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Beyond the Nature–Heritage Divide: A Biocultural Perspective on Historic Urban Landscapes

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Abstract.
Although contemporary policies promote renaturing approaches to address emerging urban challenges, the nature–heritage divide continues to influence management practices in historic urban centers, where vegetation is perceived as a threat rather than a structural component. Drawing on the Historic Urban Landscape approach and the concept of biocultural heritage, the paper interprets the historic city as the outcome of co-evolution between ecological systems, cultural practices, and the built fabric. Through the case of Milan, compared with recent strategies implemented in Paris, it proposes a dynamic understanding of urban heritage that integrates transformation and recognizes vegetation as living heritage capable of shaping more resilient urban futures.

Keywords: Historic Urban Landscape; Biocultural heritage; Natural heritage; Urban palimpsest; Co-evolution.

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Cities and Nature

Throughout history, it has always been the city –dominant– that has invented its "other" and advocated different forms of "return to nature". Thus, the city has invented both the exotic and the regional, national parks and the very idea of natural heritage, and it would likewise invent landscape. The growing distancing from nature has always generated a desire for nature (Jakob, 2009, p. 8).

The interpretation of city/nature as an oppositional binomial has produced a tension between the contrasting tendencies of development and conservation, between anthropization and landscape protection, between the artificial and the natural. Over time, several disciplines have offered alternative perspectives that situate urbanization within ecosystem processes rather than in opposition to them (Pickett et al., 2008; Salomon Cavin and Granjou, 2021). Nevertheless, this dichotomous simplification persists in many approaches to the contemporary city, particularly when the limits of the city itself become evident in the face of a global scenario of climate change and environmental risks that transcend the urban scale. Nature is thus invoked as a "solution": reintroducing what is lacking, bringing back the "other" (Alva, 2022).

The discourse on adaptation to future scenarios characterized by uncertainty has progressively incorporated strategies such as urban reforestation, vegetation designed as "green infrastructure," and "nature-based solutions" as responses to problems generated by the urban model. The benefits of vegetation in urbanized contexts are indeed multiple, both quantitative and qualitative, ranging from heat island mitigation to the strengthening of place attachment (Babí Almenar et al., 2021). However, the reinsertion of nature into the city is frequently accompanied by bold rhetorics: from the celebration of the wild and the romantic –yet scarcely ecological– idea of urban retreat to make way for the return of nature, to the opposite utopia of controlling vegetation through its engineering integration into the urban system (Seddon et al., 2021).

This contribution does not seek to question the usefulness or good intentions of approaches that propose reintegrating natural components and processes into urban contexts. Rather, it aims to contribute to a theoretical repositioning of discourse within a vision of collaboration between humans and nature that is neither simplistically oppositional nor utilitarianly instrumental, especially in relation to the role of nature in the historic city and, indeed, re-starting precisely from the historic city and from the effective recognition of nature as heritage.

Nature and Heritage

Regardless of the approach adopted, the impetus to reintroduce nature into urban contexts becomes more uncertain and controversial when entering the field of the historic city. In contexts characterized by a high density of cultural assets, the priority attributed to the conservation of material heritage tends to marginalize the role of vegetation, which is perceived as an external, unstable element and potentially threatening to the physical and visual integrity of the built environment.

In particular, three areas of real or perceived conflict between nature and heritage can be identified. First, biodeterioration of historic structures and materials due to biological attack, colonization by invasive species, and fracturing caused by plant root systems. Second, the compromise of aesthetic perception and the presumed authenticity of places. Third, the impact on the ease and costs of heritage maintenance, given that forms of vegetation management other than removal require more time and expertise (Coombes and Viles, 2021).

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To the city/nature dichotomy and the rigid interpretations that follow from it is thus added the problematic relationship between nature and heritage. The result is a persistent difficulty in accepting the spontaneous presence of nature and in supporting new greening strategies within preservation policies for historic centers. It is no coincidence that experimentation in this direction has concentrated mainly in post-industrial areas, peripheral neighborhoods, and peri-urban belts: "nature-based solutions" are still too often expressed through a predefined catalogue of standardized interventions – such as green corridors, brownfield reconversion, or building-envelope interventions – that may be suitable to the morphology of the contemporary city but are incompatible with the urban fabric and architecture of the historic city.

