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Redlining in Richmond, VA: Tracing the legacy of discriminatory housing policies in Richmond's environment and communities

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REDLINING IN RICHMOND, VA

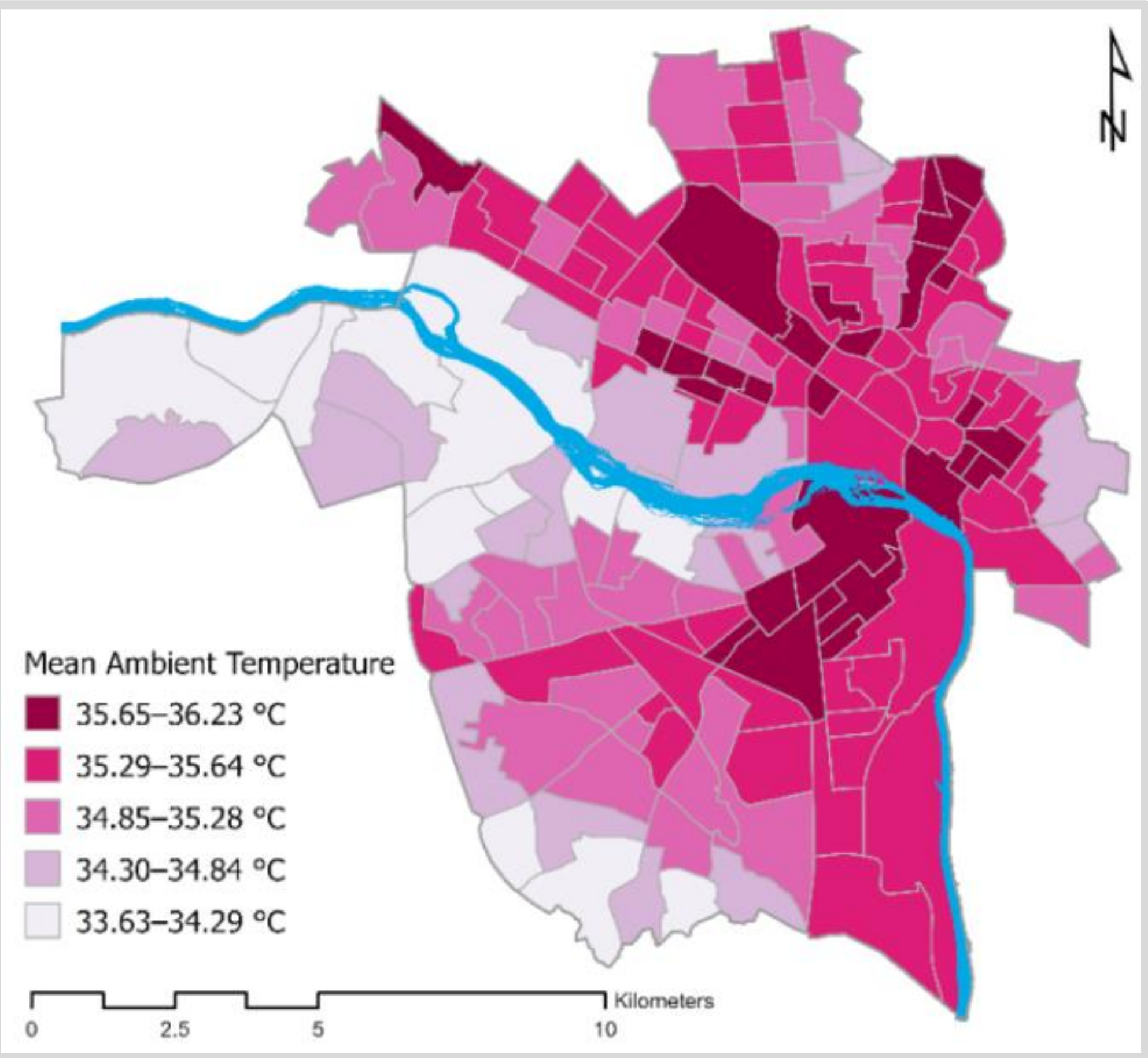
Tracing the Legacy of Discriminatory Housing Policies on Richmond’s Environment and Communities

By Aayla Kastning

Environmental Concerns

Urban Heat Islands (UHIs)

UHIs are urban areas with higher temperatures than surrounding suburban or rural areas caused by intense development and reduced green space. The main factors influencing temperature are percent impervious surface and canopy cover. UHIs typically have less tree cover to shade the area and low albedo surfaces like dark pavement and buildings, which has caused significant spatial disparities in temperatures throughout Richmond.³



Note. From “Assessment of Urban Heat Islands and Land Cover Types in Relation to Vulnerable Populations,” by I. Suen, 2022, *Earth*, 3(2), p. 738. CC BY-NC.

