1. Introduction

# Part I - Urban Landscapes

Urban landscapes are a complex combination of natural and built elements. The natural elements that make up our cities include flora, fauna,and natural structures such as rivers and lakes. Built elements are infrastructure created by humans, such as buildings and roads, often referred to as “grey” infrastructure. Both natural and built elements benefit urban dwellers. Built infrastructure in cities is concentrated in a way that allows urban residents to fulfill many needs in a convenient way. For example, living in a city allows you to live, work, shop, and build community all within a relatively small area. Further, the natural elements of the city provide many benefits to urban dwellers. Most people experience nature through the lens of the urban landscape. Studies have shown that interaction with nature improves mental health and physical health, and is an important part of development. In addition, there are specific gifts and benefits that humans receive from nature, urban and non-urban, that we cannot receive from built elements. However, urban nature differs from non-urban nature in an important way, management.

Everything in our cities is managed by humans, including nature. For example, the composition of the urban forest does not necessarily evolve naturally, in the same way you would expect a non-urban forest to evolve. Urban planners, residents, and developers all make decisions regarding the density and species of trees that make up the urban forest. Often, urban nature is being managed in a way that maximizes benefits to urban dwellers. Maximizing human benefit can look very different depending on the interested party.For example, planners want to have low levels of maintenance and are often guided by ecologically determined “best practices” for planting, whereas residents may be trying to maximize benefits such as food production or aesthetic beauty. All management goals are valid and important, and managing urban nature to maximize benefits to all parties involved is an especially critical and difficult problem (has been referred to as a “wicked” problem Gaston, Avila-Jim Enez, and Edmondson (2013)).

Cities in the Global North are not currently being designed or managed to maximize benefits to all rights- and stake-holders. Currently, we build and manage our cities under capitalist and settler-colonial systems. The prioritization of maximizing financial benefit to private businesses and individuals in combination with the legacy of settler-colonial ideals, mainly racism, has led to a deeply skewed and inequitable distribution of urban benefits. Despite the hard and relentless work of many municipal government employees, activists, and NGOs to address the long- standing inequities of urban nature’s benefits, there are still extremely harmful disparities in how the distribution, production, and delivery of urban nature’s benefits occurs. For example, the “luxury effect” is a well-tested theory in urban ecology that explains a large amount of variation in urban nature quantity and quality by using the socioeconomic status of the neighbourhoods in question. Further, urban parks provide many benefits to residents, including alleviating public health issues, and park area is negatively correlated with the proportion of BIPOC residents in the census tract in the United Stats (Hoover and Lim 2020). To maximize urban nature’s benefits to the entire urban population, we need to critically engage with the prioritization of economic benefits and make our decisions based on other critera, such as equity, compassion, and justice.

# Part II - Ecosystem Services & Disservices

Managing urban nature to maximize benefits to all urban dwellers is a daunting task, however, an “ecosystem services” framework may allow us to attempt it. Nature bestows many benefits and gifts on humans that interact with it, consciously or unconsciously. Often, the gifts that nature gives to humans are defined as “nature’s contributions to people” or ecosystem services. However, nature’s impacts are not always beneficial. For example, street trees often require maintenance and when that is not provided, they can become dangerous for residents. The negative impacts of nature on human lives are often referred to as ecosystem disservices. The urban landscape is a complex and dynamic system that is made up of many ecosystem services and disservices.

Ecosystem services are often categorized into four main groups, provisioning services, regulating services, supporting services, and cultural services. In reality, many ecosystem services cross the boundaries of each group and can provide benefits in multiple categories. Provisioning services are defined as benefits that provide products from ecosystems, for example food provided through agriculture. Regulating services are defined as benefits that are obtained through the regulation of ecosystems, such as climate regulation from tree canopies. Supporting services are defined as services that are needed for overall ecosystem functioning, such as nutrient cycling. Finally, cultural services are defined as benefits obtained from ecosystems that are non-material in nature, for example, a sense of belonging. All four groups of ecosystem services provide different benefits to humans and all are required to improve quality of life.

### References

Gaston, Kevin J, L Avila-Jim Enez, and Jill L Edmondson. 2013. “Managing Urban Ecosystems for Goods and Services.” *Journal of Applied Ecology* 50 (4): 830–40. <https://doi.org/10.1111/1365-2664.12087>.

Hoover, Fuschia-Ann, and Theodore C. Lim. 2020. “Examining Privilege and Power in US Urban Parks and Open Space During the Double Crises of Antiblack Racism and COVID-19.” *Socio-Ecological Practice Research*, 16.