



Elizabeth Cook, Urban Ecologist

Research mission:

- Leverage urban nature-based solutions to address sustainability concerns around climate change and equity
- Study how cultural and individual values shape interactions with green spaces
- Measure the impacts of climate change on urban ecosystems

Summary:

Elizabeth Cook explores how nature-based solutions can support cities in becoming more resilient and equitable in the face of climate change and rapid urbanization. Through this work, Cook also examines how people relate to the natural world.

Cook pursues three complementary approaches: applying traditional ecological methods in cities (*ecology in cities*), examining people's interactions with urban ecosystems (*ecology of cities*), and improving urban planning and sustainability (*ecology for and with cities*).

Ecology in cities: For the past decade, Cook and her colleagues have been collecting data on trees planted as part of New York City's Million Trees Initiative, one of the largest urban reforestation efforts conducted in the US. Their long-term study will reveal how a changing urban environment impacts tree health, survival, and the role trees play in natural climate solutions by sequestering carbon, mitigating climate impacts, and more.

Ecology of cities: Cook investigates how people's interactions with green

spaces and cities impact their wellbeing. In collaboration with New York City community-based organizations, she is investigating what characteristics people value in parks and other kinds of urban nature, to help decision-makers better plan and manage urban green spaces that support human wellbeing.

Ecology for and with cities: Cook helps to coordinate Nature-based Solutions for Urban Resilience in the Anthropocene (NATURA), a worldwide network exploring how urban nature-based solutions can help to address sustainability concerns around climate change and equity. The network shares knowledge and data about nature-based solutions that advance urban resilience to extreme weather. In another project, Cook worked with city decision-makers across the US and Latin America to co-develop over 45 future scenarios exploring how cities might achieve resilience to extreme heat, flooding, drought, and equity challenges by 2100.

By bridging diverse methods and perspectives, Cook's work helps us to envision more just and sustainable cities.



Science for environmental solutions

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Select publications:

Cook EM, Y Kim, NB Grimm, T McPhearson, P Anderson, HA Bulkeley, L Diep, J Morato Ferreras, W Zhou. 2025. **Nature-based solutions for urban sustainability.** *Proceedings of National Academies of Sciences.*

Dutta M, P Herreros-Cantis, TM McPhearson, A Mustafa, M Palmer, M Tosca, J Ventrella. EM Cook. 2025. **NYC 2100: Ecosystem service and environmental justice implications of future extreme heat.** *Landscape and Urban Planning.*

McPhearson T, EM Cook, M Berbés-Blázquez, C Cheng, NB Grimm, E Andersson, O Barbosa, D Chandler, H Chang, M Chester, DL Childers, SR Elser, N Frantzeskaki, et al. 2022. **A social-ecological-technological systems framework for urban ecosystem services.** *One Earth.*

Iwaniec DM, EM Cook, MD Davidson, NB Grimm, M Berbés-Blázquez, M Georgescu, S Krayenhoff, X Li, A Middell, D Sampson. 2020. **The co-production of sustainable future scenarios.** *Landscape and Urban Planning.*

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