CAST BRIEFING 32 - November 2024

Navigating a new normal: adapting to rising temperatures in the UK

Key messages:

- As UK temperatures rise, demand for cooling is likely to increase. We carried out research exploring how people's lived experiences of extreme heat can impact demand for cooling. This research explores the **behaviours and experiences of UK residents** during the summer of 2022.

- We found **complex, interrelated and contrasting narratives** around heat in the UK. While hot weather was seen as **positive and long-awaited**, people had **negative experiences** of trying to keep cool. People took 'common sense' actions to deal with high temperatures but experiencing these for a sustained period was **challenging and novel**.

- Impacts were shaped by **social and structural contexts and experienced unevenly**.

- Air-conditioned futures are becoming increasingly normalised, driven by narratives of **techno-optimism** and **uncertainty of sustainable cooling pathways.**

- We recommend that UK policy prioritises **passive cooling solutions** (e.g. building design) rather than active ones (e.g. air conditioning) and works to **shift people's responses to heat from reactive to preparatory.** Interventions are needed at **multiple scales** and should account for **different contexts and people's varied abilities to manage extreme heat.**

Centre for **Climate Change** and **Social Transformations**

CAST is a global hub for understanding the systemic and society-wide transformations that are required to address climate change. Based at the University of Bath, our additional core partners are the charity Climate Outreach, the University of Manchester, University of East Anglia and Cardiff University.

Introduction

This briefing is for policymakers, local authorities and governments across the UK.

In the summer of 2022, UK temperatures breached 40°C for the first time. More lengthy, frequent and intense heatwaves are predicted in the future due to climate change. As a result, demand for cooling is likely to increase, especially in temperate climates such as the UK where the focus has previously been on retaining heat in buildings.

Meeting this demand with active cooling solutions will lead to increased energy consumption and greenhouse gas emissions, further exacerbating climate change. Heat resilience strategies must therefore prioritise passive cooling solutions.

What are passive and active cooling solutions?

Passive cooling involves changing neighbourhoods, buildings and behaviour:

- Green and blue infrastructure (using natural features in artificial areas) – e.g. green roofs, rain gardens, planting trees for shading
- Building design and materials – e.g. insulation, ventilation, reflective surfaces
- Changing behaviour to reduce heat exposure – e.g. closing curtains/blinds, staying in cooler areas, night-time purging of heat
- Changing behaviour to cope with heat exposure – e.g. keeping hydrated, carrying out less strenuous activities

Active cooling involves mechanical or electronic devices:

- Electric fans
- Refrigerant-based air conditioning (AC)

Introduction

There is an urgent need to understand how people's lived experiences can impact demand for cooling. Our research gained insights into the everyday activities, behaviours, perceptions and experiences of UK residents during the summer of 2022. We explored the impacts of heat on people's daily lives and how effective their coping strategies were. We also identified implications for future cooling demand.

Research methods

Data was collected in October and November 2023 from 40 participants. They were from South West and South East England, areas which experienced high temperatures in the summer of 2022. There was an even split of participants across gender, age, location and housing tenure.

Participants submitted up to five photos representing how they stay (or imagine staying) comfortable at home in hot weather. These could include photos from the summer of 2022. Participants then took part in interviews, in which they discussed their photos in more detail and their experiences of the 2022 heatwave. Topics included cooling strategies and factors impacting thermal comfort and access to cooling.

Findings

We identified four key themes from the photographs and interview discussions.

Theme 1: Enjoyment and misery

The photos and their accompanying narratives conveyed participants' contrasting conceptualisations of heat and cooling. When asked to recall experiences of the summer of 2022, participants offered vibrant and colourful photos, often featuring people, objects and activities associated with pleasure. They described hot weather as being an inherently positive experience, often long-awaited in the UK.

> *"It was a very enjoyable time [summer 2022] [...] you could be anywhere, you could have been in Greece or whatever, couldn't you? Eating outside, enjoying it all."*
> **– Mark, Bristol**

However, participants' descriptions of trying to stay cool and comfortable inside their homes were mostly negative. Participants experienced inconvenience, discomfort, lethargy and difficulty sleeping, as well as exacerbation of underlying health conditions, social isolation, aggravation of complex care needs and significant productivity reduction.

> *"My next-door neighbour, she's 80. And she found the heat really hard. [...] Generally, we're chatting over the fence and whatever, but everybody just went back into their houses. [...] She was quite a recluse."*
> **– Joanne, Swindon**

Theme 2: Responsibility and consumption

When discussing managing heat, cooling was characterised largely as an individual concern. People described using multiple coping strategies, mainly technology (active cooling) but also passive measures such as creating shading and ventilation in their homes, and nature-based solutions such as creating outdoor 'rooms'.

When describing how they coped with heat, people's positive cultural representations of summer such as enjoyment, fun and relaxation were replaced by practical concerns of managing heat inside their homes. People drew on their personal knowledge, experience and diverse social networks to cope during periods of high temperature. Managing heat was explained in terms of personal thermal comfort, health and wellbeing, caring for others and maintaining daily life. This was often described as taking 'common sense' actions.

> *"I've got a nice leather reclining chair, so I slept downstairs in the lounge because it was cooler downstairs than it was upstairs."*
> **– Stuart, Bath**

Theme 3: Precarity and inadequacy

Photos from participants foregrounded the inadequacy of cooling solutions. For example, images depicted broken cooling equipment, out of stock products, and beds or sofas which participants described collapsing into when no relief from the heat could be achieved. People found it difficult to maintain comfort in their homes, highlighting that experiencing extreme heat for a sustained period of time was particularly challenging and novel.

