

GCF Science Communication Seminar Project

Title: Climate Justice is Social Justice

by Murry Burgess

I texted the family group chat a link to an interesting paper I had read for urban ecology class. Dr. Christopher Schell's 2020 publication describes the intersections of ecology, evolution, and social inequality, emphasizing that environmental racism is both a social justice issue and a conservation issue. Ma replied with song lyrics from Willie Hutch, "*You know because in the ghetto / You really got nowhere to go / The rats, the roaches, and these different things...*". While I was wrapped up in my graduate studies in ornithology and urban ecology, this one, simple text clicked for me that my family – and most Black families – didn't need academic papers to explain what they already knew: people who look like us face the brunt of harsh environmental living conditions.

In the wake of the murder of George Floyd and other violent acts of racism, recent publications in urban ecology and climate change have tackled the much-needed topic of racial injustice as it relates to the environment and global climate change. However, poor and racially marginalized communities have faced the repercussions of climate change since before the conception of urban ecology as a field of study. We see evidence of this in the art that comes from these communities. We can look to examples of music, especially those by Black artists, that have described the same issues decades earlier than academia.

But first, what is urban ecology? Urban ecology is the study of how organisms interact with their physical environment that includes humans and wildlife living in cities and built landscapes. Urban ecology took off as a field of study in the late 1900s when the idea of humans being part of nature solidified along with research about rising carbon emissions and climate change. Humans are directly affected by biodiversity (the variety of plants and animals), green space, climate, and pollution. The degree to which a community is exposed to all these factors is often determined by socio-economic factors such as race and class. To no surprise, outdoor inequality disproportionately affects lower income communities and communities of color, both of which are largely Black, Hispanic, and Indigenous. Environmental racism is real. A

good place to start exploring this issue is listening to music by Black artists and examining the science that backs up their art.

“Oh so cold up north that the birds can’t hardly fly”

- **Cold Weather Blues by Muddy Waters, 1964**

Each new season seems to set a record – hottest day ever, coldest day ever, most rainfall ever. Increasing incidences of extreme weather and natural disasters like droughts, flood, fire, and hurricanes are direct results of climate change. Urban infrastructure like electricity, heat, air conditioning, and access to clean water are essential during these times. However, the infrastructures of many communities are not equipped to handle these extremes. Low-income housing units are especially ill-prepared for natural disasters. As a recent example, frozen Texas electric grids caused power outages in record low temperatures leading to a disproportionate number of deaths in Black, Latinx, and low-income communities.

Heat is just as deadly as cold. The Urban Heat Island Effect describes the phenomenon of increased temperatures when cities replace natural land cover with impervious surfaces - asphalt, concrete, brick, and other materials that absorb and retain heat. The Urban Heat Island Effect increases the demand for air conditioning; more air conditioning puts a strain on electric grids and releases more fossil fuels into the air. Marginalized communities are hotter than predominantly white and wealthy communities due to their general lack of green space and the crowding of houses (1). Excessive heat can lead to dehydration, heat exhaustion, and heat stroke.

“You know because in the ghetto / You really got nowhere to go / The rats, the roaches, and these different things...”

- **Life’s No Fun Living in the Ghetto by Willie Hutch, 1974**

Historic and ongoing systemic racism has played a prominent role in the development and structure of cities in the United States. Urban areas with the most impervious surfaces and highest temperatures are typically inhabited by lower income or minority communities due to redlining (1). Historical redlining was a form of segregation that still has consequences today.

Redlining ranked neighborhoods based on desirability and systematically excluded racial and ethnic minorities from homeownership in better-ranked neighborhoods. These better-ranked neighborhoods include features like higher tree cover, shade, and green space, while lower-ranked neighborhoods had a higher proportion of impervious surfaces, less walkability, and less natural resources.

Not only are lower-ranked communities less aesthetically pleasing, but replacing green space with impervious surfaces decreases biodiversity, and thus human health. (The reverse is true as well - the health and genetic diversity of wildlife is often poorer in racially marginalized neighborhoods (1, 2)). Willie Hutch sings about common “pest” species – roaches and rats – that are more prevalent in redlined cities. Pest species, like raccoons, rodents, mosquitoes, and various arthropods, are often the only animals that can survive in areas with extreme weather, less natural food sources, and more human activity. Unfortunately, these species are also more likely to carry zoonotic diseases - diseases that can pass from animals to humans (3). Many studies have linked higher rates of zoonotic diseases and impoverished areas.

