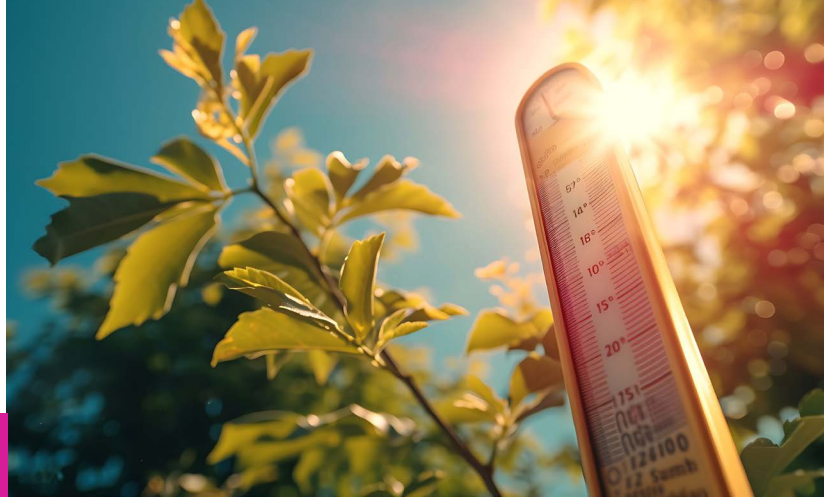
Hixon Center for
Urban Sustainability

FACT SHEET

Residential Segregation and Summertime Heat

Healthy City | **Climate Ready City**



Climate Issue: Extreme Summertime Heat

- Climate change has increased summertime temperatures across the United States (US)
- Emerging research has documented temperature disparities across different racial groups nationwide
- Historical and systemic racism in urban policymaking has promoted long-lasting residential segregation
- This is associated with uneven distribution of government resources, including cooling amenities like parks
- Understanding how current residential segregation affects extreme heat exposure can inform policy interventions.

New Methods for Mapping Heat Vulnerability

Scientists have developed a new model for mapping heat vulnerability. This approach:

- Uses fine-resolution data to examine heat exposure across communities with different racial makeups
- Relies on air temperature instead of land surface temperature (LST) for a more accurate measure of heat exposure
- Incorporates proxies for energy burden to understand how much residents pay to cool their houses.

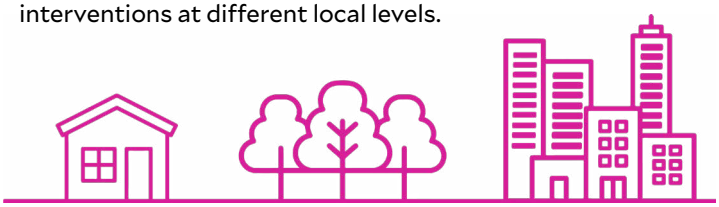
This method can better reveal unequal exposure to high temperatures. It has been used to track summertime conditions in 13 states across the northeastern US.

Unequal Heat & Energy Burdens

- The science shows that residential segregation contributes to summertime temperature disparities
- Across the northeastern US, Black and Latino communities experience summers that are hotter than the average temperatures for their county
- Higher heat exposure can increase dangerous health impacts in these neighborhoods
- It also implies marginalized communites pay higher costs to cool their houses, exacerbating potential energy insecurity.

Informed Interventions for Equity

- Mapping heat inequality can inform policy and design interventions at different local levels.



Individual	Neighborhood	City
Direct financial assistance for energy costs and housing improvements	Investment in emergency facilities and cooling amenities such as parks	Equitable urban planning to reduce residential segregation

IN A NUTSHELL

- The unequal impacts of summertime heat are associated with residential segregation and historical discrimination
- This leads to disproportionate exposure to high temperatures and inadequate access to cooling resources
- As a result, marginalized communities lack — often Black and Latino — experience higher health risks and energy costs
- Developing policy solutions that provide individual and neighborhood-level assistance is essential to mitigate the impacts of extreme heat.

WHAT CAN YOUR CITY DO?

EXPAND energy assistance programs to offer funding to low-income residents on hot summer days

PROMOTE urban greening to increase cooling amenities in marginalized communities

ENSURE community health outreach programs and emergency facilities are well-prepared during heat waves

ADDRESS historical discrimination through equitable urban planning and design.

To find out more information on this fact sheet, contact **Dr Daniel Carrión** at **daniel.carrion@yale.edu**. Case study based off Carrión, D., Rush, J., Colicino, E., & Just, A. C. (2024). Residential segregation and summertime air temperature across 13 northeastern U.S. states: Potential implications for energy burden. Environmental Research Letters, 19(8). https://doi.org/10.1088/1748-9326/ad5b77