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Green Inequities: Examining the Dimensions of Socioenvironmental Injustice in Marginalized Communities

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Green inequities:
Examining the dimensions of socioenvironmental injustice in marginalized communities

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Abstract

In the realm of socioenvironmental justice, much discourse centers on equal access to green areas and on climate injustice in the United States. Marginalized communities, including Indigenous populations, are being excluded from current narratives surrounding the natural spaces that in many cases are historically tied to under-represented groups. This article aims to explore some of the many dimensions of environmental racism, green inequities, climate injustice, and access. The dimensions include but are not limited to racial gatekeeping, nature deprivation in low-income communities, green gentrification, light pollution, and access to clean water. The recommendations section serves as a guide during decisionmaking processes at the local, state, and federal level, as well as moving forward in offering impacted communities protection from environmental racism and socioenvironmental injustice to impacted communities.

Authors' note

We acknowledge the fluidity of language use and inclusive terminology. We recognize that over time, some terminology may come to be considered outdated due to societal changes and advances in diversity, equity, and inclusion (DEI) initiatives. We aim to use language in a way that respects and commemorates diversity. It is imperative to consider personal preferences when using language to address a collective. Furthermore, personal preference is not always synonymous with that of a group of people. The terminology used in this article considers current inclusive terminology and the personal preferences in language and self-identities of our diverse authors. In order for our readers to stay current on terminology, we have provided a link in the References to the National Assembly of State Art Agencies Inclusive Language Guide.

Introduction

There is a long history of environmental discrimination in the United States involving inequities in land use, public health (e.g., water quality and air quality), housing, and human rights (Taylor 2011). Natural resource management operates under the same systems of oppression present in other aspects of society. In this context, we use "green inequities" as an umbrella term to address the dimensions of socioenvironmental injustice discussed in this article. Examples of green inequities include those pertaining to light pollution, air and soil contamination, gentrification, racial gatekeeping, and access to nature. Environmental justice is a broad conceptual construct that examines the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, and concerns the development, implementation, and enforcement of

environmental laws, regulations, and policies (Liu 2001: 11). Fernandez et al. (2021) counseled that the discourse of environmental inequities should not narrowly focus on distribution but instead seek to address the processes leading to marginalized groups carrying the burdens of injustice. The following paper offers a brief discussion of some of the patterns associated with environmental inequities. A concluding recommendations section serves as a guide for community leaders and decisionmakers addressing green inequities.

Concepts of environmental justice

Critical concepts in environmental justice include environmental equity, environmental racism, and environmental discrimination (Lee and Tazim 2008). *Environmental equity* focuses on distributions of environmental costs and benefits across population groups and policy responses (USEPA, 1992: 2). *Environmental racism* is discrimination (whether intended or unintended) in environmental policy, practices, or directives (Bullard 1996; Lee and Tazim 2008). *Environmental discrimination* focuses on the disproportionate impacts of environmental policy and procedures on individuals, populations of minority racial/ethnic groups, or lower-income communities (Lee and Tazim 2008).

The United States has a long-standing tradition of associating whiteness and wealth with cleanliness and high moral character. Therefore people of color and those experiencing poverty are deemed dirty and of weak moral character. This justifies why (whether unintentionally or intentionally) peoples of color and the poor have greater exposure to environmental hazards (e.g. poverty, disease, and death) (Zimring 2015). Throughout history, white and wealthy people separate themselves based on perceived status (the position a person or group holds in society e.g., race, gender, class; Taylor 2000). White flight, urban renewal, and redlining are just a few methods used to maintain the "respectability" of white and wealthy communities.

