



# PORTLAND'S HOT SPOTS

PHOTO BY JOE GLODE

Ways to reduce temperatures in urban heat islands include depaving portions of parking lots, like this one near 82nd Avenue, or painting them white so the sun's rays are deflected.

*With few shade trees and a lot of pavement, urban heat islands are hotter than the average neighborhood, posing health risks for residents*

**BY AMANDA WALDROUPE**  
STAFF WRITER

Portland, unlike the rest of the nation, has had a relatively cool summer this year.

Even so, 2016 has so far been the hottest year on record, according to the National Oceanic and Atmospheric Administration. The past three years rank among the five hottest

years since 1880, when data collection started.

As climate change quickens and its effects increase, Portland is expected to have longer, drier summers, more days that are hotter on average and more

heat waves that last longer.

During heat waves, like the one Portland experienced in late August, nowhere is the effect of hot days more pronounced than in Portland's urban heat islands.

Heat islands are places in a city as small as a city block or as big as an entire neighborhood that are hotter than average recorded temperatures. The increased heat is the result of few trees and other greenery to provide canopy and shade, coupled with large swaths of pavement, parking lots, black rooftops and other materials that absorb and

slowly release heat.

Heat islands are neighborhoodwide broilers. During the recent mid-August heat wave, according to the Weather Underground, the temperature in the Irvington neighborhood, on Northeast Klickitat Street between 22nd and 23rd avenues, was 100 degrees. The temperature in the Lents neighborhood, east of Interstate 205 and between Southeast Holgate and Powell boulevards, was nearly 105.

As climate change continues, the effect of urban heat islands will only become more pronounced – and more harmful to the health of people living in those neighborhoods. The city of Portland, Multnomah County and a variety of nonprofits are beginning to take steps to reduce the effect of urban heat islands, both to improve environmental health and to create equity throughout Portland.

"It is an increasingly big problem for us to confront," said Vivek Shandas, a professor in Portland State University's School of Urban Studies who developed a map charting Portland's urban heat islands. "Heat waves kill more people in the U.S. than all other natural disasters. It is a silent killer. That's the concern. (We need to identify) what can we do to help transition our neighborhoods and our entire city to be climate resilient."

"With climate change, we really have a timeline," said John Wasiutynski, director of Multnomah County's Office of Sustainability.

"As the climate warms and we have these hotter summers and more extreme weather, it's going to (be) hardest on the people who are furthest on the margins. We have to get to this right now."

In 2015, Shandas, a group of researchers and PSU graduate students, began mounting small thermometers onto their cars and bikes. The thermometers were connected to a global positioning system, and as the researchers drove throughout the city, the thermometers recorded the temperature, down to the tenth of a degree, each second.

Shandas mapped the composite data, creating a map identifying the coolest and hottest places in Portland. The hottest parts of the city – Portland's urban heat islands – include areas along the Interstate 5, 84 and 205 corridors, parts of north and northeast Portland, the central eastside industrial area, parts of downtown, and almost all of Portland east of I-205.

Those parts of the city, Shandas and others said, have more asphalt and parking lots, which absorb and trap heat. During heat waves, those materials do not release the heat quickly enough, which means that over a period of days, the area can get – and feel – hotter and hotter.

"That heat will actually get massed, accumulate in those hard surfaces and radiate

**"Urban heat islands completely overlap in many ways with those communities that have the least resources."**

**VIVEK SHANDAS,**  
PSU PROFESSOR WHO  
DEVELOPED A MAP CHARTING  
PORTLAND'S URBAN HEAT ISLANDS