

## Inland From Bondi Beach, 'Heat Islands' Make Australia's Summer Deadlier

Just a few miles west of some of the country's most iconic beaches, densely built Sydney suburbs are amplifying the dangers of climate change.

By **Gavin Butler** Photographs and Video by **Matthew Abbott**

Reporting from the western suburbs of Sydney, Australia

Dec. 20, 2023

The construction site was only 15 miles inland from Bondi Beach on Australia's east coast, but it may as well have been a world away. When the first heat wave of the summer hit earlier this month, the broiling conditions left Apenisa Marau's co-worker too delirious to function, with a pounding head and sore, aching eyes. He was moved to a cool corner to rest and hydrate.

The western expanse of Sydney, the country's biggest city, has always been warmer than the coastal suburbs because of geography. Cooling sea breezes don't reach these low-lying plains, which also receive less rainfall than the east.

But in recent decades, the region has become even hotter because of rapid urban development. It is now peppered with so-called heat islands — densely built and populated neighborhoods that trap heat and magnify the effects of a warming planet. Temperatures can be as much as 18 degrees Fahrenheit (10 degrees Celsius) higher than in Eastern Sydney.

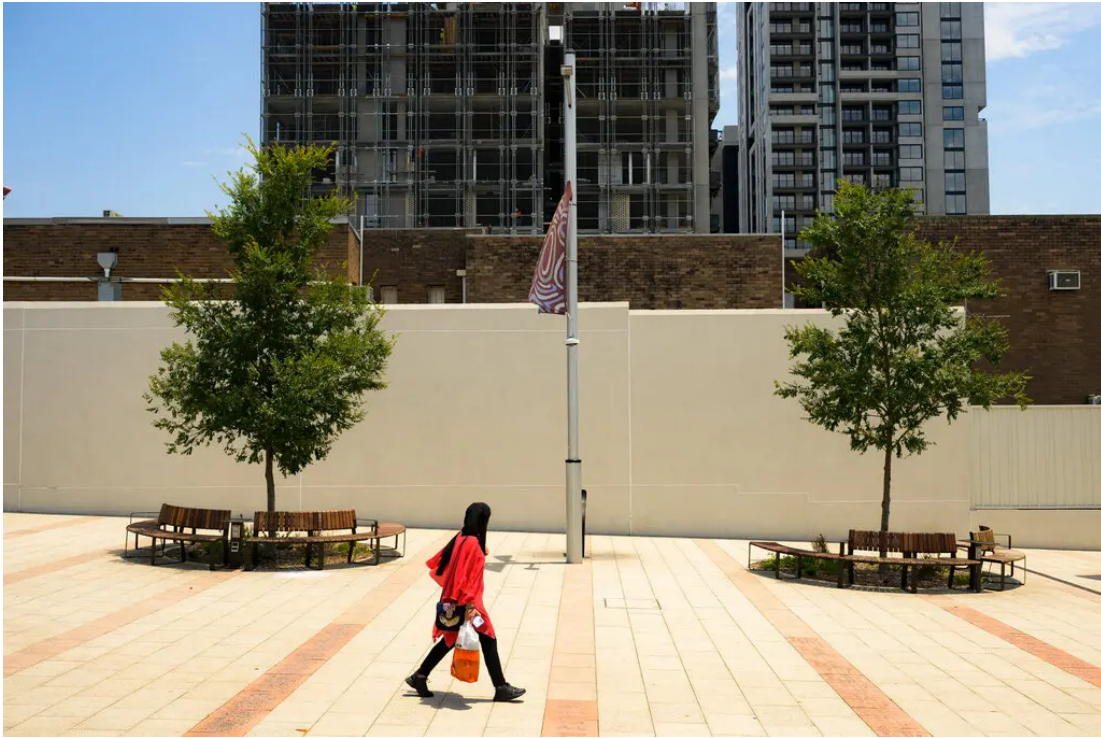


A teenager during basketball practice in Mount Druitt, Western Sydney, on a sweltering day this month. The venue had no air conditioning.

Heat waves cause more deaths globally than all other natural disasters combined. In Australia, the hot and dry El Niño weather pattern has returned after more than half a decade and made the summer an acute danger to the millions of people who live in Western Sydney.