In her history of environmental racism in the United States, Taylor (2011) points out some of the earliest documentations date back to the 1793 yellow fever epidemic. This epidemic killed thousands of people in Philadelphia. While white people fled, Absalom Jones and Richard Allen organized the Black community to keep the city running (e.g., caring for the sick, burying the dead, etc.) because doctors of the day believed that Black people were less susceptible to yellow fever. They were wrong; Black Philadelphians died from the virus at similar rates as their white counterparts (Historical Society of Pennsylvania, n.d.). In the end, the weather cooled and yellow fever cases decreased while the Black community was vilified and accused of causing the outbreak rather than touted as the heroes they were (Taylor 2011). Another well-known example is Central Park in New York City, which sits on land formerly inhabited by the Black and immigrant communities of Seneca Village, Yorkville, and Pigtown. The development of community parks in general played a role in displacing people of color and the impoverished. Mixed-race neighborhoods were viewed by "mainstream" society as "nuisances and symbols of moral and economic decay" (Taylor 2011: 283). As a result, in 1855 the residents of the area began receiving eviction notices (Taylor 2011). By the end of 1857, all the residents were gone and the park built.

Environmental injustices are woven throughout the tapestry of American history. We cannot address current examples as if these are new issues, but rather we must recognize the continuation of long-held systems of oppression ingrained within our society. The following offers a few examples of the environmental inequities rampant in natural and green spaces, housing, pollution, health, and human rights.

Inequities in the distribution of nature's benefits

Access to nature is a basic human right. However, wide-ranging issues, such as lack of transportation to parks and a lack of urban green spaces, impact marginalized communities. Consequently, these communities cannot reap the benefits of nature, including improved mental and physical health, lowered pollution levels, and community resilience. Green spaces are disproportionately situated in higher-income and otherwise privileged communities, far outpacing the availability in marginalized communities (Anguelovski et al. 2020). Chiefly, this disparity is an issue of health. Green spaces provide positive influences on both physical and mental health of nearby residents (Anguelovski et al. 2020). Decreased stress and improved mental health has been shown to occur near parks and trails, and is even associated with the presence of additional roadside trees. The re-introduction of nature into urban areas allows residents to enjoy exploring, often leading to increased physical activity and health. Conversely, decreased well-being in communities can be partly attributed to the disparity in green spaces between marginalized and non-marginalized communities.

Inequity in access to larger protected areas exists as well. National parks in the United States are world-renowned for their beauty and history yet are not accessible to many. Approximately 80% of national park visitors are white, though whites make up only 60% of the population at large. One reason for this discrepancy is that margina-

lized peoples may be discouraged from visiting, as they are not represented in a park's programming. Including the stories of marginalized groups in telling the true and complete history of the national park system could aid in improving access by empowerment through representation. Interpretive programming addressing the uncomfortable reality of misappropriated Indigenous lands, enslaved peoples, racism, and misogyny is essential if park attendance and usage is meant to reflect the true face of the nation. The reallocation of green spaces and tearing down of hurdles can help everyone benefit from all that nature provides. Lack of representation in green spaces and the unequal distribution of the benefits of nature extend out of the larger park system and into the very neighborhoods we inhabit.

Inequities in planning and development: Gentrification

Older, lower-income neighborhoods are often the location of revitalization and redevelopment projects, habitually including environmental planning agendas that incorporate green spaces and beautification initiatives. As noted above, spending time in green spaces provides positive benefits to the individual (Anguelovski et al. 2020), yet many lower-income residents presently residing in gentrified areas are displaced, often unable to sustain the benefits presented. In addition, the inclusion of green spaces and other beautification processes raises property value, paradoxically "cleaning out" the communities who have been inhabiting the space to make way for the influx of new, richer residents. While some argue that gentrification is an inevitable, natural process, this claim fails to acknowledge *how* and *who* is allowed to designate and direct the trajectory of the change.

