

INTEGRATIVE FRAMEWORK FOR UNDERSTANDING URBAN ECOLOGICAL DISSERVICES

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Abstract

The Millennium Ecosystem Assessment (2003) and various other environmental studies have highlighted the importance of ecosystem services, while relatively little attention has been paid to the disservices produced by the ecosystems. Likewise, research on urban ecology has highlighted various ecosystem "goods" that urban green and blue areas can provide. However, the "bads" produced by urban ecosystems – such as safety issues in dark parks or pollen causing health problems – can be highly relevant especially in the context of urban lifestyle (Petersen et al., 2007). Here we apply the Environmental Protection Process (EPP) framework (Tapio and Willamo, 2008) in order to build a coherent overall picture of different urban ecosystem disservices. The EPP framework illustrates the overall process through which environmental problems are created and settled from systems thinking perspective. We focus on examples from Finnish urban areas. Many of the disservices identified may be considered as irrelevant, or of negligible importance, if compared with ecosystem services making possible to fulfil basic needs such as eating, drinking and breathing. However, these disservices can become important when considered against everyday practices of urban people in affluent societies. For example, aesthetic discomforts that are not a threat to the survival of urban residents can still raise demands for management options that are destructive for urban biodiversity, such as demands for intensively managed, artificially illuminated, largely paved and, consequently, barren green space. Both the services and disservices produced by urban ecosystems are woven into urban people's regular life-patterns, attitudes and values. Perceiving of services and disservices is largely a matter of subjective valuation and what is perceived as disservice varies over time. A continuous learning process is needed in order to take these changes into account in urban development. Comprehensive yet simple enough conceptual frameworks, such as the EPP framework, can aid this learning process.

Key Words

Ecological disservices, integrative frameworks, urban biodiversity

Key References

- Millennium Ecosystem Assessment. 2003. Ecosystems and Human Well-being. A Framework for Assessment. Washington DC: Island Press.
- Petersen LK, Lyytimäki J, Normander B, Hallin-Pihlatie L, Bezák P, Cil A, Varjopuro R, Münier B, Hulst N. 2007. Urban lifestyle and urban biodiversity. Towards conceptual framework for urban lifestyle-driven biodiversity change. Alter-Net report. Available from: <http://www.alter-net.info>.
- Tapio, P. & Willamo, R. 2008. Developing interdisciplinary environmental frameworks. *Ambio – A Journal of Human Environment* (in press).