Air Pollution

In Richmond, regions exhibiting higher temperatures are correlated with more significant surrounding development, which includes industrial facilities that emit pollutants into the air. UHIs have been found to have higher concentrations of PM_{2.5}. Moreover, air pollution can further trap heat, and there is a correlation between heat-related illnesses and poor air quality. Not only do these warmer areas lack trees that are essential to cooling extreme heat, but they also lack trees and other vegetation that help sequester pollutants.¹

Vulnerable Populations

Over the past five decades, the “frequency, duration, and intensity of heat waves in the U.S. have all increased”, with UHIs exacerbating these effects in cities.³

- Heat and subsequent drought are the leading cause of all natural disaster related deaths, accounting for 19.6%. Severe summer weather is second at 18.8%.³
- Residents living in UHIs disproportionately experience these negative impacts of extreme heat, evidenced by their increased risk of developing heat-related illnesses or death.⁴
- Regions with higher levels of air pollution, which correlate to areas with warmer temperatures, also experienced higher mortality rates from COVID-19.¹
- These communities are more susceptible to environmental disaster due to the inadequate infrastructure and proximity to “environmental hazards” that characterize UHIs.²
- Inhabitants of areas with poor infrastructure and low vegetation also have less access to green space and its benefits on mental, social, and physical health.¹

Prejudiced Policies

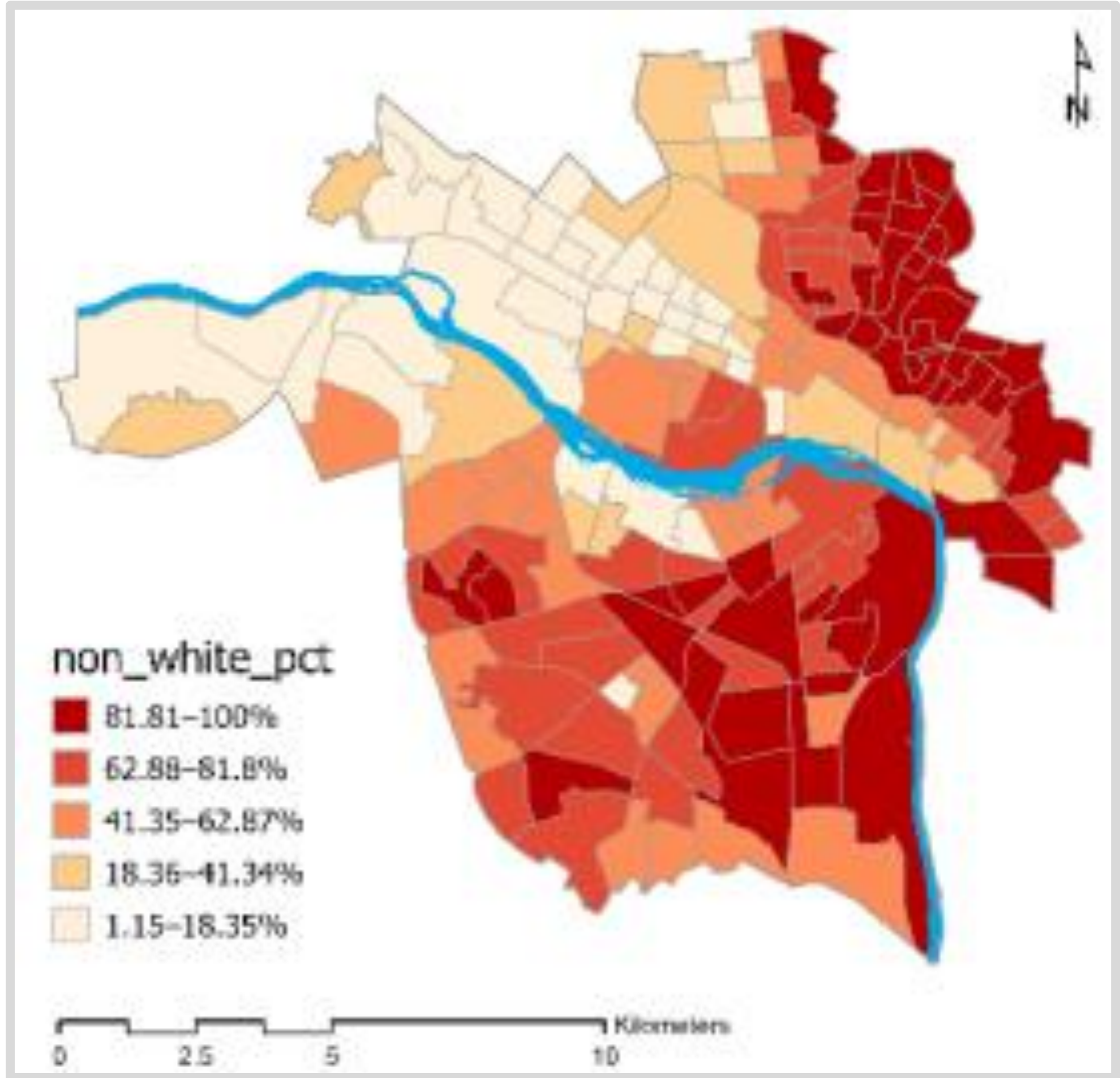
During the late 1930s to 1960s, the federally-sanctioned Home Owners’ Loan Corporation (HOLC) ranked areas’ “mortgage creditworthiness” based on “minority composition” and “income levels.” “Redlining” refers to the red lines used to outline “D” grade areas. Banks were discouraged from lending to residents in neighborhoods with lower HOLC scores.² No areas with larger Black populations were designated “A” or “B.” This also placed Black communities near industrial districts.¹ This has resulted in significant disinvestment in specific areas in Richmond, “upholding segregation by denying resources” that can still be observed today.³

