

# Designing the Urban Coexistence: Challenging Speciesism for Equitable Spaces Beyond Human Boundaries

*Diseñando la convivencia urbana: desafiando el especismo por espacios equitativos más allá de los límites humanos*

*Projetando a coexistência urbana: desafiando o especismo para espaços equitativos além das fronteiras humanas*

DOI: <https://doi.org/10.18861/ania.2024.14.1.3762>

**MSc. Arch. Filippo Vegezzi**

Coharc Studio

Switzerland

[vegezzi.filippo@gmail.com](mailto:vegezzi.filippo@gmail.com)

ORCID: <https://orcid.org/0000-0002-1250-9520>

Received: 10/02/2024

Accepted: 30/03/2024

## How to cite:

Vegezzi, F. (2024). Designing the Urban Coexistence: Challenging Speciesism for Equitable Spaces Beyond Human Boundaries. *Anales de Investigación en Arquitectura*, 14(1). <https://doi.org/10.18861/ania.2024.14.1.3762>



## Abstract

This paper critically examines the prevailing paradigms of environmental and spatial justice, emphasising the existing disparities in policies that predominantly favour human interests while overlooking the fundamental rights and well-being of non-human species. Despite the growing acknowledgement of the importance of establishing a deeper connection between human and non-human actors for overall well-being, a pervasive speciesism mindset persists, distancing humans from the broader natural world. This separation from nature profoundly influences the formulation of policies and justice, establishing a bias that focuses primarily on human concerns and environmental conditions tailored to human well-being. Architects and planners, despite possessing the potential to enrich habitats for various species, frequently adopt human-centric approaches that marginalise other-than-human entities, restricting their access to the immediate surroundings of human territories and impeding opportunities for immersive nature experiences. This article advocates for a comprehensive paradigm shift in architectural practices, urging a more inclusive and equitable approach that extends spatial and environmental justice to encompass the diverse needs and rights of both human and non-human species within the urban landscape. The conclusions underscore the urgent need for architects

and planners to re-evaluate their approaches, fostering an environment that supports coexistence and acknowledges the interconnectedness of all species. In the face of global biodiversity concerns and international frameworks such as the Kunming-Montreal Global Biodiversity Framework, the research contributes to the discourse on sustainable and ethical design practices, advocating for a future where spatial and environmental justice extends its reach beyond the confines of human experience to create a respectful and just coexistence with the entire ecological community.

**Keywords:** Coexistence, more-than-humans justice, multispecies design, ecological architecture, human-nature separation, social acceptance, speciesism, urban wildlife, urban habitats, living with nature.

## Resumen

Este artículo examina críticamente los paradigmas predominantes de justicia ambiental y espacial, enfatizando las disparidades existentes en políticas que predominantemente favorecen los intereses humanos mientras pasan por alto los derechos fundamentales y el bienestar de las especies no humanas. A pesar del creciente reconocimiento de la importancia de establecer una conexión más profunda entre los actores humanos y no humanos para el bienestar general, persiste una mentalidad de especismo pervasiva que distancia a los humanos del mundo natural más amplio. Esta separación de la naturaleza influye profundamente en la formulación de políticas y justicia, estableciendo un sesgo que se centra principalmente en las preocupaciones humanas y en las condiciones ambientales adaptadas al bienestar humano. A pesar de poseer el potencial para enriquecer hábitats para diversas especies, arquitectos y planificadores adoptan frecuentemente enfoques centrados en el ser humano que marginan entidades que no son humanas, restringiendo su acceso a los alrededores inmediatos de los territorios humanos e impidiendo oportunidades para experiencias inmersivas en la naturaleza. Este artículo aboga por un cambio de paradigma integral en las prácticas arquitectónicas, instando a un enfoque más inclusivo y equitativo que extienda la justicia espacial y ambiental para abarcar las diversas necesidades y derechos de las especies humanas y no humanas dentro del paisaje urbano. Las conclusiones subrayan la urgente necesidad de

que arquitectos y planificadores reevalúen sus enfoques, fomentando un entorno que apoye la coexistencia y reconozca la interconexión de todas las especies. Frente a preocupaciones globales sobre la biodiversidad y marcos internacionales como el Marco Global de Biodiversidad Kunming-Montreal, esta investigación contribuye al discurso sobre prácticas de diseño sostenible y ético, abogando por un futuro donde la justicia espacial y ambiental amplíe su alcance más allá de los límites de la experiencia humana para crear una coexistencia respetuosa y justa con toda la comunidad ecológica.

### Palabras clave

Convivencia; justicia más-que-humana; diseño multiespecies; arquitectura ecológica; separación humano-naturaleza, aceptación social; especismo; fauna urbana; hábitats urbanos; convivir con la naturaleza.

