



ECEHH Project Insight

HEROIC: Health & economic impacts of reducing overheating in cities

A bite size project update, Sep 2023

How much do nature-based solutions reduce urban heat? How much can we reduce impacts on health? What are the costs?



Who is this relevant to?

Public health professionals, scientists and researchers, policy makers and city planners.

Background

In towns and cities, temperatures are often higher than in nearby natural areas due to urban development, known as the urban heat island (UHI) effect. This effect is stronger in larger, more densely built cities, like major UK cities, which can become 5-10°C hotter than rural surroundings during extended warm periods. In the future, we can expect higher average temperatures, more frequent and prolonged heatwaves, which can have adverse effects on human health and healthcare systems.

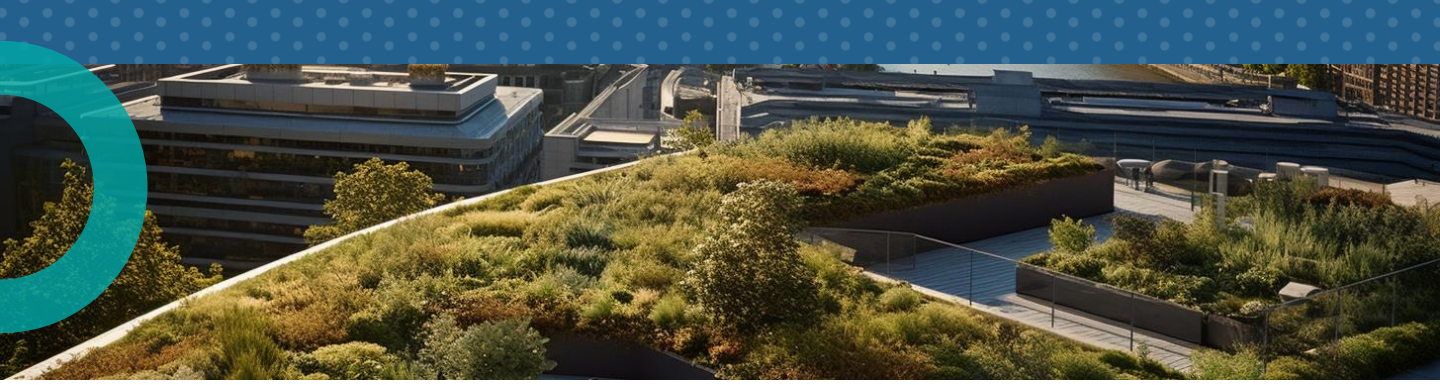
However, urban greening initiatives, such as planting trees, creating green spaces, and introducing green roofs on built structures, may reduce the UHI effect by increasing evapotranspiration and providing shade. Increasing vegetation in urban areas may be one potential way to reduce the risks to human health.

Objectives

1. Better understand the scale of the Urban Heat Island (UHI) effect in cities around the world
2. Identify populations who are most impacted by the UHI and health inequalities resulting from urban heat
3. Identify measures that can reduce the risks of the UHI and calculate the costs and benefits

Who's involved?

The project is led by University College London and involves ECEHH, the London School of Hygiene and Tropical Medicine and Tampere University. It is funded by The Wellcome Trust.



Some of the work across the project

- Responses to heat are influenced by both temperature and humidity. A range of metrics that combine the two were compared.
- Data from citizen weather stations improves climate model accuracy. The distribution and potential inequalities were explored.
- A review of the impacts of future population changes on heat vulnerability has been carried out.
- Machine learning was employed to estimate the current coverage of green roofs in London.



Work at ECEHH

Valuing the benefits

Using Nature-Based Solutions to address climate challenges often brings additional advantages. For instance, natural spaces such as parks have a cooling effect, but are also venues for physical activities. In HEROIC we use a variety of secondary data to quantify and value the positive impacts on health resulting from physical activity in natural spaces in England.

Temperature, well-being, and green/blue space visits

We use the BlueHealth International Survey to explore the relationship between temperature and well-being and whether it changes when people visit green or blue spaces.

Future plans

We are currently working on an ArcGIS StoryMap that delves into the challenges of mitigating urban heat. This interactive platform will feature HEROIC researchers through video interviews, offering valuable insights into their work.



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