

More than 40M Americans living in cities experience 'heat islands': study



A sign displays an unofficial temperature as jets taxi at Sky Harbor International Airport at dusk, July 12, 2023, in Phoenix. A new study Tuesday, July 25, finds these intense and deadly hot spells gripping much of the globe in the American Southwest and Southern Europe could not have occurred without climate change. (AP Photo/Matt York, File)

More than 40 million Americans in cities live with the impact of the “heat island” effect, in which city centers absorb more heat than surrounding areas, [according to an analysis](#) published Wednesday by the organization Climate Central.

Cities are particularly susceptible to the heat island effect due to the replacement of natural vegetation with infrastructure like pavement, which absorbs more heat. This can mean the impact of climate change is more keenly felt by the 80 percent of Americans who live in cities, particularly in

the recent waves of extreme heat.

Climate Central analyzed 44 cities with a collective population of 74 million. Their researchers found that of this population, more than half live in a census tract with an urban heat island (UHI) index warmer than 8 degrees, meaning they experience about 8 extra degrees.

Nine of the cities analyzed have at least 1 million residents exposed to UHI of 8 degrees or higher. In eight cities — Dallas, Detroit, Houston, New Orleans, New York, Omaha, Neb., Portland, Ore., and San Antonio — more than two-thirds of the population deal with at least 8 extra degrees.

Of the cities analyzed, New York has the highest UHI per capita, at 9.5 degrees, followed by San Francisco with 8.8 degrees, Chicago and Miami with 8.3 degrees and Seattle with 8.2 degrees.

The cities analyzed varied in how much of the city experiences the most intense heat. For example, cities like Indianapolis, Philadelphia and Las Vegas have distinct urban cores where the UHI is concentrated. Others, like Atlanta, Boston and Denver, have heat intensity spread more evenly across the city.

The analysis based its calculations of UHI on several factors, including cities' population density, the percentage of green space in the cities and albedo, or the proportion of solar energy surfaces reflect.

Surface types such as roads, parking lots and buildings lower an area's albedo, but so can large bodies of water, hence the higher UHI numbers for cities like Miami, New Orleans and Seattle.