## Resumo

Este artigo examina criticamente os paradigmas predominantes da justiça ambiental e espacial, enfatizando as disparidades existentes nas políticas que predominantemente favorecem os interesses humanos, enquanto negligenciam os direitos fundamentais e o bem-estar das espécies não humanas. Apesar do crescente reconhecimento da importância de estabelecer uma conexão mais profunda entre os atores humanos e não humanos para o bem-estar geral, uma mentalidade pervasiva de especismo persiste, afastando os humanos do amplo mundo natural. Essa separação da natureza influencia profundamente a formulação de políticas e justiça, estabelecendo um viés que se concentra principalmente nas preocupações humanas e nas condições ambientais adaptadas ao bem-estar humano. Arquitetos e planejadores, apesar de possuírem o potencial para enriquecer habitats para várias espécies, frequentemente adotam abordagens centradas no ser humano que marginalizam entidades que não são humanas, restringindo seu acesso aos arredores imediatos dos territórios humanos e impedindo oportunidades para experiências imersivas na natureza. Este artigo defende uma mudança abrangente de paradigma nas práticas arquitetônicas, instando a uma abordagem mais inclusiva e equitativa que estenda a justiça espacial e ambiental para abranger as diversas necessidades e direitos tanto das espécies humanas como não humanas dentro do cenário urbano. As conclusões destacam a

urgente necessidade de os arquitetos e planejadores reavaliarem suas abordagens, promovendo um ambiente que apoie a coexistência e reconheça a interconexão de todas as espécies. Diante das preocupações globais com a biodiversidade e dos frameworks internacionais como o Marco Global de Biodiversidade Kunming-Montreal, esta pesquisa contribui para o discurso sobre práticas de design sustentável e ético, defendendo um futuro em que a justiça espacial e ambiental amplie seu alcance além dos limites da experiência humana para criar uma coexistência respeitosa e justa com toda a comunidade ecológica.

### Palavras-chave

Convivência; justiça mais que humana; design multiespécies; arquitetura ecológica; separação humano-natureza; aceitação social; especismo; vida selvagem urbana; habitats urbanos; conviver com a natureza.

## Introduction

Regrettably, spatial and environmental justice are often narrowly perceived as an exclusively human prerogative, ignoring the myriad of species that co-inhabit these spaces and relegating them based on their utility to humans. Despite the inherent presence of animals in every human society and the direct dependence of humans on other animals, the dynamics of relationships between them have predominantly assumed a form of domination. In this context, as articulated by Philo and Wilbert (2000), there is a prevailing acknowledgement within human society that “animals have been the relatively powerless and marginalised other.” Similarly, Corbey and Lanjouw (2013) have emphasised the distinction between human and non-human entities, characterising it as possibly “the most pervasive dominator hierarchy in Western cultural discourse and practice.” Indeed, the observed tendency to position spatial and environmental justice as an exclusively human prerogative may be attributed to an opposition to nature rooted in the belief of an assumed intellectual and moral superiority over other species, a concept commonly referred to as speciesism.

The term speciesism was coined by Richard Ryder in 1970, drawing parallels with racism and sexism (Ryder, 2010). The intention was to describe a distinctive mindset or behaviour that unjustly prioritises and favours one species, typically humans, over others, leading to the discrimination or exploitation of non-human animals based on arbitrary criteria. Indeed, adopting a mindset and behaviour characterised by such a perspective grants permission for a range of derogative actions against other species and their environment. This approach compels animals to engage in human society solely on human terms and for human profit, resulting in significant ethical and environmental consequences (Donaldson & Kymlicka, 2011, p. 9; Pyle, 2017).

From the initial concept of speciesism, a new form has emerged, disguising itself as an ethical approach to environmental justice. While Dunayer (2013) defines the evolution of speciesism as the extension of moral and legal rights to other species based on “human-like characteristics”, and Donaldson and Kymlicka (2011, p. 4) criticise ecologists for being “willing to sacrifice individual animals” based on a particular ecosystem vision, anthropologist Philippe Descola offers a contrasting viewpoint. Descola highlights a broader and different perspective, asserting that the prevalent modern perception is that “nature only has meaning when set in opposition to human works” (Descola et al., 2013, p. 8). In this way, Descola’s perspective encompasses a broader context, emphasising a clear separation or demarcation between humans and the rest of nature. Consequently, embracing this perspective places humans in direct opposition to wild nature, nurturing the belief in their ability to dominate it (Clément, 2015, p. 9). This human

attitude, in contrast to nature, as argued, creates the conditions for reshaping the natural landscape into one that is “sterile, infertile, and toxic.” Building upon these arguments, the research explores the dichotomy between humans and nature, particularly within the field of architecture, aiming to broaden the concept of spatial and environmental justice beyond human boundaries. The primary objective is to instigate critical reflection among theorists and practitioners regarding the consideration given to non-human species within urban environments and the consequential impact of adopting a mindset of separation from nature in architectural designs, affecting both human and non-human inhabitants. By reflecting on a deeper understanding of the role of non-humans in shaping urban landscapes, this study aims to inspire a paradigm shift in architectural and urban design towards a more inclusive and respectful coexistence between humans and nature.

