

GREEN CITY: A KEY TO PROTECTING WILDERNESS

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Abstract

A green city is not as green as wilderness. Every place, whether a hamlet, town, or city, has its own natural surroundings that are distinctive in their own right. Along with the place, the environment has developed its local nature over time as a consequence of the interaction between the people who live there and the wilderness that is immediately around there. It is accepted that the development of human civilization depends on natural resources and the weather conditions of a local region. History says, the Pre-Aryan and the Aryan civilizations flourished along the Indus river and its valley. Even in modern times, most townships and villages rely on their own natural water supply, which may come from streams, rivers, lakes, etc. There are many different kinds of complex ecosystems because of the wide variety of local meteorological and geographical conditions with overall biodiversity. The natural wilderness areas of many of the world's towns and cities, which may include wetlands, woodlands, grasslands, hills, coastal areas, etc., are foundational to the very essence of the communities' identities. In recent years, green spaces like these, especially those located in and around cities, towns, and other urban areas, have acquired significant significance in the landscape of urban areas. The distinctive individuality of a city that allows it to be easily distinguished from the identities of other cities is referred to as its "urban character." It is also known as "urban landscape identity." It is the aggregation of the city's natural and cultural landscapes, including its history and social life. These urban green areas are very significant for the preservation of the ecosystem's structure, as well as its species diversity and ecological integrity. Therefore, the concept of a "green city" rises to the forefront with a great lot of relevance. The present paper's primary focus is to discuss this concept as a key to protecting wilderness in urban areas.

Keywords

Wilderness Protection, Wilderness Areas, Green City.

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Introduction

Even though the ideas of urban wilderness areas, green cities, and livable areas are relatively recent, the idea of green space as an urban norm can be traced back to the French Revolution. For example, the Tuileries Garden in Paris was initially made publicly accessible in 1792, which is located immediately to the west of the palace that shares its name. Since then, the private and public greening of the urban area has come to be recognized as being fairly separate from one another (Akkerman, 2010). The valley and the rivers were left almost untouched even though the Indus valley civilizations grew in the cities of Mohenjo-Daro and Harappa till its end. The lush, green areas surrounding the palaces in India were kept that way thanks to the Mughal Gardens, which were constructed in an Islamic architectural style. The national parks, bio-reserves and woods were safeguarded, particularly for preserving wilderness. The above illustrations demonstrate that the idea of green areas has a wide range of origins.

Urban wilderness The term “green city” literally appears to be misleading like “concrete forest”. Urban wilderness areas are defined by utilizing arbitrary limits of remoteness, naturalness, and total area. These are the areas where humanity recognizes and values the biotic variety. The majority of the historical work that has been done on the subjects of wilderness and preservation has been on national parks, which are areas of nature that are located outside of cities as if there were an inherent dichotomy between cities and wilderness. As a result, the notion of finding wilderness in the middle of the city is very recent. (Meyre, 2009).

The term “wilderness” refers to the natural area that is untouched and unaltered by humans. The “urban wilderness” refers to an area that is slightly changed land and sea that has not been significantly inhabited and maintains its natural character and influence. This area has been protected and is under regular maintenance to preserve its natural nature (World Commission on Protected area, 1992). The concept of urban wilderness is today considered a natural heritage in many areas of the globe; yet, there is a great deal of concern over the fact that it is in danger as a direct consequence of the trend of so called urbanization that started in the early twentieth century (Michele et al., 2006).

These urban wilderness areas include a wide range of habitats, such as forests, woodlands, grasslands, fields, plantations, wetlands, ponds, lakes, reservoirs, springs, and rivers, as well as several other natural features. There are many different kinds of biota that call each of these wilderness areas their home. Wilderness areas provide protection, food, and water to a wild variety of flora and wildlife that coexist with

humans. All of these wild organisms depend on one another for their continued existence, but they coexist peacefully without interfering with one another's lives. This is the case unless human activities cause competition for space and resources, in which case there is a disruption in the harmony of the ecosystem. Men, who are also a part of this ecosystem like other living species, can continue to cohabit with other creatures in harmony even today, as they did up until very recently. This diversity of purpose is tackled by urban ecology, which sees human and natural systems in urban areas not as separate entities but as interacting parts of a unified whole (*Grimm et al., 2000; Pickett et al., 2001; Alberti et al., 2003*). These wilderness areas serve an important purpose as ecologically significant micro-ecosystems in the city's environment. They are responsible for managing the microclimatic regime of the town or city they are situated in. They serve as barriers against the potentially damaging effects of urbanization. The mosaics of urban and wilderness areas demonstrate the diverse function that these areas play. These wilderness areas not only supply resources but also aid in recycling organic substances and reduce the ever-increasing effect of pollution by functioning as pollutant sinkers like carbon sequestrers. In addition to being enhanced with educational and scientific potential, aesthetic value, and recreational potential, urban wilderness areas are also enriched with aesthetic value. They are an urban common in the city's social life and activities. These so-called "Urban Commons" have a significant aesthetic value in the urban environment and serve as gathering places for people of all ages and backgrounds to participate in various activities. The urban wilderness provides all of these benefits at no additional expense, and they either directly or indirectly contribute to the continued preservation of the sociocultural equilibrium of the city.

