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.

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An Effective Approach to Urban Sustainability, Jianguo (Jingle) Wu. 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. KEYWORDS Urban ecology, landscape ecology, urban sustainability, landscape planning and design. How can we make ecological approaches more relevant and effective for urban sustainability? In this paper, I address these questions by reviewing different perspectives in urban ecology, and then proposing a transdisciplinary framework for study and developing sustainable landscapes. Landscape ecological concepts and applied metrics are likely to be useful to address the spatial dimension of sustainable planning. In response to this need we propose a conceptual framework for sustainable landscape planning and design to frame the operational objective, i.e. why, where, how, and which landscape ecological concepts and metrics should be applied in planning.