

Urban Nature

This introductory textbook with a global scope aims to train students of geography, sustainability, and urban and environmental studies to reimagine and transform cities to meet climate, biodiversity, and sustainability challenges. A dedicated team of authors critically examine the relationships between nature and urban areas, sharing an inspiring account of how nature helps us rethink our cities and their futures. Prior to this textbook, literature for courses covering urban nature was written by and for practitioners, whereas this textbook is written by experienced course instructors specifically to be accessible to diverse students. The textbook is illustrated with numerous photos and figures that bring key topics, challenges, and opportunities to life. It contains focus boxes and case studies from every continent, offering students an international scope and multiple entry points into the field. Chapters conclude with thought-provoking follow-up questions and recommended reading. The authors provide an array of supplementary online resources.

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how actors, sociotechnical experimentation, institutional change, and incumbency in urban regimes co-produce sustainable city futures.

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New Directions for City Futures

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From
Urban Nature
to
Nature-Based
Solutions



External building greens



Urban green areas connected
to grey infrastructure



Parks and semi-natural
urban green areas



Allotments and community
gardens



Green indoor areas



Blue areas



Green areas for water
management



Wilderness or derelict areas

The term *urban nature* can be understood from a general perspective to refer to the blue and green areas present in cities. The emerging concept of *nature-based solutions* is more specific than urban nature, and focuses on what we have come to know as green and blue infrastructure – an urban nature that has purposefully been created, maintained or managed to provide multiple benefits for humans and the environment alike.

Preface

Urban nature holds great potential to address the complex web of challenges that cities are facing and to support sustainability transitions. Cities are working with nature in a diversity of ways. Blue infrastructure, such as lakes, ponds, drains, and wetlands, can regulate storm water, reduce pressure on the urban drainage system, and create sponge cities, which also lowers heat and offers recreational opportunities. Green infrastructure, on the other hand, such as urban forests and green roofs and walls, can improve air quality, reduce heat island effects, enhance biodiversity, and contribute to human health and well-being. Furthermore, urban gardens can increase access to local food and employment, while enhancing physical and mental health along with social integration.

Cities and nature are at the heart of the biodiversity and climate intersection and at the core of reshaping approaches to urban and global sustainability. Yet despite growing recognition of these challenges and the potential for synergistic nature-based solutions, policy-makers, business leaders, and practitioners continue to rely largely on traditional approaches of governance, finance, and engineering, which often take silo approaches to address these profoundly interconnected sustainability challenges. Considering cities as dense networks of interwoven sociospatial processes that are simultaneously local and global, human and physical, cultural and organic opens the door for more integrated measures. This is the perspective on cities, nature, and sustainability we adopt in this textbook.

As an author team, we offer students the benefit of a breadth of knowledge, experience, and perspectives from diverse fields and contexts. The complexity of cities and nature necessitates an interdisciplinary approach. As a team of eight, we offer what a single author could not provide: expert coverage of urban nature and nature-based solutions from many angles, including natural and social sciences, urban governance and policy, engineering, economics, geography, politics, and environmental science. We capture the conceptual emergence of thinking on cities, nature, and sustainability from across these areas.

TARGET AUDIENCE

Despite the recognised multi-functionality of urban nature and the multiple benefits that nature-based solutions can provide, there is a lack of textbooks that critically and thoroughly examine the relationships between nature and cities. As the research in this area dates back less than a decade, book-length treatments are scarce. In particular, we noted that what little there is available is inaccessible to undergraduate- and masters-level students in social science disciplines undertaking courses in geography,

sustainability, urban, and environmental studies. This textbook is our response to these issues. It is an introductory and inspiring account of urban nature and its role in addressing climate change, biodiversity, and sustainable transformation of urban areas.

TEXTBOOK ORGANISATION

Urban Nature is a concise overview. It initiates students into the intersection of cities and nature, demonstrating why and how nature helps us to rethink and reimagine urban sustainability. In this perspective, cities and nature are not separate, but instead merge to become a combined concept or approach. Ten chapters in three parts investigate and illuminate the key topics, challenges, and opportunities for urban nature. The chapters in the textbook are illustrated with figures, images, and text boxes, and they also contain a list of thought-provoking follow-up questions and resource materials. All the chapters draw on knowledge and examples from a collection of global case studies on cities and nature, covering North America, Europe, Asia, Africa, and South America.

PEDAGOGICAL FEATURES

This textbook has been designed to engage students in a journey of discovery and learning. Each chapter includes sections that both break down and connect key topics, as well as two main case studies from cities around the world, providing students with insights into urban nature through a focus on sustainability challenges and opportunities. Throughout the textbook, there is a range of text boxes that introduce supplementary insights and ideas with a particular focus on revealing the design and impact of nature-based solutions. The textbook also uses photographs and visuals to provide key examples of cities and nature. This approach offers students an improved understanding of sustainable transformations and ways of reimagining new directions for urban futures.

ONLINE RESOURCES

We encourage students to engage more deeply with the concepts in our textbook by providing a curated selection of complementary online resources created by our author team:

- **Urban Nature Online Course:** A free Massive Open Online Course on nature-based solutions and innovation in cities.
- **Urban Nature Atlas:** A collection of more than 1000 inspiring nature-based solutions from cities in Europe and beyond.
- **Urban Nature Navigator:** A tool that helps to assess the contributions that different nature-based solutions can make to meeting urban sustainability challenges.

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- **Urban Nature Podcast:** A podcast series that takes its listeners on a journey into the world of nature-based solutions.
- **Urban Nature Business Models Catalogue:** A catalogue for urban nature-based solutions that presents eight different business models.

Whether you are using this textbook as an instructor, a student, or a practitioner, we trust you will find ideas and inspiration. We encourage your feedback and questions.

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