Mr. Marau, 28, moved to Australia from Fiji in early 2022 to escape the cyclones, floods and rising seas on his home island of Vatulele.

"When I came over to Australia, I thought we wouldn't face any of these things. But I didn't know about these heat waves," he said. "It's quite scary, it's inescapable."



Walking past a large housing development in Merrylands, a western suburb of Sydney. The decrease in green spaces and the increase of artificial surfaces are contributing to the creation of “heat islands.”

Western Sydney has one of the fastest-growing urban populations in the nation, mostly fueled by international migration. Cheaper housing is a big draw: Median property prices can be almost three times less than in the city center. As the area’s population has grown to about 2.5 million — nearly one in every 10 Australians now lives in Western Sydney — so has urban development. The number of green spaces is decreasing, while the number of artificial surfaces, like bitumen and concrete, which absorb and radiate heat, is increasing.

Some researchers warn that if the Earth keeps warming at a rapid rate, the number of extreme heat days, those with temperatures higher than 95 degrees Fahrenheit, will increase fivefold to 46 by 2090.



Many residents of Western Sydney set up outdoor beds in an attempt to escape the heat.

Mr. Marau lives in the suburb of Cabramatta and shares a three-bedroom house with eight people to save money on energy bills. Others residents of Western Sydney hang quilts in windows to block sunlight, or spend entire days inside air-conditioned shopping malls, said Aquilina Pinto, a community services worker who has lived in the suburb of Mount Druitt for four decades, and whose family has been affected by extreme temperatures. Her uncle died from heatstroke while washing his car.

This summer has her fearing the worst.

“We’ll have more deaths, definitely,” she says. “We are suffering.”



Leba Komaisauvou and Jone Soko at the cottage in Cabramatta, Western Sydney, that they share with several other people. It has no air conditioning.

Despite calls for governments and developers to adopt more climate-conscious building practices, heat islands are expanding rather than shrinking, said Sebastian Pfautsch, an associate professor in urban planning at Western Sydney University.

“What we’re doing is putting hundreds of thousands of people into the area where we can expect extreme heat stress to increase,” he said. “It’s a very daunting situation.”

A spokesperson for the New South Wales planning and environment department, a state-level authority, said it was aiming to increase the tree cover across Sydney by 2036, with priority given to the hottest parts of the west. The department has also instituted more energy-efficient building standards for new homes.



A lab at the University of Sydney where the effects of heat on the body are studied.

At the University of Sydney, Ollie Jay, who calls heat a “silent killer,” has spent years trying to understand how to mitigate the effects of extreme temperatures. Using a sealed “climate chamber” inside his research lab, he and a team of researchers simulate heat waves to study the physiological effects of heat on the human body — and the point at which they become harmful, or even fatal.

Heat-related mortality in Australia, some experts believe, has been dramatically underreported. Fatalities are typically accompanied by one of three complications — heatstroke, heart attack or kidney failure, ailments that get recorded as the cause on death certificates.

Another recent study, in which Dr. Jay was involved, found that humans’ ability to survive extreme temperatures has probably been vastly overestimated. This is especially worrisome for those in Western Sydney’s heat islands, whose predominantly lower socioeconomic status puts them at greater risk.



Lai Heng Foong, right, an emergency physician in Bankstown in Western Sydney, said it was hard to get governments and communities to take the dangers of extreme heat seriously.

“We are the worst-resourced area in Sydney,” said Lai Heng Foong, an emergency physician at a Bankstown hospital and the chair of New South Wales’ Medical Staff Council. “I don’t think we’re prepared,” she said, adding that local hospitals are already stretched.

Part of the problem, Dr. Lai Heng said, is getting governments and communities to take the dangers of heat seriously. Compared with raging bushfires and surging floods, she said, heat is undramatic, invisible and “insidious,” an “out-of-sight-out-of-mind-type of disaster.”

“The whole thing that stresses me is this is completely preventable,” she said. “We know it’s going to happen, and people just think that we can get away with it. But we can’t.”



Children playing in a housing complex in Marsden Park, a Western Sydney development. Most residents wait until sundown to go outside on hot days.