HOLC Zoning and Typical Demographics		
A	“Best”	Middle to upper income, all-white populations
B	“Still Desirable”	Middle income, all-white neighborhoods
C	“Definitely Declining”	Poorer white populations located closer to factories or Black Schools
D	“Hazardous”	Predominantly Black or immigrant neighborhoods

Note. Adapted from “Change in environmental justice scores in historically redlined communities compared to non-redlined communities: A case study of Richmond, Virginia,” by A. Mital, 2023, *Urban Climate*, 49. CC BY-NC.

Spatial Injustice

In Richmond, “vulnerable populations are clustered in specific areas” of the city that tend to have “higher ambient temperatures.”⁴ While the first two variables contributing to UHIs were impervious surfaces and canopy cover, the third was an area being categorized “C” or “D,” highlighting a significant correlation between historic redlining and areas with extreme heat. The next two most influential factors were public transportation use and low median household income, suggesting that neighborhoods with the lowest socioeconomic statuses are the hottest. Specifically, “Black communities and those living below the poverty line were disproportionately located in the hottest areas of Richmond.”³ Additionally, these historically redlined communities have a higher risk of exposure to low air quality.¹



Note. From “Assessment of Urban Heat Islands and Land Cover Types in Relation to Vulnerable Populations,” by I. Suen, 2022, *Earth*, 3(2), p. 738. CC BY-NC.

Equitable Environments

Vulnerable populations are largely made up of racial minorities and those in poverty, who are therefore those most exposed to negative consequences of heat despite having fewer resources to “adapt to high temperatures.”⁴ To move towards environmental justice, these historically redlined areas and their marginalized residents must be at the forefront of environmental policy and remediation. Most importantly, sustainable solutions must be equitable and fair, as gentrification is a likely possible risk of improving infrastructure in these regions.

References

¹Eanes, A. M., Lookingbill, T. R., Hoffman, J. S., Saverino, K. C., & Fong, S. S. (2020). Assessing inequitable urban heat islands and air pollution disparities with low-cost sensors in Richmond, Virginia. *Sustainability*, 12(23), 10089.

²Mital. (2023). Change in environmental justice scores in historically redlined communities compared to non-redlined communities: A case study of Richmond, Virginia. *Urban Climate*, 49. doi.org/10.1016/j.uclim.2023.101505

³Saverino, K. C., Routman, E., Lookingbill, T. R., Eanes, A. M., Hoffman, J. S., & Bao, R. (2021). Thermal inequity in Richmond, VA: the effect of an unjust evolution of the urban landscape on urban heat islands. *Sustainability*, 13(3), 1511.

⁴Suen, I. S. (2022). Assessment of Urban Heat Islands and Land Cover Types in Relation to Vulnerable Populations. *Earth*, 3(2), 733-747.