Discourses that associate whiteness with cleanliness and other groups with trashiness devalue the rich histories of the latter and make their neighborhoods susceptible to transformation (Solomon 2018). A well-developed example is Norfolk, Virginia, one of seven cities within southeastern Virginia's historically rich Hampton Roads region. Since the financial crisis of 2008, much of Virginia's development revolves around the demolition and defunding of public housing, enabling a growing number of private developments in the form of luxury condos to push poor and working Blacks out of the city and into nearby towns. This continues a path of gentrification that started in the late 1960s in which predominantly Black cities became the new dumping place for waste in the region in efforts to make way for beautification efforts and incoming wealthier residents (Solomon 2018). By contrast, in the predominantly white suburbanized city of Virginia Beach, the local landfill was transformed into a 165-acre park "that filled the four active landfill cells with 18 by 18-foot blocks" (Solomon 2018: 25), and waste was now rerouted to Suffolk, whose landfill had surpassed the legal regulation of capacity (Mohai and Saha 2015).

With the Pollution Prevention Act of 1990, stricter landfill regulation forced many smaller public landfills to close, contributing to the development of the multi-million-dollar industry of private waste management. The strategy of displacement of vulnerable communities as the solution for accumulation of waste is an ongoing process, where the final resting place of trash is often close to minority or impoverished communities. Disparities such as waste stream issues are part of a broader environmental degradation and pollution problem imposed on marginalized communities.

Inequities in exposure to light pollution

Not long after Thomas Edison pioneered electricity use in the late 1800s, light bulbs replaced gas lamps along city streets and around public squares. Artificial light at night (ALAN) has since been prevalent in communities, and contributes to light pollution. Although there is no scientific evidence that ALAN reduces crime, artificial lighting provides a sense of security for many. Studies by the US National Institute of Justice contradict those feelings, as they averred that the sense of safety and security many feel when in well-lit neighborhoods is in fact a false one. Moreover, too much lighting, especially when poorly placed, can instead invite more crime. In fact, no lighting at all is more effective than bad lighting in this context.

An environmental justice study examining the patterns of ALAN in the continental United States revealed light pollution to be two times more prevalent in Asian, Black, and Hispanic neighborhoods than in white (Nadybal et al. 2021). This study found that although there were not keen differences in urban versus rural light pollution, socioeconomic status and race/ethnicity played a part in polluted areas.

ALAN is commonly blamed for negative effects on the behavioral ecology of non-human species. But these impacts don't end there: they often subsequently contribute to negative effects on people in marginalized communities. For example, in female mosquitoes light pollution is responsible for the forestalling of diapause, which is the dormant period of no reproduction or blood feeding as a seasonal response for survival. With diapause being interrupted in areas where there are heavy amounts of light pollution, female mosquitoes are reproducing and biting later in the season. In other words, residents in

these areas are more at risk for mosquito-borne diseases since the period of contracting diseases are extended (Fyie et al. 2021).

Although climate justice researchers have not fully ascertained the short- and long-term effects of light pollution in human populations, other inequities, such as sleep disturbance and the inability of impacted populations to star gaze, have received the attention of researchers (Nadybal et al. 2021). Light pollution, as a dimension of green inequities, intersects with the air, soil, and water contamination often found in marginalized communities.

Inequities in access to clean drinking water: The case of Flint, Michigan

In the United States, the protection of drinking water resources are subject to a combination of local, regional, state, and federal guidelines and regulations (Campbell et al. 2016). Threats to clean drinking water are often associated with a "spill" or single event, but it can also reflect historical decisions around infrastructure, such as using lead service lines. At low levels of exposure, lead can result in slow changes in behavior or cognition. This means that the cause is nearly impossible to pinpoint without testing blood lead levels, and the effect of the exposure may take years to realize. All too often, the communities affected are lower-income or otherwise marginalized (Campbell et al. 2016).