Even though urban ecology is regarded as a relatively recent profession (*Sukopp, 1998; 2002*), there is a rising interest in the topic due to the ever-increasing scale of cities and the ever-increasing blurring of the lines between rural and urban areas. In recent years, a good number of studies have been undertaken on the plant communities in various urban contexts. The findings revealed that historical components and architectural types, as well as land use and urbanization gradients, are intimately connected to the diversity and richness of these communities (*Zerbe et al., 2003*).

Significant advances have been made in developing key urban ecology principles. The following five established principles (*Cadenaso and Pickett, 2008*) were held as essential characteristics of cities and urban areas:

- 1) Ecosystems
- 2) Diversity

- 3) Dynamicity
- 4) Reciprocity between human and non-human; and
- 5) Continuity of ecological processes

For instance, instead of being interconnected parts of a larger urban socio-ecological system, urban green areas have traditionally been seen as fixed and interwoven entities in the urban environment. This misconception has led to a lack of appreciation for the value of these areas (*Borgstrom et al., 2006*). Learning and feedback between human beings and the natural elements that make up urban ecosystems are thought to be two of the most important characteristics of the urban model (*Gonzalez et al., 2008*).

Green City and Habitable CityThe “green city” has been developed as a new concept on the horizon and it will take into account the significance of urban wilderness areas in the process of city development. The Organization for Economic Co-operation and Development (OECD) has also started a program on ecologically green cities in response to the upcoming difficulties of the future. About 34 countries, in the world, started the OECD declaration on green growth in June 2009. Green development is defined as decreasing greenhouse gas emissions and pollution, reducing waste, effectively using natural resources, and, most significantly, preserving biodiversity in urban cities (www.oecd.org). Based on the idea of the green city concept, the United Nations Environment Program has produced guidelines for the green city. The order of these regulations is to assist cities in becoming more ecologically friendly. This emphasizes the value of green elements and positions them as meaningful solutions and remedies to many of the problems that contemporary life generally poses. On the master plan, green spaces are just as important to development and regeneration as red, blue, and grey areas (www.thegreencity.com).

Using a comprehensive approach while designing, demolishing, building, and renovating is referred to as “going green” in this context. This strategy aims to lessen the effect a building has on its residents, the neighborhood, and the environment. This is achieved by creating strategies to lessen their effects. Site planning, energy and water efficiency, waste reduction and waste management, water recycling, material and resource efficiency, indoor air quality, and environmental quality are just a few examples of the actions that might be taken. The green city will need green spaces, open spaces, and wilderness areas to operate successfully. The city’s lungs will be located in these areas. The most important task in any effort to mitigate the potential effects of urbanization would be preserving the pre-urban natural remnants and constructing urban green areas. (*Nakagoshi et al., 2007*). The

coverage and make-up significantly influence the extent and severity of many urbanization-related effects and management of green spaces in urban areas, including areas of semi-natural habitat surrounded by development, private gardens, public parks, sports fields, abandoned land, road and railroad verge, and waterway banks (Loram *et al.*, 2008).

To improve the effectiveness of integrated urban planning, the concept of a habitable city, otherwise called a “livable city”, is put forward. This concept is included in city development projects and eco-city planning. By raising everyone’s quality of life, environmental management and planning city together to make cities more livable for their residents. It describes the quality of living that city residents enjoy and is associated with their access to infrastructure (transportation, communication, water, and sanitation), food, clean air, affordable housing, fulfilling life, green space, and parks. Another element that affects it is how easily residents may access facilities (Palej, 2000).

A habitable city may also be referred to as a sustainable city, which offers the means of subsistence in addition to ecological sustainability (Evans, 2002). Earlier definitions focused mostly on a location’s economic potential and access to various resources. But the idea of a habitable city has expanded in scope in recent years, and it also incorporates the quality of the environment that is made accessible. As a result of the high pace of urbanization, concerns relating to city competitiveness and the quality of life achieved via environmental development have emerged as important debates of discussion.

