

The Clay Research Group

RESEARCH AREAS

Climate Change ♦ Data Analysis ♦ Electrical Resistivity Tomography
Time Domain Reflectometry ♦ BioSciences ♦ Ground Movement
Soil Testing Techniques ♦ Telemetry ♦ Numerical Modelling
Ground Remediation Techniques ♦ Risk Analysis
Mapping ♦ Software Analysis Tools
Artificial Intelligence



August 2026
Issue 255

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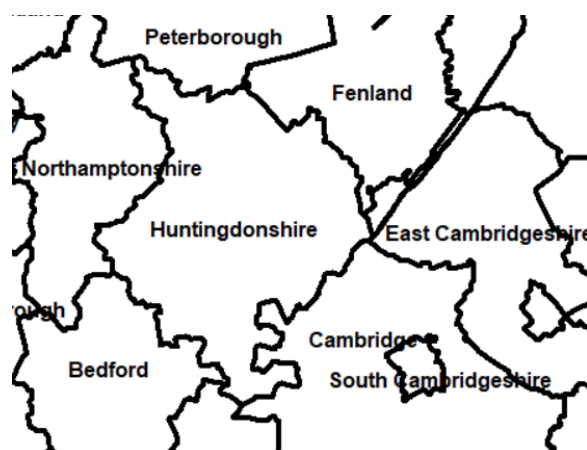
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Subsidence Risk Analysis by District
Huntingdonshire

District and Sector Risk

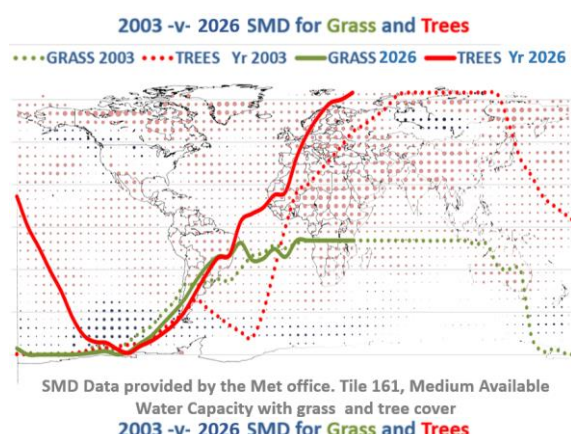
Huntingdonshire is situated in Cambridgeshire. It has an area of 912.5km² and a population of around 181,000.

It is the subject of the 'Risk by District' series in this month's edition. Its geology comprises drift deposits of Peat and Till overlying a solid geology of Oxford and Kellaways beds – see Page 7.



The risk maps are built from a data sample covering four claim years, including one surge and three 'normal' years.

SMD Graph



SMD graph for Met Office tile 161 plotting the correlation between the SMD for a surge year (2003) and the current year in soils with medium water capacity.

Contributions Welcome

We welcome articles and comments from readers. If you have a contribution, please Email us at: clayresearchgroup@gmail.com

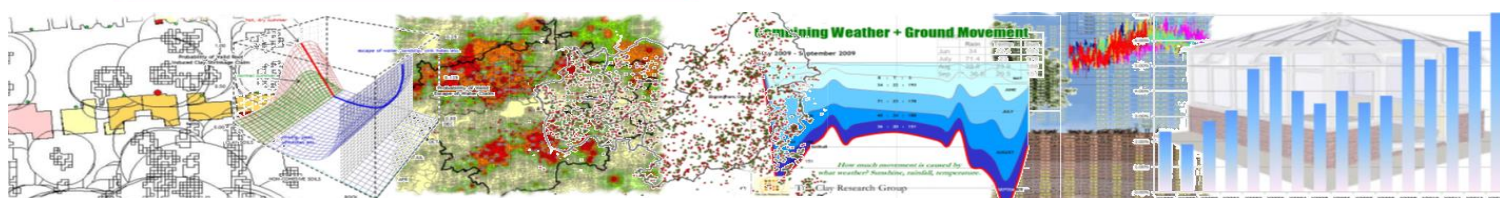
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www.theclayresearchgroup.org

clayresearchgroup@gmail.com

SMD and Claim Cost

The graph, left, suggests that we may see more claims this year than in 2003, a surge year. The moisture deficit for grass reached the maximum in both years. For trees, the 2026 deficit commenced much earlier and exceeded those of 2003 by quite a margin. The ABI report average claim cost of £20k in the second quarter of 2026 - an increase of £2k compared with 2025 figures. It will be interesting to see if SMD values do help predict claim numbers and if not, is it simply the case the number of trees posing a risk has reduced?