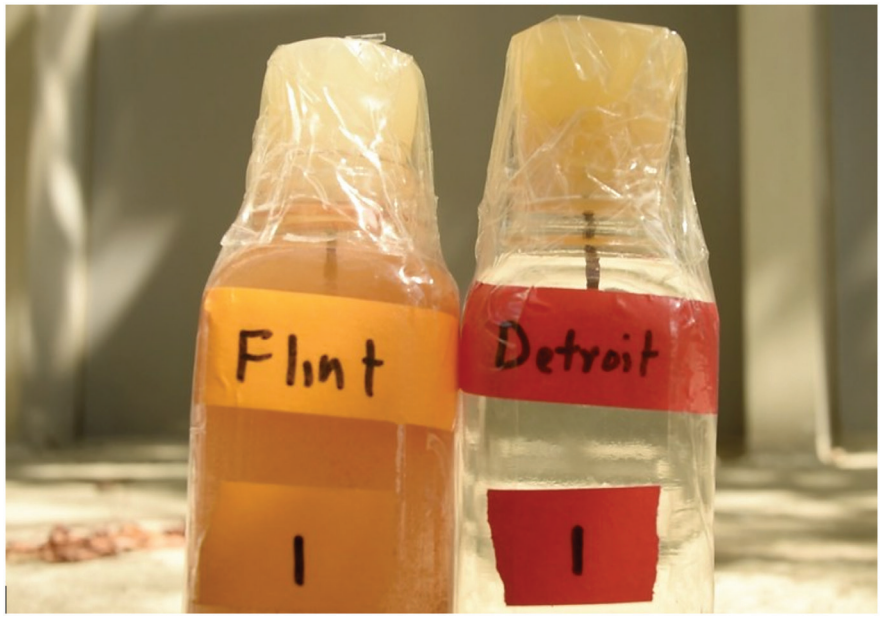
Such was the case in Flint, Michigan, a majority-Black city that suffered financial challenges during and after the Great Recession. In 2011, Michigan passed Public Act 4, which allowed the state to appoint an unelected emergency manager with power above that of local elected officials and effectively removed democratic decision-making in cities where the law was invoked (Johnson et al. 2018). Shortly after the passage of Public Act 4, state officials notified Flint that the city's financial problems warranted emergency management. To cut costs, in 2014 the emergency managers decided to discontinue the partnership with Detroit for drinking water service and instead draw water from the Flint River to treat locally for human consumption (Johnson et al. 2018).

The water in the Flint River was known for being corrosive; General Motors, which operates factories in the city, noticed corrosion on its machines after using water from the river and quickly switched its water source. Yet the drinking water drawn from the Flint River was not treated with an anti-corrosive to prevent lead from being released from the lead service lines (Campbell et al. 2016). The result was drinking water that exceeded US Environmental Protection Agency (EPA) standards for lead from April 2014 to December 2015 (Campbell et al. 2016).

Red flags were raised almost immediately following the switch. The new water was brown and cloudy (Johnson et al. 2018; Figure 1). According to Robert Bullard, a leading expert on and founding figure in the field of environmental justice, the supply decision and its long-awaited "solution" are examples of environmental racism; others also have considered race the greatest determinant for the Flint water crisis (Campbell et al. 2016). Black community groups organized against the new water supply in hopes of attracting attention outside of Flint, but the media, academics, and healthcare professionals remained uninterested (Johnson et al. 2018). The voices of the majority-Black community were ignored, countered by reassurances from Michigan state officials, including the state health department and the governor, that the water was safe to drink (Campbell et al. 2016).

Nevertheless, the community-based organizations rallied. They delivered bottled water and educational materials to homebound Flint residents. This continued into mid-2015, when community groups finally engaged the *right* experts. In the midst of great government failure in Flint and at the state level, the Black community organizations combating the injustice were not victims,

FIGURE 1. Drinking water samples from Flint (left) Detroit (right). DON JOHNSON LC / FLICKR



but local experts, aware of their community's needs and deserving of a voice in decisionmaking (Johnson et al. 2018). The Flint Water Advisory Task Force, a group of five experts, eventually described the situation for what it was: a government failure and environmental injustice (Campbell et al. 2016).

Flint is just one example. Across the United States, studies have highlighted racial and socioeconomic inconsistencies related to environmental toxins and hazards (Mohai and Saha 2015). While disagreement remains on the extent to which policy decisions regarding the siting of industrial facilities that cause pollution can be blamed for environmental injustices, it is an undeniable fact that these facilities disproportionately are built and located in Black, Asian, and Hispanic neighborhoods rather than white ones (Mohai and Saha 2015). Residents of impacted communities, who cannot rely on local decisionmakers, often turn to federal agencies for guidance. These agencies have their own shortcomings.