In fact, wilderness areas or green spaces are now the most neglected and threatened. They are seen as wastelands or areas that don’t generate anything, particularly in and around expanding cities and towns. Even while urban planners are talking about creating green and habitable cities as urbanization continues to spread, actual wilderness areas are being destroyed at an alarming pace by urban expansion, which pays little attention to the ecological, social, cultural, or aesthetic worth of these areas.

Urbanization The urbanization of an area is an unavoidable phenomenon. It is an essential component in the development of the human race. Worldwide urbanization is moving forward (Germaine *et al.* 2001., McKinney,2006). In the year 1900, about just 9% of the total human population on the planet was found to be living in “urban areas.” This number had already reached 40% by 1980, and it had reached 50% by 2008. It is anticipated that by 2025, it will have risen to more than 66%. (World Bank, 1984; UNEP, 2012). As Compared to developed countries, the proportion of the urban population is

increasing much higher in developing nations. The United Nations Population Fund anticipates that the rate of urbanization will continue to rise in the next decades, especially in the countries of the developing world (UNPF-2007).

The transformation and concentration of land usage are what's known as urbanization. Because of the mushroom growth of population, urban areas use a disproportionate amount of energy and other resources. There are several interpretations of the word "urban." In its most basic form, it is a geographical concept that describes how land in a certain area is to be used. One description of an urban area is that it is an area that is relatively big, has a high population density, and is comprised of residential, commercial, and industrial sectors. An urban region is a functional unit in almost all respects. According to the United Nations, "urban residents" reside in areas with a population density of at least 150 people per square kilometer (*Makoto, et al., 2005*). Of course, it is less in India.

A city's unique identity, which distinguishes it from other cities, is known as the urban landscape identity, sometimes referred to as the urban character. In addition to conveying the history and social life of the city, it is a synthesis of the natural and cultural landscapes of the city. One of the primary reasons for changes to the landscape is rapid urbanization, which may be defined as the construction of human-made infrastructures like roads and buildings to satisfy human requirements (*Wilcox et al., 1985; Leston et al., 2006*).

As a result of urbanization, the landscape may be altered with undesirable effects from an ecological perspective. Green spaces and wilderness areas might be impacted positively and negatively by these effects. On the one hand, a range of habitats that do not exist anywhere else is created and kept alive. On the other hand, the influence that is often seen is a negative one. The spread of urban development around the world has affected many animal species, often leading to their classification as endangered or vulnerable. The utilization of more and more land for urban purposes is a global trend that presents a significant risk to biological diversity (*Burton et al., 2000*).

Pressure is being put on the urban wilderness in India's cities due to the country's rapidly expanding population and other development activities. These activities add to the stress and are responsible for the degradation of urban wilderness areas in many places due to the unavoidable nature of the city-development process. Infrastructure facilities must be made and updated to satisfy an expanding population's requirements. Road widening projects are done so that different building activities may be completed to meet the infrastructure facilities' requirements. In the course of this process, trees will be chopped down, which will result in the

degradation or destruction of habitats. The expansion of unplanned and unlawful building activities in red zone areas along river banks and in close proximity to springs is adversely impacting most cities. The pollution of local lakes, streams, and rivers is caused by the discharge of raw sewage directly or indirectly into these water-bodies. The improper disposal of solid waste contributes to an increase in the level of contamination in both ground and surface water sources. It also badly impacts the underground water sources in the surrounding area.

The grassland ecology is being disrupted by activities such as overgrazing and accidental fires, both of which have a detrimental impact on grassland biodiversity. The habitats of the local flora and fauna are being destroyed due to mining and stone quarrying on the hills in the area. The transformation of natural, unspoiled habitats in wilderness areas into gardens and plantations of a single kind is adversely affecting local biodiversity. The introduction of non-local species into their natural environment creates competition for native species.

Nevertheless, recreational gardens, plantations, and open spaces are not a suitable substitute for the original wild habitats. These original habitats are more effective at serving as biodiversity depositories and performing ecological tasks. While developing the city and planning its infrastructure, biodiversity in urban activities is often neglected. The reduction in biodiversity may be traced back to a lack of eco-planning that is both integrated and focused on the long term and to deficiencies in the Environmental Impact Assessments of various development projects.

Climate change and urban environs It is no longer a science fiction to say that global warming will impact life on earth in the form of climate change; rather, this is a fact of science. Over the past three decades, the scientific community and the general public have realized that climate change has to stay long. We must find a way to adapt to it by making adjustments, changing our lifestyle, and, most importantly, shifting our mentality. This has been the case for both groups. The impacts of climate change are particularly hazardous to vulnerable species, such as the human population and other animals with a limited ability to adapt. Because of their overwhelming dependence on the fragile natural resources nearby, the most densely populated areas, such as cities and metros, are more vulnerable to harm than other places.

