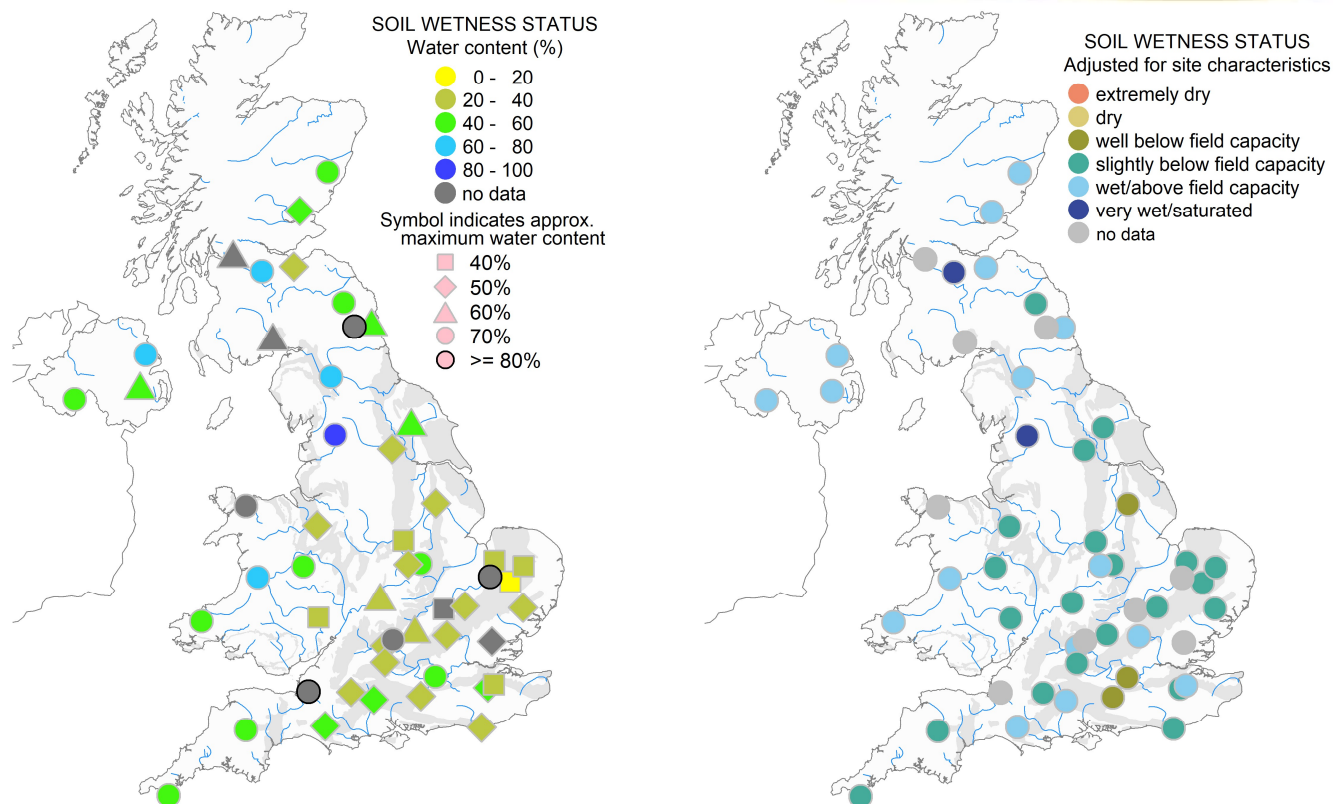




Soil moisture on 31 October 2025 (see back page for explanatory comments).

October saw increases in soil moisture across much of the UK, with conditions steadily moving back towards typical autumn levels.

