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The Great Urban Disconnect Between Ecologists and Foresters

2nd in a three part series on urban ecology and the urban forestry

By

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After an encouraging response to Burney Fischer's January article "Defining Urban Ecology and the Connection to Urban Forestry," our research group has decided to expand upon those themes to discuss the disconnect between urban forestry and urban ecology and to open up feedback from you, the readers.

Unlike Burney, who began as a rural forester and moved into ecology, Burney's graduate students come from a different background: As traditional biology students who spent undergrad soaking up physiology and ecology, it wasn't until late in our academic careers the idea of applied ecology resonated. Having been trained to think of nature as something that lies outside the fences surrounding human habitation, flipping that dogma to recognize that cities and suburbs are awash in ecosystem services and novel ecosystems is something of a shock. For that reason, it's understandable that ecologists who work in traditional theory and foresters and arborists who work in management struggle to find common ground. Here, our research group would like to address some of our findings on this disconnect, open up the forum to readers, and address possible solutions in the next issue.

A key starting point in addressing ecology of the city is recognizing that the environment is patchy. Right now, the foremost experts on urban ecology in the United States are researchers at the Baltimore Long-Term Ecosystem Research (LTER) site. Baltimore is one of only two urban LTERs in the United States, the other forty-four focusing on natural systems. The "Baltimore School," as described in *The Baltimore School of Urban Ecology: Space, Scale, and Time for the Study of Cities*, puts emphasis on heterogeneity of cityscapes. A forest patch on one block may be vastly different from an adjacent block. Drainage pipes, fertilizers, artificial light, and other of inputs make ecology of the city a system of patchwork dynamics. Despite this, urban forest professionals do not delineate cities ecologically to reflect this. Our group's survey of urban forestry professionals in IN, MI, OH, and WI found only two out of forty-eight used ecological criteria when dividing a city for management purposes. While roughly half agreed that there was room to incorporate ecology into their delineation of management areas, the majority cited lack of funding and lack of staff expertise as reasons for not currently incorporating ecology in their work.

Ecologists suffer from the opposite problem: They are more likely to focus on ecology in the city by attempting to transpose rural studies into an urban environment. Ecologists suffer from what the Baltimore School refers to as "learned deficiencies." At its heart, urban ecology is a multidisciplinary subject. Urban forests are socioecological systems, wherein the gears of social dynamics and ecology interlock. Academia has a problem with multidisciplinary. Peer-reviewed journals tend to focus on narrow subject matter, there is pressure to publish new findings, and departmental funding and tenure are tied to narrow academic subjects. A unified theory of ecology of cities would include demographic studies from the social sciences, economics, government studies, and ecology, but academics are trained to be experts within one topic. This becomes a practical problem, since managing socioecological systems require a broad base of knowledge. All sectors, private, non-profit, and government benefit from having the best knowledge freely available, so ecologists and social scientists are unable to best practice for the city with these limitations placed on them.

Finally, nonprofits and citizen groups suffer from a myopic view focusing on ecology for the city. Unlike academics, it is rare for nonprofits to have access to technical staff that can provide services using global information systems data, statistical analysis, and botanical expertise. Unlike private and government urban forestry practitioners, nonprofits are not defined by metrics of success tied to tree survival rate or cost-benefit analyses. Nonprofits instead survive or perish based on their ability to market the value of their work to donors. Without a high degree of ecological literacy, ecological health will be undervalued by funders relative to metrics such as number of trees planted or volunteers recruited. Likewise, ecology of the city is unlikely to be a point of focus. Nonprofits compete for donations, so spotlighting individual projects inflates the significance of a nonprofit's work.

Our research tells us that stakeholders with unique perspectives need a common language and understanding of the nature of urban forests. Our goal is to integrate ecology into management and philanthropy, emphasize a more multidisciplinary outlook in the practice of urban forest ecology, and broaden metrics of success for nonprofits to better reflect the metrics used to evaluate urban ecological health.

Next issue, we will conclude this series by exploring solutions to the disconnection between ecologists, arborists and urban foresters working in cities. In the meantime, we would love your feedback on our observations! Email Burney at bufische@indiana.edu.