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INTERVIEW WITH DR. STEWARD T. A. PICKETT

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"It is important that medium-sized places have the resources to improve the ecological quality of their growth "

Dr. Steward T.A. Pickett is one of the pioneers of modern American urban ecology. He is a Distinguished Senior Scientist at the Cary Institute of Ecosystem Studies, in Millbrook, New York. His research focuses on the ecological structure of urban areas and the changes in vegetation through time after disturbance. He believes that ecological knowledge about cities is crucial for both improving the environment and residents' wellbeing. He has written books on spatial patterns and their changes in ecology, humans as a part of ecosystems, conservation, how to connect ecology with urban design, and linking ecology with ethics. He has served as President of the Ecological Society of America and is on the boards of the American Institute of Biological Sciences and the City as Living Laboratory. picketts@caryinstitute.org

Terr@Plural – *Urban Ecology has had a great boost, both in the number of scientists and in knowledge produced, since 1990. How do you define this science?*

Urban ecology can mean two things. Narrowly, it means the study of organisms in the context of urban systems. This is taking classical ecology, with its focus on plants, animals, and microbes, into the city. This kind of urban ecology -- ecology *in* the city -- asks about how organisms are affected by the city, how they, in turn, affect the city and the wellbeing of their human neighbours. Ecology *in* the city often focuses on the obviously "green" and "blue" habitats in cities. But there is also a broader view of urban ecology -- ecology *of* the city. This kind of ecology is really an interdisciplinary science, since it combines biological ecology with the approaches of various kinds of social sciences, with engineering, and with urban design and planning. At its best, the ecology of the city also links with the humanities. The interdisciplinary science for the city brings ecological emphases on systems, on the role of connections and interactions, and the importance of biological activity in the metabolism of cities, suburbs, and exurbs. This is an exciting time in the growth and interdisciplinary maturation of urban ecology.

Terr@Plural – *Data shows that, in spite of megacities, most of the urban growth in global terms occurs in small and medium-sized cities, whose planning and management capacity is usually low. Do you agree with this point of view? And how can urban ecology be applied to reduce the impacts of these cities and to increase the quality of life of their citizens?*

Urban growth is happening across a wide range of sizes of urban settlements. Some large cities have good capacity and resources to apply ecological knowledge and thinking to guide their future growth, and for correcting errors of sometimes omitting ecological approaches in their past development. If a large city has an ecological vision, it often can direct staff, financial, and material resources to improve its environment and ecological functioning.

However, smaller and medium-sized cities -- indeed places that are not even now recognized as urban -- will shoulder much of the burden of urban growth into the future. It is important that these small and medium-sized places have the resources to improve the ecological quality of their growth. Of course, another potential limit to applying ecological thinking to the growth of these smaller urban centers is a relatively small or narrowly focused talent pool. Helping smaller size urban places develop ecological visions of their future or compensating for the absence of ecologically-trained or aware staff are two important ways forward.

There are some very helpful international networks that can help share both ecological visions, appropriate practices for more ecological development, and training or exposure for staff. The Urban Sustainability Directors' Network is one that stands out to my mind. It is only open to municipal officers or staff, and as such, it is a great peer-to-peer information sharing institution. There are also some practical networks that share advice concerning ecological design principles and practices. The Sustainable Sites Initiative is a standout for the practice of ecological design. Smaller cities might take advantage of such information-sharing tools even if they don't have large staffs or staff members entirely focused on sustainable or ecological projects and assessment.

One thing that needs to happen that residents, decision leaders, and activist groups can help with is to increase the resources for research, implementation, and monitoring of ecologically-motivated design and planning initiatives. The social effects, especially on populations and places that may not have much power, need to be kept in mind and included in planning and evaluation of urban changes.

