

# Urban Ecology

## Instructor

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## Overview

Our planet is increasingly urban. Approximately 50% of the world's people now live in urban areas and an estimated two-thirds of the world's population will be urban by 2030. In many regions of the world, the rate of urbanization is declining; however, individual cities, metropolitan regions, and urban areas continue to grow (in number, extent and population) worldwide. In this context, urban ecology is an important approach to ecological science, environmental governance, and sustainable development. People throughout the world practice urban ecology. Urban ecologists are motivated by a desire to create healthy human ecosystems and livable communities in which to live, work, and play. This semester, we will study some of these people, projects, and places. The purpose of this course is to gain a better understanding of the emerging theory and practice of urban ecology and sustainable urban development.

Key questions: What is an urban ecosystem? Are cities sustainable environments? What are the major urban environmental challenges in today's world? What are people in local communities and global society doing to ensure that urban and urbanizing landscapes are healthy and desirable places now and in the future?

*Critical and creative thinking are required!*

## Learning Objectives

Following completion of the course, students should be able to:

- Demonstrate a broad, transdisciplinary understanding of urban ecology;
  - Describe the history, current status, and future prospects of urban ecology;
  - Define and use key terms, concepts, frameworks, models, and theories related to urban ecology;
  - Explain the many disciplinary, professional, and cultural perspectives that contribute to urban ecology;
  - Identify significant urban ecologists and urban ecology projects, studies, and publications;
  - Explain the relevance of urban ecology to science, society, and the environment.
- Display critical and creative thinking regarding urban environmental challenges;
  - Describe and compare the complex and changing environmental challenges unique to different types of urban and urbanizing areas in different regions of the world, including a focus on specific cities and metropolitan urban regions, inter- and intraurban issues at various scales of space and time, rural-urban connections, and regional-global networks of cities;
  - Identify and explain good practices and successful examples of urban ecology in action in specific places;
- Conduct independent research and writing regarding urban ecology;
  - Collect, analyze, and interpret primary and secondary empirical data on urban ecosystems and urban ecological practices;

- Communicate effectively with specific audiences regarding sustainable urban development and related innovations in environmental governance.

### **Methodology**

Methods include reading, writing, discussion, independent research, and peer review.

### **Evaluation**

Class Discussion	40%
Assignments	60%

### **Sample Reading List**

- Platt, R. H. 2004. Toward ecological cities: adapting to the 21<sup>st</sup> Century metropolis. *Environment* 46(5):10-27.
- Beatley, T. 2004. Planning for sustainability in European cities: a review of practices in leading cities. Pages 249-258 in S. Wheeler and T. Beatley, editors, *The Sustainable Urban Development Reader*. Routledge, London.
- McGranahan, G., and D. Satterthwaite. 2003. Urban centers: an assessment of sustainability. *Annual Review of Environmental Resources* 28:243-274.
- Marcotullio, P. J., and G. Boyle, editors. 2003. Defining an ecosystem approach to urban management and policy development. United Nations University Institute of Advanced Studies, UNU/IAS Report, March 2003.
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- Marcotullio, P. J., S. Rothenberg, and M. Nakahara. 2003. Globalization and urban environmental transitions: comparison of New York's and Tokyo's experiences. *The Annals of Regional Science* 37:369-390.
- Luke, T. W. 2003. Global cities vs. "global cities:" rethinking contemporary urbanism as public ecology. *Studies in Political Economy* 70:11-31.
- Marcotullio, P. J. 2003. Globalisation, urban form and environmental conditions in Asia-Pacific cities. *Urban Studies* 40(2):219-247.
- Hsiao, H. M., and H. Liu. 2004. Collective action toward a sustainable city: citizens' movements and environmental politics in Taipei. Pages 259-274 in S. Wheeler and T. Beatley, editors, *The Sustainable Urban Development Reader*. Routledge, London.
- Still, W. 2002. Wild cities: It's a jungle out there. *The New York Times*, November 23, 2002.
- McIntyre, N. E., et al. 2000. Urban ecology as an interdisciplinary field: differences in the use of "urban" between the social and natural sciences. *Urban Ecosystems* 4:5-24.
- Collins, J. P., et al. 2000. A new urban ecology: modeling human communities as integral parts of ecosystems poses special problems for the development and testing of ecological theory. *American Scientist* 88:416-425.
- Alberti, M. et al. 2003. Integrating humans into ecology: opportunities and challenges for studying urban ecosystems. *BioScience* 53(12):1169-1179.
- Pickett, S. T. A., et al. 2001. Urban ecological systems: linking terrestrial ecological, physical, and socioeconomic components of metropolitan areas. *Annual review of Ecological Systematics* 32:127-157.
- Redman, C. L., et al. 2004. Integrating social science into the Long-Term Ecological Research (LTER) Network: social dimensions of ecological change and ecological dimensions of social change. *Ecosystems* 7:161-171.

- May, R. 2004. Editorial—on the role of humanities in urban ecology: the case of St. Petersburg. *Urban Ecosystems* 7:7-15.
- Daily, G., and Ellison. 2002. New York: how to put a watershed to work. Pages 61-85 in *The New Economy of Nature*. Island Press, Washington, D.C.
- Lord, C. P., E. Strauss, and A. Tofler. 2003. Natural cities: urban ecology and the restoration of urban ecosystems. *Virginia Environmental Law Journal* 21:317-385.
- Bengtson, D. N., et al. 2004. Public policies for managing urban growth and protecting open space: policy instruments and lessons learned in the United States. *Landscape and Urban Planning* 69:271-286.
- Bare, T. B. 2003. Recharacterizing the debate: a critique of environmental democracy and an alternative approach to the urban sprawl dilemma. *Virginia Environmental Law Journal* 21:455-501.
- Beatley, T., and R. Collins. 2000. Smart growth and beyond: transitioning to a sustainable society. *Virginia Environmental Law Journal* 19:287-322.
- Landy, M. 1999. Local government and environmental policy. Pages 227-260 in M. Derthick, editor. *Dilemmas of Scale in America's Federal Democracy*. Cambridge University Press, Cambridge.
- Patterson, M. E., et al. 2003. The urbanization of wildlife management: social science, conflict, and decision making. *Urban Forestry & Urban Greening* 1:171-183.
- Light, A. 2003. Urban ecological citizenship. *Journal of Social Philosophy* 34(1):44-63.
- Agyeman, J., and T. Evans. 2003. Toward just sustainability in urban communities: building rights with sustainable solutions. *Annals of the American Academy of Political Science and Sociology* 590:35-53.
- Satterthwaite, D. 2003. The links between poverty and the environment in urban areas of Africa, Asia, and Latin America. *Annals of the American Academy of Political Science and Sociology* 590:73-92.
- de Hollander, A., and B. Staatson. 2003. Health, environment and quality of life: an epidemiological perspective on urban development. *Landscape and Urban Planning* 65:53-62.
- Pickett, S. T. A., et al. 2004. Resilient cities: meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms. *Landscape and Urban Planning* 69:369-384.