The result is what Coombes and Viles effectively describe as "grey holes" in urban greening programs, meaning extensively mineral historic centers that remain excluded from broader adaptation strategies. The tendency to prefer a "sterile but stable" scenario for historic centers, rather than hybrid formulas that are certainly more unstable but potentially richer and more vital, contributes to relegating urban heritage to a static vision that is reluctant to recognize the dynamic dimension of the urban landscape (Siravo, 2014). Within this framework, vegetation is generally admitted only in selective and residual forms – listed historic gardens, monumental trees, formalized green systems – while a broader reflection on the structural and cultural role of ordinary vegetated systems, which have historically contributed to shaping the city, remains excluded.

The case of Milan is particularly significant in this regard. Although the *Piano di Governo del Territorio Milano 2030* declares the objective of constructing "a green, livable and resilient city", promoting a green-blue infrastructure and depaving strategies, the translation of these principles into projects implemented in the historic center appears limited and contradictory. Recent interventions in Piazza San Babila, Piazza Cordusio, and Piazza Quasimodo, to cite only the most emblematic cases, show a systematic prevalence of mineral surfaces, the use of vegetation according to a predominantly decorative logic, and a reluctance to grant vegetative components a spatial role capable of truly influencing the experience of urban space (Fig. 1). While these interventions have improved the usability of the spaces, they seem to reproduce a design model that considers vegetation as an accessory element, compatible only within formal and controlled limits, avoiding any reconsideration of its structural role in defining historic public space.

Nature is Heritage

Abandoning the dichotomous vision means opening the field to new possibilities and synergies between city, nature, and heritage. For at least fifty years, theoretical debate has offered insights in this direction, beginning with the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage, which later embraced the concept of cultural landscape, recognizing it as the "combined works of nature and of man" illustrating the evolution of society and human settlement over time (UNESCO, 1972, 1999).

Reflection on the relationship between nature and culture subsequently evolved through significant milestones and intersecting lines of inquiry (Fig. 2). Since 1988, the United Nations Environmental Programme (UNEP) has deepened the study of biological diversity, while the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Council on Monuments and Sites (ICOMOS) have developed guidelines and instruments for safeguarding tangible and intangible cultural heritage. From 1992 onward, a common path began to emerge with

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the Convention on Biological Diversity (UNEP, 1992) and the Belém Declaration, which recognized the interconnection between biodiversity and cultural expressions, defined as the "humankind's reservoir of learned responses to the environment that makes co-existance and self-recognition possible" (UNESCO, 1992). Since 2010, a joint program has been established to enhance the intersections between biological and cultural diversity.

The role of the city, latent in many of these documents, gained prominence with the European Landscape Convention, which fully included urban landscapes as one of the possible expressions of the interaction between human society and the natural context (Council of Europe, 2000). Meanwhile, the concept of biocultural heritage has been reconsidered and expanded, recognizing its relevance also within a modern and urbanized Europe. Agnoletti and Rotherham emphasize that, "since it assimilates economic, social, cultural and environmental processes in time and space, the European landscape is predominantly a biocultural, multi-functional landscape" (Agnoletti & Rotherham, 2015).

Despite these theoretical advances, historic centers have often remained isolated, treated primarily as objects of conservation and restoration, rarely as subjects of innovation and adaptation (Di Marino et al., 2023). This tendency has left historic centers behind, increasing risks for urban heritage and missing opportunities to draw from the complexity of the urban palimpsest insights for imagining urban futures (Taylor, 2016).

The Recommendation on the Historic Urban Landscape (UNESCO, 2011) aims to overcome this contradiction by moving beyond the very idea of the "historic center" toward the broader concept of "landscape." The Historic Urban Landscape paradigm seeks to reconcile conservation and development, and the nature–heritage dichotomy, proposing a reading of the historic city as the result of relationships between public and private dimensions, tangible heritage and intangible practices, and social, ecological, economic, and spiritual relations in continuous evolution (Bandarin & van Oers, 2012).

