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Urgent Biophilia: Green Space Visits in Wellington, New Zealand, during the COVID-19 Lockdowns

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Abstract: Urgent biophilia describes the conscious desire of humans to seek interactions with nature during periods of stress. This study examines the changes in frequency and reason for visiting urban green spaces by residents of Wellington, New Zealand, to determine whether resident behavior during a stressful period exemplifies the principles of urgent biophilia. The COVID-19 pandemic and resulting lockdowns were used as the study period due to the significant physical and mental health stressors they triggered. Pedestrian and cyclist counters located in key urban green spaces in Wellington were used to collect data on visits pre- and post-pandemic. Two surveys were used to assess residents' reasons for visiting urban green spaces during lockdowns. Increased green space visits were seen during the strictest lockdowns, though there was some variation in visits depending on the location of the green space. The most frequently reported reason for visiting green spaces during lockdown was mental wellbeing, followed by recreation. These results suggest that Wellington residents used urban green spaces as a coping mechanism during stressful lockdown periods for wellbeing benefits, exemplifying the principles of urgent biophilia. Urban planners and policymakers must consider and implement urban green infrastructure as a public health resource.

Keywords: urgent biophilia; urban green space; nature-based coping; human wellbeing; pandemic; COVID-19; urban green infrastructure

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1. Introduction

1.1. Urgent Biophilia and Human Wellbeing

The concept of biophilia, introduced by E. Fromm in 1964 and popularised by E.O. Wilson in 1984, describes the "innate human tendency to focus on and affiliate with life forms and life-like processes" [1]. This affiliation and desire to connect with nature, often termed the biophilia hypothesis, is said to be encoded in human genetics as a result of our evolutionary and historical dependence on other species and biological systems for survival and reproduction [2,3]. A growing body of quantitative and qualitative research provides evidence for the mental and physical advantages associated with biophilia and contact with nature, as well as the adverse effects of a lack of contact with nature [4,5].

A framework for incorporating biophilia into the built environment at the architectural scale, termed biophilic design, was introduced by S. Kellert, a colleague of E.O. Wilson, in 2008 [6]. Biophilic design frameworks related to urban scales have also been devised [7,8], and an international Biophilic Cities Network exists to facilitate a global network of partner cities "working to pursue a natureful city within their unique and diverse environments and cultures" [9].

Biophilic design utilises natural morphologies, materials, and spatial patterns and arrangements to provide more opportunities for humans to connect with nature, either directly or indirectly, in buildings and cities, thereby improving human wellbeing [6]. Russell et al. [10] categorised the contributions of non-material experiences of nature to the many facets of human wellbeing, including certainty and control, inspiration and fulfilment, sense of place and identity, and connectedness and belonging.

In 2012, K. Tidball [11] proposed the concept of urgent biophilia to describe nature's role in human resilience. In contrast to the biophilia hypothesis, which suggests that our innate affinity to nature is mostly subconscious, urgent biophilia suggests that humans consciously seek out contact with nature to strengthen their resilience during a crisis or disaster. Tidball's 2012 paper [11] reviews the therapeutic benefits of contact with nature and suggests that within the context of a disaster or crisis, individuals or communities may consciously seek out nature to reap those benefits and aid in their recovery. This hypersensitised manifestation of the human affinity for nature functions as a self-administered or doctor-prescribed [12] nature-based therapy that can improve our capacity to withstand and adapt to hardship [13].

1.2. Green Space and Human Wellbeing

Ecosystems and contact with nature contribute to human wellbeing through physical, psychological, philosophical, social, cultural, and spiritual pathways [14]. The term "wellbeing" goes beyond the meeting of basic needs and includes elements such as a positive physical and mental state, social cohesion and participation in society, and a sense of purpose and achievement [5]. These more intangible benefits of contact with nature are central to human values and preferences, such as cultural diversity and identity, cultural landscapes and heritage, inspiration, recreation, and tourism [10,14].

An extensive body of literature documents the mental and physical health benefits related to nature-based therapies and living in close proximity to nature [4,5]. Nature-based therapies for mental wellbeing include practices such as forest bathing, horticulture, and community gardening [15]. There is evidence for the positive impacts of nature on stress reduction [16], social cohesion [17], and improved mood [18]. Significant associations have been found between the proximity and accessibility of urban green spaces and positive physical and mental health outcomes [19]. However, McDonald et al. [20] found that only 13% of urban residents live near enough forest cover to confer significant wellbeing benefits. Due to age or financial constraints, residents with limited mobility are particularly impacted by a lack of access to good quality urban green space [21]. Urgent biophilia suggests that access to the physical and mental wellbeing benefits of urban green spaces is especially important during times of crisis. Therefore, this study examines the COVID-19 lockdowns and their impacts on green space visits by urban residents.

1.3. COVID-19 Pandemic and Human Wellbeing

The global public health crisis presented by the COVID-19 pandemic sent unprecedented regulations throughout countries worldwide. When the COVID-19 virus arrived in New Zealand in February 2020, the government implemented rapid, strict lockdowns to stop its spread. While this resulted in New Zealand having fewer COVID-19 cases and deaths, there were other impacts on wellbeing due to the economic, social, and health consequences of the border closure and lockdowns [22]. Such large and sudden disruptions to everyday life negatively impact the wellbeing of populations, particularly those in urban environments with limited access to green spaces [23]. Whether through direct contact with the COVID-19 virus or the indirect impacts of the local and global restrictions put into place to reduce its spread, the COVID-19 pandemic has had serious impacts on human wellbeing [24]. The COVID-19 period has been associated with significantly higher levels of depression and anxiety [25], and lockdown severity significantly impacted mental health [26]. The COVID-19 pandemic is a crisis scenario that contains no physical destruction or disaster but remains a threat to public health and social cohesion. The self-isolation