Terr@Plural – *We live in Planet City. The future is urban, but probably the dystopia presented in the classic science fiction film Blade Runner (whose story takes place in 2019!) will not materialize. How do you see the growth of cities throughout the 21st century? Will we achieve the seemingly irreconcilable objectives of urban development, conservation of urban biodiversity and reduction of the ecological footprint of cities?*

The first thing that we all have to do is to frame the issue differently. Let's begin to ask, how do we improve our ability to simultaneously improve the quality of urban change,

the quality and accessibility to urban biodiversity, and reduce the ecological impact of cities on areas elsewhere? This immediately takes us out of the traditional way we have tried to improve cities by focusing on seemingly isolated urban problems: transportation, water supply, rainwater drainage, sanitation, housing, and on an on as separate departments. We need to start approaching our cities as complex systems in which problems are linked. If cities can begin to evaluate projects, plans, and interventions from the perspective of how each one can contribute to using the ecological work that can happen in cities, how each can help reduce the burden of the city on lands and waters elsewhere, how biodiversity can be facilitated, and how society and natural phenomena in cities can be better linked, then our solutions will likely become more ecological. Older theories of cities see them as all about profit, or about industrial productivity, or about the speed of transportation, or efficiency of shunting wastes "away." We need to articulate a new theory of cities and put that into practice in every decision we make about the city. Planet city still needs ecological work, still has an ethical responsibility to all its residents, and still must facilitate the quality of all environments it touches. Of course, sorting out that "quality" constitutes a huge job for society.

Terr@Plural –*The knowledge you have produced about Urban Ecology is somehow translated into planning and management? In your country, is there effective cooperation between managers to apply urban ecology to planning?*

Our urban ecology in Baltimore is well embedded in urban decision making. We have pursued equal and respectful partnerships with decision-makers and managers in city, county, and state governments since the project started 20 years ago. And even then, we were able to build on a previous decade's environmental and social research and community revitalization. This has relied on a lot of personal investment from all partners including those in research, education, community activists, non-governmental organizations, and public agencies. It has built and relied on trust and openness.

It has also flourished due to the political vision of leaders in all the jurisdictions in the Baltimore region. For example, there are smart growth policies, city, and county sustainability offices and strategies, equity-based planning and green infrastructure strategies, and sensitive place-based strategies for increasing urban tree canopy.

Not all cities follow the same model for linking urban ecology with their planning and management approaches, but the Baltimore example points to some ingredients for success. Many cities I am aware of are exploring or already have good practices for linking with urban ecology knowledge in place. But it is not a given everywhere, and there is still the need to help cities develop the vision for the ecological practice and to support their efforts to do so.

Terr@Plural –*The biological diversity of cities is one of the central research topics of urban ecologists. How can ordinary citizens be engaged in actions to conserve urban biodiversity?*

Some practices are simple, and some are more complex. And depending on what kind of neighborhood a person lives in -- dense residential in the core city, or suburb with yard space, or exurbs -- determines what kinds of actions can be taken.

If you have planting space that you are in charge of, try to add some native plant species or plants that supply nectar or flowers for bees and butterflies. Try not to use insecticides that kill bees. Plant some shrubs that make the three-dimensional structure of your yard more complex and thus more inviting to a variety of species of birds. Keep your cats inside -- remember they are predators, and they prey on birds heavily. Recognize that not all valuable biodiversity is large and cute. Put up a bat house if you have a place for that. If your building has a lot of reflective glass, put up raptor silhouette decals, or if you are a planner or designer, advocate for new buildings to use window glass that has a subtle pattern that prevents birds from seeing it or the "unobstructed" sky beyond. Recognize that not all urban parkland should be manicured lawn or paved athletic surfaces. Set aside some that are a bit wilder and attractive to wildlife. Become informed about urban biodiversity, advocate for it, and help officials to "get it."

Terr@Plural – *What is the future of urban ecology?*

Urban ecology is a growing field. It is becoming more interdisciplinary, welcoming input and intellectual exchange with an ever-growing list of specialties. It is learning to meld ecological thinking into urban practice by mutually respectful exchange with policymakers and managers. It is helping educate residents and communities about their ecological contexts and the benefits that they can reap from ecological features and processes in their cities. Urban ecology is developing long-term data so that society can understand the difference between short-term fluctuations and slower changes. Urban ecology is becoming better able to understand the many new conditions and events that climate change is visiting on cities. Finally, urban ecology is becoming better at understanding cities themselves as changing, complex systems.

To quote one of the pioneers of modern ecology, the job of urban ecology is increasingly to "meet change with change." It is hard to imagine a more pressing goal at a time when climate, human migration, economic shifts, media and rates of connection, the obsolescence of existing urban infrastructure, or the need for new infrastructure are coming together to make our cities something new and unprecedented. Urban ecology needs to be right there at that intersection.