

Making the Case for Landscape Ecology An Effective Approach to Urban Sustainability

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Abstract

Urban sustainability is one of the most pressing and challenging tasks facing humanity today because cities are the primary sources of major environmental problems, the centers of economic and social developments, and home to more than half of the world population. While the ecological, economic, and social dimensions of sustainability are equally important in principle, the ecology of cities is arguably least studied. But this situation has been changing rapidly in recent years. In this paper, the author compares and contrasts different perspectives in urban ecology and examines their relevance to urban sustainability. While all perspectives are useful in some ways, the author argues, a landscape ecology perspective that integrates elements of sustainability science seems most comprehensive and effective. This integrative perspective views humans as powerful “ecosystem engineers” or agents that are critically important for developing urban sustainability. It focuses on the human landscape scale that is large enough to include key ecological and socioeconomic processes and small enough to allow for detailed mechanistic studies. The landscape ecology approach also emphasizes the interrelationship between urban landscape patterns and ecological/ socioeconomic processes on different scales, and encourages place-based research that integrates ecology with planning, design, and other social sciences.

[Urban ecology](#) [landscape ecology](#) [urban sustainability](#)
[landscape planning and design](#)

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The landscape ecology approach also emphasizes the interrelationship between urban landscape patterns and processes on different scales, and encourages place-based research that integrates ecology with planning, design, and other social sciences. Discover the world's research. To some extent, the SL papers seem to have been inspired by the patch-corridor-matrix model in landscape ecology (Forman & Godron, 1986), with interests in applying landscape metrics in assessing the ecological sustainability of landscape planning (Leitao & Ahern, 2002) and in developing a landscape-based ecosystem services approach (Haines-Young, 2000). Urban ecology and its theories are increasingly poised to contribute to urban sustainability, through both basic understanding and action. We present a conceptual framework that expands the Indus-trial → Sanitary → Sustainable City transition to include non-sanitary cities, “new cities”, and various permutations of transition options for cities encountering exogenous and endogenous “triggers of change”. In the former approach, research focuses on tradi-tional ecological structures and functions, but in an urban setting. To that end, urban sustainability moves us toward an ecology for cities, where the “knowledge to action” model invokes using what we have learned about urban ecosystems to actively make cities better and more sustainable places to live.