During the 19th and 20th centuries, the bulk of the world's urban population and many of its finest cities were situated in the more wealthy nations of the world. This trend continued far into the 21st century. On the other hand, as of 2011, just five of the world's 23 megacities were situated in nations with high levels of wealth. The remaining were all situated in either nation with a low or a moderate income,

such as India. This lends credence to the notion that the rate of urbanization is steadily picking up speed. However, urban cities with poor or moderate incomes and inadequate infrastructure are particularly vulnerable to the effects of natural catastrophes. Most of the deaths caused by natural disasters between 1970 and 2008 occurred in low- and middle-income nations. This accounts for the majority of disaster-related fatalities (*IPCC, 2012*).

Urbanization changes local environments via a number of different physical processes. These include urban heat islands, which are characterized by greater temperatures, especially at night, in contrast to rural areas located far away, which may be made worse by climate change. Understanding the dynamic progress of the urbanization process, the current status of the local environment, the accelerating speed of climate change is crucial. The IPCC said in 2014 that the density of many large cities, which substantially impacts anthropogenic heat emissions and surface roughness, is related to the degree of wealth, energy consumption, and local and regional climate conditions. The high degree of seasonality, diurnal variation, and meteorological variation in temperature, all impact how dramatic urbanization-related changes are in certain cities.

As per the UNEP Report on Climate Change, close to 80% of all carbon dioxide (CO₂) and considerable quantities of other greenhouse gases are produced by urban activities. Energy production, transportation, industry, and domestic burning of fossil fuels and biomass are all direct sources of greenhouse gas emissions. Vehicle and transport equipment emissions are rising at 2.5% annually. They are a major source of CO₂ emissions. The use of lead, sulphur, nitrogen oxides, and electrical energy for industrial, commercial, and residential applications, as well as for things like public lighting and transportation, may also result in such emissions.

“Green coverage” in cities is gradually disappearing due to construction and development projects such as roads, railroads, housing, commercial buildings, and other such initiatives. A steady increase in the amount of land devoted to agriculture and forest is being replaced by urban development inside and surrounding the city. Because of this, the temperature in cities is rising as compared to the surrounding areas, and as a result, cities are now functioning as “urban heating islands.” The findings show that the fast heating of urban surfaces, such as buildings, asphalt, bare soil, and short grasses, and a reduction in the number of forests, wetlands, and open spaces, or their absence entirely, are the main contributors to urban heating. (*Kim, 1992*). It is, therefore, discovered that the summertime temperature is around 10 degrees warmer than the nearby woodlands and that the indicators of daily heating began to appear by mid-morning.

These disturbances manifested themselves in the change of changes in land use, local climate alteration, and air pollution. This study demonstrates that the effects of urbanization extend far beyond the city's limits and create detailed feedback. The rapidly increasing rate of urbanization is generating a change in the land use cover, which in turn is causing a reduction in the amount of land that is biologically unspoiled and the creation of fragments of the remaining land. This not only lessens the ecological vitality and values of the species but also raises the likelihood of more ecological deterioration.

Conclusion

Green spaces offer residents a relationship to the natural world and provide several psychological and therapeutic advantages (*Turner et al., 2004*). It is projected that by the year 2030, the majority of the world's population will be living in what is known as a condition of 'biological poverty.' This prediction is based on projections made by the United Nations. Instead of focusing on restorations of cities that are impossible to achieve, it is now very necessary to employ the remaining "natural" habitats that are found in urbanized areas as instruments for the conservation of biodiversity (*Blair, 1996*). The potential for the restoration of urban greens is low, and efforts for the conservation of biodiversity are hampered by the structure of towns and by public policy. Nonetheless, urban biodiversity is of utmost significance for the amusement of city inhabitants as well as the education of people on the relevance of the conservation of biodiversity (*Ormerod, 2003*). Both conservation ecologists and urban planners have unique problems when dealing with urban ecosystems and their biodiversity. (*Blair, 1996*).

For urban planning to develop in a more eco-friendly direction, the green city managers must know how to increase cities' ability to house species. This is crucial for natural habitat patches found in cities, which are more likely to support a variety of large-scale species. It is natural to protect idle land or small woodlands inside urban towns and the natural structure of these habitats (*Leston and Rodewald, 2006*). For instance, woodlands, one of the most common natural habitats in European towns, tend to be one of the places where it is most probable that a significant number of species native to the landscape might live there. Consequently, urban woodlands could be crucial for maintaining urban biodiversity (*Donnelly et al., 2004; Kowarik et al., 2005*). Given the importance of urban wilderness, the idea of a green city would be a significant possibility of conserving them in the development of urbanization.

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