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The promise and pitfalls of using nature to help cities adapt

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Homo sapiens are now primarily an urban species. By 2050, the world's urban population will swell by almost 3 billion. All this growth will require new infrastructure, as will the challenge of adapting cities to climate change. Ecologists, urban planners, economists, and landscape architects are increasingly asked to consider the role that nature-based solutions - the natural habitat, inside or outside the city's walls that supplies crucial benefits to urban residents - can play in meeting these challenges.

In this talk, I will present the prospects for nature-based solutions to help cities adapt to climate change, while also planning for dramatic urban growth. I will begin with a conceptual framework, discussing how cities are both a threat to nature but also dependent on nature for their citizens well-being, illustrating both facets with quantitative examples from my research. I will then detail the potential for nature-based solutions to help with urban climate adaptation, focusing on the challenges that droughts and heat waves pose.

Although there are some challenges, I will conclude on an optimistic note: nature, far from being obsolete in our urban world, will be an essential part of climate adaptation. While ecosystem service quantification remains an important task of researchers into nature-based solutions, I will argue that ecologists need to increasingly work with urban planners, political scientists, and urban historians to understand the economic, social, and policy barriers to use of nature-based solutions at scale and how they can be overcome.