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What does the summer hold?

ChatGPT



Question to ChatGPT

What are the chances of the current climate delivering a surge in domestic subsidence claims?

Response:

The short answer is: **the probability is relatively high**, particularly if the UK experiences another prolonged period of hot, dry weather through late summer. The conditions that drive domestic subsidence claims are already in place, and several industry indicators are pointing in the same direction.

The main reasons are:

- **Soil moisture deficits are elevated.** Consecutive warm, dry seasons leave shrink-swell clay soils increasingly vulnerable. If rainfall remains below normal, the ground beneath foundations can continue to contract.
- **2025 established a very high baseline.** Following the UK's warmest spring and hottest summer on record, UK insurers paid around **£307 million** in domestic subsidence claims during 2025—the highest annual total recorded.
- **Ground conditions carry over between years.** Unlike flood risk, subsidence isn't reset by the calendar. Clay soils can remain moisture-deficient, meaning a second dry summer can produce a disproportionately large increase in movement. This is why some claims specialists have discussed the possibility of a "double surge."

From an insurance perspective, I'd roughly frame the outlook as:

Climate Scenario

Wet remainder of summer

Mixed weather with intermittent rain

Continued hot, dry conditions through August/September

Extended drought with multiple heatwaves

Likelihood of elevated claims

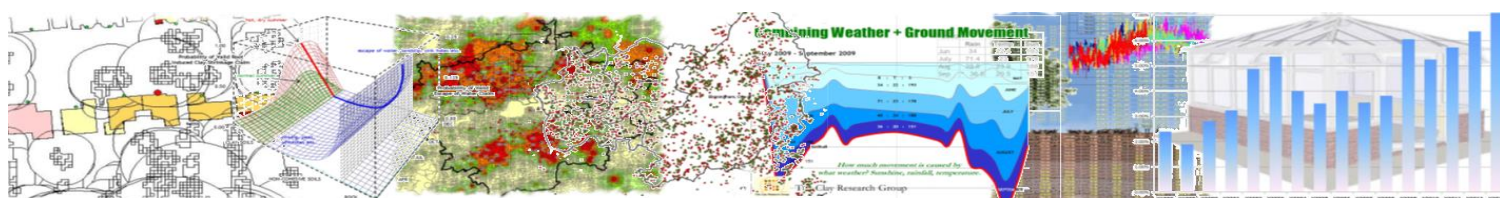
Low to moderate

Moderate

High

Very high, potentially approaching or exceeding recent record years

... continued



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There are also structural reasons why claims may continue to rise even if weather isn't quite as extreme:

- The British Geological Survey has identified millions of UK homes on shrink-swell clay that become increasingly susceptible under a warming climate, particularly across London, the South East and parts of eastern England.
- Average subsidence claim costs have also been increasing, with ABI data showing higher average payouts in 2026 than the previous year, reflecting rising repair costs as well as claim severity.

For insurers

If you're asking from a claims or underwriting perspective, the leading indicators I'd monitor are:

- Soil Moisture Deficit (SMD)
- Consecutive dry weeks rather than rainfall totals alone
- Maximum daily temperatures and heatwave duration
- Geographic concentration on shrink-swell clay (London, Kent, Essex, Hertfordshire, Buckinghamshire, parts of the Midlands)
- Early notifications involving cracking, sticking doors/windows and tree-related movement

These indicators typically begin deteriorating **weeks before** the peak in reported claims, as policyholders often don't notice damage until late summer or autumn.

Overall, based on the current climatic conditions and the available industry data, I'd assess the chance of a **meaningful surge in UK domestic subsidence claims as above average**, with the magnitude depending largely on whether the remainder of the summer stays unusually hot and dry. Another record year isn't inevitable, but it's a credible scenario if soil moisture continues to decline.



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Largest ever El Niño?