Inequities in the Superfund program

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 established the Superfund program. Superfund is the primary US federal program that addresses areas contaminated by industrial pollution. EPA oversees the program by identifying potential sites, placing them on the National Priorities List, and conducting cleanup. EPA coordinates the cleanup of a site with the potentially responsible party, which is usually the owner (or previous owner) of a site (Burda and Harding 2014).

While the Superfund program drives site cleanup, structural challenges exist within the program that may disproportionately impact marginalized communities. As is the case for industrial facilities, disparity exists in the location of Superfund sites, which are often in marginalized communities. The Superfund program has tried to address environmental injustices related to cleanup duration. In 1994, President Clinton signed Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," to address racial and socioeconomic inequities related to Superfund sites. While this Executive Order prioritized cleanup in marginalized communities, the economic status of a community still seems to influence how soon and fast it gets done (Burda and Harding 2014).

This can lead communities to ask when their Superfund site will be cleaned up—how long is too long? Such is the case for the town of Opportunity, Montana. Opportunity, with a population of fewer than 500 residents, is located in southwestern Montana, a few miles north of the Continental Divide. From 1884–1980, copper smelting and milling operations in the region deposited high levels of heavy metals into surface water, groundwater, and soils. In 1983, EPA designated the area surrounding the Anaconda Co. Smelter a 300-square mile Superfund site. Cleanup efforts have continued for over 30 years at this site. Some residents of Opportunity question why some nearby communities with higher levels of income, wealth, and education have received faster and more publicized cleanup efforts than their own, with one resident asking, "Where's our pretty picture?" (Tyer 2013: 107).

Addressing green inequities: Place-based recommendations

Robert Bullard suggests there are five principles that government must adopt to combat environmental injustices: "guaranteeing the right to environmental protection, preventing harm before it occurs, shifting the burden of proof to the polluters, obviating proof of intent to discriminate, and redressing existing inequities" (Bullard 1994, as cited by Campbell et al. 2016). With these general principles in mind, we offer the following recommendations for community leaders and decisionmakers when addressing the examples of green inequities discussed in this paper.

- **Inequities in the distribution of nature's benefits.** Local and national stakeholders must both be engaged in improving the equitability of nature's benefits and access to them. Local governments should focus on improving and increasing green spaces situated in marginalized communities, especially those spaces with multiple benefits such as urban gardens, while keeping in mind methods to combat potential gentrification. National actions include re-emphasis in organizations such as the National Park Service to highlight non-white stories and improved accessibility through broader transportation options and fee-waived days, for example. Collaboration between local and national entities is necessary to ensure these changes can be upheld and that local knowledge is incorporated in these decisions and stories.
- **Inequities in planning and development: Gentrification.** Although outreach and agreements between industry and the surrounding communities are meant to foster conversation and protection, the imbalance of power between the two renders the agreements ineffective in mitigating structural inequalities, so the burden of protection ends up being placed on the communities (Solomon 2018). In order to address planning and

development, it is vital to consider power structures in place that prohibit change in communities.