## (Mis)-Designed Coexistence

The perception of a separation between humans and nature is rooted in the prevailing Western notion that positions humans in a distinct category, creating a perceived isolation from the broader natural world. Consequently, due to this misconception, many individuals today view themselves as entirely detached from nature (Braito et al., 2017; Clayton, 2019; Pett et al., 2016; Stryker, 2013) the role of individuals’ relationship with nature has not yet been fully clarified. This paper attempts to operationalize human-nature relationships. It expands a scale assessed in an iterative process of mixed-methods in the US and Europe. This scale is then used to assess individuals’ relationship with nature and whether such relationships correlate with environmental behaviour. The value scale of Schwartz’s Theory of Basic Values is used to validate the results. The results verify that people hold multiple

human-nature relationships, confirm strong correlations between human-nature relationships and values, and reveal that individuals' behaviour is connected to the relationship they have with nature. Global phenomena, including urbanization, agricultural intensification, and biotic homogenization, have led to extensive ecosystem degradation, species extinctions, and, consequently, a reduction in biodiversity. However, although it is now widely asserted in the research, policy, and practice arenas that interacting with nature is fundamental to human health and well-being, there is a paucity of nuanced evidence characterizing how the living components of nature, biodiversity, play a role in this accepted truth. Understanding these human-biodiversity relationships is essential if the conservation agenda is to be aligned successfully with that of public health by policymakers and practitioners. Here, we show that an apparent "people-biodiversity paradox" is emerging from the literature, comprising a mismatch between (a. This belief system or practice carries significant implications for how societies interact with and perceive the environment, influencing aspects ranging from resource utilisation to environmental policies. As articulated by Stryker (2013), this perspective creates "an emotional and cognitive distance" from nature, resulting in an indifference to "the need to feel empathy or to take moral and ethical responsibility for the consequences of our [humans] actions." Furthermore, as highlighted by Soga & Gaston (2016), maintaining a distance from nature also poses the risk of escalating missed opportunities to engage with the broader natural world, leading to various associated negative impacts on both human and ecosystem well-being. As a ripple effect, the implications of restricted exposure to nature could contribute to a broader narrative of detachment from and disregard for nature (Rosa et al., 2018) we explore whether nature experiences lead to self-reported pro-environmental behaviors (PEBs. Expanding on this context, Bekoff (2014, p. 34) emphasises how the contemporary human lifestyle

continuously erodes the connection with the natural world, intensifying a pervasive sense of alienation:

**"Yet our modern world undermines this constantly. It unwilds us. We experience alienation from nature when we learn about, or participate in, the wanton killing of wild species, when fields and forests are clear-cut and paved over for suburban developments, and when ecosystems are ruined by pollution or other human impacts. We experience firsthand our separation from nonhuman animals when we keep them in cages in zoos. And we instill alienation from nature in our children by teaching them primarily indoors at desks and in front of computer screens. Alienation flows from the belief that humans are superior to all other animals and that we are meant to dominate other species and use the Earth solely for our benefit."**

At this point, perhaps, the understanding of the origins of this separation becomes crucial. The roots of this mindset that pose humans as separate from nature can be traced back to the Neolithic Revolution (Descola, 2013, p. 52). Accordingly, the simultaneous taming of animals and plants appears to have given rise to a more pronounced contrast between human and wild spaces. This detachment from nature was further intensified by Christianity and subsequently heightened by the Industrial Revolution. While Romanticism may have rekindled an interest in nature, contemporary society appears to have become "denatured." On top of that, these historical developments have also exerted a substantial influence on architecture and the cognitive framework of designers as they strive to adapt and reshape the landscape. Indeed, Houston et al. (2018) asserts that "urban planning has a history of viewing cities as somehow separate from nature," attributing this perspective to a "human exceptionalism" approach in designing cities and buildings. Likewise, Magle (2017)

clarified how cities have been intentionally designed as "oases of civilisation," with the explicit aim of keeping nature and the wild outside at a distance. While humans have indeed derived some advantages from modifying the landscape to suit their habitat preferences (see, e.g. Heerwagen & Orians, 1993), this lifestyle has brought about significant challenges and drawbacks. Drawing from Rousseau's historical analysis as presented by Mendham (2011) – suggesting that upon entering civilisation, humans lost more than they gained – the question arises: why are most of humans incapable of seeing the benefits linked to coexisting with nature?