Thus, from a "crisis narrative," in which conservation policies urgently respond to irreversible loss of diversity, we can shift to a "dynamic narrative," in which safeguarding strategies accompany the co-evolutionary processes of cultural and natural heritage (Elands et al., 2019). Within this new interpretative framework, it becomes possible to re-think the preservation of the historic city while incorporating its dynamic transformation, the co-evolution of its material, social, and natural components, and adaptation to future scenarios. In this perspective, the concept of biocultural heritage fully enters the discourse on the city, and particularly on historic urban landscapes, bringing attention to the synergistic and reciprocal collaboration between nature and culture.

Dynamic Landscapes

More than a decade after the adoption of the UNESCO Recommendation, it is necessary to acknowledge the slowness and widespread difficulty in its reception. It has remained more a theoretical reference than an operational tool capable of influencing concrete transformations (Rodwell, 2018; UNESCO, 2023). This is also due to the lack of methods and procedures capable of linking the theoretical framework with design and transformation practices affecting the consolidated city. It is precisely within this gap between principle and practice that the concept of biocultural heritage may offer further theoretical and operational advancement. While the Historic Urban Landscape approach broadens the field by including the landscape and relational dimension

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of urban heritage, the biocultural paradigm radicalizes this perspective by recognizing the historical co-production of urban forms and ecological processes. It is not merely a matter of "integrating greenery" into historic centers, but of recognizing that the historic city itself is already the result of stratified biocultural interactions. Such inyerpretative lens allows vegetation to be understood not only as an object but as a subject endowed with its own agency, capable of influencing over time urban morphology, environmental conditions, and everyday practices (Maurer, 2024). Re-starting from the historic city to re-signify the relationship between city, nature, and heritage means reinterpreting the urban palimpsest as the result of long-term co-evolutionary relations between human communities and ecological systems. A diachronic reading of the historic city and its relationship with vegetation makes it possible to reformulate the anthropocentric interpretation of human–nature link in relational terms and to identify unprecedented ways in which natural systems have conditioned, supported, and oriented urban development and social practices, contributing to the stratified construction of urban heritage.

Co-evolution and Adaptation

In the case of Milan, for example, such an approach highlights how vegetation historically contributed to shaping the urban morphology within blocks, structuring courtyards, orchards, and convent gardens that for centuries formed a diffuse and capillary network of urban nature (Fig. 4). Despite the progressive erosion of this vegetated fabric, its substantial persistence still testifies today to a distinctive mode of relationship between built form and vegetation that is an integral part of Milan's urban heritage (Tzortzi and Lux, 2022).

Recognizing this co-evolutionary process, together with awareness of new environmental and social demands, suggests rethinking intervention strategies in order to preserve and at the same time update the historic relationship of proximity and collaboration between nature and the built environment. If in Milan and many other cities design practice still appears to prefer the "sterile but stable" paradigm, Paris offers instead a valuable example of a systematic approach to regenerating historic urban spaces that reinterprets the richness of vegetated forms that have participated in urban stratification (Bourgeois-Gironde and Lumb, 2025; Mathis, 2022). The *Projet de Plan Climat Air Énergie 2024–2030* (Mairie de Paris, 2023) sets objectives similar to those of Milan's planning framework, including achieving 10 m² of green space per inhabitant by 2040 – equivalent to greening approximately 300 hectares, of which 30 hectares will be accessible to the public by 2026 – and depaving measures aimed at restoring 40% of the territory to permeable surfaces by 2050, compared to 33% in 2023. However, the City of Paris has translated these strategic objectives into a detailed identification of transformable areas through coordination between the *Plan local d'urbanisme bioclimatique* and the *Plans de Sauvegarde et de Mise en Valeur*, which concern the historic districts of the Marais and the 7th arrondissement. This has made possible a project such as that of Place de l'Hôtel de Ville – at the very heart of the Marais – which has transformed an entirely mineral square into a 2,500 m² urban forest. The project opens new possibilities for co-existence between human and non-human actors, responding to the needs not only of people – who will benefit from shade, coolness, and proximity to nature – but also of vegetation, with trees and shrubs planted in adequate soil volumes and in numbers and varieties capable of supporting interspecific collaboration. The same transformative logic can be found at different scales, from the macro-scale of another urban forest such as that at Place de Catalogne to the micro-scale of punctual

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interventions in school streets. The systematic, capillary, and coherent character of the actions underway in Paris avoids the risk of "flagship projects" and demonstrates instead the possibility of re-discussing and updating the relationship between city and nature.

