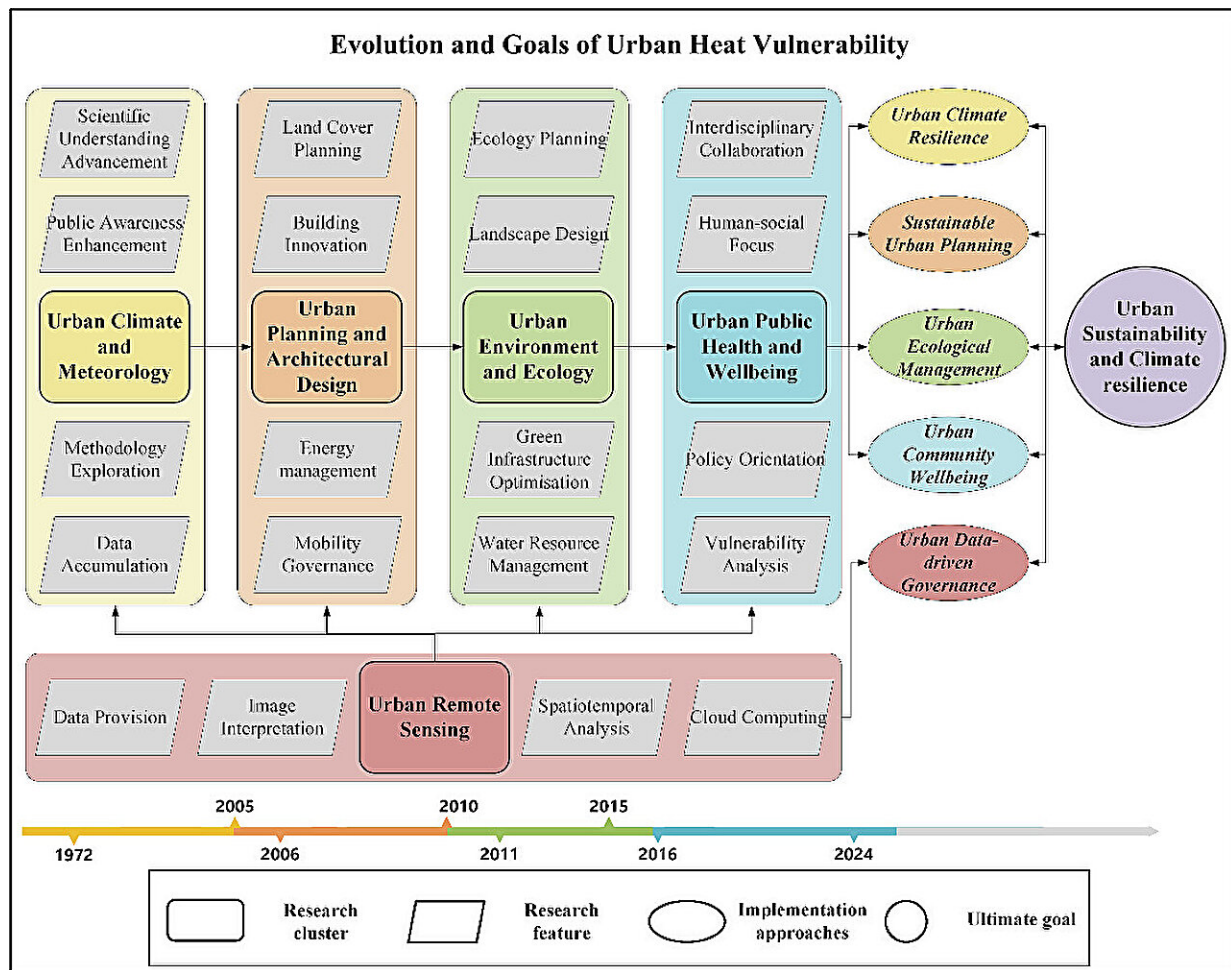


Study reveals key strategies to combat urban heat vulnerability

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Graphical abstract. Credit: *Urban Climate* (2024). DOI: 10.1016/j.uclim.2024.102035

A QUT study analyzing five decades of research and thousands of studies has identified five critical areas needed to tackle urban heat vulnerability (UHV), a growing issue impacting millions in increasingly heat-prone cities.

Recent research has broadened from focusing solely on climate modeling and weather monitoring to include public health and strategies for protecting vulnerable populations.

Other key areas for mitigating UHV include [innovative design](#) and planning practices, the cooling effects of green and blue infrastructure and ecosystems, and advancements in [remote sensing](#).

The study, led by Fei Li of the QUT City 4.0 Lab in the School of Architecture and Built Environment, is believed to be the first to analyze more than 2000 scholarly articles in UHV research published from the 1970s to the 2020s. The paper, "Understanding urban heat vulnerability: Scientometric analysis of five decades of research," is [published](#) in the journal *Urban Climate*.

"As [urban populations](#) grow and climate change accelerates, extreme heat events are becoming more frequent, posing significant risks to public health," Mr. Li said.

"This increased exposure highlights the urgent need for targeted research and innovative solutions."

UHV has received increasing attention over the past two decades due to the exacerbation of global warming and the Urban Heat Island (UHI) effect.

This refers to the phenomenon where urban temperatures are noticeably higher than those in the surrounding suburban region.

Primarily attributed to increasingly dense urban structures and dwindling natural landscapes, elevated temperatures from UHIs can affect a community's environment and quality of life.

This leads to increased [energy consumption](#), elevated emissions of air pollutants and greenhouse gases, compromised human health, and impaired water quality.

"Leveraging [technological advancements](#) will be key to improving real-time monitoring and decision-making processes," Mr. Li said.

"Remote sensing can offer valuable data to help urban planners and policymakers develop effective strategies for enhancing climate resilience."

The findings underscore the importance of interdisciplinary collaboration in advancing UHV research, corresponding author Professor Tan Yigitcanlar, also from the School of Architecture and Built Environment, said.

"Integrating urban planning, environmental science, [public health](#) and advanced technologies is essential for developing comprehensive strategies to mitigate urban heat impacts," he said.

More information: Fei Li et al, Understanding urban heat vulnerability: Scientometric analysis of five decades of research, *Urban Climate* (2024). [DOI: 10.1016/j.uclim.2024.102035](https://doi.org/10.1016/j.uclim.2024.102035)

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