Contrary to the common perception of cities as devoid of wildlife, they have become significant hotspots for wild animals. For example, Ives et al. (2016) emphasise the importance of urban areas for threatened species in Australia. Sterba (2012) sheds light on the remarkable resurgence of wild animals in U.S. cities, bringing

inhabitants closer to them than ever before in history. Werner and Zahner (2010) report a substantial presence of biodiversity in urban areas, challenging the notion that wildlife is absent in densely populated regions. Additionally, Clarke et al. (2019) emphasise the considerable diversity of wild species in the urban context, whether their presence is driven by “necessity or choice.” Likewise, Turrini and Knop (2015) yet a mechanistic understanding of the impact of urbanization on biodiversity is lacking. We assessed the impact of urbanization on arthropod diversity (species richness and evenness) showed that urban areas have the potential to serve as habitats for more biodiversity compared to rural areas.

Controversially, despite the increasing presence of animals in human settlements, the separation from nature appears to have rendered humans unable to perceive them fully in their daily lives. As observed by Caffo (2017, p. 9), “in our daily lives, animals simply do not exist”. Possibly, this explains the restricted awareness of species among Beatley’s students (Beatley, 2011, p. 1) or the limited understanding of invertebrates and their diversity among the general population (Wilson, 2016, p. 28). Aligned with this tendency, Pilgrim et al. (2008) Indonesia, and the UK (n = 1095 interviews report a concerning and growing deficiency in ecological knowledge within contemporary Western societies. The implications of this knowledge deficit manifest directly in architecture and planning, where designers often lack adequate environmental knowledge, limiting their capacity to comprehend information and data related to natural ecosystems (Kay et al., 2021).

The failure of architects and planners to incorporate nature and wildlife in their designs may have pushed wild animals to inhabit forgotten spaces within human settlements, commonly referred to as “marginal spaces.” These areas are usually avoided by humans and mainly

inhabited by animals perceived, from the human perspective, as out of place and not belonging in close proximity to them (Philo & Wilbert, 2000).

As these unwanted animals inhabit the immediate surroundings of humans, the likelihood of encounters among them unavoidably increases. The dynamics of interactions between them and humans in shared spaces, once considered marginal, emphasise the broader impacts of neglecting nature in landscape reorganisation. Indeed, the growing presence of unwanted wildlife in densely populated areas may lead to tensions and disputes between the animal inhabitants and human residents (Soulsbury & White, 2015). As highlighted by Bekoff (2013), this tendency to “ignore and redecorate nature in incredibly self-serving ways” is particularly dangerous as it poses a significant threat to the broader goal of ensuring justice and ethical treatment for non-human species.

### **An Endless Battle for Taming the Urban Wilderness**

At this point, it becomes evident that adopting a mindset of separation from nature when implementing changes to the landscape has resulted in spatial and environmental injustice that not only significantly impacted nature but also humans themselves. The ecosystem disservices, stemming from architects' and planners' inadequate attention to the presence of nature in human settlements, might have diminished human interest in nature. This reduction in interest further diminishes the probability of humans experiencing nature, which, besides the impact on human well-being (Keniger et al., 2013; Wilkes-Allemann et al., 2022), escalates their sense of disconnection from it (Clayton, 2019; Pett et al., 2016; Rosa et al., 2018; Soga & Gaston, 2016).

Neglecting the acknowledgement of nature and inadequately providing it space and consideration sets

the stage for the formulation of policies to address emerging “socio-ecological consequences,” leading to the categorisation of certain species as “pests and weeds” (Houston et al., 2018). The separated spatial dimensions defined from the current social attitude in regard to animal geographies and in which architects and planners work, as delineated by Weisser and Hauck (2017), result in labelling species that traverse these boundaries as intruders, forcing humans to intervene and restore the division. Indeed, if the construction industry fails to integrate the existence of local species, thereby reshaping the meaning of the landscape, the animals inhabiting the area may be viewed as misplaced. Brownlow’s (2000) study in the Adirondacks illustrates this phenomenon, demonstrating that alterations in landscape description and meaning led to the reclassification of the wolf, native to the area, as “out of place.” Subsequently, these changes contributed to eradicating the wolves from the region. As observed previously, the significance of a place can

readily shift to the marginal category based solely on the presence of a specific species, subsequently leading to human rejection of that place (Philo & Wilbert, 2000). This implies that architecture, through its permanent alterations to the landscape, holds the potential to impact the sociocultural values attributed by humans to specific places, consequently influencing the social acceptance of particular species. The transformation of physical spaces by architectural interventions not only shapes the environment but also contributes to the construction of meaning and the social dynamics associated with cohabitation between humans and other species.