Conclusion

To consider vegetation as living heritage inevitably entails a redefinition of the practices of knowledge and management of urban heritage (Van Oers, 2014). Unlike built elements, vegetation introduces long biological temporalities, as well as processes of growth, adaptation, and transformation that do not always coincide with the timelines of design and planning. Historic urban landscapes offer invaluable testimony to the coexistence and co-evolution of vegetative systems, cultural practices, and the built environment and, if properly acknowledged, suggest diversified opportunities to preserve, enhance, and valorize the biocultural heritage of which cities are custodians.

The recognition of urban natural heritage as an indispensable component of the urban palimpsest, however, requires overcoming dichotomies and rhetorical simplifications, as well as a willingness to incorporate—among the criteria guiding the management and transformation of urban spaces—the physiological needs of non-human components. Species selection, planting and maintenance practices, and the capacity to anticipate future climate change scenarios thus become central aspects of a form of conservation that can no longer be understood as the mere preservation of the existing state. In this sense, historical knowledge of the relationship between city and vegetation assumes a strategic role in identifying persistent relational patterns between urban nature and the built environment, latent ecological continuities, and practices of integrating greenery into the urban fabric that may inform contemporary adaptation strategies. The care of urban natural heritage thus takes shape as a long-term practice of stewardship, oriented not only toward the protection of the past but toward the construction of more resilient and culturally meaningful urban futures.

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Images

Piazza San Babila, Milano (completed in 2023) | Piazza Cordusio, Milano (completed in December 2025) | Piazza Quasimodo, Milano (completed in December 2025)

Fig. 01 – Urban regeneration interventions in the historic center of Milan.

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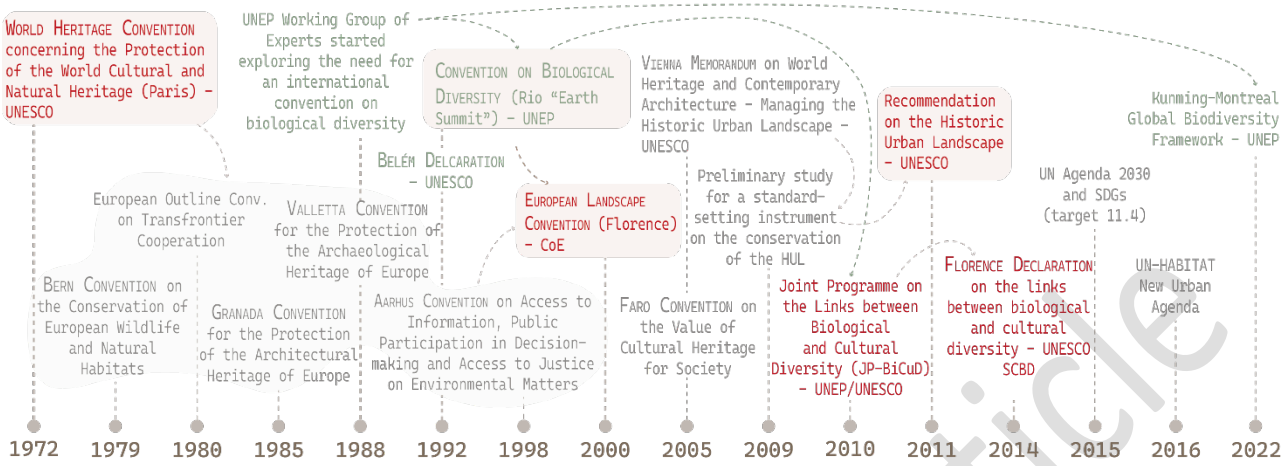

Fig. 02 – Timeline of international documents concerning the recognition and protection of cultural and natural heritage.

