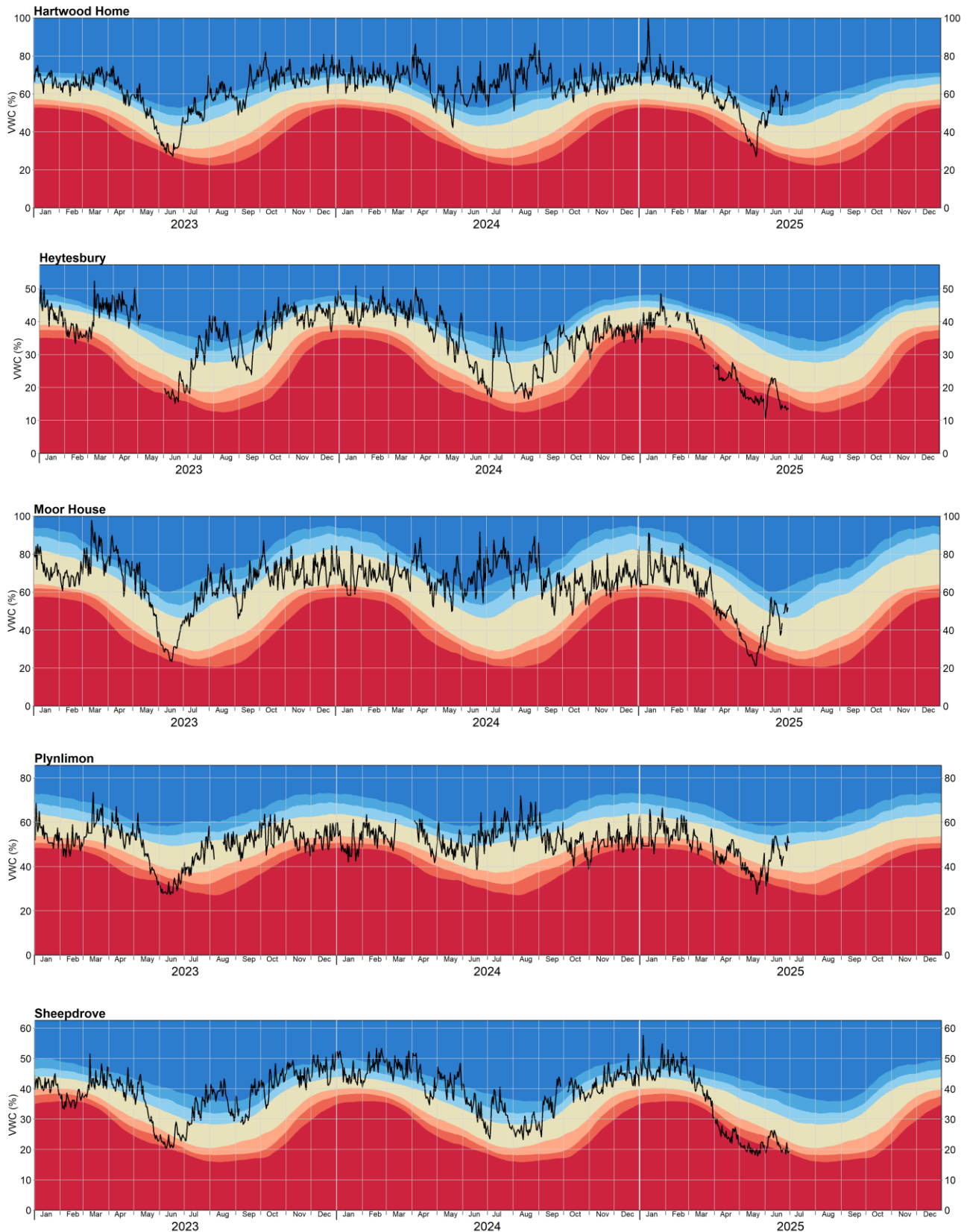


Fincham



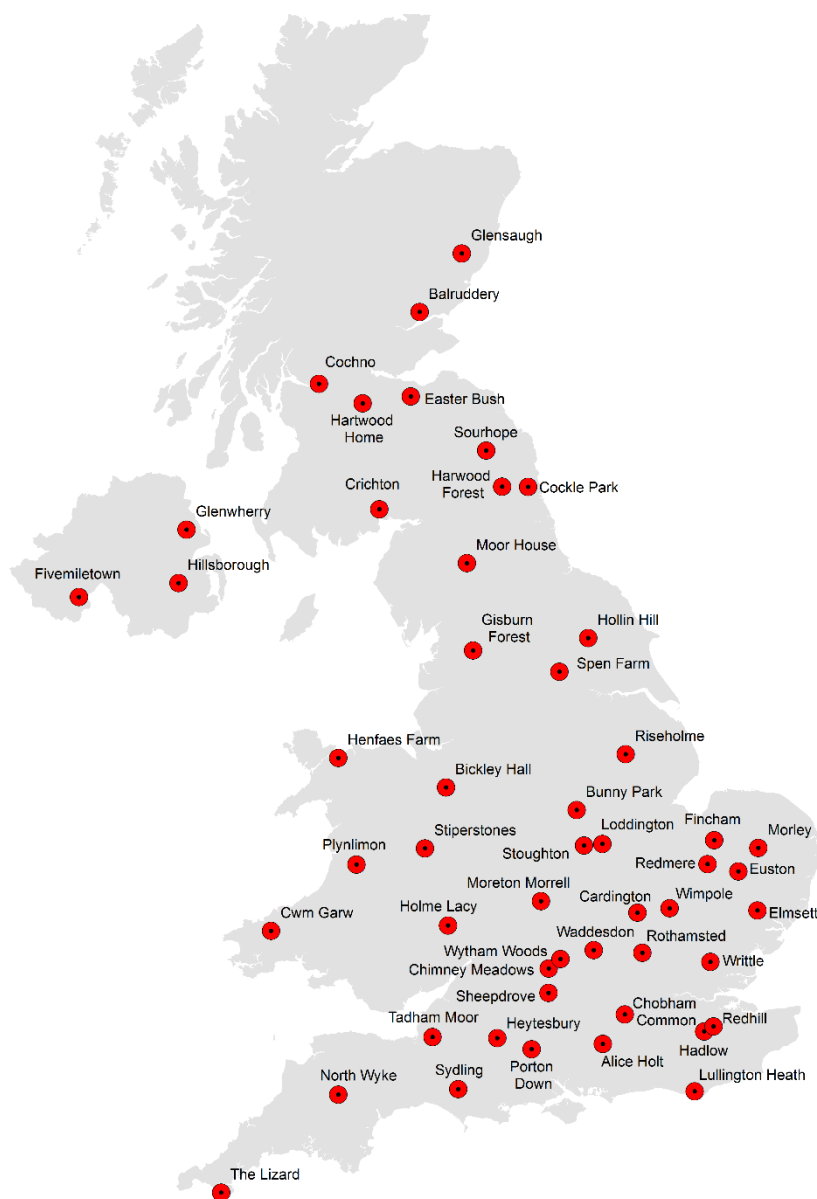
Fivemiletown







Issued on 10 July 2025



About the maps on page 1: The maps show daily mean soil moisture on the last day of the month. Colours indicate wetness as in the legends.

The map on the left shows wetness as the volumetric water content (VWC) of the soil which is constrained by soil type, i.e. some soils are able to hold more water than others as indicated by the shape of the symbol.

The map on the right presents soil wetness adjusted for site specific characteristics, i.e. taking account of the possible range of soil wetness at each site. Field capacity (FC) is a key point in this range. When soil moisture is below FC soil moisture is said to be in deficit, i.e. there is a (positive) soil moisture deficit (SMD).

Grey shaded areas on these two maps represent principal aquifers.

About the graphs on pages 2 and 3: The black line shows VWC. The coloured bands indicate how VWC compares to historical variability for the site and time of year.

- exceptionally dry
- notably dry
- drier than normal
- normal
- wetter than normal
- notably wet
- exceptionally wet

About soil moisture: Soil moisture varies in the short term (hours to days) with rainfall and as water drains through the soil. Longer term variation is driven by the seasonal difference between rainfall and evaporation. Thus soil moisture decreases in the summer when evaporation exceeds rainfall but increases when this is reversed. In most winters under UK conditions, soil moisture reaches a relatively constant value, known as the field capacity. Field capacity is a measure of how much water the soil can hold against gravity and is strongly dependent on the soil type. Soils are expected to be around field capacity after being wetted to above field capacity and the excess water (e.g. from macropores) has drained away under gravity, which can take several days after heavy rain, to reach a near steady state. Differences in soil type and weather patterns cause variations in soil moisture between sites including when the soil returns to field capacity in autumn/winter and when soil moisture decreases in the spring/summer.

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