Following this trajectory, it is possible to quantify that the influence that architecture gained from a denaturalised social system also has had implications for the residents' interest and willingness to share living spaces with non-human species. For example, Rosenzweig (2003, p. 178) explained the growing inclination of humans to reject and ignore nature using the concept of shifting baseline syndrome. Essentially, individuals' perceptions and expectations adapt to the current state of the environment, making it challenging to recognise and lament losses or changes over, particularly when such experiences have never been encountered or witnessed. Similarly, Soga and Gaston (2016) highlight the repercussions of diminishing direct interaction with the natural world as an integral component of individuals' daily routines, a phenomenon identified as the "extinction of experience." Drawing inspiration from Pyle (1993), they emphasise the negative implications of a growing "disaffection" from nature. This significance amplifies when considering that individuals' values and attitudes toward nature are conditioned based on the frequency of their experiences and interactions with nature, suggesting an even broader impact (Bauer & von Atzigen, 2019; Braito et al., 2017; Clayton, 2019; Soga & Gaston, 2016). Interestingly, the repercussions of this loss of engagement with nature extend beyond the individual well-being of human and non-human actors, as it poses a

significant obstacle to broader efforts aimed at reversing the overall environmental crisis. Indeed, the loss of connection with the natural world not only hinders efforts to reverse the ongoing environmental degradation but also complicates endeavours to broaden the concept of justice within spatial and environmental realms. Consequently, challenging speciesism in architecture and planning—moving beyond human exceptionalism to provide space and consideration for other-than-human species—is not only a crucial step in restoring the connection between humans and nature but also an essential aspect of designing equitable places that promote justice for all living entities.

### Beyond Human Boundaries

Despite the expanding consideration of a multispecies approach in diverse disciplines, architecture and planning

practices and theories seem to lag behind in embracing such perspectives (Houston et al., 2018). This discrepancy raises questions about the extent to which these fields are equipped to address the complex interconnections between humans and the broader ecological community within the built environment. The urban environment, as described by Weisser and Hauck (2017) the design of 'green infrastructures' or 'nature-based solutions' has been proposed to maintain the provisioning of these services and the preservation of biodiversity. It is unclear, however, how such green infrastructure can be implemented, given existing planning practices that generally ignore biodiversity. Urban open spaces are normally designed by landscape architects with a primary focus on plants, aesthetic design and functionality for human users. As a consequence, conservation of species only plays a minor role, in fact, protected animals are often considered detrimental to the design, e.g. when the need to conserve a protected species demands modifications of a building

project. Conversely, conservationists are often in favor of protected areas, also in cities, with little access for humans and no human design. We propose 'Animal-Aided Design' (AAD, often becomes a battleground where design and nature engage in a continuous fight, with nature typically emerging as the disadvantaged party. This raises concerns regarding the capacity of design to broaden spatial and environmental justice for entities beyond humans and the potential repercussions for both human and non-human inhabitants.

The difficulty to progress in biologically informed architecture, identified by Kay et al. (2021), points to challenges faced by architects due to inadequate training in environmental systems and limited exposure to transdisciplinary research. Wilkes-Allemann et al. (2022) draw attention to the disconnection between theory and practice as a primary obstacle in transferring scientific knowledge about urban biodiversity, emphasising the

need for collaboration. Concurrently, Kueffer et al. (2020) advocate for developing competencies aimed at fostering biodiversity in urban settings. In light of these challenges and the continuous struggle between design and nature in urban environments, Weisser et al. (2023) propose the need for enhanced methods and tools to reintegrate nature into urban settings effectively. The development of such tools, or the relative environmental knowledge capable of incorporating ecological knowledge into design processes, becomes crucial for providing necessary support to architects and planners.

The gap between the growing understanding of multispecies dynamics in other disciplines and the slower integration of these perspectives in architecture and planning raises urgent questions about the future of urban environments. This issue takes on added significance given the global commitment in December 2022, where 198 countries signed the Kunming-Montreal Global Biodiversity Framework (GBF) during the United Nations Biodiversity Conference (COP15) in Montreal. The framework aims to "halt and reverse" the decline of biodiversity, with the ultimate goal of "living in harmony with nature" by 2050 (CBD, 2022). Despite considerable opportunities to enhance biodiversity status in the urban environment, encouraging individuals who perceive themselves as detached from nature to "live in harmony with" it can pose considerable challenges. Currently, there is a critical need to better understand people's perceptions of nature in urban areas and explore ways to foster a positive attitude towards it (Weisser et al., 2023; Wilkes-Allemann et al., 2022). As seen, the acceptance of nature in cities plays a vital role in the success of any intervention measures (Apfelbeck et al., 2019; Canepa et al., 2022; Catalano et al., 2021; Garrard et al., 2018; Vegezzi, 2021; Weisser et al., 2023; Weisser & Hauck, 2017). This underscores the importance of bridging the gap between urban residents and nature, recognising that positive perceptions and acceptance are integral not only to the effective implementation of

biodiversity-enhancing initiatives in urban planning but also to promote justice for all living entities.