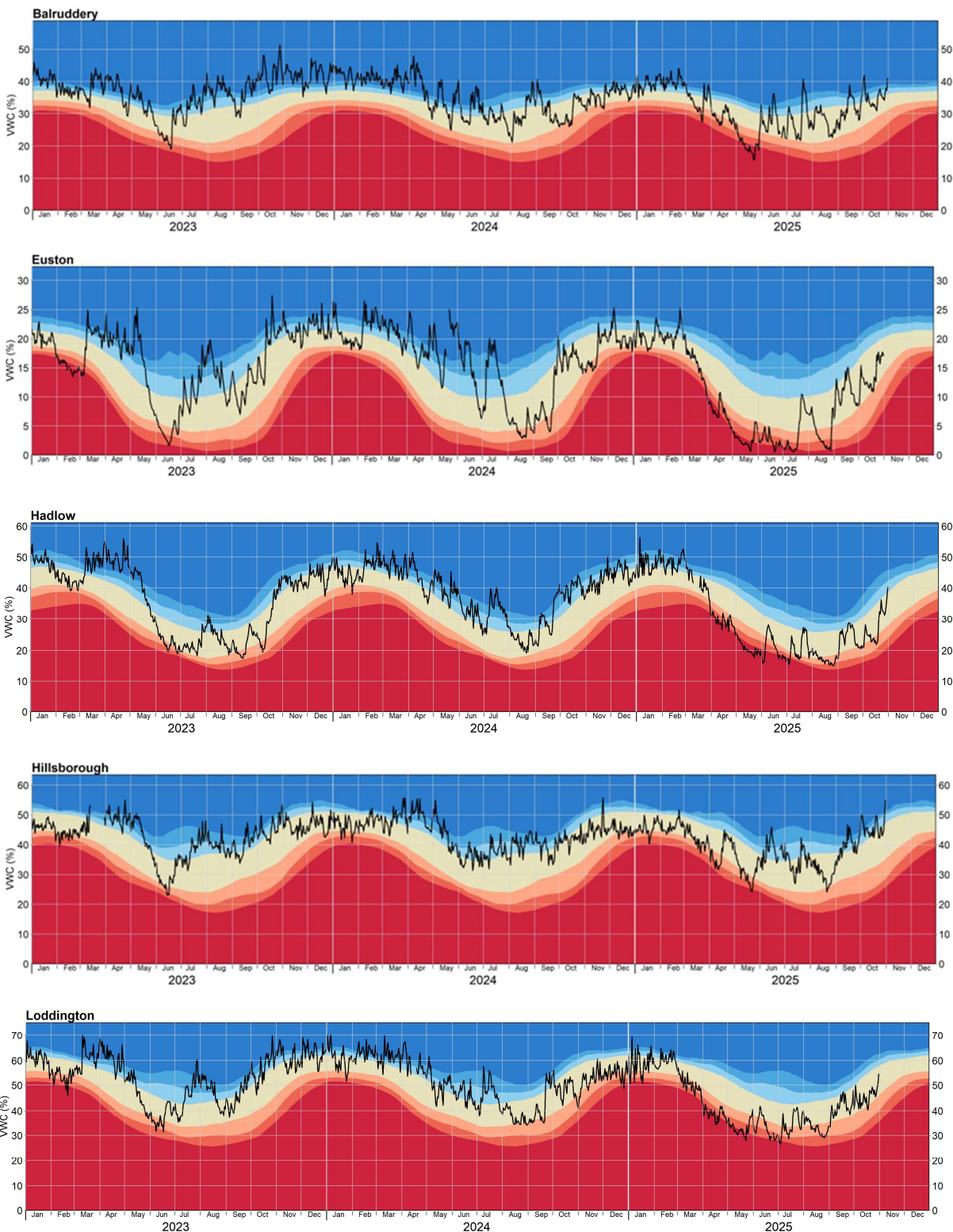
October began with Storm Amy (the first named storm of the season) bringing widespread rainfall and strong winds, particularly across Scotland and Northern Ireland. A calmer period followed, before unsettled weather returned later in the month, bringing heavy showers to the south and west. Provisional data indicate UK rainfall was close to average overall, though there were some regional differences. Northern Ireland was significantly wetter than usual (~136% of average), while parts of central and south-west England were drier. Temperatures were slightly above average at the start of the month before cooling as October progressed.

COSMOS-UK sites reveal a general north-west to south-east divide in soil moisture conditions. Sites in Northern Ireland and Scotland (e.g. Hillsborough and Balruddery) are above field capacity, reflecting the wetter conditions in these regions. In contrast, several sites in Wales, the Midlands, and southern England (e.g. Loddington, The Lizard and Euston) are closer to, or slightly below, field capacity - though most have transitioned from dry summer conditions to near-normal levels. Overall, the network shows a broad shift towards typical autumn wetness, with only a few sites below normal conditions after the summer deficit.

Overall, October's rainfall has helped replenish soil moisture across much of the UK. Many western and northern sites are at or above normal conditions, while several southern and eastern sites continue to recover from the summer deficit. Further rainfall will help the drier sites in reaching typical winter wetness levels.

Network news

Site visits to Redhill and Morley are planned to collect soil samples to establish soil moisture levels prior to winter rainfall.