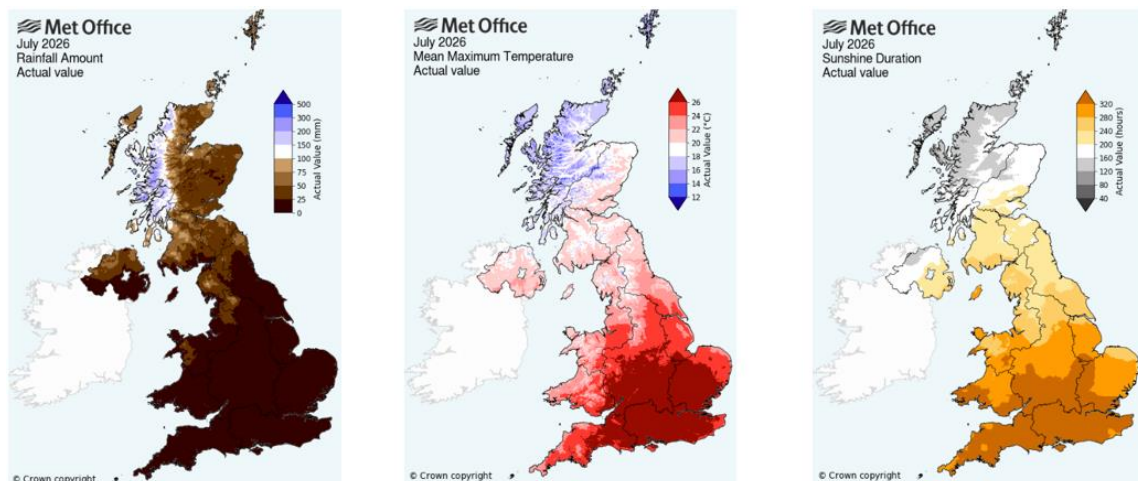
An article in the journal Nature lists predictions of an increase in the influence of El Niño with forecasters predicting that, when combined with effects of global warming, it could push global temperatures in 2027 to new heights, possibly raising global average temperatures as high as 1.7 °C above the pre-industrial average

Climate scientist Zeke Hausfather suggests the El Niño could beat past records by a “truly mind-blowing margin”. Current values are apparently the highest in the last 150 years.

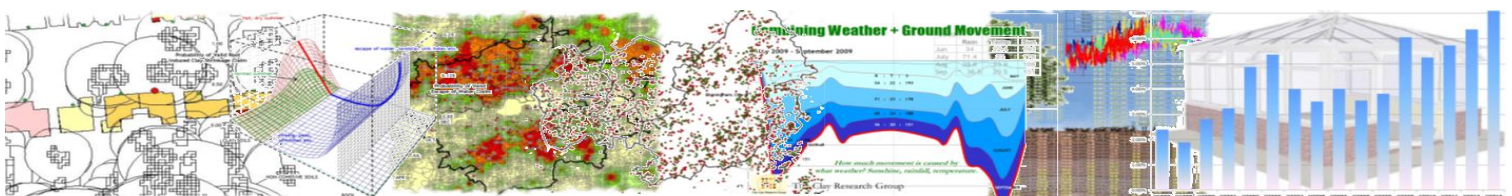
“In its latest advisory, the US National Oceanic and Atmospheric Administration (NOAA) gave a four in five chance of a “very strong” event developing by the end of the year, with near certainty that El Niño conditions will persist until at least April 2027.”

Met Office Anomaly Maps for June 2026

Anomaly maps from the Met Office web site for the month of June 2026 comparing data with the 1991 – 2020 average reproduced below. The absence of rainfall in many parts of the country, high temperatures and sunshine duration suggest high claim numbers and a significant increase in claim costs.



The Met Office report “England and Wales have provisionally, recorded their driest July on record, with Southern England seeing its driest month ever recorded, in a series dating back to 1836.” They predict that the 5th heatwave for the year is on its way.

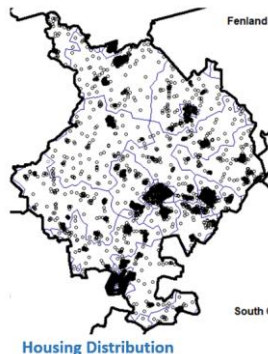
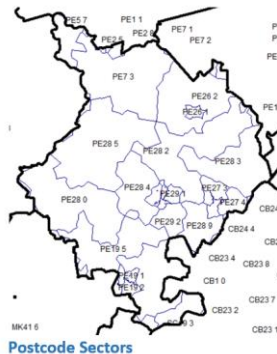


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Subsidence Risk Analysis – Huntingdonshire

Huntingdonshire has an area of 912.5km² and a population of around 181,000.

