



# Editorial: Historical Legacies of Land Use in Cities; Parks, Open Spaces and Potential for Green Infrastructure- Ideas of City Nature in an Urbanizing Planet

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**Keywords:** parks and open space, quantitative turn, parks, open space, legacies, cities, greening actions

## Editorial on the Research Topic

### Historical Legacies of Land Use in Cities; Parks, Open Spaces and Potential for Green Infrastructure- Ideas of City Nature in an Urbanizing Planet

Research on urban nature, green infrastructure, and nature-based solutions to environmental problems has burgeoned over the past two decades. A good deal of that research is undergirded by the premise that trees, greenspaces, parks, and urban ecosystems are self-evidently good. Much less critical analysis has interrogated the assumptions that legitimize and privilege urban greening, in scholarly research, urban planning, and urban management. Comparatively little has been written about how the historical origins and legacies of urban land use shape greening outcomes. And very little has been written about critiques of the “urban greening project”. Redressing these lacunae is important.

As global climate change impacts manifest ever more strongly, urban greening has moved from a nice idea to becoming what many consider an essential adaptive response. Against the backdrop of a global climate emergency, it is increasingly difficult to question the motives, assumptions, principles, and processes that enact urban greening. And with ramped-up scholarly attention to greenspace and green infrastructure driven by the global COVID19 pandemic—it seems almost heretical to question the doctrine of urban greening. Yet urban greening can have pernicious and unintended consequences. Urban greening can heighten the risk of wildfire, increase property values and displace marginalized residents, increase human wildlife conflict, promote vector borne disease, and increase other health hazards, such as asthma from pollen, biogenic volatile organic compounds, and trapped particulates, among others (Gibbs, 2019).

As Pataki et al. observe, it is vitally important that urban greening advocates use evidence, rather than received wisdom, to inform policy-making and decision-making. Urban greening initiatives can also distract from far more fundamental physical problems that drive urban inequality (e.g., urban heat, flooding and polluting land uses), problems that are embedded within the modernist urban morphology. Pavement type, street orientation, building densities, fossil fuel transport dependence, and exclusionary zoning, all contribute to urban inequality. But the focus on greening masks these more difficult, historically accreted issues, and eludes the question of how we should build and rebuild cities into the future to promote social inclusion, human diversity, equity, justice, and ecological sustainability.

## OPEN ACCESS

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### Specialty section:

This article was submitted to  
Urban Ecology,  
a section of the journal  
Frontiers in Ecology and Evolution

**Received:** 25 August 2021

**Accepted:** 11 October 2021

**Published:** 05 November 2021

### Citation:

Pincetl S and Byrne JA (2021)  
Editorial: Historical Legacies of Land  
Use in Cities; Parks, Open Spaces  
and Potential for Green Infrastructure-  
Ideas of City Nature in an Urbanizing  
Planet. *Front. Ecol. Evol.* 9:764084.  
doi: 10.3389/fevo.2021.764084

In this special issue, we have sought contributions that attempt to unpack the contemporary ideologies driving investments in green infrastructure and greenspace in cities across the world, including urban ecosystem science. Our aim was to take a step back and to try to objectively question the idea of “green is good” (Angelo, 2019). We asked ourselves and each other whether there might be a role for other colors within efforts to restore urban ecologies, provide habitat, alleviate environmental inequalities, and combat myriad urban environmental ills. Is there a place for the browns of grasslands, the grays of rocky outcrops, and the reds and oranges of lichens (Cohen, 2013)? We also questioned whether green might be a code word for a particular cultural politics of nature (Byrne, 2012), that privileges large trees over grassland, prairies, and moors; wealthy people over the poor; and White communities over people of color—(re)producing and entrenching environmental inequality (Schell et al., 2020). What is this urban vision of green and can it truly be disentangled from western imperialism, including gardening traditions exported across the globe (Doherty, 2017).

Interestingly, several submissions entirely ignored this call, focusing on quantification of GI, and/or pointing to the lack of GI and its reputed, but in many cases unstudied, value in the case discussed. Some articles have considered key questions about who has access to urban greenspace, who benefits and who does not. Collectively though, they are a first attempt to push scholarship in a more critical and reflexive direction, to pay attention to place and to history, to urban morphology and to the “what” and “why” of green infrastructure. It is quite surprising to observe, for example, that GI solutions appear to be generalized across cities, regardless of where they are situated and their land use or open space histories.

Smart et al. for instance, assess tree density and distribution in cities in different climate zones. They find that cultural factors play a significant role in both greening outcomes, but also in legitimizing urban greening programs, and note that street trees in European and North American cities were uncommon until the late nineteenth and early twentieth centuries. And there tends to be a “wealth effect” where prosperous neighborhoods have more trees. Moreover, they observe that urban planning, urban form, historical perceptions of street trees as a nuisance, and climatic factors all configure urban greening outcomes. In contrast, Berland et al., explain that higher levels of tree abundance in some cities is associated with systematic disinvestment, neglect, and perceptions of some places as undesirable. Perceptively, they observe that simply quantifying the presence or absence of vegetation is insufficient for explaining socio-ecological relationships. We also need to understand the role of residents’ perceptions of urban greening.

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In their article on perceptions of green infrastructure, Brown et al., point to the importance of understanding both green infrastructure services and disservices, noting that not all green infrastructure is perceived the same way. Both the form of the green infrastructure and the socio-demographic characteristics of nearby residents are important considerations. While people’s attitudes and values are relatively stable and hard to change, Brown et al. point to the role that preferences can play in determining what is acceptable or not for different residents. Felson and Ellison build on this insight, showing that it is possible to integrate ecological theory with landscape architecture to devise urban greening interventions that do not necessarily “look messy” and which provide critical benefits for non-human species. Yet Allen et al., also show how the taken for granted benefits of greening for non-human species can have unintended or unforeseen impacts. They reveal how seemingly innocuous actions such as dog walking can have pervasive and enduring impacts on nitrogen distribution in built environments, and that high levels of nitrogen can accumulate in soils over time, potentially harming urban ecologies.

It is also important to consider how even well-intentioned planning can smuggle-in historical legacies of racism and colonialism. Shackleton and Gwelda in their article point to the ongoing social and ecological perturbations caused by apartheid in South Africa. Decisions made at a point in time can persist for decades or even centuries. Judgements about the suitability of species, weed invasion, naturalness and belonging resonate uncomfortably with racialized policies and practices and notions of who belongs and who is unwanted. Connolly and Anguelovski probe the relationship between greening and whiteness in US cities. Compellingly, they find a relationship between the economic trajectory of a city, degree of greening and whiteness—cities with sustained economic growth tend to be greener and whiter whereas the inverse applies in cities that are contracting or have punctuated periods of economic growth and stagnation. As Ossola et al. argue, we therefore need to understand not only the spatial, but also the temporal dimensions of the urban greening project.

To those interested in the future of cities and in the role of urban greening in addressing complex socio-ecological issues, we commend this special issue.

## AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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