Considering the scientific consensus advocating for the reservation of half of the Earth's surface for conservation purposes to reverse habitat loss, prevent ecosystem collapse, and facilitate biodiversity recovery (Dinerstein et al., 2017; Wilson, 2016), the challenge for the field of architecture becomes increasingly evident. This is especially pertinent given that setting aside two separate spaces for human habitation and conservation may lead to numerous difficulties and consequences. As articulated by Rosenzweig (2003, p. 7), adopting a reconciliation ecology approach emerges as a more pertinent option. Acknowledging that humans extensively utilise the majority of the world's land surface, the development of a well-studied architectural framework capable of integrating specific wild habitats that harmonise with human environmental needs becomes crucial.

This approach holds the potential to be fundamental in reversing the ecological crisis and fostering a more ecologically informed and respectful social coexistence with nature. Such an integrated approach can not only influence environmental policies but also contribute to the broader discourse on justice in shaping an equitable and respectful relationship between humans and nature.

Given the premise that "conservation is all about people" and can only be achieved through behavioural change (Bekoff, 2014, p. 58), architects and planners are encouraged to contemplate the impact of their designs on residents. This reflection leads to a fundamental question:

**“What does it really mean to be part of nature in the twenty-first century? Will we be spectators, disruptors, or participants?”**

**Harry W. Greene  
(Louv, 2019, p. 131)**



## Moving forward

This article concerns the pressing need to broaden the discussion on environmental and spatial justice to include all living beings. The rich diversity of species that have become humans' co-citizens over time calls for a rethinking of traditional approaches to urban design, advocating for a more inclusive architectural framework. Addressing the persistent spatial separation between humans and non-humans pursued by prevailing planning systems requires the urgent implementation of comprehensive training programs for future theorists and practitioners.

Interdisciplinary education, integrating ecological knowledge with social sciences, holds significant potential to empower professionals to navigate the complexities of designing environments that accommodate the needs of both human and non-human inhabitants. Moreover, integrating research and development initiatives focused on innovative multispecies methodologies within the broader discourse of 'sustainable design' is indispensable to producing more inclusive urban spaces.

Fostering a culture of continuous learning and innovation within the architectural and planning professions can better equip future generations to confront the complex environmental challenges posed by rapid urban expansion. Achieving justice for all living beings necessitates a paradigm shift in architectural and urban design, going beyond the notion of cities as exclusively human domains.

As advocated by Bekoff (2013), overcoming human exceptionalism and speciesism is essential in redefining interactions between humans and non-humans in ethical terms. The transition towards design and planning theories that prioritise the needs of both parties represents a critical step in this transformative journey towards a more equitable and respectful urban coexistence.

### Final notes

#### Article final approval

MA. Arch. Andrea Castro Marcucci, Editor in chief, and PhD Fabio Capra Ribeiro, Guest Editor, approved the final version of this article.

#### Author contribution:

#### MSc. Arch. Filippo Vegezzi

is responsible for the entire preparation of the article.

## References

- Apfelbeck, B., Jakoby, C., Hanusch, M., Steffani, E. B., Hauck, T. E., & Weisser, W. W. (2019). A Conceptual Framework for Choosing Target Species for Wildlife-Inclusive Urban Design. *Sustainability*, 11(24), 6972. <https://doi.org/10.3390/su11246972>
- Bauer, N., & von Atzigen, A. (2019). Understanding the factors shaping the attitudes towards wilderness and rewilding. In S. M. Durant, N. Pettorelli, & J. T. du Toit (Eds.), *Rewilding* (pp. 142–164). Cambridge University Press; Cambridge Core. <https://doi.org/10.1017/9781108560962.008>
- Beatley, T. (2011). *Biophilic Cities: Integrating Nature Into Urban Design and Planning*. Island Press.
- Bekoff, M. (2013). Who lives, who dies, and why?: How speciesism undermines compassionate conservation and social justice. In R. Corbey & A. Lanjouw (Eds.), *The Politics of Species: Reshaping our Relationships with Other Animals* (pp. 15–26). Cambridge University Press; Cambridge Core. <https://doi.org/10.1017/CBO9781139506755.004>
- Bekoff, M. (2014). *Rewilding our hearts: Building pathways of compassion and coexistence*. New World Library.
- Braitto, M., Böck, K., Flint, C., Muhar, A., Muhar, S., & Penker, M. (2017). Human-Nature Relationships and Linkages to Environmental Behaviour. *Environmental Values*, 26. <https://doi.org/10.3197/096327117X14913285800706>
- Brownlow, A. (2000). A wolf in the garden: Ideology and change in the Adirondack landscape. In *Animal Spaces, Beastly Places*. Routledge.
- Caffo, L. (2017). *Fragile umanità: Il postumano contemporaneo*. Giulio Einaudi editore. Translation by Vegezzi Filippo. Original version: "nelle nostre vite quotidiane, semplicemente, gli animali non esistono."
- Canepa, M., Mosca, F., Barath, S., Changenet, A., Hauck, T. E., Ludwig, F., Roccotiello, E., Pianta, M., Selvan, S. U., Vogler, V., & Perini, K. (2022). Ecolopes, beyond greening. A multi-species approach for urban design. *AGATHÓN | International Journal of Architecture, Art and Design*, 11, 238–245. <https://doi.org/10.19229/2464-9309/11212022>
- Catalano, C., Meslec, M., Boileau, J., Guarino, R., Aurich, I., Baumann, N., Chartier, F., Dalix, P., Deramond, S., Laube, P., & others. (2021). Smart sustainable cities of the new millennium:



