

How Racism Has Shaped the Presence of Urban Tree Covers in Public Spaces

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URBAN DESIGN IS NOT NEUTRAL

The availability of shade, such as trees, isn't equitably distributed. Ideally, every neighborhood should have an abundance of trees and shelter to provide shade in public spaces; however, this is not always the case. The American Forests organization conducted a study of 3,810 municipalities, including 150,000 neighborhoods and 486 cities with at least 50,000 residents across the nation, which proposed that to implement tree equity, cities will need to plant about 31.4 million trees, an approximate 10% increase of the tree coverage of today (Gammon 2021).

Trees are particularly lacking in areas where minorities live, while shade is more prominent in more affluent, white neighborhoods. Neighborhoods with a majority of people of color have 33% less tree coverage than communities that are majority white, and neighborhoods with residents with 90% or more living in poverty have 65% less tree coverage than communities with 10% or less of the population in poverty (Gammon 2021).

REDLINING AND ITS IMPACT ON TREE CANOPIES

In 1935, the federal Home Owners' Loan Corporation marked neighborhoods regarded as "hazardous" with red ink on maps to denote which areas not to invest in and to separate the "hazardous" areas from the so-called "best" areas (UTSA, n.d.). When redlining was outlawed in 1968, the general public believed that its elimination would help individuals and families marginalized by the original practice receive the same opportunities as their white counterparts. Unfortunately, this was not the case and the effects of redlining still exist today (Badger 2017). Previously redlined neighborhoods are likely to be composed of lower-income and minority inhabitants, many of whom suffer from generational effects of the practice and continue to receive severely limited investments, such as fewer resources to clean up and enhance environmental amenities, like urban tree canopies (Hoffman 2020).

HEALTH IMPACTS OF LIMITED SHADE

On average, extreme heat has killed more people in the last ten years than any other weather phenomena (National Weather Service, n.d.). Exposure to moderate-to-extreme heat can jeopardize the body's capacity to regulate its internal temperature, which could lead to heat exhaustion, hyperthermia, heatstroke, the worsening of chronic illnesses, and death (Shindell 2020). Another study estimates that more than 1,300 deaths per year occur in the United States due to extreme heat (US Environmental Protection Agency 2021). With the increase in temperatures due to climate change, studies predict an increase of approximately 50,000 to 110,000 under high- and moderate-heat warnings. Climate change is predicted to bring more intense heat waves, and the lack of shade in certain urban areas has left communities of color even more vulnerable to heat.

Mainly found in metropolitan areas, the intense increase in temperatures from rural areas to central cities is called the "urban heat island effect" (Harlan 2013). A recent study of 108 urban areas in the United States suggests that 94% of the previously redlined areas researched had increased temperatures by 5 degrees in summer, with some cities having a difference of 12 degrees (Hoffman 2020). These neighborhoods are also more likely to have paved surfaces, like asphalt or freeways nearby, which can absorb heat, contributing to the area's rise in temperature.

Green space can alter an area entirely. More vegetation has been suggested to lower temperatures through shading, granting some relief to heat to those nearby (Harlan 2013). However, for years, cities across the nation seldom considered racial equity when developing their climate plans, leading those climate safety goals to be developed and implemented for white, affluent residents (Schrock 2015). Implementing tree canopies can be especially helpful in decreasing health stress correlated with urban heat islands and can reduce electric bills and the risk of death (McDonald 2016).

POLICY IMPLICATIONS

Many cities and states have developed and implemented plans to incorporate more green spaces into low-income neighborhoods. Los Angeles has appointed its first city forest officer, Rachel Malarich, to develop the city's urban forestry efforts across departments as well as increase tree canopies in underserved areas by 50% by 2028 (Brown 2021).

In 2020, the Phoenix city council voted to work with American Forest to create equitable tree canopies across all neighborhoods by 2030 (Brown 2021). The city also recently passed a budget that includes tree and shade administration to coordinate the planting and maintaining of urban forests.

In Boston, researcher and advocate, Neenah Estrella-Luna, is consulting to help the city develop its first urban forest plan (Brown 2021). Her team will work with city officials and community leaders to draft a pathway to tree equity within 20 years.

State lawmakers have also been planning some changes as well. Representative Bill Ramos, of the Washington state legislature, introduced a bill that will require the state's

Department of Natural Resources to conduct a statewide assessment of urban tree canopies to determine where it needs reinforcement (Brown 2021). The measure, now signed into law, will grant the agency the ability to provide technical assistance to local governments for forest management, with half its funds appropriated to underserved communities.

In California, Assembly Member Luz Rivas, has sponsored a bill that would establish a funding program to help communities adapt to extreme heat, including the development of forestry and green spaces (Brown 2021). The bill passed with significant support and is under committee review in the Senate.

For many years, low-income neighborhoods have borne the burden of the lack of tree coverage in their areas and have been particularly vulnerable to extreme weather conditions. With environmental racism still acting as a significant threat, hopefully policymakers will make positive and impactful changes to the areas where residents face the highest risk of being affected by climate change.

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