- **Inequities in light pollution.** The International Dark-Sky Association (IDA) recommends using outdoor light codes on a local level to ensure they are enforced in communities. Education and neighborhood discussions to advocate for enforced light ordinances should be explored before filing complaints locally. When enforcing outdoor light ordinances it is important to consider outdated lighting and the recommended color temperatures for appropriate lighting. (The color temperature of 3000k is the suggested warm light that is in the yellow-white range.) Although light pollution is a global issue, given the unique challenges that differ from community to community, community-based nonprofit social and environmental justice organizations can serve as key players in alleviating the problem locally.
- **Inequities in access to clean drinking water.** Centralized provision of drinking water has contributed to utilitarian improvements in public health outcomes across the US. The Safe Drinking Water Act allowed EPA to set contaminant limits for public drinking water systems, which serve most of the US population. In some cases, these utilitarian goals and outcomes miss groups on the margins, such those whose communities are too small to construct and maintain costly drinking water systems, or areas with immense infrastructure and compliance costs and limited financial resources. EPA sets standards and public water systems must connect the dots to remain in compliance. If protecting public health is truly the goal of drinking water utilities then decisionmaking should prioritize public health outcomes, not politics. This requires better coordination between local, state, and federal agencies regarding major drinking water decisions. The system is designed to be nested, with a series of checks and balances, but the Flint water crisis highlights how power imbalances and politics can quickly break down the system and erode public trust. Moving forward, EPA and state regulatory agencies should consider how to better establish mechanisms to field and address public concerns. This may include partnering with local nonprofits with community ties to field public concerns and partnering with public universities to conduct third-party evaluations of water quality. Finally, America must address its crippled water infrastructure before it is too late. This includes setting aside funds to address clean water access by groups on the margin or those that struggle to pay for an essential service.
- **Inequities in the Superfund program.** Both EPA and the Superfund program encourage and require public participation. Additionally, EPA has rules that require it to consider environmental justice when making decisions, specifically, giving affected communities the ability to participate in the process and ensuring they are included, along with providing input and considering their input in decisionmaking. Nonetheless, often communities feel left out, find the technical information inscrutable, or are left apathetic after participating but not seeing results. There seems to be a disconnect between "engagement" as defined by the agency and as defined by communities. Perhaps EPA officials should be better trained in engaging with the public on environmental justice issues. More specifically, the Superfund program could also fund more bottom-up, collaborative community groups to participate throughout the process. Or, facilitators and mediators could play a role in this process, helping communities and agency officials feel heard while achieving common objectives.

As demonstrated above, many of the dimensions of green inequities intersect in ways that may amplify the lasting effects of socioenvironmental injustice in communities.

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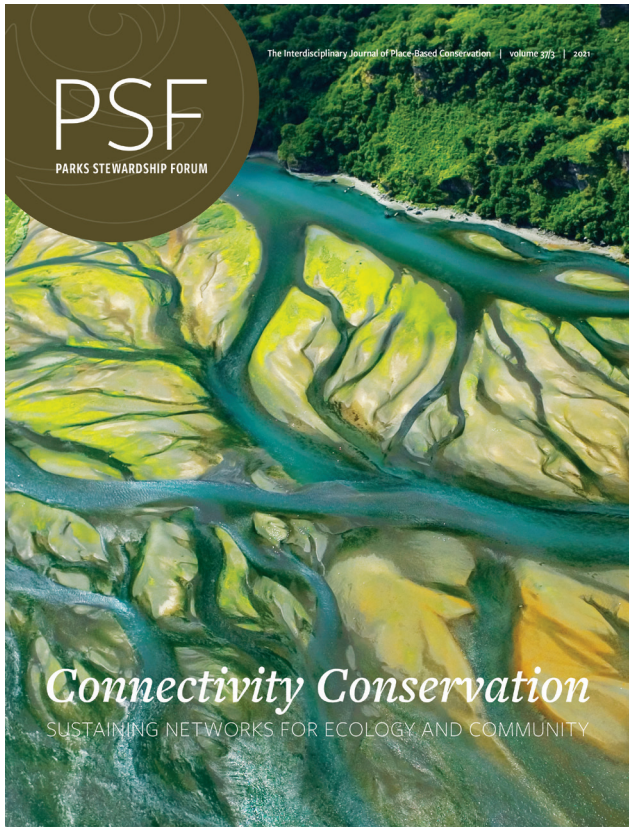

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A glacial river on Kodiak Island, Alaska, meets the North Pacific Ocean. Coastal deltas represent the critical interface between terrestrial, freshwater, and marine connectivity. | STEVE HILLEBRAND / USFWS