- Towards design for nature. *Circular Economy and Sustainability*, 1(3), 1053–1086.
- CBD. (2022, December 19). Kunming-Montreal Global Biodiversity Framework. *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity*. Conference of the parties to the convention on biological diversity, Montreal.
- Clarke, R., Heitlinger, S., Light, A., Forlano, L., Foth, M., & DiSalvo, C. (2019). More-than-human participation: Design for sustainable smart city futures. *Interactions*, 26(3), 60–63. <https://doi.org/10.1145/3319075>
- Clayton, S. (2019). The psychology of rewilding. In S. M. Durant, N. Pettorelli, & J. T. du Toit (Eds.), *Rewilding* (pp. 182–200). Cambridge University Press; Cambridge Core. <https://doi.org/10.1017/9781108560962.010>
- Clément, G. (2015). *L'alternativa ambiente*. Quodlibet.
- Corbey, R., & Lanjouw, A. (2013). *The Politics of Species: Reshaping Our Relationships with Other Animals*. Cambridge University Press.
- Descola, P. (2013). *Beyond Nature and Culture*. University of Chicago Press.
- Descola, P., Lloyd, J., & Sahlins, M. (2013). *Beyond Nature and Culture*. University of Chicago Press.
- Dinerstein, E., Olson, D., Joshi, A., Vynne, C., Burgess, N. D., Wikramanayake, E., Hahn, N., Palminteri, S., Hedao, P., Noss, R., Hansen, M., Locke, H., Ellis, E. C., Jones, B., Barber, C. V., Hayes, R., Kormos, C., Martin, V., Crist, E., ... Saleem, M. (2017). An Ecoregion-Based Approach to Protecting Half the Terrestrial Realm. *BioScience*, 67(6), 534–545. <https://doi.org/10.1093/biosci/bix014>
- Donaldson, S., & Kymlicka, W. (2011). *Zoopolis: A Political Theory of Animal Rights*. OUP Oxford.
- Dunayer, J. (2013). The rights of sentient beings: Moving beyond old and new speciesism. In R. Corbey & A. Lanjouw (Eds.), *The Politics of Species: Reshaping our Relationships with Other Animals* (pp. 27–39). Cambridge University Press; Cambridge Core. <https://doi.org/10.1017/CBO9781139506755.005>
- Garrard, G. E., Williams, N. S. G., Mata, L., Thomas, J., & Bekessy, S. A. (2018). Biodiversity Sensitive Urban Design. *Conservation Letters*, 11(2), e12411. <https://doi.org/10.1111/conl.12411>
- Heerwagen, J. H., & Orians, G. H. (1993). Human, habitat, and aesthetic. In *The Biophilia Hypothesis* (pp. 15–28). Island Press.
- Houston, D., Hillier, J., MacCallum, D., Steele, W., & Byrne, J. (2018). Make kin, not cities! Multispecies entanglements and 'becoming-world' in planning theory. *Planning Theory*, 17(2), 190–212. <https://doi.org/10.1177/1473095216688042>
- Ives, C. D., Lentini, P. E., Threlfall, C. G., Ikin, K., Shanahan, D. F., Garrard, G. E., Bekessy, S. A., Fuller, R. A., Mumaw, L., Rayner, L., Rowe, R., Valentine, L. E., & Kendal, D. (2016). Cities are hotspots for threatened species. *Global Ecology and Biogeography*, 25(1), 117–126. <https://doi.org/10.1111/geb.12404>
- Kay, C. A. M., Rohnke, A. T., Sander, H. A., Stankowich, T., Fidino, M., Murray, M. H., Lewis, J. S., Taves, I., Lehrer, E. W., Zellmer, A. J., Schell, C. J., & Magle, S. B. (2021). Barriers to building wildlife-inclusive cities: Insights from the deliberations of urban ecologists, urban planners and landscape designers. *People and Nature*, pan3.10283. <https://doi.org/10.1002/pan3.10283>
- Keniger, L. E., Gaston, K. J., Irvine, K. N., & Fuller, R. A. (2013). What are the Benefits of Interacting with Nature? *International Journal of Environmental Research and Public Health*, 10(3), 913–935. <https://doi.org/10.3390/ijerph10030913>
- Kueffer, C., Di Giulio, M., Hauser, K., & Wiedmer, C. (2020). Time for a biodiversity turn in sustainability science. *GAIA - Ecological Perspectives for Science and Society*, 29(4), 272–274. <https://doi.org/10.14512/gaia.29.4.14>
- Louv, R. (2019). *Our wild calling: How connecting with animals can transform our lives; and save theirs*. Algonquin Books of Chapel Hill.
- Magle, S. B. (2017). Building the civilized wild. In *Wildness: Relations of People and Place*. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226444970.001.0001>
- Pett, T. J., Shwartz, A., Irvine, K. N., Dallimer, M., & Davies, Z. G. (2016). Unpacking the People–Biodiversity Paradox: A Conceptual Framework. *BioScience*, 66(7), 576–583. <https://doi.org/10.1093/biosci/biw036>
- Philo, C., & Wilbert, C. (2000). Animal Spaces, Beastly Places: An Introduction. In *Animal Spaces, Beastly Places: New geographies of human-animal relations* (pp. 1–34). <https://doi.org/10.4324/9780203004883>