HUNTINGDONSHIRE



Sector and housing distribution across the district (left, using full postcode as a proxy) helps to clarify the significance of the risk maps on the following pages. Are there simply more claims in a sector because there are more houses?

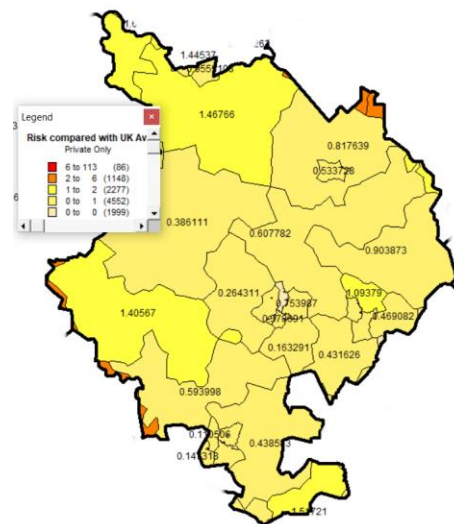
Using a frequency calculation (number of claims divided by private housing population) the relative risk across the borough at postcode sector level is revealed, rather than a 'claim count' value.

Distribution of postcode sectors and housing stock using full postcode as a proxy. Each sector covers around 3,000 houses on average across the UK and full postcodes include around 15 – 20 houses on average, although there are large variations.

In terms of risk, Huntingdonshire is rated 290th out of 413 districts in the UK from the sample analysed and is around 0.619x the risk of the UK average, or 0.16 on a normalised 0 - 1 scale.

From the sample we hold, sectors are rated for the risk of domestic subsidence compared with the UK average – see map, right. This map plots the average risk including the

Subsidence Risk Compared to UK Average



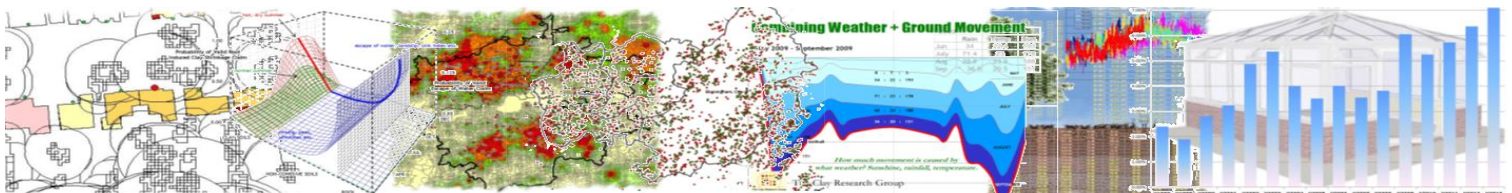
Sector risk compared to UK average from the sample analysed.

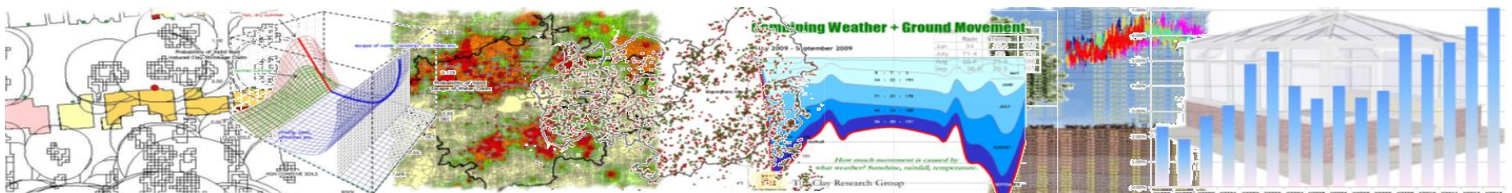


Risk increases with age of property and the model can be further refined if this information is provided by the homeowner at the time of taking out the policy.