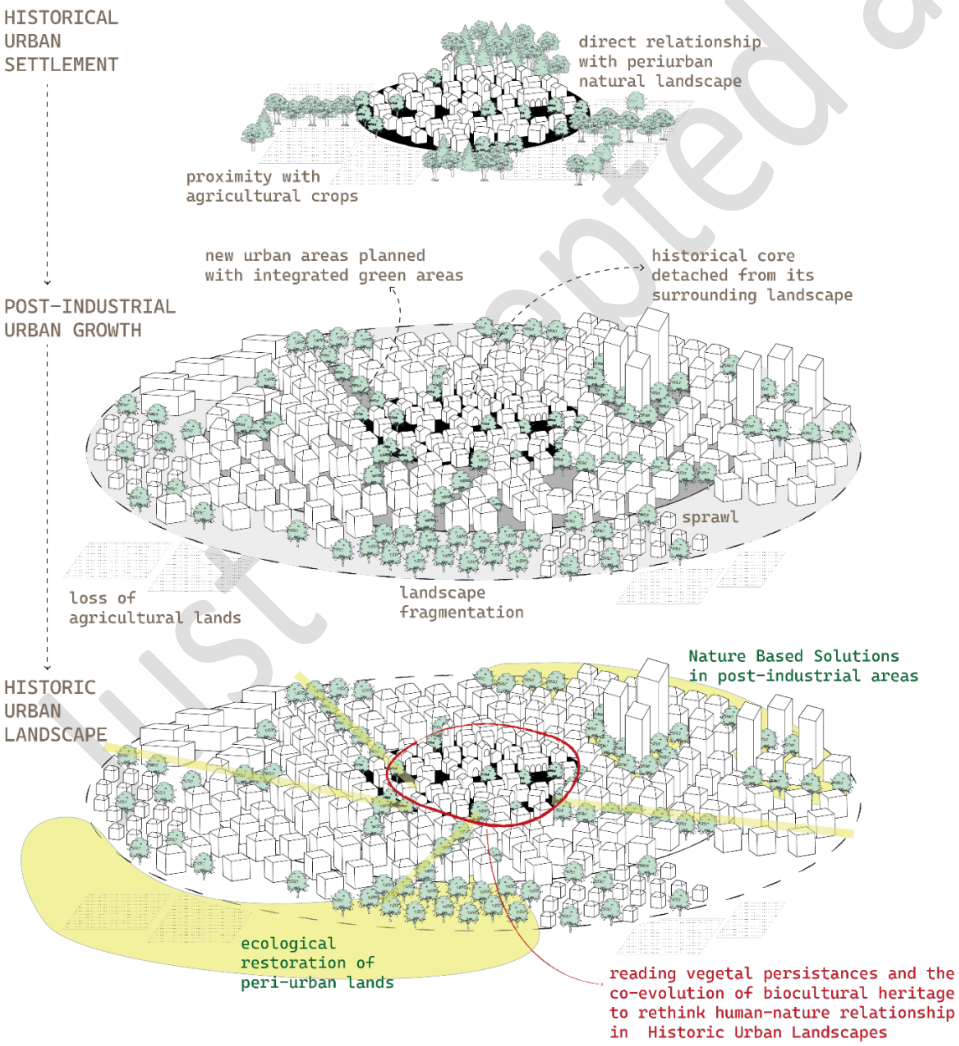

Fig. 03 – Continuity and evolution of the relationship between the historic city and urban nature.

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Fig. 04 – Persistence of vegetative forms observed in the 1807 Brera Astronomers' Map.

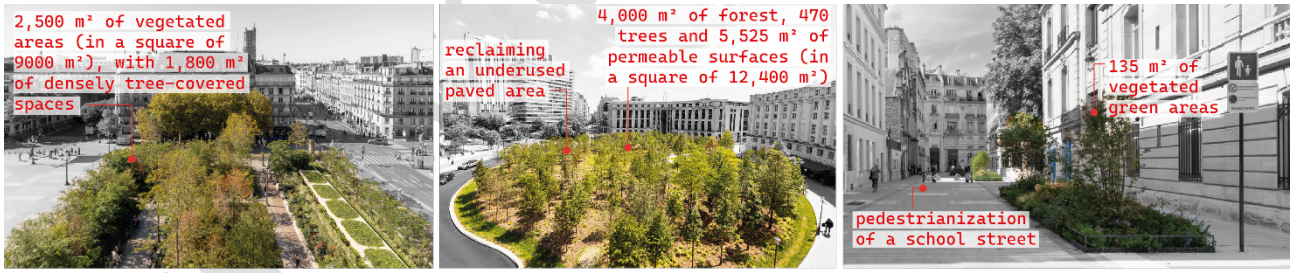

Fig. 05 – Urban regeneration interventions in the historic center of Milan.