Pilgrim, S. E., Cullen, L. C., Smith, D. J., & Pretty, J. (2008). Ecological Knowledge is Lost in Wealthier Communities and Countries. *Environmental Science & Technology*, 42(4), 1004–1009. <https://doi.org/10.1021/es070837v>

Pyle, R. M. (1993). *The Thunder Tree: Lessons from an Urban Wildland*. Houghton Mifflin.

Pyle, R. M. (2017). Conundrum and continuum. One man's Wilderness, from a Ditch to the Dark Divide. In *Wildness: Relations of people & place* (pp. 12–23).

Rosa, C. D., Profice, C. C., & Collado, S. (2018). Nature Experiences and Adults' Self-Reported Pro-environmental Behaviors: The Role of Connectedness to Nature and Childhood Nature Experiences. *Frontiers in Psychology*, 9. <https://www.frontiersin.org/articles/10.3389/fpsyg.2018.01055>

Rosenzweig, M. (2003). *Win-Win Ecology: How the Earth's Species Can Survive in the Midst of Human Enterprise*. Oxford University Press.

Ryder, R. D. (2010). Speciesism again: The original leaflet. *Critical Society*, 2(1), 2.

Soga, M., & Gaston, K. J. (2016). Extinction of experience: The loss of human-nature interactions. *Frontiers in Ecology and the Environment*, 14(2), 94–101. <https://doi.org/10.1002/fee.1225>

Soulsbury, C. D., & White, P. C. L. (2015). Human–wildlife interactions in urban areas: A review of conflicts, benefits and opportunities. *Wildlife Research*, 42(7), 541. <https://doi.org/10.1071/WR14229>

Sterba, J. (2012). *Nature wars: The incredible story of how wildlife comebacks turned backyards into battlegrounds* (1st ed). Crown Publishers.

Stryker, J. (2013). Afterword. In R. Corbey & A. Lanjouw (Eds.), *The Politics of Species: Reshaping our Relationships with Other Animals* (pp. 246–248). Cambridge University Press; Cambridge Core. <https://doi.org/10.1017/CBO9781139506755.026>

Turrini, T., & Knop, E. (2015). A landscape ecology approach identifies important drivers of urban biodiversity. *Global Change Biology*, 21(4), 1652–1667. <https://doi.org/10.1111/gcb.12825>

Vegezzi, F. (2021). *Urban AgroEcosystem Network UAEN - Agroecological frameworks for the Barcelona city transition toward biocity*. <https://doi.org/10.13140/RG.2.2.23450.93127>

Weisser, W. W., & Hauck, T. E. (2017). *ANIMAL-AIDED DESIGN – using a species' life-cycle to improve open space planning and conservation in cities and elsewhere* [Preprint]. Ecology. <https://doi.org/10.1101/150359>

Weisser, W. W., Hensel, M., Barath, S., Culshaw, V., Grobman, Y. J., Hauck, T. E., Joschinski, J., Ludwig, F., Mimet, A., Perini, K., Roccotiello, E., Schloter, M., Shwartz, A., Hensel, D. S., & Vogler, V. (2023). Creating ecologically sound buildings by integrating ecology, architecture and computational design. *People and Nature*, 5(1), 4–20. <https://doi.org/10.1002/pan3.10411>

Werner, P., & Zahner, R. (2010). Urban Patterns and Biological Diversity: A Review. In *Urban Biodiversity and Design* (pp. 145–173). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781444318654.ch7>

Wilkes-Allemann, J., van der Velde, R., Kopp, M., Bernasconi, A., Karaca, E., Coleman Brantschen, E., Cepic, S., Tomičević, J., Bauer, N., Petit-Boix, A., Cueva, J., Živojinović, I., Leipold, S., & Saha, S. (2022). *Research Agenda - Biocities of the future*. <https://doi.org/10.36333/rs4>

Wilson, E. O. (2016). *Half-Earth: Our Planet's Fight for Life*. Liveright Publishing Corporation.