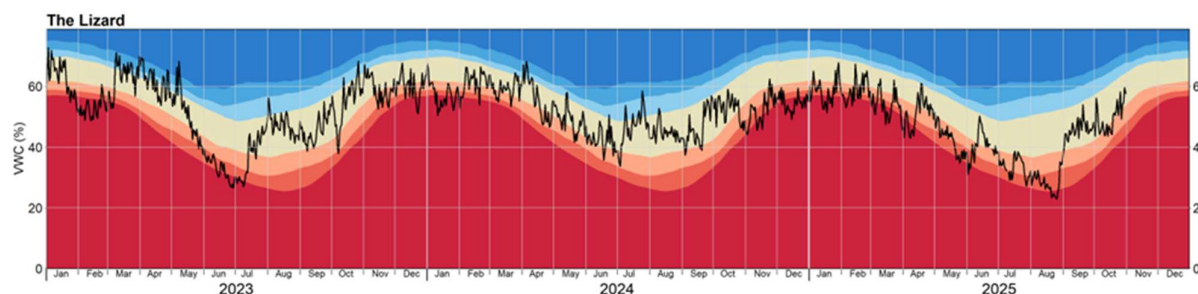
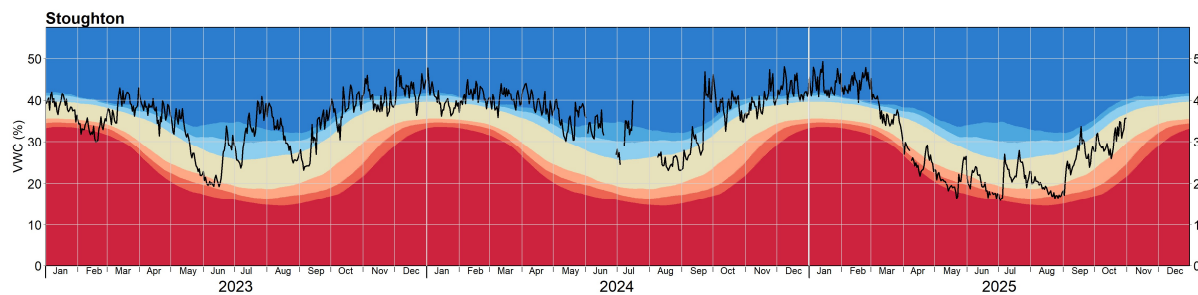
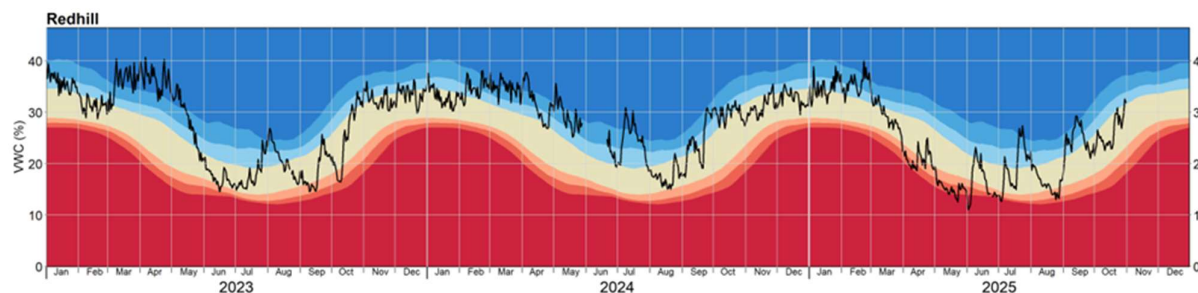
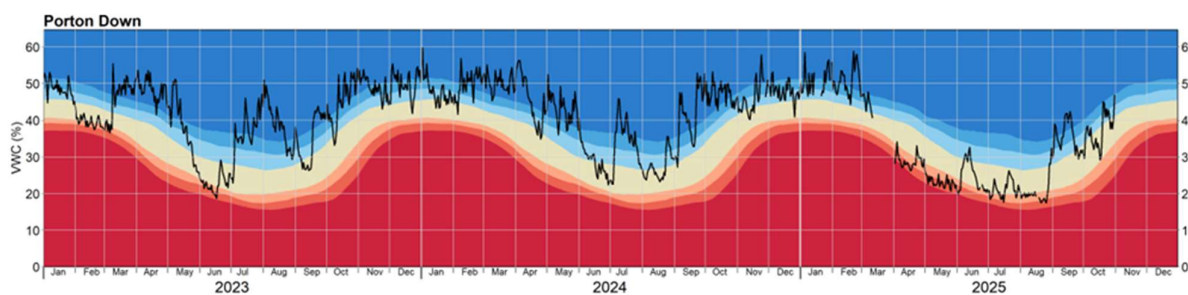
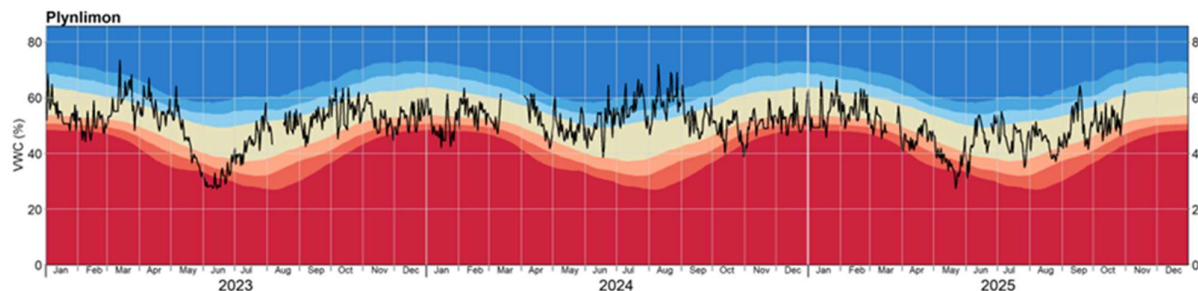