“I can’t conceive the nucleus of all / Begins inside a tiny seed / And what we see as insignificant / Provides the purest air we breathe”

- **The Secret Life of Plants by Stevie Wonder, 1979**

Animals aren’t the only component of biodiversity; the plants matter as well. Another consequence of lack of green space in communities is poor air quality. Plants are essential in filtering and sequestering pollutants that harm human health. Particularly, respiratory health is correlated with plant abundance. Areas high in air pollution can exasperate, or in the worst cases can even cause, conditions like asthma, outdoor allergies, pulmonary disease, or lung cancer (4).

Even just looking at plants is beneficial for health. In a famous hospital study from 1984, researchers found that patients who had a window view of a natural setting recovered faster than patients who had a view of brick wall (5). Green space (as well as blue space: water) has a positive effect on mental health, temporarily relieving symptoms of depression, anxiety, and PTSD. In addition, entire books have been written about the benefits of exposing children to

nature (e.g., *Last Child in the Woods* by Richard Louv), including everything from stronger immune systems and faster motor skills development to better emotional regulation and improved self-confidence. We should all, truly, be touching grass. However, access to green space is often restricted for the vulnerable populations who most need these benefits.

“New World Water make the tide rise high / Come inland and make your house go “Bye”

- **New World Water by Mos Def, 1999**

One of the most known facts about climate change is that sea levels are rising. In addition to being battered by storms and floods, communities who rely on coastal environments for a living are watching their jobs, homes, and lifestyles being washed away. Residents of coastal environments are often racial minority and low-income communities who cannot afford the precautions necessary to protect or relocate their property - and many don't want to. Historical community and cultural ties make people reluctant or unwilling to leave; there is also a prevailing link between poverty and low risk perception and preparedness (6).

“Oh, I know you know that pain / I'm hopin' that this world will change”

- **Feels Like Summer by Childish Gambino, 2018**

After my group chat realization, I had a moment of anger: If people have been living with environmental racism *and* talking about it for decades, why has little to nothing been done about it yet? And why is science and academia so far behind in studying these issues? As a Black female urban ecologist from the Deep South, I wished that there was something I could immediately do to resolve this socioenvironmental crisis. Writing this article is only the first of many steps.

I find hope in the fact that despite decades of climate and social issues, the persistence of affected communities is evident in the music and art they create. As climate change continues to push us toward extremes, funding and resources will need to be poured into updating infrastructure, creating emergency shelters, and adding easily accessible green spaces in marginalized communities. The people who live with these issues are resident experts; it's up to scientists and our government to listen to and partner with these communities to build

community resilience (7). Meanwhile, both artists and public-facing scientists can continue raising awareness and risk comprehension through media like popular music and articles. Urban ecology and climate change are not only environmental issues, but social justice issues. We all have a part to sing.

Spotify Playlist: Climate Justice is Social Justice by murryloub

<https://open.spotify.com/playlist/7GDV5S9YhbpYi5P1mAjxHN?si=5b50a1ae146344f4>

As a companion piece to this article, I've curated a playlist of 70 years of songs by Black artists about the intersections of socioeconomic status, environmental racism, and global climate change. The playlist is ordered chronologically, starting with Billie Holiday in the 1950s and ending with Tyler, The Creator in the 2020s. I've included some of the lyrics from selections in this playlist as section headers for this article. I hope that readers will enjoy listening to music with critical reflections on socioenvironmental issues.

References and Further Reading

- (1) Schell et al. 2020. The ecological and evolutionary consequences of systemic racism in urban environments.
- (2) Schmidt and Garroway. 2022. Systemic racism alters wildlife genetic diversity.
- (3) Molyneux et al. 2011. Zoonoses and marginalized infections disease of poverty: Where do we stand?
- (4) Anenberg et al. 2020. Synergistic health effects of air pollution, temperature, and pollen exposure: a systematic review of epidemiological evidence.
- (5) Ulrich 1984. View through a window may influence recovery from surgery.
- (6) Donner & Rodríguez 2008. Population Composition, Migration and Inequality: The Influence of Demographic Change on Disaster Risk and Vulnerability.
- (7) Rudd et al. 2021. Overcoming racism in the twin spheres of conservation science and practice.