Detached

Private Ownership





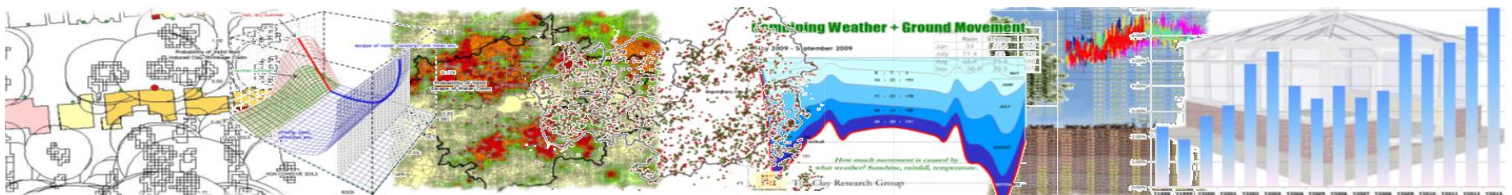
The visualization is a multi-panel figure titled "Coupling Weather + Ground Movement". It includes several data representations:

- Top Left:** A schematic diagram of a building foundation and soil layers, with labels for "Foundation", "Soil", and "Water".
- Top Center:** A map of a city area with a color-coded overlay representing ground movement or weather data.
- Top Right:** A cross-sectional diagram showing the vertical profile of the ground and building foundation, with labels for "Foundation", "Soil", and "Water".
- Bottom Left:** A map of a city area with a color-coded overlay, similar to the top center map.
- Bottom Center:** A cross-sectional diagram showing the vertical profile of the ground and building foundation, with labels for "Foundation", "Soil", and "Water".
- Bottom Right:** A bar chart showing the distribution of ground movement or weather data across different categories.

 The title "Coupling Weather + Ground Movement" is prominently displayed in the center. The overall theme is the relationship between weather and ground movement, as indicated by the title and the various data layers.

HUNTINGDONSHIRE - Subsidence Risk Relative to UK



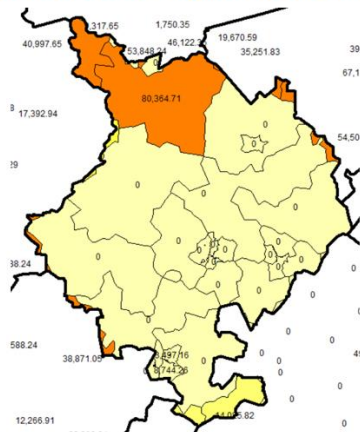


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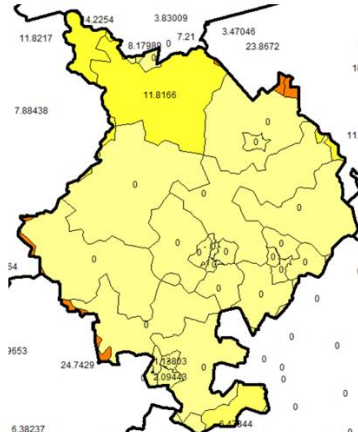
Aggregate Subsidence Claim Spend by Postcode Sector and Household in Normal & Surge Years

The maps below show the aggregated claim cost from the sample per postcode sector for both normal (top) and surge (bottom) years. The figures will vary by the insurer's exposure, claim sample and distribution of course.

NORMAL YEAR SPEND – HUNTINGDONSHIRE



Spend by Sector

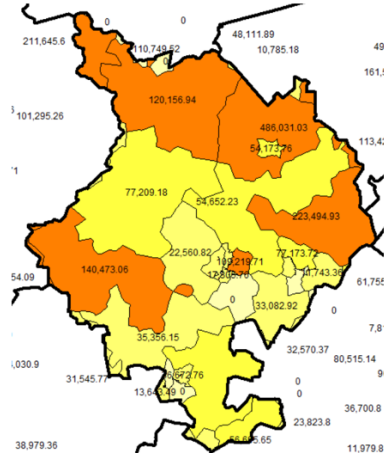


Spend Averaged Over Private Housing Population

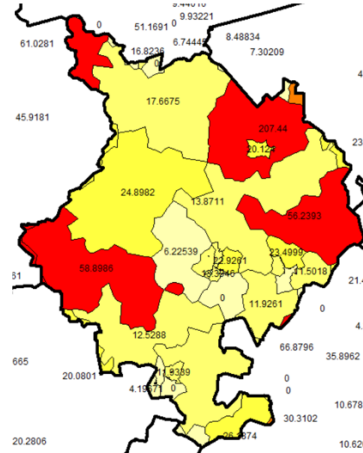
The images to the left in both examples (above and below) represent gross sector spend and those to the right, sector spend averaged across private housing population to derive a notional premium per house for the subsidence peril.

In this case, the absence of any distinct difference between surge and normal years reflects the geology.

SPEND in SURGE – HUNTINGDONSHIRE



Spend by Sector



Spend Averaged over Private Housing Population