> *"It brings it all back [describing a photograph of closed curtains]. I remember just how unbearable it was, it was horrible. And just that desperate feeling of 'what can we do to cool down?', 'how can we get away from this?'."*
> **– Julia, Bath**

Social and structural contexts shaped experiences of heat and strategies for heat management. Participants spoke about the impact of housing quality, tenure, size and access to outdoor space. They also discussed economic constraints, such as reduced access to resources and the (in)ability to alter work hours.

> "Three of my boys share a bedroom, so there's three body heats in one bedroom. So, we had two fans running in their room, just to try and keep it cool."
> **– Abbie, Reading**

Theme 4: Normalising air-conditioned futures

When discussing cooling solutions, people described air conditioning (AC) as the most effective and familiar solution, with many pointing out that AC is becoming increasingly available and affordable. Indeed, narratives of technology as a panacea to changing climates were embedded in discussions of future cooling demand. People spoke of warmer places where AC enables 'normal life' to continue and anticipated a similar cultural shift in the UK as the climate warms.

> *"I think in the years to come it'll be good to get like air conditioning, right? They have that in warmer countries [...] if the house is air-conditioned in England, it's quite a rarity, but I think in 20 years' time it may be normal."*
> **– Carla, Bristol**

Installing active cooling into new and existing housing was considered inevitable. Such narratives normalise expectations and the social acceptability of air-conditioned futures. In contrast, understandings of preparatory action and passive cooling solutions were limited.

> *"If we're going to be facing these types of temperatures going forward, or you know, may get even worse, then AC's just going to be one of those necessary things."*
> **– John, Reading**

Conclusions & policy recommendations

Our findings reveal the **complexity of the interrelated and contrasting narratives around heat** in the UK and temperate climates. Our research highlights how the positive culture associated with hot weather contrasts with people's diverse and negative lived experiences of heat. **Prolonged periods of heat are framed as a novel experience**.

The link between perceptions and behaviours is complex. However, there is capacity to **shift people's heat-related actions from reactive to preparatory,** to avoid air-conditioned futures becoming the default. It is also key to **understand people's perceptions** of heat risk and whether they truly believe increased heat will be an issue, as participants' passive cooling measures were limited and their preparatory measures short-term.

Understanding **social and structural contexts** in both managing heat and identifying vulnerability is particularly important. The impacts of heat are experienced unevenly, often as a result of social equity factors including housing quality, type and tenure; household composition; level of urbanisation; and access to outdoor space.

There is evidence of increased **normalisation of air-conditioned futures**, driven by narratives of **techno-optimism** and **a lack of understanding of sustainable cooling solutions**.

We outline the following policy recommendations:

- People need **support to shift from *responding* to heat in the moment to *preparing* for heat in advance**. Information provision is important but must be backed up with **interventions** to make preparatory action easier and more normal (e.g. installing shading or insulation).
- While the cooling market is still developing, government policies should **support passive measures,** to prevent active measures becoming the social norm.
- **Policies should consider how different contexts** (e.g. health, social isolation, housing, work requirements) **affect people's experiences of and ability to manage extreme heat.**
- **Interventions should be implemented at different scales**, from individual to wider neighbourhoods. They should **draw on local knowledge and be co-designed** by residents.

Further reading

- Alrasheed, M. and Mourshed, M. (2023). Domestic overheating risks and mitigation strategies: The state-of-the-art and directions for future research. *Indoor and Built Environment* 32, 1057–1077. doi: 10.1177/1420326X231153856

- Brimicombe, C. *et al.* (2021) 'Heatwaves: An invisible risk in UK policy and Research', *Environmental Science & Policy*, 116, pp. 1–7. doi:10.1016/j.envsci.2020.10.021.

- Howarth, C. *et al.* (2024) *Turning up the heat: Learning from the summer 2022 heatwaves in England to inform UK policy on extreme heat*. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science.

- Khosla, R., Renaldi, R., Mazzone, A., McElroy, C. and Palafox-Alcantar, G. (2022). Sustainable cooling in a warming world: technologies, cultures, and circularity. *Annual Review of Environment and Resources*, 47(1), pp.449-478. doi: 10.1146/annurev-environ-120420-085027

- Khosravi, F., Lowes, R. and Ugalde-Loo, C.E. (2023). Cooling is hotting up in the UK. *Energy Policy*, 174, p.113456. doi: 10.1016/j.enpol.2023.113456

- Lizana, J., Miranda, N.D., Gross, L., Mazzone, A., Cohen, F., Palafox-Alcantar, G., Fahr, P., Jani, A., Renaldi, R., McCulloch, M., Khosla, R. (2022). Overcoming the incumbency and barriers to sustainable cooling. *Buildings and Cities* 3, 1075–1097. doi: 10.5334/bc.255

- McLoughlin, N., Howarth, C. & Shreedhar, G. (2023). Changing behavioral responses to heat risk in a warming world: How can communication approaches be improved? *WIREs Climate Change*, 14(e819). doi:10.1002/wcc.819.

- O'Neill, S. *et al.* (2023) 'Visual portrayals of fun in the sun in European news outlets misrepresent heatwave risks', *The Geographical Journal*, 189(1), pp. 90–103. Available at: https://doi.org/10.1111/geoj.12487.

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Image credit:
Selection of images from research project participants about responses to heat.

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We research and develop the social transformations needed to produce a low-carbon and sustainable society; at the core of our work is a fundamental question of enormous social significance: How can we as a society live differently – and better – in ways that meet the urgent need for rapid and far-reaching emission reductions?

Based at the University of Bath, our additional core partners are the charity Climate Outreach, the University of Manchester, University of East Anglia and Cardiff University.

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