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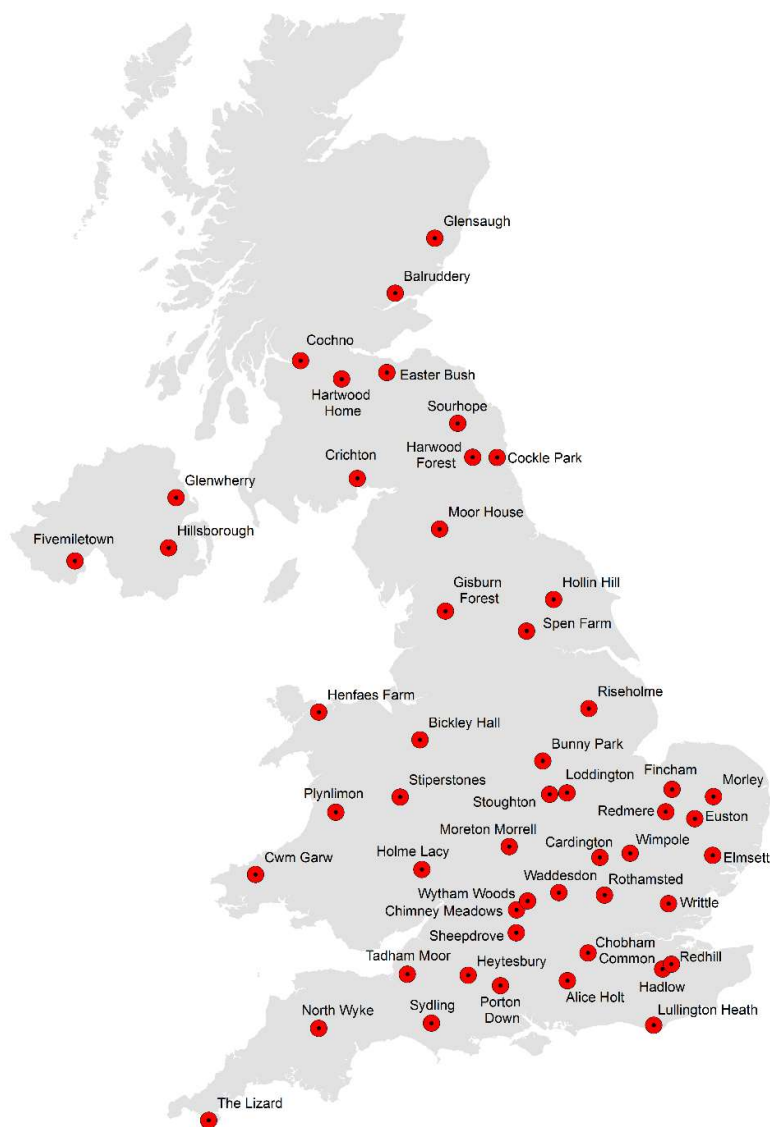
soil moisture

Issued on 07 November 2025





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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.



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.

About COSMOS-UK: COSMOS-UK is supported/partially supported by NERC, through the UKCEH National Capability for UK Challenges Programme NE/Y006208/1.

